MARKET MONITORING FOR FINANCIAL CONSUMER PROTECTION
February 2022

CGAP

COUNTRY CASE
Bank of Tanzania, CGAP, FSDA, FSDT

Type of market monitoring tool: **Analysis of regulatory reports**
Sub-type: **Analysis of granular data**

Granular data helped Bank of Tanzania (BoT) assess the rapid growth of the digital credit market in Tanzania and identify a set of emerging consumer risks, especially on transparency, creditworthiness, and bias. For example, data showed that many borrowers chose lower interest loans as they took out more loans, and that women were as good at repaying loans as men but had significantly lower access to credit.

Background

- In 2017, at the request and under the guidance of the Bank of Tanzania, CGAP and the consulting firm Busara Center for Behavioral Economics piloted a data-driven analysis of Tanzania's digital credit market based on granular transactional and demographic data. The research was part of a comprehensive diagnostic of Tanzania's credit market that FSDA developed for BoT in cooperation with FSDT. Within BoT, the National Payment Systems Directorate and the Financial Stability Directorate's Micro-Surveillance unit were actively involved in the pilot. The pilot followed a demand-side phone survey with digital borrowers.

- **Regulatory and supervisory powers.** BoT is the central bank of Tanzania, a public autonomous institution in charge of licensing, regulating, and supervising all types of banks and financial institutions, including microfinance services providers. BoT is responsible for non-deposit- taking providers (which include digital lenders since 2018), savings and credit cooperatives, and community microfinance groups. BoT also has regulatory and supervisory responsibility over the national payment systems and payment systems providers, including e-money issuers.

- **Consumer protection supervision role.** The 2019 Financial Consumer Protection Regulations provide BoT with a clear financial consumer protection mandate, including the power to impose preemptive supervisory measures to address misconduct, and to

Factsheet
Country: Tanzania
Authority: Bank of Tanzania (BoT)
Sector: Digital credit
Tool: Granular data analysis
What is the tool used for?
To better understand the state and evolution of the digital credit market, and the main types of emerging consumer risks and issues.
Third parties: Busara Center for Behavioral Economics (vendor), CGAP, Financial Sector Deepening Africa (FSDA), Financial Sector Deepening Trust (FSDT)
Estimated cost: $US70,000 (including vendor and estimated CGAP staff costs)
Year(s) of usage: 2018
Keywords: Data analytics, granular data, digital credit, digital lending, digital loans, over-indebtedness, multiple borrowing, debt trap, credit scoring, Tanzania, fairness, discrimination, gender

use a range of enforcement powers and tools to allow investigations and supervision activities, including mystery shopping, market analysis, and thematic review. Beginning in 2015 and up to 2018, BoT only had explicit consumer protection responsibilities over e-money issuers and other payment systems providers.

Purpose and incentives

- **What was this tool used for?** Analysis of granular data helped BoT better understand how the digital credit market was evolving and performing in Tanzania, and how different consumer segments were experiencing digital credit, especially in terms of repayments, defaults, and financial access.
- **Incentives for tool development.** BoT was concerned about the rapid growth in consumer credit, including digital credit, and whether it would result in over-indebtedness or other consumer issues that could affect the health of the overall credit market. To address these concerns, BoT was interested in developing analytical tools that would more effectively monitor the credit market—from prudential, consumer protection, and market development perspectives—while also gathering inputs for regulatory development.

Technical methodology and data ecosystem

- The project started by identifying three core research questions, agreed upon by all participants: How big is the market? How well do people repay? How do different customer segments behave?
- The project focused on the three largest digital lenders, which were estimated to represent over 75 percent of the market. The lenders included regulated and unregulated financial services providers, all of which delivered their digital loans through e-money issuers supervised by BoT.
- The team developed a template to request transaction-level data from digital lenders that would allow response to the research questions. The template includes fields for granular reporting on:

  - Account and demographic data to allow the analysis of transactions by segments and clusters (e.g., product name, number that uniquely identifies a mobile phone subscription, gender, date of birth, location)
  - Transaction data to indicate the key terms and values at loan origination (e.g., loan tenure, loan amount, disbursed amount, disbursement time, interest charges, other charges) and after origination of the digital loan (e.g., type of transaction, time of transaction, transaction value, penalty charges, cash-out charges)

- Once the template was agreed upon, BoT sent information requests to the three most relevant digital lenders, asking for transaction-level data and demographic data from all digital credit accounts with any activity during a specified time period (about two years). To ensure confidentiality and privacy, the template did not include a field for customer name.

