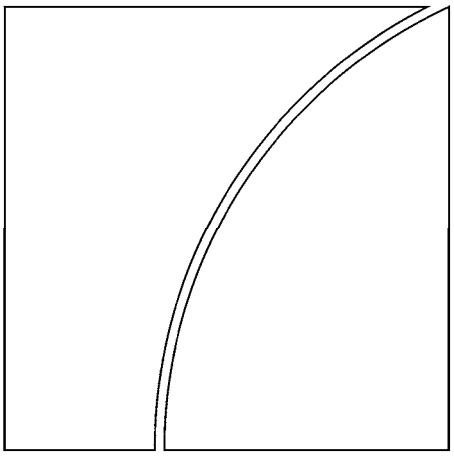
BANK FOR INTERNATIONAL SETTLEMENTS



BIS Working Papers

No 347

On harnessing the potential of financial inclusion

by Peter Dittus and Michael Klein

Monetary and Economic Department

May 2011

JEL classification: G210; G280.

Keywords: Financial Intermediaries; Payments; Regulation.

BIS Working Papers are written by members of the Monetary and Economic Department of the Bank for International Settlements, and from time to time by other economists, and are published by the Bank. The papers are on subjects of topical interest and are technical in character. The views expressed in them are those of their authors and not necessarily the views of the BIS.

Copies of publications are available from:

Bank for International Settlements
Communications
CH-4002 Basel, Switzerland

E-mail: publications@bis.org

Fax: +41 61 280 9100 and +41 61 280 8100

This publication is available on the BIS website (www.bis.org).

ISSN 1020-0959 (print)

ISBN 1682-7678 (online)

On harnessing the potential of financial inclusion

The case of "mobile payments"

Peter Dittus and Michael Klein[1]

Abstract

The development of information and communications technology is opening up the opportunity for providing essential financial services to most people. Indeed, many mobile money or branchless banking schemes are currently spreading across the world. However, these schemes can only be sustainable if they are built on a commercially viable business model. In this respect, the jury is still out. The paper describes one commercially viable initiative in more detail, M-PESA in Kenya, and analyses in detail the transactions involved. It argues that in order to harness the potential of financial inclusion it is vital to permit experimentation with different business models. Regulation is therefore required that enables such experimentation by being calibrated to the type of service offered, but which can be tightened if and when such schemes become bigger with the potential to impact financial stability: risk-proportionate regulation by service type.

JEL classification: G210; G280.

Keywords: Financial Intermediaries; Payments; Regulation.

---

[1] Peter Dittus is Secretary General of the BIS, Michael Klein Professor at the Frankfurt School of Finance and Management and Visiting Professor at Harvard and Johns Hopkins University. We would like to thank Karl Cordewener, Marc Hollanders, Carlos Isoard, Miguel Mancera, Paul O'Brien, Keng Heng Tan and Philip Turner for useful comments.

Introduction

Traditionally access to financial services has been a rich person's privilege. The poor had to rely on informal arrangements within their family or close community. While the linkages between a well-functioning financial sector and economic development have been well documented (World Bank (1989)), generally efforts have been focused on developing a formal banking sector in order to mobilise savings and convert them into investment. Extending banking services beyond well-off urban areas seemed costly, the demand for them low, and the ability and willingness to pay of poor country folk was considered non-existent. In the 1990s things started to change. Two developments started to converge. The experience of micro-credit since the mid-1970s showed the feasibility of new business models that could provide specific financial services to the poor profitably. And the rapid development of information and telecommunications technologies promised to enable new cost-effective ways to build business models to reach poor people.

Developments did not stop with micro-credit. Experiments with other financial services started to emerge including saving and insurance products. More recently the action has shifted to payment services. The enabler for this has been the rapid development and spread of information and communications technology, making it possible to offer tailored services profitably to population segments and in areas where full-fledged traditional banking services were not available. Technology such as mobile phones could very well unleash far-reaching change in developing economies. As a result, business models using new technology may allow financial services to emerge and be profitable without going through more traditional stages of development.

Mobile money or "branchless" banking schemes are spreading across the world. One scheme was launched in 2001 (GSMA (2011)). By 2006, there were just 10 globally. Initial trials were scattered across the world. The success of M-PESA in Kenya, which was launched in 2007, appears to have added impetus. 25 schemes started in 2009 and 38 in 2010. 2011 is on course for over 50 deployments. By the end of the year over 140 mobile money ventures would be operating globally, up from 95 in mid-February 2011. The current boom is focused on Africa with 45 schemes so far, followed by Asia and the Pacific with 25 in operation and Latin America with 12.

The success and sustainability of most schemes remains uncertain. But one of them stands out: M-PESA in Kenya, which signed up over 50 per cent of all adults in the nation in less than 4 years to a mobile phone-based retail payment system.[2] The idea originated at Vodafone in 2004, with the support of the UK Department for International Development. In 2006, the Kenyan Vodafone subsidiary, Safaricom, started testing the use of mobile phones in support of microfinance. Originally, the idea had been to facilitate loan payments and repayments under microcredit schemes. However, as Safaricom explored the scheme, the company found out that a more pressing need seemed to be the provision of payment and small saving services, as exemplified by the slogan: "Send money home". The annual number of payment transactions now exceeds that of Western Union globally and accounts for about 60 per cent of electronic payments in Kenya. The system allows users to send or withdraw money at over 23,000 retail outlets, compared to about 1,000 bank branches before. At the same time absolute amounts remain small, reflecting the income level of the users. Average savings in the system are around $ 3 and amount to 0.2 per cent of bank

[2] The other major system in operation is in Brazil, which established "correspondent banking" around 2000. Over 95,000 shops across the country provided basic facilities for customers to make payments using a Point-of-sale (POS) device, not a mobile phone. While Brazil is, next to Kenya, the country with the most far-reaching retail payment scheme, the financial viability of the approach remains fragile (Rotman (2011)).

deposits overall. The total amount of payments accounts for only 2 per cent of all electronic payments in the country.[3]

If the success of M-PESA can be repeated elsewhere, access to financial services through mobile devices could become a key driver to help lift people out of poverty, and might even become an important feature of financial systems. This potential has been recognised by governments, experts, and donor organisations. It has even received special attention from the G20. In Seoul, in late 2010, the G20 launched the Global Partnership for Financial Inclusion, which among others has been tasked to implement the action plan for Financial Inclusion Principles (Access through Innovation Sub-Group of the G20 Financial Inclusion Experts Group (2010)). The potential economic benefit of financial inclusion is also high on the agenda of central banks in emerging economies (eg Gokarn (2011), Zeti (2011), Hawkins (2006)).

The challenge is how to harness the potential of what has become to be called "financial inclusion", ie basic financial services for the poor, while ensuring that the stability of the financial system is not compromised. On a worldwide scale, more stringent regulations have been developed to make the financial system more resilient and reduce the probability of financial instability, following the crisis in 2007 (for example see Basel Committee on Banking Supervision (2010a)). To which degree can and should regulation be applied to newly emerging financial services for the poor? Is there a trade-off between financial innovation to help the poor and regulation?

This paper tries to shed some light on this debate. It first describes the challenges of poor people, and their need for basic financial services. It then shows how information and communication technology has made it possible to provide basic services at a price point where the poor can afford it. It goes on to describe how well-meaning attempts to protect the poor through regulation can be counterproductive. It argues that before regulation is discussed, we need to understand the object of regulation – because in the new world traditional banking service bundles may be much less important than basic, highly specialised financial services. The paper analyses key building blocks of such services: exchange of different forms of money for one another; storage of money for safe-keeping; transfer of money from one owner to another; investment of money. Our analysis explores what form of regulation would allow solutions to poor peoples' problems to emerge with acceptable risks.

