



Toulouse
School of
Economics

FIT IN Initiative

Policy paper

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Can banks keep up with mobile money?

by Emmanuelle Auriol

& Alexia González Fanfalone

A photograph of a woman with a joyful expression, wearing a yellow patterned top and an orange headwrap, looking down at her smartphone. The background is dark and out of focus.

Economics for the Common Good

Can banks keep up with mobile money?

Mobile banking has rapidly expanded access to financial services around the world. TSE's FIT IN Initiative, with the support of the Bill & Melinda Gates Foundation, seeks to help developing countries make the most of this revolution by analyzing the optimal design and regulation of interoperable digital financial services. At this research project's final conference in May, FIT IN Initiative Scientific Director Emmanuelle Auriol (TSE) presented her investigation with Alexia González Fanfalone (OECD) into mobile money's impact on financial inclusion in Kenya.



Emmanuelle Auriol

TSE

Since arriving in Toulouse in 1998, Emmanuelle has received numerous distinctions and awards. A specialist in industrial organization and development economics, she studies whether market failures are caused by rent-seeking agents with market power or by cognitive biases such as negative intrinsic motivation, religious belief, and discriminatory social norms, especially against women. This research combines neo-classical with behavioral economics.



Alexia González Fanfalone

OECD

Alexia is a telecommunication policy analyst at the Organization for Economic Co-operation and Development. For the past 10 years, she has focused on the impact of the next evolution of wireless networks, digital divides, and the environmental sustainability of communication networks. She had worked on multiple analytical reports on connectivity, including broadband networks of the future, spectrum management, 5G, Internet of Things, and connectivity gaps.

What is mobile money?

Mobile money systems allow subscribers to make and receive payments using their mobile phones, as well as a growing range of other financial services. Their accounts are held by a mobile network operator and transactions are authorized and recorded in real-time using SMS. Users can convert cash into electronic value (and vice versa) at retail stores and other agents.

Why has this innovation seized policymakers' attention?

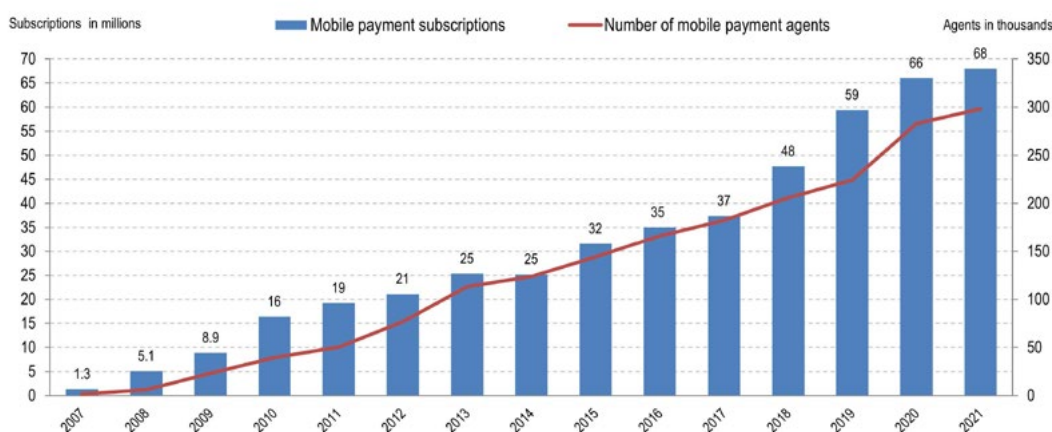
By delivering services to individuals who would otherwise lack access to traditional banks, mobile money has dramatically changed the lives of many people living in the world's poorest countries. Existing research shows considerable empirical evidence that access to finance is positively linked to economic development and poverty reduction.

Bridging the "financial access divide" is a key policy challenge as nearly a third of adults in developing countries have no access to formal banking, compared to only 3% in wealthy economies. According to the World Bank, almost two billion people had no formal bank account in 2021. In Sub-Saharan Africa the problem is particularly acute, with almost 45% of adults lacking a formal account.

