



M-Pesa An Instrument of Financial Inclusion, Digitization and The Emergence of Fintechs

Njuguna Ndung'u

African Economic Research Consortium, AERC

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1. Digital Evolution Driving Financial Inclusion

- ❑ Banks are agents of financial Inclusion – They should understand and reach their market niche - Roll out products to reach and sustain their market niche:
 - The poor are sensitive to financial products, their price and delivery channels – esp. for economies with segmented markets
 - Financial inclusion for savings and asset accumulation to escape cycles of poverty.
 - Financial access - increases the number of participants – reduce unit cost of financial services hence more financial inclusion – Success begets success
 - Innovations will generate appropriate financial products and services for the market and even market segments – keeps the market vibrant.
 - Financial institutions are embracing innovations - regulation and supervision must continuously evolve to keep pace with innovations in the market place.
 - Regulatory capacity and regulatory technology must improve – So Better regulation.

2. Financial Inclusion has a Critical Role

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- Inclusive growth works with access to markets – financial markets are critical: savings and investments for asset accumulation for sustainable poverty reduction.
- Banks deposits and intermediation capacity, lower unit costs and lower barriers to entry
- Developing economies with nascent financial sectors should use technology to leapfrog access and financial development.
- Financial inclusion initiatives should provide an accessible, efficient and effective financial services platform – the Digital technological platform provided by the mobile phone revolution in the last 11 years has shown very positive results
- Digitization solves the problem of physical distance, mass market access will solve the unit costs problems but more importantly it is a platform to innovate and reach the target market niches required.
- Financial inclusion will grow the financial market and the economy

3. Financial Inclusion to Push Financial Development to the Next Level

- ▶ Success in FI will drive an endogenous demand to complete the financial infrastructure:
 - Information capital – Credit Reference Bureaus; Deposit insurance; Competition policy; Consumer protection/financial literacy, etc
- ▶ FI will drive an endogenous demand for regulatory reforms, regulatory capacity and regulatory technology – this will change the financial inclusion space
- ▶ Commercial banks will invest heavily on digital platforms to develop their capacity to grow and to serve their market niches – strong banks can weather shocks and roll out competitive products for their market niches.
- ▶ This will make it easier to develop and enlarge the infrastructure for screening and monitoring existing and potential participants in the financial system.
- ▶ Successful financial inclusion will improve the environment for monetary policy: forward looking monetary policy will be possible – like Inflation targeting.

4. The Digital Financial Services (DFS) Platform

1. DFS platform provides an effective, efficient, safe and transparent technological platform for banks to operate in.
 - ▶ A retail electronic payments transactions platform in real time has emerged.
2. DFS has supported the development of virtual savings and credit supply platforms: Inclusive finance is good to ignite inclusive growth.
3. DFS platform will supply an infinite possibility to roll out sustainable business models and financial products for banks and for all sectors of the economy.
 - ▶ Products for SMEs, the agricultural sector and other sectors can be developed
4. DFS has supported the banking sector with an efficient technological platform to manage entry into the banking sector and MFIs – Unit costs' decline and endogenous developments will ensure further vibrancy

5. Digital Revolution has Pushed the FI Frontier

- Digital revolution taking place in developing and emerging economies has produced three important outcomes in the financial sector:
 - First, a retail payments and settlement platform has emerged and governments have joined them!
 - Second, it has enabled financial inclusion - financial services at the doorstep
 - Third, a combination of these two produces a game-changing environment that cuts across all the sectors of the economy and across market segments including the informal markets
- Recent Mckinsey Report show that digital finance services has the potential to:
 - Provide access to financial services for 1.6 billion people in emerging and developing economies
 - Increase the volumes of loans extended to individuals and businesses by \$2.1 trillion
 - Allow governments to save \$110 billion per year by reducing leakage in spending and tax revenues.
- Evidence is thus mounting to show that digital revolution has produced fundamental changes in public policy formulation and has pushed the financial inclusion frontier.

6. The Kenyan M-Pesa Example

- M-Pesa is an electronic money transfer product that enables users to store value in their mobile phone or mobile account in the form of electronic currency that can be used for multiple purposes including transfers to other users, payments for goods and services, and conversion to and from cash
- M-Pesa can be described as a technological platform that has allowed Kenyans to access a menu of financial services in the comfort of their homes, work places or locations they choose, without a trip to the bank.
- It is an important instrument for financial inclusion in Kenya.
- The M-Pesa has developed into a platform for retail electronic payments, virtual savings accounts and a platform for short term credit.

