

- Despite improvements in India's banking services, financial exclusion remains a significant problem. Mobile money, if successfully adopted by a large enough part of the population, has the potential to offer a novel solution. Mobile money can offer basic storage and transfer services to the unbanked. Further, through related fintech, it can offer access to vital credit and insurance products.
- Widespread adoption requires social co-ordination. The government can help in this regard by identifying central nodes in local networks in poorer areas and seeding such nodes with appropriate technology and knowledge.
- The government can also help by bringing telecom-based mobile money and fintech providers under the umbrella of the same risk-based capital regulation as banks and then allowing them the same scope as banks in offering financial services. Such a policy would encourage the development of new modes of intermediation as a legitimate part of the financial sector while avoiding unnecessary risks.

AN OVERVIEW:

Old economics textbooks often defined economics as the study of allocation of scarce resources across competing uses. While a vast expansion in the scope of economic inquiry has rendered such a definition outdated – indeed, defining economics in a neat sentence is all but impossible now – it does capture a basic aspect of competitiveness in a market-based economy. Putting resources to their best possible use and minimising waste lie at the heart of being competitive. There are of course several dimensions to this process, as evidenced by the varied contributions in the present volume.

The aspect I consider in this article is the process through which resource allocation works. How do the funds from savers find their way into the hands of the most productive investors? Savers might directly fund a firm by buying its stocks or bonds; or, alternatively, might lend their funds to banks, who then either buy stocks or bonds or extend credit lines to firms. The banking sector plus the markets for stocks and bonds together comprise the financial system, which plays a crucial role in ensuring efficient use of capital. In fact, for a variety of reasons to do with informational problems faced by investors when participating directly in stock markets, the transformation of savings into investment happens principally through the mediation of banks. Banks aggregate capital across small savers, advance credit to the most productive investment opportunities and monitor subsequent actions of those investors to limit mis-use. A well-functioning financial system is therefore essential for efficient allocation of capital.

ANALYSIS & DISCUSSIONS:

The Problem of Financial Exclusion: It follows that if significant parts of an economy remain outside the scope of the financial system, full efficiency of allocation remains unrealised. If many individuals remain unbanked or have access to basic bank accounts but not to services such as credit, insurance or pension plans, there remains significant scope for improvement in productivity – a key component for competitiveness and growth. As noted by Demirguc-Kunt et al. (2017), direct evidence linking financial inclusion of the unbanked or underbanked to economic growth is constrained by data availability. Financial inclusion data is relatively new, making inference problematic. However, the importance of the financial development – a broader category to which financial inclusion contributes – is certainly borne out in data. A large body of research surveyed by Levine (1997), shows that the depth of the banking system is an important factor in determining economic growth.

In India, basic bank account coverage has made great strides in recent years, leading to an improvement in the CRISIL financial inclusion index, currently standing at 58% (CRISIL Inclusix, 2018). However, around 190 million adults remain unbanked and even among those with a bank account, many remain under banked as credit and insurance penetration remains low. Further, limited access to credit stunts the growth potential of many among more than 50 million SMEs. The 2018 report from CRISIL also shows that the pattern of financial deepening is uneven across the country, with north-eastern and eastern regions lagging behind.

The Role of Mobile Money: What drives financial inclusion? The traditional approach rests on expansion of banking networks in rural areas, a relatively slow and costly process. However, in recent years, an entirely different type of solution has emerged that holds great promise in banking the unbanked rapidly at a relatively low cost. The idea is to harness the widespread use of mobile phones to build a platform for financial transactions. The technology itself is not very new – the first instance of mobile money can be traced to the late 90s. However, the idea gained prominence through the spectacular success of Safaricom’s M-Pesa¹ in Kenya, a mobile money service introduced in 2007. Since then, such services have spread across several countries in Sub-Saharan Africa. Indeed, the worldwide mobile money industry landscape is dominated by its relatively mature standing in Sub-Saharan Africa, accounting for 49% of global customers. However, Emerging economies in other continents are catching up – with South Asia registering the highest growth rates in usage².