At the same time, controversies about various micro-credit schemes have erupted, most notably in Andhra Pradesh, India. Allegations abound about usurious interest rates charged to poor borrowers and about excessive profits reaped by private microfinance institutions. At the core of the debates are concerns about imprudent borrowing by poor people, who may have been pushed into debt and may not have appreciated the burden of future repayment. This is fundamentally an issue of micro-credit as opposed to micro-finance more broadly. For the current paper these debates are not directly relevant as we focus on issues related to mobile payments and do not derive conclusions for micro-credit.

Demand: the plight of poor people

Poor people do not just have low incomes and little wealth. To manage what little money they receive, own or owe, poor people typically need to resort to more complex financial transactions than many people who are comfortably off. It all starts with jobs. In the World Bank's study "Voices of the Poor", a man from Pakistan expressed it aptly: "The poor are rich

[3] The data reflect information received on a field trip to Kenya in January 2011.

in jobs; the rich have one permanent job" (Narayan et al (2000)). Many of the poor go out seeking a new job every day. On some days, they may perform different jobs for several clients. On others they may not find any work. Shocks like illness or bad weather hit the poor hard. It is not just the shocks of nature that hurt. Poor people tend to work without contracts and without much recourse to dispute resolution mechanisms. For example, they may sometimes not be paid by employers, who feel they can renege on their promise of pay without penalty. For all these reasons, poor people need to establish and manage some form of safety net to ensure they can eat, find shelter or medical treatment when income falls short. In richer societies people who are comfortably off tend to have steady jobs and are protected by contracts. They are less exposed to shocks and tend to be protected by safety nets that they themselves do not need to manage. They just need to pay for them, through fees or taxes.

Poor people face a more complex challenge and need to manage it themselves without much contractual or legal protection. Not only do they need to understand and manage the risks of the job markets and those of nature. Street smarts are needed to assess who is an honest employer, a trustworthy safe keeper of money and a reliable transporter of money. By the same token lenders to poor people need to assess creditworthiness and willingness to pay in the absence of access to standard ways of contract enforcement.

The daily financial lives of poor people have been described in detail in "Portfolios of the Poor", a prominent investigation into the everyday problems they face (Collins, Kulkarni and Gavron (2009)). Typical low income families used some 10 different financial instruments, several channels of transport for money and multiple ways of keeping money safe. For example, they might keep some money at home and accept the risk of stealing. Some other part might be deposited for safekeeping with a trusted person with the risk that some of it might not be returned. Money transfers from workers in a city to relatives in a village might sometimes require a lengthy and costly trip by the money earner. Sometimes people might elect to trust a bus driver they know.

Poor people do not have accountants nor do they have access to "better business" bureaus. They process and record their investments and obligations in their head. Their fundamental protection against risk is diversification, knowledge about counterparties and the judicious exploitation of relationships that are expected to last.

Micro-credit is important, but only part of the picture. Setting up new businesses is often not the main issue. Finance is needed to cope with shocks and the demands of special events such as wedding or funeral expenses. "Portfolios of the Poor" found that among the interviewed people over-indebtedness was almost absent. The mutual precautions taken by the various counterparties and the resulting incentives appeared typically adequate to sustain financial relationships.[4]

Overall then, poor people manage fairly complex financial transactions and relationships. They seem perfectly capable of doing this – notwithstanding the lack of legal protection for their transactions and their lack of formal education. They also embrace new products that help them – and they pay for them. When poor people are told about new attractive possibilities, they test the new product. When they become reassured that it works and is

[4] As an aside this raises interesting questions about recent reports of over-indebtedness of poor people with micro-lenders. Why did defaults occur in greater number? Was it events like an economic crisis or was it because providers of finance were too freely handing out money with limited credit analysis and little care about repayment? If the latter, was the issue consumer protection and financial literacy or was it weak credit discipline among some providers of micro-credit? For example, in the recent financial crisis non-performing loans among microfinance institutions in the Balkans rose significantly faster than non-performing loans overall. Maybe micro-borrowers were willing to take the loans because they expected that some NGOs and donors would not enforce loan agreements as much as borrowers in "regular" commercial transactions. Maybe the issue is not consumer protection and financial literacy but the expectations about contract enforcement.

reliable, they embrace it. In Kenya, people are sceptical of propositions to deposit money in a new scheme. Fears of pyramid schemes are widespread.[5] Initially, therefore, people tested the system with small amounts to gain experience, just as they have always tested new propositions in the informal money markets that they dealt with in the past. The massive uptake of M-PESA's service is a sign that trust has been established.

The success of M-PESA suggests a business proposition that reduces the complexity of the money management challenge for poor people is in great demand and the poor are willing to pay for this. Some complain that poor people pay for safe-keeping of their own money, ie deposits, under schemes like M-PESA. Some argue that instead the poor should receive interest on their deposits – like many rich people do. That might indeed seem fair, but given the high cost and high risk alternatives for the poor they seem willing to pay for an improvement, even if it is not perfection. Forbidding providers like M-PESA to charge fees for deposits or forcing them to pay interest may simply undermine the business model and force poor people back to the bad old ways. The more general point is that we need to understand better the economics of why and how poor people take up new financial services. The analysis of the risks and benefits of new financial services and their impact on poor people needs to have a realistic counterfactual. For poor people the alternative is not the good life of the rich, but their bad old insecurity.

Supply: technological innovation enables new business models

The impact that advances in information and communications technology can have – if paired with appropriate business models – has been described with the example of M-PESA. It is a particularly striking example among a range of others that stands out for its speed of adoption. Examples such as this raise the question what might come next. Innovation in information and communication technologies continues at a rapid pace. Such technologies are thus finding their way into applications for everyday life at affordable cost.

Arguably the device that has been the most powerful enabler for financial services for the poor is currently the mobile phone. The first mobile phone came to market in 1983. Today close to 5 billion mobile phone subscriptions provide access to mobile phones for more than half the world's population. Prices keep falling, providing the conditions for a further extension of the market. In recent years Africa has been the fastest growing market for mobile phones with annual growth rates in the order of 65 per cent. Mobile community payphones provide additional access as owners rent out phones for use to poor people without their own phone.

Other devices are spreading too, including chip cards and computers. Prices keep falling and capabilities increasing. Moore's law continues to be alive: this rule, pronounced in 1965 by Gordon E. Moore, one of the founders of Intel, predicts that computer capacity doubles and prices halve roughly every 2 years. Today, an i-phone 4 has over a million times more computing power than the computer that send the first rocket to the moon (2 KB of RAM and 36 KB of hard drive capacity).

The convergence of computing, cards and the mobile phone is easily observable. Smart phones are rapidly transforming into little computers and can also be used like smart cards. New transmission mechanisms, including the internet and satellites open up new communications options. Within the next few years several new types of phones will be affordable for poor people. For example, currently phones with Near Field Communication (NFC) capability can be produced for USD 10 apiece in China and will be available to African

[5] This was repeatedly mentioned on our field trip.

consumers soon.[6] This would enable the option for micro-payments as such phones are compatible with existing (re-programmed) point-of-sales terminals that are used, for example, by airtime sellers. Currently the technology is used in Japan.

Technological innovation and the new business models promise real economic benefits – in contrast to some of the financial innovation in recent years that has emerged to game the system and exploit regulatory arbitrage opportunities. As Paul Volcker, former Chairman of the United States Federal Reserve famously remarked in 2009, in his view the most important financial innovation has been the automated teller machine (ATM): "It really helps people, it's useful" (Volcker (2009)). The same can be said of payments mechanisms such as M-PESA. Through mobile phones they can reach a large number of poor people that had no access to finance before.

To summarise, today's technology has started to make a significant difference in the life of poor people, by inter alia providing financial services that seemed out of reach only a few years ago. And yet, existing technology will rapidly be superseded by new innovations, enabling additional business models to serve the poor. The challenge will be to harness the potential benefits that such innovation and new business models can bring, while ensuring that the risks are understood and can be managed.