7. Successful Innovations - Diverse Descriptions

➤ **M-Pesa is a Fintech Product – is it?**

- It has become a platform of financial services - A Platform can be used to achieve fruitful ends: It has worked as a **retail electronic transactions platform**

➤ **M-Pesa is the Best Example of a Regulatory Sandbox – is it?**

- True? Yes – there was no direct legal framework – **Test-and-Learn** Approach
- M-Pesa was allowed to operate within set parameters, operational guidelines – pre-defined KYC for SIM cards, threshold of transactions
- Rules on issuing e-money, threshold on transactions and operating the Trust Account

➤ **M-Pesa and financial inclusion is a Telco-led Model – really?**

- Telcos were the main investors
- Telecoms only formed the transmission backbone to the Transactions platform
- Telcos owned and regulated the Agents Network along the guidelines issued by the central bank and the Communication authority

8. M-Pesa Development - Four Innovative Stages

- ❑ M-Pesa has developed to a technological platform for financial services and an agent of digitization:
 - **First Stage – Retail Electronic Payments platform:** Technological platform for money transfers, payments and settlement supported by a network of Telco Agents. Telco formed the transmission backbone to a Trust Account in the commercial banks
 - Other commercial banks, MFIs and SACCOs were integrated with this platform.
 - **Second Stage – Virtual Savings Accounts in banks** - a technological platform to manage micro accounts.
 - **Third Stage: - A platform of virtual credit supply** -Transactions and savings data used to generate credit scores for use as the basis to evaluate and price short-term micro credit.
 - Changing and transforming the costly collateral technology that forms the major obstacle in the credit market development, especially in Africa.
 - **Fourth Stage:** Developments in cross-border payments and international remittances.
- ❑ **Regulatory flexibility, reforms and capacity have been a major catalyst to this evolution**

9. Why M-Pesa Successful?

- ▶ The financial inclusion space was gathering momentum and Transformative regulatory technology was in place at the central bank – it facilitated an innovative regulatory environment
- ▶ Available infrastructure – Phone network and fibre optic network - scalable
- ▶ Existing vector of agents and potential agents: Pre-paid airtime network of agents as well as potential agents whose role easily changed to be POS, aggregators and liquidity distributors (see slide on agent model)
- ▶ Marketing design that easily targeted early adopters who easily became the network builders
- ▶ Consumer receptiveness who initially were in the mobile phone network driven by:
 1. Spatial demographics – Urban-Rural links and pattern of financial flows
 2. Cost – visiting banks for transactions inhibitive
 3. Reliability and in real time – turn around time is 5 seconds
 4. Potential positive effects – business opportunities
 5. Reducing potential negative effects – reduced urban- rural trips or family visits
 6. Trust in the system – Regulator/regulated interactions and inter-personal interactions at agent level, POS

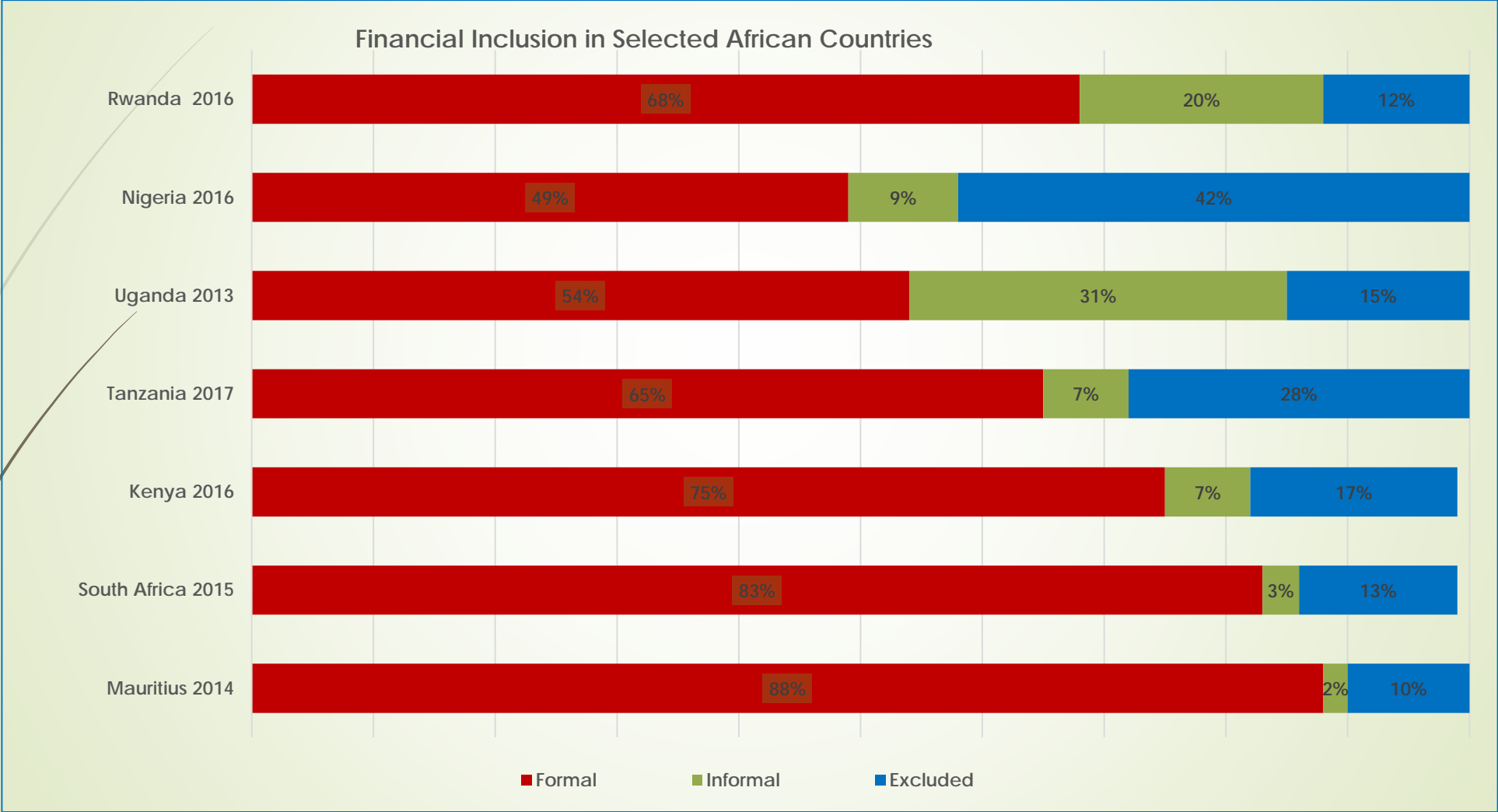
10. Kenya's Agent Network Management Model