However, mobile money is driving up growth in account ownership among the world's poor, particularly in Sub-Saharan Africa, where 33% of adults have a mobile money account. Globally, the percentage of adults with access to financial services increased by 50% between 2011 and 2021. Our paper focuses on Kenya, where the M-Pesa service has been so successful that more than half of the country's GDP now transits through mobile accounts.

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Mobile money accounts and agents in Kenya



Source: Own elaboration with data from the IMF Financial Access Survey 2021.

AFRICAN STAR: Since the introduction of the M-Pesa service in 2007, mobile money accounts and mobile money agent coverage have grown steadily in Kenya, reaching 300,000 mobile payment agents and 68 million subscriptions in 2021.

Why does mobile money pose a puzzle for regulators?

Policymakers are still unsure how to regulate the entry of mobile network operators into the financial services market. Should they tie the mobile account to a bank account? Impose banking regulation on the mobile operator? Or opt for regulatory forbearance? In France and other developed countries, where mobile banking is considered a complementary service offered with traditional banking services, mobile providers operating as banks generally have to comply with banking regulation. In developing countries like Kenya, regulators have been hesitant to restrict mobile money entrants due to their transformative potential. This uncertainty could slow down adoption so specific banking and telecom guidelines may be needed.

A key issue for regulators is how banks will react to competition from mobile providers, as a strong traditional banking sector is necessary to guarantee the stability of the wider financial system. This is especially true in Kenya and many other countries where mobile operators do not need to comply with prudential regulations. If a bank shrinks under the pressure of competition and is replaced by a mobile operator, the entrant should face banking regulation. But if mobile money extends coverage of all financial services, including traditional ones, regulators may opt to lower entry barriers for this new service to foster financial inclusion.



How does your study attempt to inform these decisions?

While previous research has studied many of the positive impacts of mobile money on development, we focus on its effect on the supply side of the banking market. Our study develops a theoretical model with two networks: a monopoly bank that, due to prudential regulation and fixed costs, is unwilling to cover the whole country; and a mobile entrant that can cover latent demand for financial services at a lower quality and cost because it faces a lighter regulatory burden.

To test our model's predictions, we also document and explore empirically the impact of mobile money on Kenya's traditional banks. Specifically, we map the geographical coordinates of bank branches and mobile money agents from 2000 to 2016 in Kenya. This allows us to analyze whether the entry of M-Pesa in 2007 exerted enough competitive pressure on incumbent banks to change their coverage decisions.

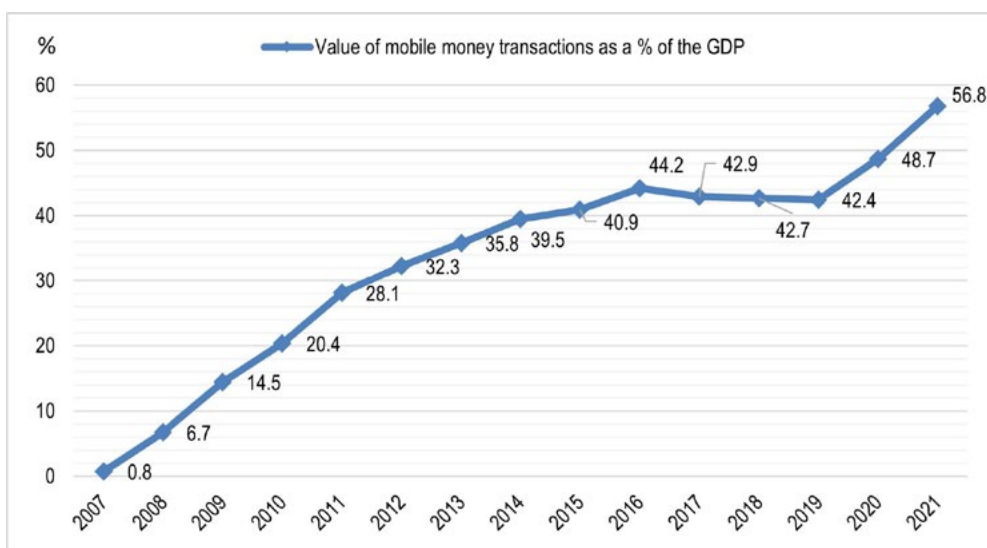
A key issue is how banks will react to mobile competition, as a strong traditional banking sector is ensures the stability of the wider financial system.