Why we need to understand the building blocks of financial inclusion

The paper has described why poor people need financial services; so much indeed that they are willing to pay for them out of the little income they have. It has sketched that technological innovation has been enabling the development of business models that permit the provision of such services in a sustainable manner. But further progress may be undermined by well-meaning concerns for the poor, as it has on other occasions. For example, well-meaning concerns about water pricing and its fairness have led to water tariffs in many poor countries that are unable to cover costs. In contrast, so far mobile phones were considered "luxury" items with no need to be concerned about pricing for basic needs. The paradoxical result has been that today in Africa more poor people have access to cell phones than to piped water.

When deep concern for the poor meets unpredictable innovation, emotions are not far from the surface. The key protagonists are financial inclusion promoters and regulators. To put the arguments in starker contrast, we put up the straw men of "typical" viewpoints on regulation of micro-finance of these players. These viewpoints matter for the way debates on regulation have been shaped.

Financial inclusion enthusiasts are encouraged by the success of microfinance. At the same time they see that many microfinance schemes lack the scale to reach the majority of poor people. New technology provides new hope for expanding access to finance. In debates about regulating micro-finance they often argue for no or light regulation so as not to undermine the goal of access and to make life easier for micro-finance institutions. However, enthusiasts often exhibit an interventionist streak when it comes to charging poor people. Some, such as Professor Yunus, feel that annualised interest rates of, say, over 25 per cent are excessive. They may question why poor people are being charged for depositing money. While they may accept the argument that usury laws may unduly restrict the scope for microfinance, they often feel uneasy about the implications.

[6] According to briefing by representatives of Zap, the mobile banking service of Airtel Jan 13, 2011.

Regulators come in two varieties: consumer advocates and prudential regulators. The guardians of consumer protection worry about exploitation of poor people through unfair contracts, fraud and excessive prices and interest rates. They worry that poor people might be exploited by rapacious micro-finance providers – in a sense wolves (money-lenders) in sheep's clothing. Guardians of consumer protection thus have common ground with many activists. Because people are poor and at risk, the guardians of consumers propose strong rules to protect them.

Prudential regulators worry about the integrity of individual institutions (the micro view) and of the financial system as a whole (the macro view).[7] They ask financial institutions to be conservative, to go for good credits, to maintain a strong equity capital base. This tends to limit banks' incentives to seek out business among the poor. It is also worth noting that prudential regulators tend to favour for-profit financial institutions over not-for-profits as they have more options to raise capital for recapitalisation of distressed financial institutions. Thus prudential regulators seem at times at odds with the enthusiasts.

It is easy to conceive of scenarios where the interaction between well-meaning financial inclusion enthusiasts, defenders of consumer protection and prudential regulators could lead to an undesirable outcome. In an effort to defend the poor, caps on interest rates that can be charged might be introduced; charging fees for making deposits might be prohibited; specialised financial services might be subjected to the prudential regulation of banks. In the end, a combination of well-meaning efforts to protect the poor and the stability of the financial system may lead to a situation where the poor cannot get the services they are willing to pay for because no one is willing to supply them.

Reviewing and analysing the issues is complicated by fast-moving technical changes and business models. There still reigns a fair deal of confusion about how new business models for "mobile money" operate. A proliferation of approaches, as is normal in a period of experimentation, makes understanding sometimes hard. Terminology itself is unsettled and it is not always clear what the exact meaning of the terms used in the debate is. Most schemes use mobile phones as the device to communicate with an account provider. Yet, some use point-of-sale devices in conjunction with magnetic stripe cards, mostly in Latin America; some use both phones and point-of-sale devices, for example WIZZIT in South Africa and Smart in the Philippines.

The account provider may be a bank, but more and more it is a telecommunications company and, in rare cases, a third party, for example Celpay in Zambia. Most account providers effect payments among the participants within their scheme. A few schemes interconnect different account providers, mostly banks so far. New interconnection schemes that allow payments to be made between different types of account providers are being tested.

The new payment schemes bring people from the cash economy into modern systems of book-entry money that may be recorded electronically or on paper, sometimes both in one system. A key requirement for success is thus to have retail outlets that change cash for book-entry money. So-called "cash-in/cash-out" services are provided sometimes by shops that operate independent of bank branches or by bank branches. Many shops are branded by a single mobile money scheme, some offer services for several schemes. The success of any scheme is critically dependent on finding the right business model that makes the retail providers of cash-in/cash-out services profitable. Only one scheme, M-PESA, appears so far to have achieved this. For most schemes it is too early to tell.

---

[7] For example in a speech on mobile money, Zamani Abdul Ghani, the Deputy Governor of the Central Bank of Malaysia expressed a common concern stating that "the events in the US sub-prime markets and derivative products serve as a good lesson where innovation significantly outpaced the capacity of the regulatory environment to exercise prudential oversight and prevent distress to the financial system" (Ghani (2009)).

All in all, there is no established way to classify the new experiments by type of institution. Each scheme tends to add a new twist and may combine functions and players in new ways. It is thus most helpful to analyse issues by service provided. M-PESA seems to us to be a good example to discuss the issues that arise.

In order to foster financial inclusion, we need to understand what we are talking about, and clarify our terminology. A clear understanding of the building blocks of financial inclusion is the foundation that should allow regulation to target the specialised financial services in an appropriate manner, balancing considerations of access to financial services and innovation on the one hand, and consumer protection and financial stability on the other. On purpose, we focus on key functions, not on institutions, because innovation is happening at a rapid pace and some specialised financial services may be provided by a range of suppliers, and the type of supplier may change over time. Banks may be only a small part in the supply of financial services to the poor, indeed they may not be best placed to provide them. Describing the building blocks of financial inclusion is what we are therefore turning to now.

The building blocks of financial inclusion[8]

In order to analyse the building blocks of financial inclusion, we propose a basic framework that decomposes the "banking business" into the following main functions:

- Exchange of different forms of money for one another
- Storage of money for safe-keeping
- Transfer of money from one owner to another
- Investment of money

Exchanging forms of money

Most forms of money currently used fall into one of two categories: Book entry money (BEM) or cash (in the past and during crises commodities have often functioned as money). Forms of BEM vary by the way they are recorded typically either on paper or electronically. Cash also comes in several forms: bills, coins or sometimes e-money stored on smart cards.[9] In turn bills or coins may be issued by different monetary authorities. Today these would usually be issued by national monetary authorities and constitute different forms of national currencies.

Different forms of money are routinely exchanged for each other. For some form of exchanges special merchants have existed for some time, for example, foreign exchange bureaus. For the exchange business it is necessary for both parties to the transaction to

---

[8] Regulatory issues for mobile payment schemes are discussed in Lyman, Pickens and Porteous (2008), Porteous(2009), Tarazi and Brefloff (2010), Dias and McKee (2010) and Alexandre, Mas and Radcliffe (2011). The Basel Committee on Banking Supervision (2010b) issued a broader report on microfinance.

[9] In this case money is stored on a card. When the card is lost, the money is lost. Such cards are called e-purse or e-wallet. Most cards do not actually store money, but provide some record of how much money is available in an account, facilitate communication with that account and provide the basis for authentication. In many articles about mobile money the term "e-wallet" is used to characterise the mobile phone or a card that provides records of money available in an account. This use of the term is misleading. When someone loses a debit card or a mobile phone with account services, the money is not lost. It still sits in the account managed by an account provider.

know what can be used as money and to recognise the money. A traditional issue has been the identification of fake currency. To deal with this, merchants may have special machines checking the authenticity of currency. Foreign exchange businesses have processes to identify whether a particular banknote offered for exchange is really official tender in the issuing country. When BEM is exchanged the issue is how it is documented that money has effectively been transferred. In the case of M-PESA, the parties to the cash/BEM exchange get real-time confirmation of the transfer of BEM by text message from M-PESA. The issue is what type of communication is considered sufficient to establish finality for the transaction, and what the formal documentation requirements are. A priori, given the strong interest of both parties in the transaction to protect themselves against fraud, it would seem that the establishment of documentation rules could be left to the parties concerned. Perhaps one might want to consider minimal standards for this documentation, just as printers of banknotes do incorporate special features in the banknote that allow distinction of real from fake notes. As long as the documentation is accepted, such as an SMS in case of M-PESA, both parties can proceed with the exchange. If one party in an exchange accepts "fake money" it may have to accept resulting loss. At the same time there should be the possibility to seek redress against those who create such fakes.