- M-Pesa started with a network of pre-paid airtime distribution network of agents
- The role of an Agent in a POS was simple – Change cash into electronic units of money and store into the SIM card and vice versa and the money was simultaneously stored in a Trust Account in a bank – it developed into a transactions platform
- The evolution facilitated the formation of specialised agents with specific responsibilities:
 - **Super Agents** - no transactions threshold and provided liquidity to other agents.
 - **Aggregators (Master Agents)** - directly responsible for Sub-Agents in a given locality – supervising sub-Agents and liquidity distribution
 - **Sub-Agents (or Simply Agents)** - they formed the lower end of POS or CICO
- This model enabled an easier access to financial services via POS across the country efficiently and effectively.
- In the emerging literature, this is the **Master Agent Model** - considered the Global Best Practice in Agent Network Management.

11. The Celebrated Outcomes of M-Pesa

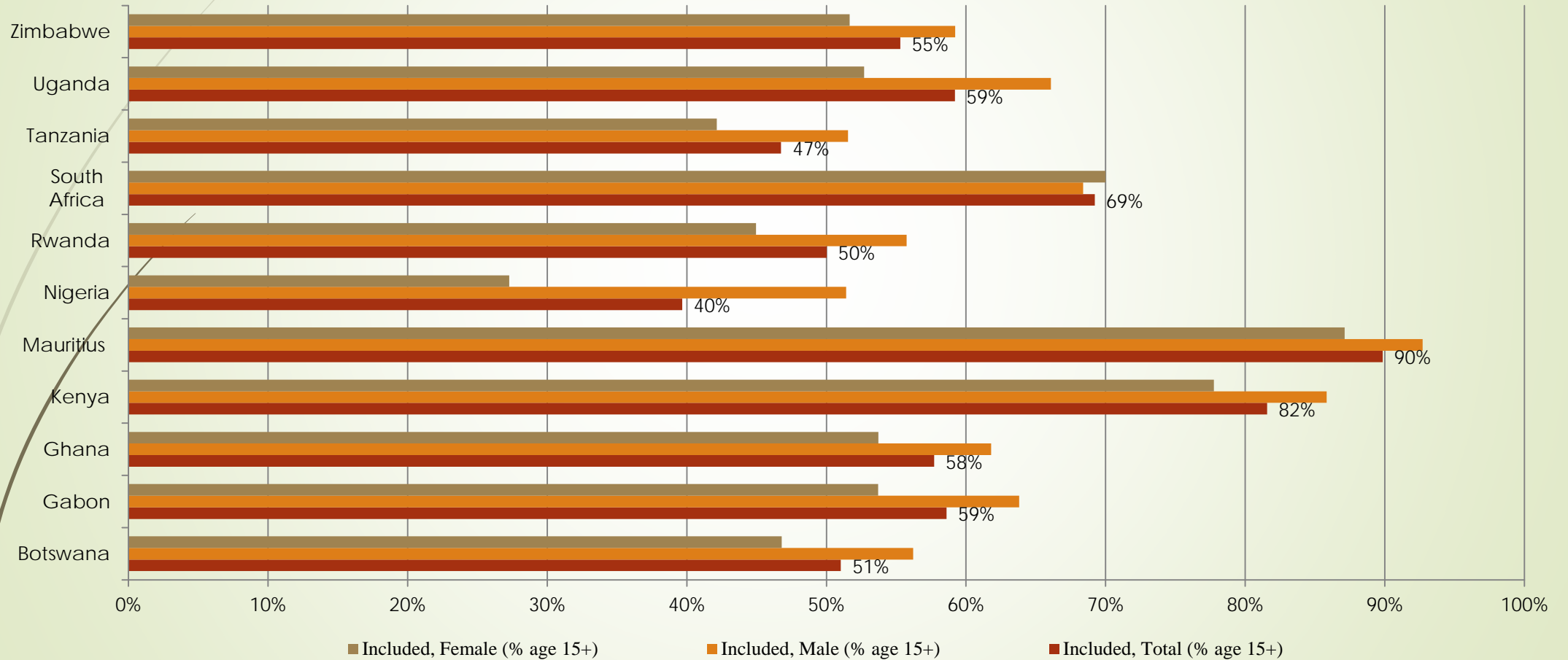
1. An Electronic Retail Payments System has evolved – it is effective, efficient, transparent and safe.
 - Retail electronic payments an easier entry point for financial services and also formalising the informal market
 - The retail payments platforms are operated from commercial banks – Not Telcos.
 - Kenya’s case demonstrates that once a successful electronic payments platform is operational, it becomes a game-changer – Fintechs can roll out new products across all sectors of the economy.
2. Financial inclusion has been a success - evidence of financial development, inclusive finance and poverty reduction
 - i. Banks now have a technological platform to manage micro accounts and to reach customers cost-effectively
 - ii. Virtual savings and virtual credit supply platforms have emerged – in addition to solving information asymmetry problems via credit scoring for pricing short term loans.
 - iii. Strong banks with intermediation capacity have emerged – Kenyan banks have covered EAC region.
 - iv. Allows the formulation of an effective and forward looking monetary policy
 - v. DFS platform allows monitoring of financial transactions and improves the AML/CFT regime.
 - vi. Women can save in instruments that cannot be encroached, they are efficient savers.
 - vii. A recent study, Tavaneeet and Jack , 2017, shows that 2% of Kenyan households have been lifted from poverty.