The success of Kenya's approach may prove useful for other developing countries seeking to foster mobile payments, such as Pakistan, Myanmar and Mexico.

To address concerns about unobserved factors that might influence decisions by banks and mobile agents, our identification strategy uses mobile network GSM coverage data. All else equal, mobile cell towers only influence bank coverage indirectly, through their impact on mobile banking agents. This instrument is only valid until 2011, when prudentially regulated banks were authorized to use local agents to offer their services, gaining an interoperability that was previously only available to mobile operators.

Mobile money transactions as a percentage of Kenya GDP



Source: Own elaboration with data from the IMF Financial Access Survey 2021

MOBILE REVOLUTION: By 2021, transactions through mobile payment platforms had grown to 57% of Kenya's GDP.

What are your main findings?

When much of the population lacks access to formal banking, our model predicts that banks will react to competition from mobile operators by decreasing the price of their services. With this aggressive pricing strategy, they will generally be able to increase their market share.

When we test this prediction empirically with Kenyan data from 2000 to 2011, our results suggest that for every seven new mobile agents in the same local area, there is likely to be one new bank branch. After 2011, the impact of mobile money competition on traditional banks is likely to be even greater, thanks to the development of the banking agent network.

Which lessons should policymakers take from this research?

Our research suggests that mobile money can foster financial inclusion both through the delivery of new financial services, and also by inducing traditional banks to expand their coverage and services. Light-touch regulation of telecoms innovation enabled the expansion of mobile money in Kenya. In turn, this allowed M-Pesa to exert competitive pressure on the prudentially regulated financial market. The success of this approach may prove useful for other developing countries such as Pakistan, Myanmar and Mexico that are seeking to foster mobile payments.

However, regulators will need to carefully evaluate the trade-off between the benefits of greater financial inclusion and the risk of less prudentially regulated financial services. The regulatory burden should be tailored to the specific risks this new platform poses to the banking sector when adopted by a large portion of the population, balanced with the social benefit of extending coverage of financial services.

KEY TAKEAWAYS

- Emmanuelle and Alexia's research studies the effect of mobile money on traditional banks when many consumers lack access to financial services.
- Their model predicts that banks will react to mobile competition by decreasing their prices, a strategy that should increase their market share.
- Empirical results using Kenyan data from 2000 to 2011 suggest that for every seven new mobile agents, there was one new bank branch. The subsequent impact of mobile money is likely to have been even greater, due to third-party banking networks.
- These findings show that mobile entrants can increase financial inclusion by delivering new services and pressuring banks to expand their coverage.
- A light-touch approach to digital innovation can improve access to financial services, but policymakers must be wary of the risk of weaker prudential regulation.

Document based on "Competition from Mobile Operators in the Banking Sector and Financial Inclusion: The case of Kenya" (working paper in progress).



About the FIT IN Initiative

In November 2020, the Toulouse School of Economics launched the Financial Inclusion Through INteroperability Initiative to catalyze new research to constructively influence the design and regulation of interoperable digital financial services systems in low- and middle-income countries.

The main objective of this four-year research initiative is to better understand the implications of alternative competition and regulatory policies and ultimately inform policies to expand the scope, improve the quality and reduce the cost of digital payment systems for impoverished users.

The FIT IN Initiative receives support from the Bill & Melinda Gates Foundation's Financial Services for the Poor program.

For more information: www.tse-fr.eu/groups/FIT-IN-Initiative / fitinitiative@tse-fr.eu

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Toulouse School of Economics

1, Esplanade de l'Université
31080 Toulouse Cedex 06
FRANCE

Tel: +33 (0)5 67 73 27 68

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