Box 1

Kenya: Cash merchants and the M-PESA system

M-PESA's payment service by mobile phone allows people who relied only on cash before to store and send money by phone. It thus allows poor people to use a form of book entry money (BEM) recorded and transmitted electronically. This is not new for people who have been using banks. But now poor people, just like richer ones with bank accounts, need to be able to give cash to someone and transform it into BEM, which is currently called "e-float" in Kenya. Likewise, they need to be able to withdraw cash. They need to be able to exchange BEM for cash. Traditionally people used to do this at a bank branch or in modern days at an automated teller machine (ATM). But most poor people either have no bank account or the trip to the Bank takes a lot of time.

Safaricom exploited the fact that most Kenyans now have mobile phones. Users may request a SIM card with the M-PESA application for their phone. Once signed up they are provided with an electronic account. They may deposit money into it, withdraw money or send money from their account to that of another M-PESA account holder. To deposit they need to give money to someone and to withdraw they need to receive money from someone. The way this currently happens is via cash merchants signed up by M-PESA. Some 23,000 such merchants now operate out of small huts, shacks or rooms all across the country.
The merchants themselves invest into their own business by acquiring an M-PESA account and deposit money of their own into it. Once the merchant holds electronic BEM at M-PESA, she can sell BEM to another person for cash. At the same time the merchant needs to hold cash to be able to buy BEM from another person by selling cash. When customers visit the cash merchant to deposit money into their account they give them cash and receive M-PESA's BEM via mobile phone. When they withdraw cash they transfer BEM via phone to the cash merchant's M-PESA account and receive cash in return. The cash that is being exchanged for BEM at the cash merchant's shop is owned either by the customer or by the merchant. No cash belonging to anyone else is at risk.

In common parlance in Kenya, the cash merchants are called M-PESA "agents".[①] The word agent together with the acts of depositing or withdrawing money sounds as if the merchants perform services on behalf of the account provider, M-PESA, like a bank branch performs services for its bank. Yet, in fact, the merchants do not dispose of M-PESA's cash or other assets like a bank branch employee does for a bank. They transact with their own money – either in the form of BEM or cash. It is a service just like the exchange of coins for bills that is allowed to happen without special rules anywhere in the world.

The service that cash merchants provide is highly valued by customers. In a way they perform the functions of an ATM that allows cash withdrawals and deposits. The service, often called "cash in/cash out", is crucial for mobile phone based transactions. Otherwise poor people could not obtain

the cash they need on a daily basis. Cash merchants tend to be in close proximity to people in most of the country. In the slums of the major cities in Kenya M-PESA cash merchants maintain shops every few hundred meters. There are no long waiting lines. They open early and close late like other shops in the informal markets. Poor people can transact at these shops without abandoning their business for lengthy amounts of time and without the cost of transport that may be involved in a visit to the nearest bank branch.

For their services the merchants receive compensation. In the case of M-PESA, the compensation is paid by the account provider out of the transaction fees charged. A cash transfer within the system or a cash withdrawal, of less than USD 30 (the bulk of the transaction amounts), costs about 30 to 40 cents.[②] New proposed business models, for example, by a service called ZAP now promoted by the telecommunications company Airtel, foresee that cash merchants receive compensation directly from customers.

Retail cash merchants need to maintain adequate amounts of cash and BEM to meet customer demand. They obtain this from one or more of several hundred wholesalers. The wholesalers may be banks or separate cash wholesale merchants without associated banking business. When retailers are short of cash they can obtain more from the wholesaler, likewise for BEM. Demand for one form of money or another varies by region and over time. The wholesalers help meet that demand (Eijkman, Kendall and Mas (2011)).

Traditionally, the cash merchant function has been performed by banks that provided customers with accounts and was thus covered by banking regulation. Now it is a free-standing business that does not put money of the account provider at risk. In the case of M-PESA, the account provider, in turn, is not part of a bank. Contrary to a bank it does not use deposits to extend credit. It simply helps store and transfer money.

The M-PESA system as a whole maintains net deposits from customers. It could just keep the net cash received in a safe. Yet, as required by the Central Bank of Kenya net balances are invested in regulated banks for safe-keeping. Currently the Central Bank does not allow interest paid on these deposits to be paid out to M-PESA depositors. Instead, interest income is provided to charity.[③] The M-PESA system thus does not receive interest income on its net balances just as if they were kept in a safe-deposit box. The function performed is purely safe-keeping. The Central Bank regulation assumes that it is better to keep the money in a bank than in a safe. To that extent the account provider functions as a collector of deposits for banks. Yet it is not a legal part of a bank and performs no credit business that puts the depositors' money at risk beyond the risk of investing in safe forms of deposits at regulated banks.

[①] Concepts like "agents" need to be treated with care. In bank regulation, the use of the word "agent" tends to be understood to imply coverage by banking regulation. In specialised financial services principals may also contract with agents to carry out functions on behalf of the principal. But this principal may not be a bank. The regulatory treatment will be dependent on that of the principal. If the principal is not subject to for example prudential regulation, then agents should not be either.

[②] A detailed analysis of the fee structure can be found in Mas and Ng'weno (2010). Current rates and fee structure are published on www.safaricom.co.de/index.php?id=255.

[③] New regulations issued by the Central Bank of Kenya in February 2011 provide for the possibility that account providers use the income from deposits, for example, to lower fees, but not in the form of interest payments to customers.

The exchange of money involves the valuation of one form of money relative to the other, and therefore the exchange rate between cash and book entry money need not be 1:1 and could vary between locations and over time. Consider the case of exchanging coins for notes. Someone who wants urgently to use a public payphone at night may have no choice but to exchange a dollar bill for coins just worth 50 cents, because coins are needed for the phone. When cash is scarce in some area cash merchants may, in principle, raise the price

of cash or equivalently the fee for the transfer.[10] Customers need to decide whether they then want to make the exchange. It may be in the interest of the merchant to honour a one-to-one exchange rate for the exchange of cash to BEM and/or fixed fees to maintain reputation. It is just as in the case of any other good exchanged for money. When the goods are scarce the price rises. The rising price gives incentives for competing merchants to increase the supply of cash. In remote areas with limited competition prices may be higher just as prices of foodstuffs in such villages may reflect a scarcity premium. It may be counterproductive to impose a 1:1 exchange rate by regulatory fiat, as it may prevent cash merchants to establish themselves in difficult locations or be available at unusual times.

Keeping money safe

For poor people, the traditional way of keeping money safe is to store it in a safe place ("under the mattress") and to guard it. However, one cannot constantly watch the money and thugs may still be able to steal the money by force. Many poor people try to deal with this risk by asking trusted friends or relatives to keep money safe. This is a simple form of safe-keeping services.

More sophisticated ways of delegating safe-keeping are available in today's financial systems. A standard and basic safe-keeping service is the safe-deposit box. The provider assures physical security for the box and its contents, but does not have access to the contents in the box. Key elements in this service are authentication (how to identify the owner) and access control.