Financial Inclusion Successes



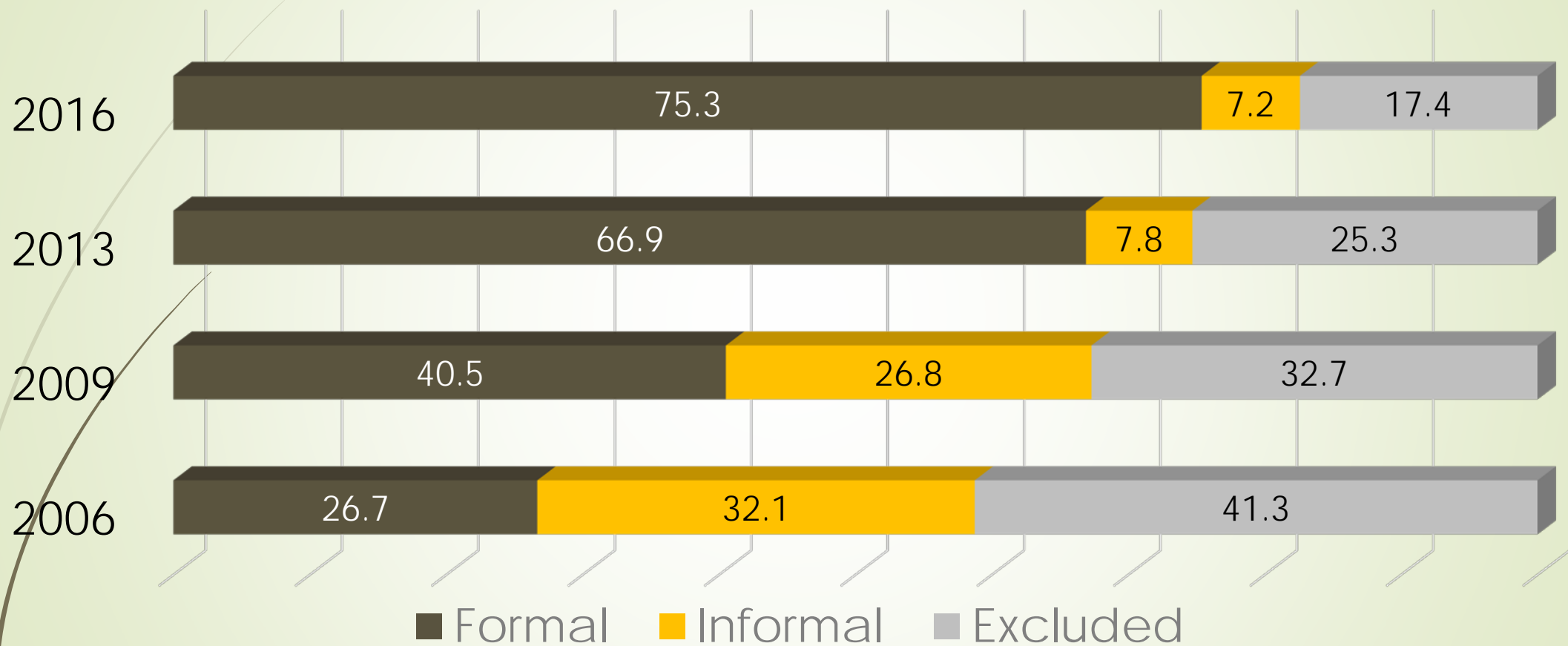
The Success of financial inclusion - 2017