Mobile money (also often called mobile wallet) refers to financial services provided through mobile phone apps, providing an alternative to bank accounts. Users can exchange cash for electronic credit and both store wealth this way and transfer credit domestically to other users. Unbanked individuals, typically working in the informal sector, have no recourse but to use cash for both purposes. Cash as a store of wealth is vulnerable to theft, and a cash transfer to a distant relative is both inconvenient and costly. Since individuals in the informal sector often face an uncertain income stream, access to a safe storage technology facilitates basic plans to set aside money for food, shelter and health expenses. Also, in the absence of access to formal insurance, transfers play a crucial role in the provision of informal insurance through risk-sharing across family and friends. As Jack and Suri (2014) show in their study of M-Pesa in Kenya, mobile money facilitates this process by reducing transaction costs significantly.³

A further problem is that the unbanked do not have credit histories, and therefore no credit score. This locks such individuals out of credit and insurance markets, not allowing them to plan for and invest in their future, in turn leading to a loss of potential human capital. Lacking credit, small informal businesses cannot grow, and the consequent lack of financial depth implies inefficiencies in capital allocation, as noted at the outset. Here, too, mobile based services can offer new types of solutions. Firms such as InVenture, Branchand Tala Mobile provide credit scores based on mobile phone usage. M-Shwari, a savings and loan service in Kenya developed in partnership between the Commercial Bank of Africa and Safaricom, provides loans to M-Pesa users without requiring visits to a bank or filling out any forms, and allows a gradual increase in loan amounts based on past repayment behaviour.

GSMA (2016) notes that the Commercial Bank of Africa disbursed 40 billion shillings (US\$ 495 million) in loans in Kenya in 2015 through M-Shwari, with a non-performing loan ratio of two per cent (compared to 4.3 per cent globally and 5.4 per cent for Sub-Saharan Africa). A similar product, M-Pawa, operates in Tanzania. The GSMA report concludes that “millions of individuals and businesses that have never had access to credit are now able to generate a transaction history, borrow money, and pay it back through their mobile phone.” Turning to insurance, the GSMA report notes that there were 106 live mobile-enabled insurance services providing life and health insurance in 31 Emerging markets. This is an area of fast growth: the number of policies nearly doubled in a year since 2015.

¹ Pesa is the swahili word for money.

² See GSMA (2017) for details.

³ Aron (2017) provides an excellent survey of the literature on mobile money.

MOBILE MONEY IN INDIA

Facilitated by the widespread use of mobile phones – TRAI reported just over a billion active connections in January 2018, with around 30% of consumers using a smartphone – India has seen rapid development in the use of mobile money over the last four or five years.

The provision is varied. There are non-bank mobile money companies such as PayTM, Freecharge, MobiKwik, provision by banks themselves as well as by telecom service providers (e.g. Airtel Money, Vodafone-MPesa) and direct public sector provision (UPI-based transfer service BHIM). According to data from Medianama, PayTM, the largest provider, had 282 million subscribers in October 2017 as well a merchant base of 5 million. The number of subscribers is growing fast – the numbers had increased by 29% just from March that year.

Further, following licensing from the RBI in 2015, six non-bank companies (e.g. Airtel, PayTM, Jio) have now set up payments banks. These are narrow banks: they can offer transactions services only. As they leverage their mobile-money customer base to offer services, they can compile data on customers that would be valuable in offering further services such as credit and insurance to the unbanked and under-banked. While these banks are prohibited by regulators from offering such services, it might be possible for them to do so through collaboration with credit and insurance providers. A more lenient regulatory regime would, of course, be even better for widening access to credit and insurance. We discuss this further in the next section.

Several alternative-data-based credit rating services have started operations in India. ⁴FICO, a world-leader in credit rating, is partnering with Lenddo – a firm that specialises in developing credit ratings based on social networking data from smartphones (and other web-enabled devices) – to provide a credit rating to Indians lacking a traditional credit history. Similar alternative-data-based rating services for India include the Social Loan Quotient by CASHe, ratings developed in partnerships between Bankbazaar and Experian, Rubique and CIBIL, PayU and Kreditech.

While such rating services and consequent provision of credit or insurance is currently at a nascent stage in India, they hold the promise of a relatively low-cost path towards wider provision of these vital services. Given the shallow credit and insurance penetration in many parts of India, mobile money and related fintech applications could play a vital role in financial development in the next decade.

THE ROLE OF POLICY

Let us now turn to the question of policy. Two types of policies are important. First, the class of regulatory directives that set up the broad business environment for mobile money. Let us call this class “macro policy.” Second, policies that influence take-up through local incentives, a class we can call “micro policy”.