If the content of the safe-deposit box is simply some form of cash money and not other valuables, the service provider may offer safe-keeping through book-entry money accounts. These facilitate also the access to the funds and make them more easily transferable. Traditionally, such book-entry money accounts have been bank deposits. But in principle anyone can offer simple safe-keeping accounts, including a company like M-PESA.

Such a company is basically a custodian, and the value of the services depends on how safe they are. Again, documentation (proof of ownership), authentication (proof of identity) and access control (proof of access right) are the key elements of the services. The functions can be fulfilled by paper or by electronic means. In addition, an account requires rules on how the records are being maintained and how the owner is informed about the state of the account.

The key for any safe-keeping function are the governance mechanisms that ensure the integrity of the system (Makin (2009)). For accounts there may need to be procedures subject to audits. Back-up systems are needed to ensure that account information can be recovered in case of physical destruction or theft.[11] One approach to the governance of safe-keeping is to leave it to account providers to set out the integrity measures they promise to uphold. In case of breach of contract customers can then have redress. Alternatively, regulators may provide minimum requirements for system integrity.

In the case of M-PESA the cash merchants are performing a key function related to safe-keeping, namely registration of the account. They establish identity of the owner, process the request for account opening and perform checks required by anti-money laundering rules.

---

[10] In the case of M-PESA branded cash merchants are supposed to follow the scheduled fees for an exchange.

[11] In the case of M-PESA the accounts of M-PESA that contain deposits from customers are kept separate from the accounts of Safaricom, even though M-PESA is not a separate company. For this purpose Safaricom created a special trust to safeguard the accounts. Additional security for customers stem from the fact that accounts administered by M-PESA are not on the balance sheet of Safaricom and thus are not part of its assets, important in case of bankruptcy of Safaricom.

They are thus subject to more regulation than is required for the cash merchant function by itself. This also means that M-PESA, the "safe-keeper", takes on responsibility to train account openers in requisite procedures like know-your-customer protocols required by anti-money laundering rules and to supervise implementation. It should be noted, however, that the account opening function need not be bundled with the cash merchant function.

Transferring money

Poor people often transport their money themselves. When this is impractical they may give it to friends or to a bus driver they trust to take to their relatives. It is not surprising that safer and cheaper means of transport are in strong demand.

Courier services or the mail are possible alternatives, and they indicate clearly the elements required for the safe transport of money. Like in the case of safe-keeping of money, the key elements are authentication, reliable documentation, and system integrity. First, sender and receiver need to agree on a transport mechanism that both trust. For them to do so, the courier service will need to fulfil certain criteria that may include track record, dispute resolution regime, regular auditing and others. The sender of the money will want proof that he has handed over the money to the courier service, in case the funds get lost during transport. The courier service will need sound documentation and controls such as the four-eye principle to safeguard against fraud. It will require that the receiver of the funds be authenticated to certain standards. Sender, receiver, and courier service will want a clear assignment of liability for each stage of the transport being carried out.

The dangers of the physical transport of money have of course been recognised for centuries, and have led to the development of networks of merchants and bankers. In such a network, the sender would contact a merchant say in London (a network node), and give him the cash that is to be transferred to a contact in Venice. In return, he would receive a payment order that could be sent to the contact, and would be cashable at the merchant in Venice (another network node) against showing both the payment order and proof of identity. In case the payment order was stolen or got lost in transit, the funds would not be lost because their access was linked to providing proof of identity, ie authentication.

With electronic communications, there is no longer a need to transport a physical payment order. But in essence, the requirements for an electronic transport system are not very different from any network system. This can be seen clearly when observing the modern equivalents of merchant networks. Cash transfer services such as Western Union or MoneyGram are indeed very similar to the merchant networks. They require physical presence.[12] They provide documented proof that money has been given to the network. They require the receiver to be authenticated. They have established internal messaging and control protocols that ensure against fraud and system failure, including encryption and identification through public key systems. Beyond the assurances provided by the commercial law and the court system to enforce it, very little additional governance is required, although restrictions may be imposed on the size of transfers, the keeping of records, or the obligation to identify the sender in order to prevent money laundering or terrorist financing. To strengthen competition, rules may be established to clearly indicate the fees.

[12] On the international level, the issues arising in transferring money and the key principles for such transfers have been described and analysed in Committee on Payment and Settlement Systems and World Bank (2007).

Basic money transfer services may of course be bundled together with services such as safe-keeping. This is so in the case of M-PESA, where the sender acquires book-entry money with the M-PESA system, and then uses text messaging via mobile phones to authenticate him or herself; and give transfer orders. The receiver likewise is notified through text messaging, and may keep the book-entry money with M-PESA or take it out through one of the many cash merchants in the country. Cash merchants fulfil in this case a function rather similar to ATMs.

Investing money

The exchange, the safe-keeping and the transfer of money can all take place without involving lending or investment. All funds in the electronic system could be converted into cash at the end of each day, and put into a safe-deposit box. In this case, the money of depositors is not subject to any credit, market, or liquidity risk – beyond that of the government of the country. The account provider who collects the deposits may still be called a "deposit-taking" institution in common parlance. But this is quite different from the standard meaning of the term, which refers to institutions that take deposits, and invest them in loans and marketable instruments, typically at different maturities, thus raising the question of market risk, credit risk, and liquidity risk (see also Alexandre, Mas and Radcliffe (2010), p.7). These institutions are banks. Their risk taking is typically reflected in higher returns. But these risks also expose banks to the danger of bank runs, potentially leading to financial instability that in turn cause large damage to people's welfare (Reinhart and Rogoff (2009)). This damage is the fundamental rationale for prudential regulation and supervision of banks, and the provision of deposit insurance.

It is important to emphasise that the exchange, the safe-keeping and the transfer of money – important financial services for the poor and which might even be considered to be akin to utilities – can all be provided without incurring the risks that come with a "normal" banking business. Therefore it would also seem that some of the measures that have been put in place to reduce the instability of the banking system may not be required. Indeed, these key financial services without the risk-taking element of commercial banks appear to be fairly similar to early proposals to make the banking system safer (see for example the proposal for a 100% reserve banking made by Douglas, P et al (July 1939)). In this proposal, companies would provide essential cash-merchant, safe-keeping, and transfer services, and deposit the float of the system always in safe assets, or it could (in the form of cash) simply be kept safe in vaults – like gold reserves. Thus basic financial services essential for the functioning of the economy would be separated from the taking of credit and market risk. Following the financial crisis of 2007, similar thoughts of separating financial basic services from the "casino" element of banking seem to be gaining in currency (King (2009), Volcker (2009), Kay (2010)).

To return to our example of M-PESA, deposits there are remunerated as if the money was kept in the electronic equivalent of a safe-deposit box, namely not at all. Customers bear the risk of loss of value through inflation and do not receive interest. They pay the cost of transferring and withdrawing money. Yet, they clearly find the costs of this system lower than that of the alternative. Based on an understanding with the Central Bank of Kenya M-PESA does, however, not keep the net amount of deposits it holds[13] in the equivalent of a box. It cannot invest it with the central bank, but invests it into the next best instruments, sight deposits with commercial banks, on which it had earned interest in the order of 7.5 million

[13] The net deposits of M-PESA are held in the form of a trust to separate it from Safaricoms own assets.

dollars by early 2011.[14] The Central Bank has asked M-PESA to diversify investment by depositing the money in two banks into safe forms of deposits, and decreed that, for now, the interest should be paid to charity.