Financial Inclusion in Selected African Countries, 2017



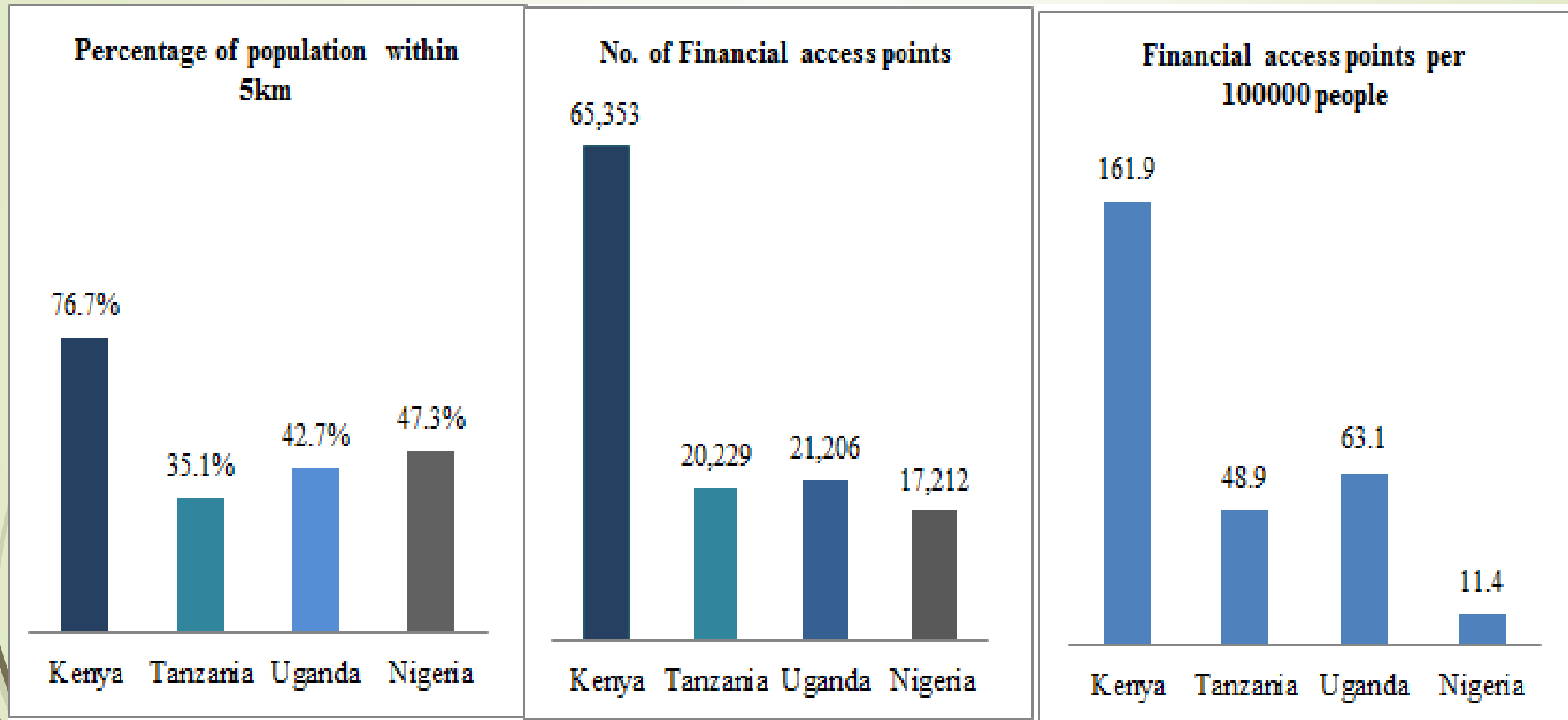
Kenya's Progress in Financial Inclusion: 2006-2016