The class of micro policies: Let us examine the micro policy class first. To see how schemes in this class might be designed, it is important to understand why mobile money and related fintech applications represent a very different approach to serving the unbanked and under-banked compared to, say, a push towards more bank accounts. The difference arises from the fact that, unlike traditional bank accounts, mobile money has a social coordination aspect. The more users there are, the more valuable it is for merchants to accept this form of payment, which in turn raises the benefits of adoption for users. In other words, adoption by one user generates positive externalities for other users on both sides of the market. This suggests that once use reaches a tipping point, adoption spreads quickly. Note that adoption spreads not through any top-down policy, but through a bottom-up process driven by positive externalities.

Given the makeup of Indian society, there are, however, natural hurdles in reaching critical mass. Individuals with lower levels of education and technological nous may face an initial adoption barrier.

⁴As an aside, it is interesting to note that the numerous microcredit networks in India, covering many underbanked individuals, has the potential to be a rich source of credit rating. This is by no means straight forward, and requires more research to establish viability, as such rating and subsequent access to credit and insurance might in turn have a negative impact on the original microcredit programmes themselves.

Here social networks play an important role as channels of influence and information from adopters to the rest, facilitating the coordination process.

What factors influence how quickly the tipping point is reached? Economic theory confirms that an increase in an individual's benefits of adopting mobile money relative to costs makes social coordination easier. This is also clear from the spread of mobile money in several African countries. For example, in Kenya, where 90% of the adult population have M-Pesa accounts, there are only 6 bank branches and 11 ATMs for every 100,000 adults, but 538 mobile money agent outlets,⁵ pointing to the high relative benefits of mobile money, which in turn accounts for faster spread of adoption. As Michael Joseph, former CEO of Safaricom said⁶ about the 2007 launch of M-Pesa, "By the end of December that year, we had 1.2 million active customers – really tremendous. What that really meant is that we hit the tipping point – it became viral after that, and that was the key."

Somewhat paradoxically, serving the unbanked and under-banked through mobile money and related fintech is a tougher challenge in India since it has a relatively more developed financial system, reducing relative benefits for a large part of the population. This is where the government has a role to play. In particular, public policy can try to reduce the costs of adoption through a variety of measures. Let us examine a few of these.

As noted above, user coordination facilitated by social networks – which act as channels of information and influence – is crucial to the success of mobile money adoption and subsequent development of higher-value services. An important policy consideration, then, is to enhance the process of information dissemination through networks. To this end, the government can consider seeding appropriately identified nodes belonging to networks in poorer areas with access to hardware and know-how. A public subsidy towards development of mobile-money and related apps in local languages, as well as voice-enabled apps, can also be beneficial in reducing the initial adoption costs. Targeted public subsidies can also complement markets is a push towards greater use of smartphones in poorer communities. Greater smartphone access for poorer sections of society would lead to faster spread of mobile money and related financial inclusion benefits.

The Class of Macro Policies: Let us now turn to the macro policy class. As Porteous (2006) noted, two broad properties of the legal and regulatory environment matter for the success of mobile money. First, the environment should be certain – i.e. should instill confidence that legislation will not change suddenly. Second, it should be open – i.e. allow entry and innovation. Using World Bank financial inclusion data to test performance across 35 countries against a variety of measures of certainty and openness, Gutierrez and Singh (2013) find that conducive, legal and regulatory frameworks are strongly associated with greater adoption of mobile money for the banked as well as the unbanked. This bodes well for India, which scores well on both openness and certainty.

Gutierrez and Singh also find that for the poorest sections of the population, interoperability across platforms leads to greater use but stronger consumer protection measures discourage participation. A policy towards developing greater interoperability across platforms is particularly important for India, as its current landscape comprises a large number of mobile money and fintech firms using several platforms. The negative effect of consumer protection is unsurprising since directives such as KYC required documents that the poorest sections often lack. However, such measures are important for the long-term success of mobile money since they promote safety, which is especially important for the poorest users who are often the most vulnerable. The only solution therefore is that even the poorest must have necessary identification papers, and India's drive to issue Aadhaar cards to all should be very effective in this regard.

An interesting natural experiment on the value of openness can be seen by comparing Kenya, where take-up of mobile money is near universal, with Nigeria, where it has failed to take off. Several commentators point to the difference in regulatory openness as the likely cause. While in Kenya it was

⁵See GSMA (2016).

⁶As narrated in "Story of M-Pesa," TechChange (2013), available on YouTube.