Compared to the narrow banking model, where the account provider keeps deposits in highly liquid and safe assets such as government bonds, M-PESA intermediates in a sort of rudimentary lending function as it deposits at banks that are free to on-lend the deposits from the M-PESA trust. The risk incurred by this intermediation is thus equivalent to the risk of a sight deposit in banks that are subject to supervision by the relevant regulator. M-PESA acts as a conduit of deposits for banks. In this case M-PESA is subject to de facto minimal prudential rules, namely to invest money only in safe instruments in a somewhat diversified set of regulated banks. Beyond this the regulation and supervision of the banks are meant to deal with risk-taking by the banks. M-PESA deposits are not as good as reserve money, but they are as good as those in a bank.[15]

Networks and market power

The value both of telecommunication and payment networks grows as the number of participants grows. A new customer conveys a benefit to an old customer by virtue of joining the network, providing a network externality. Obviously, a credit card that is not accepted by any merchant has no value. A money transfer service that links only two small villages is of lesser interest than one that connects all major towns and villages. It may also be possible that a larger network has lower unit cost per service provided. Both network effects of value and cost of service may mean that networks have to some degree naturally monopoly characteristics. This implies that one large company may be the most efficient way of providing the service. Alternatively, interconnection protocols between different providers may be able to reap the benefits of network externalities, if not necessarily the cost advantages.

Two basic issues arise. First, is government intervention required to obtain at least the main benefit from network externalities? Second, where natural monopoly features are important, is competition policy required to contain market power? Consider first the issue of achieving network benefits.

In any payment system that relies on mobile devices for access to the network, network effects arise both in the underlying telecommunications market and in the provision of the payment platform. In the telecommunications market, standard solutions have emerged across the world. In most countries, just a couple of decades ago, telecommunications services were still granted legal protection to protect their monopoly against new entrants to prevent inefficient duplication of network infrastructure. Today, the standard approach everywhere is to permit entry into the telecommunications business, but to require interconnection among service providers. This is no different in Kenya, where the telecom regulator requires interconnection and sets access charges between telecommunication networks. Hence the basic policy to promote interconnection within a framework of competition exists, along with the regulatory system to implement it. Competing mobile telephony providers can enter the market and operate. They are free to offer phones with SIM cards like that supporting the M-PESA system or other solutions.

---

[14] Information provided on field trip to Kenya by Safaricom, Jan 13, 2011.

[15] If the account provider invests in banks, should the interest go to depositors? In principle, it seems to us that the interest paid on a trust account like that of M-PESA could be distributed to depositors without raising additional regulatory issues not covered by existing bank regulation.

The basic financial services of exchanging money and keeping it safe do not have any network characteristics if used standalone. Thus potential issues of market power and what to do about it do not emerge. For a money transfer service the situation is different. Needed are again access points to the system where cash can be transformed in deposits, and a transfer system that is safe and reliable. The key element is the interaction between the two. The system will only take off if the merchants are there. The merchants, in turn, will only be there, if the system takes off. This "chicken and egg" situation arises in industries that need a critical scale of complementary services to take off. For example, in the early days of the gas and electricity industry, energy providers also provided household appliances like stoves that could be fired with the new energy source. Without the appliances, there would have been insufficient demand. While gas and electricity networks exhibit natural monopoly characteristics on grounds of marginal costs falling with size, the complementary business of making and selling stoves is not a natural monopoly, but a complement that can eventually be provided in competitive markets independent of the energy companies. So it is with cash merchants. Competing cash merchants may eventually offer their services, but to get the market to develop in the first place, M-PESA felt the need to develop a cash merchant network in parallel with providing accounts and transfer services. Today, anyone with an M-PESA account can provide cash-in/cash-out services for the M-PESA network.[16]

While the provision of cash merchant services may be accomplished in a competitive system with free entry, achieving payment network externalities may require either monopoly provision of accounts or common interconnection rules among competing account providers. Taking an international perspective, we observe that economies of scale have indeed played an important role in the development of national and international payment systems. But they have not necessarily led to payments monopolies. A range of national and international payment systems providers exist that connect to each other. What can we learn from this for financial inclusion efforts?

The most important reason is probably that interconnection between payments systems is feasible even when account providers are imperfectly connected. For example, basic interconnection is always feasible via cash or via bank accounts that have access to the competing systems. The cost of such "self-made" interconnection seems small compared to the benefit of network externalities.

Again, Kenya provides interesting examples. In the case of M-PESA the basic system transfers BEM only between account holders at M-PESA. But it is also possible to send cash to a person who does not have an account with M-PESA. For this to happen a text message is sent from an account holder to, say, a relative without an account. The relative then goes to an M-PESA cash merchant. The SMS provides a code that authorises the merchant to transfer money from the sender's account to herself. She then pays out the equivalent amount in cash to the designated recipient. If the recipient were part of another payment system, she could then deposit the cash there. It would cost more than using only one system – but probably less than falling back on informal means of transferring money.

Interconnectivity is also provided through cash and bank accounts. People in Kenya can move money from one bank account to another by transferring it first from their bank account to M-PESA, from there to another M-PESA account holder and from there to that person's account in a bank. The process may be cumbersome, but does provide a basic option for interconnection of accounts.

With the help of technological innovation interconnectivity costs are being further reduced. For example, new software solutions are being developed which ease the process and

[16] The ability to perform cash merchant functions is limited by the size of allowed holdings in an M-PESA account. Cash merchants need higher limits than regular customers to perform their function effectively.

reduce cost, for example, by a system called Spot Cash that allows members of saving co-operatives to transfer money to M-PESA via mobile phone so that they can withdraw cash from cash merchants when the cooperative is closed or ATMs are not working.

Voluntary interconnection between account providers is feasible, but it may not happen, because of diverging business interests. For example, M-PESA has built its system including cash merchants at great expense. The company may need to be compensated for the costs incurred when providing access to its own systems. Negotiations about access to the system may simply fail, because the parties cannot agree on the required system changes and charges for access to the platform.

When voluntary interconnection does not happen, a dominant player like M-PESA may over time become a de facto monopoly provider. Today, the fear of some banks in Kenya is that the current advantages of M-PESA lead more and more users to desert them and just use M-PESA.

However, account providers may also have strong incentives to seek interconnection, consistent with the international experience. For example, in the case of mobile phone-based systems lack of interconnection may simply lead customers to buy SIM cards from multiple providers so that they can transfer money to whom they want. To prevent people to buy SIM cards and service from competitors, each company offering such services may support interconnection so as not to give customers an incentive to "shop around". For such interconnection to happen some level of co-ordination is needed and may be encouraged by rules for access prices among account providers. As M-PESA tries to diversify its financial service offering beyond basic services, it seems to find it useful to work closely with banks that already have such services set up. Already, M-PESA has entered into collaboration with Equity Bank in Kenya. Under the brand M-Kesho, Equity Bank provides, for example, interest paying saving accounts and loan products via the M-PESA communication and cash merchant network that M-PESA itself cannot provide.[17]

Another reason why we do not observe payments monopolies lies in the fact that in practice a range of financial services tend to become bundled over time. A company may offer payments services, but also safe-keeping and cash-merchant services. Local proximity or higher levels of trust among certain communities may be more important factors in deciding which service provider to use than only the costs of the payments services.

As for fears of natural monopoly, the factors discussed so far, combined with markets that are contestable, seem generally to be sufficient to prevent the emergence of entrenched monopolies, so far at least. Any new (non-bank) firm offering payment services is free to set up a distribution network to compete with that of M-PESA. In fact, several telecommunications companies are currently pursuing varying solutions, including Airtel under the brand name ZAP and Orange in conjunction with Equity Bank. These telecommunication companies have the resource base to fund the set-up of new distribution networks, if they choose to. Each is pursuing a different approach to develop a mobile payment mechanism. For example, ZAP charges for transfers only, not for deposits or withdrawals and leaves that to cash merchants who need to be paid directly by customers, and not via the account provider as in the case of M-PESA. Finally, while M-PESA has apparently achieved operational profitability, nobody seems to be making large profits at this time. Most firms are investing and experimenting. New technologies are already on the horizon and may undermine any incipient market power.