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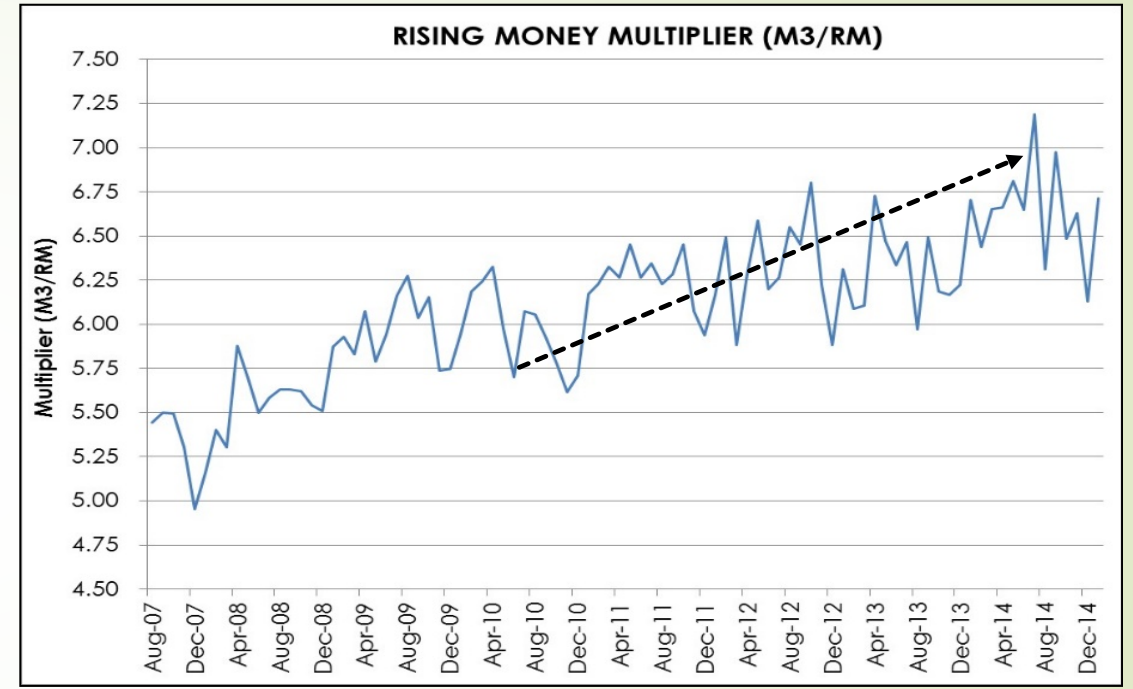
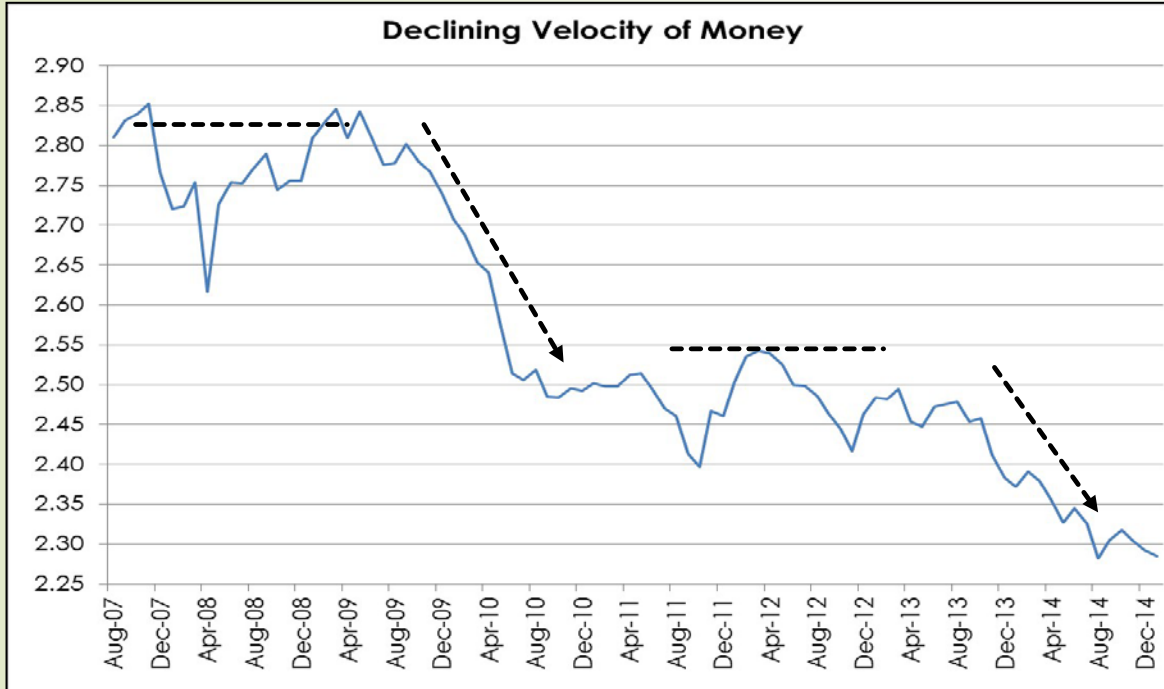