Safaricom that developed M-Pesa, Nigerian regulators have allowed only banks to develop mobile money platforms, barring telecom companies. The banks, it would appear, have been unable to reach the unbanked and under-banked in a way that telecom companies have been able to in other countries. A further confirmation of the key role of openness comes from the experience of Ghana⁷, where take-up rose significantly only after 2015, when a bank-only restriction similar to that in Nigeria was removed.

Facilitating Mobile Money and Fintech Through Regulation: While openness indicates an absence of barriers to entry, a separate question is the extent to which regulators are willing to facilitate the use of alternative credit rating data arising through mobile phone transactions. Given that in India 9 out of every 10 jobs are in the informal sector, which provides little scope for access to credit and insurance through traditional channels, alternative ratings have immense potential for affecting financial development. However, allowing mobile money operators to develop such products might lead to a more complex and challenging financial landscape, rendering the existing regulatory regime inadequate. This seems to be a concern of the regulators in countries such as China and India, where regulators have sought to limit the development of alternative credit rating. The Chinese government has recently curbed the reach of its two mobile payments giants – Ant Financial (Alipay) and Tencent (WeChat Pay, Tenpay) – whose dominance in mobile transactions and related fintech threatened to take a significant part of business away from banks.⁸ Presumably, the government was concerned that existing regulation might not be able to control the emerging “bank-like” sector.

In India, payments banks launched by telecom companies have been allowed a narrow remit limited to basic account transactions only. The concerns prompting such limits are likely to be similar to those in China. However, extending the reach of credit and insurance products using alternative-data-based rating is one of the most exciting developments around mobile money which regulators should nurture rather than thwart. While such developments would certainly present regulatory challenges, the solution must be to develop better regulation. Hopefully, as the mobile money sector flourishes in India, regulators would seek to control risk by bringing mobile-money and fintech providers under the same risk-based capital regulation regime as banks rather than by imposing arbitrary restrictions that deter new opportunities for financial development.

Mobile Money and The Use of Cash: Let me conclude by commenting on the much-touted connection between mobile money and a cashless economy. There is in fact no evidence to suggest that the spread of mobile money reduces the use of cash by significant amounts. Indeed, it is not even clear that “cashlessness” is particularly desirable in economic terms. To understand the reasons, consider what cash is used for. Cash is a medium of exchange and can also be a store of value. It is the latter use that gives rise to problems: for the unbanked, cash is the only way to store value, which exposes them to the risk of theft; for others, it might be a way to store undeclared income. Mobile money has the potential to change the store-of-value problem for the unbanked, which can also lead to other benefits by generating access to hitherto unavailable credit and insurance products. However, there is no reason for mobile money to replace cash as the medium of exchange in low-value transactions. Even in Kenya, the most mature global market for mobile money, where 90% of the adult population subscribes to M-Pesa, over 80% transactions⁹ are nevertheless carried out in cash (Flood 2018). This is all the more relevant for India given that its informal sector accounts for around 90% of all jobs, with salary payments as well as other exchanges relying almost exclusively on cash.

Finally, while mobile money has the potential to solve the store-of-value problem for the unbanked, it cannot address the other problem of storing undeclared income. To that end, economists would advocate gradual abolition only of high-value currency.¹⁰ But any move towards removing cash without formalising the economy first would lead to a substantial loss of output. Mobile money offers, for

⁷See Klapper and Popovic (2018).

⁸See *The Economist* (2018).

⁹Other estimates in the media suggest this number could even be as high as 90%.

¹⁰See Rogoff (2016) for this and related monetary policy concerns.

now, a step towards formalisation of the economy and obsolescence of cash. With technological advancement, one day all individuals and businesses might be connected on an e-credit platform making cash redundant, but that day is far off yet.

CONCLUSIONS:

1. Widespread adoption of mobile money requires social coordination. Social networks play an important role as channels of influence and information from adopters to the rest, facilitating the coordination process. The government should identify relatively central nodes in local networks in poorer areas, and seed such nodes with mobile technology and know-how for using financial services. Further, targeted subsidies should be used to encourage the use of smartphones in networks comprising the financially excluded.
2. The spread of mobile money and related fintech products through the telecom sector should be encouraged rather than seen as undesirable competition to the banking sector and thwarted. For this to happen it is crucial that once a payments regulator is instituted, telecom-based mobile money providers should be brought under the umbrella of the same risk-based capital regulation regime as banks. The newly licensed payments banks should then be allowed to make loans and offer other fintech services which they are currently barred from.

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