[17] Strains have, however, arisen as Equity Bank is, for example, also collaborating with Orange in its own branches. It remains unclear whether Equity Bank can effectively leverage M-PESA's distribution network and how to avoid extra regulatory complications when M-PESA cash merchants play a role in offering bank products.

What regulation?

The paper started out by noting that the challenge is how to harness the potential of what has come to be called “financial inclusion”, while ensuring that the stability of the financial system is not compromised. After looking at the basic building blocks of financial inclusion, it is now time to turn to regulatory implications. We will, in a necessarily tentative exploration, return now to the building blocks and see what kind of regulation may be appropriate. The focus is clearly on achieving the benefits of financial inclusion. In doing so, we explore three fundamental questions. First, is regulation needed? Second, if yes, is it justified by the benefits, for example in terms of financial stability? Third, if market failure argues for regulatory intervention, how does that compare to the dangers of regulatory failure?

It is useful to clearly distinguish four different types of regulation:

- Commercial law and the resolution system: provides the fundamental underpinning for economic activity (similar functions can also be provided by customs and traditional enforcement mechanisms)
- Business conduct regulation: special rules for the conduct of business (eg for purposes of consumer protection or anti-money-laundering, see Box 2)
- Prudential regulation and supervision such as capital and liquidity requirements, restrictions on investments (eg loan-to-value ratios)
- Regulations to foster interconnection and competition

Is regulation needed for the basic building blocks of financial inclusion that we have identified as being important for providing financial services to the poor?

Cash merchants. They provide cash-in/cash-out services by exchanging cash for book-entry money. They trade with their own property at their own risk. They do not put others at risk. Therefore it would a priori seem appropriate to rely on commercial law and the standard resolution mechanism. The service quality is easily observable; the stakes small; market entry possible at low cost. Additional governance mechanisms do not seem needed.

Safe-keeping services. Safe-keepers take valuables or money and keep it safe, whether in safes or a book-entry system. In contrast to the cash merchant, the service has a time dimension, involving the promise to safeguard a high value item and return it for a small fee. Inherent in such a service is the temptation to take the money and run. Therefore commercial law and enforcement systems are important, but probably even more important are rules that help create and sustain trust in the service provider. Such rules are likely to emerge naturally from the interaction between supply and demand if the service is to be provided. Nonetheless, support for the emergence of this service may be provided through consumer protection measures, such as disclosure requirements, for example, standards for informing depositors about balances held and transactions carried out. Business conduct regulation that increases the integrity of the system through transparency and audit requirements may be useful. Prudential regulation is not necessary as long as safe-keepers keep the money safely in a vault. This being a competitive business with low barriers to entry, rules to safeguard competition does also not seem required.

Transfer services. Transfer service providers link different account merchants and allow their customers to transfer money from accounts with one merchant to another person or another account provider. The key element in transfer services is the safety of the transfer mechanism, in particular secure communication and reliable identification of people. The basic elements to ensure this are commercial law and enforcement possibilities of contracts. But since operational risk is omnipresent, and the scope for fraud exists, consumer protection measures and business conduct regulation are important to help establish ground rules and increase the trust one can have into the system through eg transparency and audit requirements.

Transfer services exhibit a tendency towards a natural monopoly as a result of network externalities. What role should therefore competition policy play? We have argued above that the tendency towards monopoly in practice seems to be met by countervailing forces. Still, there may be a role for regulatory intervention to promote interconnection. The Kenyan experience shows that with existing technology various solutions exist already to interconnect different payments service providers. The question remains whether simpler, cheaper interconnection should be mandated by regulatory authorities.

In our view the tentative answer should be no – at least for the time being. The technology is developing at a rapid pace, and new business models are being experimented with. The risk is that in the search for more perfect ways to reap the gains of network externalities regulation may end up undermining the incentives of new entrants to develop better systems. We need to bear in mind that currently only one such system in the world seems to work profitably, namely M-PESA. More experience with successful system development would be desirable. Meanwhile it seems sensible to provide new entrants with freedom to develop new business models, including pricing arrangements. In any case, given the pace of technology development, new entrants are likely to appear within just years and challenge incumbents. Hence any market power positions may be ephemeral. It should also be noted that globally payment systems have often been allowed to develop by allowing competing payment service providers to enter markets. Regulatory efforts have focused on ensuring integrity of

Box 2

Regulation for anti-money laundering and combating the finance of terrorism (AML/CFT)

Experience has shown that financial services can be used to transform illegally obtained funds into legal wealth, and to provide the financial backbone for terrorist organisations. It is therefore natural that international payment providers such as Western Union have attracted attention, and that rules have been developed that aim to stem the abuse of financial services. The emergence of small-scale payments services such a M-PESA may provide in due course similar opportunities for illegal activities. Should rules against anti-money laundering and for combating the finance of terrorism be applied to new financial services for poor people?

Two broad areas of AML/CFT regulation matter:

- establishing identity under agreed “know your customer” (KYC) rules; and
- “suspicious transaction reporting” under agreed protocols to detect suspect patterns of financial transfers

In many countries it is not practical to require people registering for an account to provide identity cards or provide proof of residence based on rental contracts or utility bills. Most poor people simply do not have that kind of documentation. Requiring such documentation would amount to excluding them from basic financial services. In that context it is important to consider the size of the amounts deposited and transacted by poor people. Typically they are of the order of a few dollars. In M-PESA typical transactions are below $ 30. If one is serious about developing the potential of financial inclusion, it may therefore be appropriate to provide graduated exemptions with for example limits on amounts and frequency of transactions. Proof of identity may only be possible through reliance on third party declaration and flexible types of documentation that are within reach of poorer people. One could even consider accepting identity declarations without verification as a first step for small, infrequent transactions.

Fundamentally, there is also not much of a genuine conflict between AML/CFT concerns and financial inclusion. Financial inclusion helps people move from the cash economy to the “monitorable” book-entry money economy. Making it feasible for poor people to acquire electronic accounts makes it possible to deploy suspicious transaction reporting and learn more than if people had stayed in the cash economy. The financial action task force (FTAF) has started to consider such an approach (Chatain, Zerzan, Noor, Dannaoui and de Koker, (2011)). Hence, while handling identification requirements pragmatically account providers may be placed under obligation to maintain records and copies thereof and they may be required to provide suspicious transaction reports (STR).

transactions and robustness of systems, rather than fine-tuning mutual access arrangements. Over time, as individual systems grow to cover large parts of markets and establish solid profitability, the regulatory touch can be firmed in order to ensure that dominant market positions cannot be abused – but to do so in the incubation phase is likely to be counterproductive.

Investing money. If safe-keepers and transfer service providers do not keep their float in cash, the issue is whether there need to be rules that ensure the safety of their investments, such as there are for other deposit taking institutions. With a safe-keeping plus transfer service that invests the proceeds of its activities, we do have the basic building blocks of a bank. The deposits constitute a promise to pay on demand, and that demand can only be honoured when the investments are made wisely. Prudential regulation has emerged because this cannot be taken for granted, and bank runs and costly financial instability may result. Thus prima facie prudential regulation seems required, unless the cash float of the payment system is simply stored in a vault. Regulators may need to determine the types of assets the deposits can be invested in, such as low risk deposits at banks. Regulators may also determine which banks are eligible to be invested in and impose diversification requirements so that funds are spread over several banks.

When deposits are kept in the equivalent of a safe-deposit box there is no possibility of bank runs. But when deposits collected by an account provider are invested in a bank that in turn lends out the deposits, there is a possibility that the depositors in the account provider play a role in bank runs. Suppose that runs are started by rumours about problems with banks. Cash wholesalers may then refuse to expand their deposits in the account provider, which they would need to do if they had to pay out cash. These could freeze up the payment system created by an account provider. People would need to fall back on the old ways of storing and moving cash. For now, even in a system like M-PESA in Kenya the amounts involved are hardly reason for systemic concern,[18] as the total amount of its deposit in the banks there are just 0.2 percent of system-wide deposits. If the authorities decide to support banks with liquidity this would help depositors via a non-bank account provider just as they would others.