Kenya: Financial Access Touch Points at the Door Step

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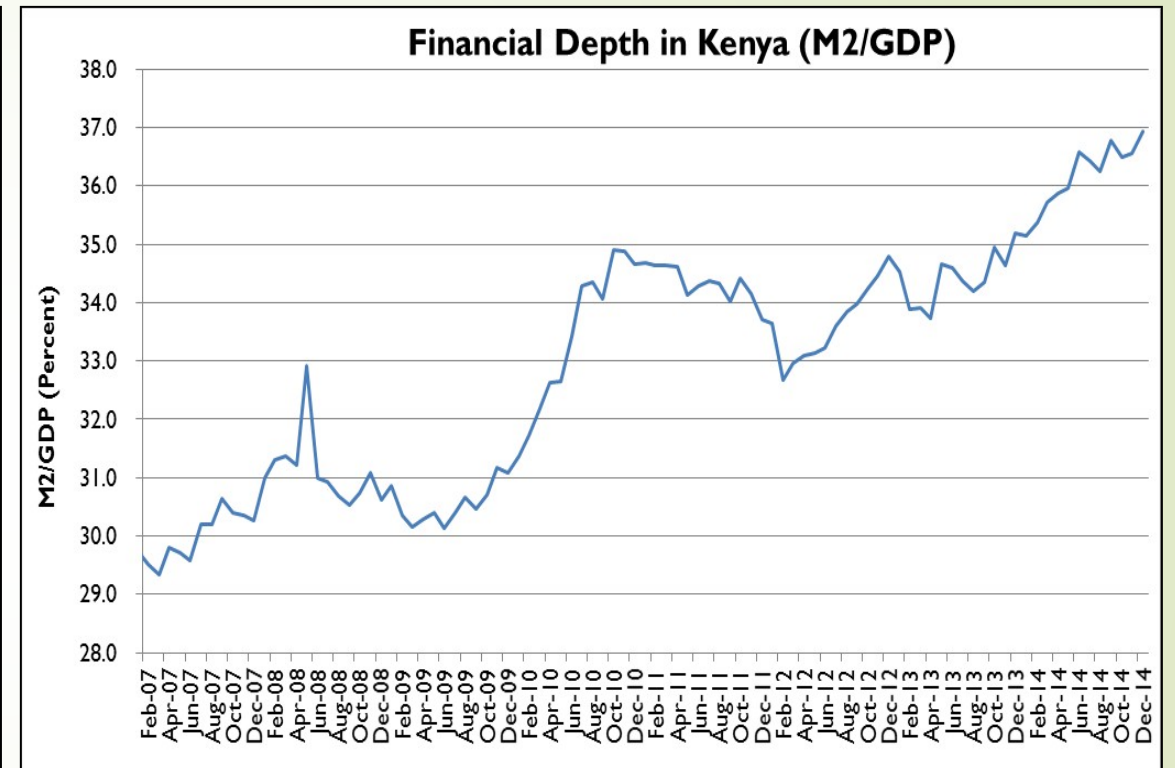
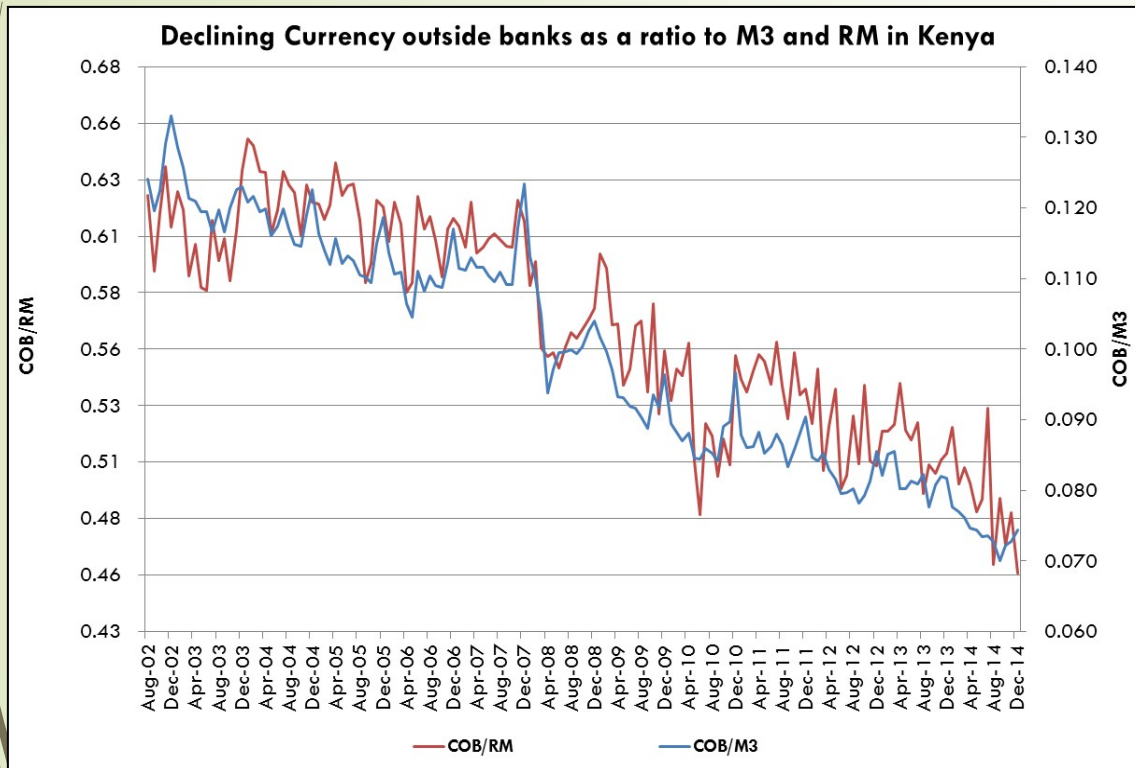
Monetary Policy Environment Has Improved



- The evolution of the velocity – less cash changing hands.
- The Money multiplier rising – financial innovation.
- The declining velocity and the rising money multiplier— Re-design monetary policy framework.

Declining Cash outside the banking System and Financial Depth

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- ▶ A declining ratio of currency outside banks to M3 and Reserve Money (RM)— this has improved efficiency of monetary policy signals – more inside money.
- ▶ Kenya's Financial depth has been rising, proxied by M2/GDP.

11.i Celebrated Outcomes From M-Pesa to DFS to Digitization – Fintechs have pushed the frontier

3. From DFS to Digitization – Has allowed Fintechs to roll out **sustainable business models**. These business models cut across all the sectors of the economy – Some Examples:

- i. One Acre Fund – Raised productivity and incomes for smallholder farmers
- ii. M-Kopa on domestic Solar energy supply
- iii. Water vending machines for urban slums for poor households
- iv. M-Tiba on financing health services
- v. M-Akiba on investments in Government securities

4. Digitization is influencing tax payments designs and revenue administration to minimize leakages

5. Finally, digitization is now allowing e-government services that are effective and easy to reach, as well as for Government to design targeted social protection programs.

12. Parting Shot – Consolidating the Future for Digitization

- 1. Connectivity** – Both for mobile phones and internet: the Fibre Optic cables are now covering rural Kenya – Scalability of digitization is important for sustainability.
- 2. Interoperability**, market conduct and competition are challenges that require feasible solutions
- 3. Electronic-ID** system to cope with market innovations and security
- 4. Institutional capacity** to cope with market innovations and dynamism: institutions that regulate the market and those that protect the market

Some Works in this area

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- Njuguna Ndung'u, **Next steps for the digital revolution in Africa: Inclusive growth and job creation lessons from Kenya**; Brookings, WORKING PAPER 20, OCTOBER 2018; <https://www.brookings.edu/research/next-steps-for-the-digital-revolution-in-africa/>
- **Njuguna Ndung'u; Foresight Africa: Top Priorities for the Continent in 2018**: Chapter 5 “New Frontiers in Africa’s Digital Potential” Brookings Institution, January 2018. <https://www.brookings.edu/muilt-chapter-report/foresight-Africa-top-priorities-for-the-continent-in-2018/>
- Njuguna Ndung'u: Practitioner's Insight: M-Pesa, a success story of digital financial inclusion <http://www.bsg.ox.ac.uk/research/policy-memos/m-pesa-digital-financial-inclusion>.
- **HANDBOOK OF BLOCKCHAIN, DIGITAL FINANCE, AND INCLUSION: Cryptocurrency, FinTech, InsurTech, and Regulation: The M-Pesa Technological Revolution for Financial Services in Kenya: A Platform for Financial Inclusion by Njuguna Ndung'u** - Elsevier is pleased to announce the forthcoming publication of the book Handbook of Digital Finance and Inclusion, Volume 1 (ISBN: 978-0-12-810441-5).
- **Tavneet Suri and William Jack (2017) “The Long Run Poverty and Gender Impacts of Mobile Money”**, *Science*, Vol. 354, Issue 6317, pp. 1288-1292.
- Njuguna Ndung'u (2017) ; **Boosting Transformational Technology: Creating supportive environments for game-changing innovations**; Brookings Foresight for Africa 2017; <https://www.brookings.edu/multi-chapter-report/foresight-africa/>
- **Njuguna Ndung'u, Armando Morales, and Lydia Ndirangu (2016) Cashing In on the Digital Revolution**; IMF FINANCE & DEVELOPMENT, June 2016, Vol. 53, No. 2,.
- CGD Task Force Report on Financial Regulation for Financial Inclusion (2016): <https://www.cgdev.org/publication/financial-regulations-improving-financial-inclusion>
- Emily Jones, Ngaire Woods and Njuguna Ndung'u (2016) **CONSOLIDATING AFRICA’S MOBILE BANKING REVOLUTION**; Blavatnik School of Government, May 2016
- **Better than Cash Alliance: How Digitizing Agricultural Input Payments in Rural Kenya is Tackling Poverty: The Case of One Acre Fund**
- Klein and Mayer, (2012) (<http://hdl.handle.net/10986/3427>) **Mobile Banking and Financial Inclusion : The Regulatory Lessons**, World Bank, *Research working paper ; no. WPS 5664*.
- Kimenyi, Mwangi & Njuguna Ndung'u (2009).”Expanding the financial service frontier: Lessons from mobile phone banking in Kenya” Washington, DC, Brookings institution.