Where deposits are stored in banks, the question arises whether they should be covered by deposit insurance, where it exists. The total amount deposited in a bank by the account provider may exceed the thresholds for deposit insurance. If one regards the account provider simply as a conduit for small deposits it may be appropriate to cover amounts deposited by such a conduit under deposit insurance.

Some tentative general conclusions

The main conclusions we draw from our analysis are twofold. First, regulation should be designed by type of service. We have tried to show that the building blocks are different in nature, and many of them do not require that the conditions for a full banking licence are met. If a normal banking licence was required, many of these specialised services may not emerge. Therefore the nature of the service needs to be analysed, and the regulation be calibrated according to the nature and risks of the financial service. Clearly, a reliable legal framework with enforceable contracts is the foundation on which all financial services are built. For most building blocks business conduct regulation can provide additional support and impetus, over and above the legal framework. Better financial services help poor people

[18] They may not be a concern for financial stability, but even these small sums can be important parts of poor peoples' financial assets. Therefore consumer protection and financial education are important.

cope better with the everyday risks of fraud and theft. At the same type new services like mobile payment systems can also give rise to fraud. The overall risk may be lower in the new systems. At the same time, if a modern system like M-PESA were to be plagued by systematic fraud the political fall-out could be significant. Hence, from that perspective as well adequate conduct regulation is important. Prudential regulation has an important role, and comes into play if the services generate a float that is invested. It should be focused on this functional building block. In doing so it is advisable to try and remain technology-neutral to leave space for further innovation. The key is to regulate the service provided, not by institution.

Second, regulation should take systemic dimensions into account. In calibrating the regulatory framework for basic financial services to the poor, regulation should be calibrated according to the risks incurred for the financial system overall. In the case of systemically important financial institutions whose failure can lead to large economic costs within a country or even beyond, even regulation that seems costly from a short term perspective may easily pay for itself by helping avoid financial crises whose costs for the people can be large. That is a lesson that we have had to relearn the hard way over the past few years. In the case of basic financial services for the poor, the danger seems not so much systemic repercussions that might impose large financial costs; the danger is more that such services do not emerge in the first place, and financial inclusion simply does not happen. In that perspective it may be advisable to experiment and to encourage the emergence of a wide range of specialised, "unbundled" financial services for the poor, and consider a stronger regulatory response if and when particular bundles of service emerge and grow towards a size and importance that could pose risks for financial stability.

In designing the regulatory framework, regulatory measures are put in place in order to mitigate possible market failures, or to help markets work better. Unfortunately, in practice there is a complication. The regulatory measures themselves are subject to influence of particular interests. Therefore possible market failure needs to be weighed against possible regulatory failure: regulatory efforts may be captured by commercial interests or affected by political considerations – an additional reason not to stifle promising approaches through regulatory responses to innovation and new business models that can help poor people.

Basic financial services seem to be of major benefit to poor people. The success of M-PESA in Kenya seems to indicate that basic payment services are perhaps the most important financial service for poor people. Luckily it appears that such systems can be developed at low risk, because, even if successful, the absolute amounts remain small. And because effective regulatory approaches can be developed, provided the objectives are clear; the regulation is targeted directly on the type of service; and the regulation is appropriate from the viewpoint of the financial system overall. That seems to be broadly what the Central Bank of Kenya has done. By allowing M-PESA to experiment, it has helped provide useful insights into new possibilities for financial services.[19]

[19] The Central Bank of Kenya has further advanced policy in this field with two new regulations on "Electronic Retail Transfers" and "E-money". The regulations are close to the approach discussed in this paper and may well set new standards.

References

Access through Innovation Sub-Group of the G20 Financial Inclusion Experts Group (2010): *Innovative financial inclusion*, Seoul.

Alexandre, C, I Mas and D Radcliffe (2011): "Regulating New Banking Models that Can Bring Financial Services to All", in *Challenge* March/April (forthcoming).

Bank for International Settlements (2006): *Central banks and the challenge of development,* May.

Basel Committee on Banking Supervision (2010a): *Basel III: A global regulatory framework for more resilient banks and banking systems*, Basel.

Basel Committee on Banking Supervision (2010b): *Microfinance activities and the core principles for effective banking supervision*, Consultative document, Basel.

Chatain, P-L, A Zerzan, W Noor, N Dannaoui, and L de Koker (2011): *Protecting Mobile Money Against Financial Crimes: Global Policy Challenges and Solutions*, World Bank, Washington, forthcoming

Collins, D, N Kulkarni and S Gavron (2009): *Portfolios of the Poor: How the World's Poor Live on $2/day*, Princeton, New Jersey: Princeton University Press.

Committee on Payment and Settlement Systems and World Bank (2007): *General principles for international remittance services*, Basel.

Dias, D and K McKee (2010): "Protecting Branchless Banking Consumers: Policy Objectives and Regulatory Options", *CGAP Focus Note 64*, Washington DC.

Douglas, P H, I Fisher, F D Graham, E J Hamilton, W I King and C R Whittlesey (1939): *A Program for Monetary Reform,* Colorado.

Eijkman, F, J Kendall and I Mas (2011): "Bridging the Cash: The Retail End of M-PESA" *Savings & Development* (forthcoming).

Ghani, Z A (2009): "Scaling up financial inclusion through branchless banking", Remarks at the Microfinance Policymakers Forum "Scaling up Financial Inclusion through Branchless Banking", Kuala Lumpur, *BIS Review 162*.

Gokarn, S (2011): "Financial inclusion – a consumer centric view", VIth Narayanan Memorial Lecture, Kumbakonam, 21 March.

GSMA (2011): *Mobile money deployment tracker*, http://mmublog.org/blog.

Hawkins, Penelope (2006): "Financial access and financial stability", in BIS (2006), www.bis.org/press/p060619.htm

Kay, J (2010): "Should we have narrow banking", pp 215-234, in: A Turner et al, *The Future of Finance: The LSE Report*, London School of Economics and Political Science, London.

King, M (2009): "Monetary Policy Developments", Speech to Scottish business organizations, *BIS Review 129.*

Lyman, T, M Pickens and D Porteous (2008): "Regulating Transformational Branchless Banking: Mobile Phones and Other Technology to Increase Access to Finance", *CGAP Focus Note 43*, Washington DC.

Mas, I and A Ng'weno (2010): "Three keys to M-PESA's success: Branding, channel management and pricing, Bill & Melinda Gates Foundation.

Makin, P (2009): *Regulatory Issues Around Mobile Banking*, OECD, Paris, mimeo

Narayan, D R Chambers, M K Shah and P Petesch (2000), *Voices of the Poor: Crying out for Change,* World Bank, Washington D.C.,

Porteous, D (2009): “Mobilizing Money through Enabling Regulation”, *innovations*, vol. 4, pp 75–90

Rotman, S (2011): “Branchless Banking in Brazil”, *CGAP technology blog*, Feb 5.

Reinhart, C M and K S Rogoff (2009): "The Aftermath of Financial Crises," *American Economic Review*, vol. 99(2), pp 466–72.

Tarazi, M and P Brefloff (2010): “Nonbank E-Money Issuers: Regulatory Approaches to Protecting Customer Funds”, *CGAP Focus Note 63*, Washington DC.

Volcker, P (2009): *Speech at Wall Street Journal Future of Finance Initiative*, New York.

Volcker, P et al (2009): *Financial reform – a framework for financial stability*, G30 report, Washington.

World Bank (1989): *World Development Report: Financial systems and development*, Washington.

Zeti A A (2011): “Consumer protection and financial education”, welcoming address at the Financial Inclusion Policymakers Forum in Kuala Lumpur, 5 April.