- BoT set up a protocol for the reception and storage of completed data templates as part of its system to receive other regulatory reports, and a process to ensure that granular data was securely received and stored by BoT and confidentially accessed only by the consulting firm.
- The request led BoT to receive data from over 20 million loans disbursed to 5.1 million accounts over a 23-month sample period.
- The consulting firm carried out a thorough process to clean and merge various data sources into a cohesive and suitable database that allowed analysis of a range of variables, indicators, and tables and graphs by different criteria, including customer segmentation. Key segmentation analysis included:

  - Disbursement of loans to, and repayment rates by, gender, age group, and region
  - Differences among accounts that pay back early, on time, or late; among accounts that take few or many loans; and among borrowers who repeatedly pay back on time or late

- CGAP and the consulting firm produced a digital credit market monitoring report with the main results of the analysis at an aggregated level.
- The project team compared the results of the granular data analysis with the results of the phone survey, underlining consistent findings in terms of major performance indicators and consumer issues.
- In addition to the granular data reporting template, the team presented BoT with an alternative annual reporting structure for aggregated statistics that the bank could require for initial ongoing monitoring of digital credit, and while the regulatory, supervisory, and granular data collection frameworks are developed. This included statistics on the overall market, and segmentation by gender, age bracket, and region, for example:

  - Change to loan offering: loan term, interest rate, late penalties, repayment structure
  - Average value and volume of loans disbursed per week, month, year
  - Average number of loans per account per week, month, year
  - Percentage of loans paid on time, paid late (under 90 days), paid late (over 90 days), unpaid (reported four months after end of period to remove active loans)
  - Nonperforming loans (NPLs) at end period
  - Percentage of borrowers with more than three consecutive loans paid late
  - Money received minus money disbursed per customer loan (e.g., first loans, second loans)

Staff, expertise, and other requirements

- BoT's Financial Stability and National Payments Systems Directorates had two and three staff members directly involved in the implementation of the tool, respectively. Other staff members were asked to support the project as needed, for example, staff in charge of the regulatory reporting database would ensure adequate reception of granular data reporting.

- In terms of data storage, BoT adapted the system it used for aggregate regulatory reports to capture and store the granular data files in a secure, safe, and confidential environment. In the long term, however, BoT would need access to a more adequate data storage and processing infrastructure to support a higher volume of transactional data.

Vendor selection and cost

- The terms of reference for the consulting firm highlighted its responsibilities for consolidating, cleaning, and merging all relevant data collected through different sources (e.g., digital lenders, e-money issuers, mobile network operators [MNOs]) into a cohesive and suitable form that would allow core research questions to be identified and answered; preparation of aggregated tables of digital credit activity at transaction, product, and national levels, including breakdowns by consumer demographics (e.g., gender, age, location); and exploration of consumer segments by clustering techniques.
- The vendor needed to possess skills and experience in experimental and behavioral design; statistics and econometrics (to collate, clean, and analyze complex datasets); analysis of large financial sector transactional datasets; and analysis of digital financial products.
- The initial budget for the vendor was around $US40,000, although additional costs were incurred in terms of time and travel due to challenges in data collection that doubled the initially estimated project timeline.
- In addition to the vendor cost, the project incurred costs to cover two technical experts from the CGAP team who provided key guidance and inputs into the definition of indicators, determination of core research and data analytics questions, and multi-stakeholder coordination.

Benefits and impact

- Exploring the granular data of digital loans meant having a range of transactional and demographic data fields for each loan in a reporting period. This level of detail provided the opportunity for rich analyses that allowed BoT to:

  - **Better understand the market,** including its size, concentration level, and growth trends, as well as features such as average loan size, and average and maximum number of loans taken per account
  - **Better understand consumers,** for example, by identifying different use and repayment behaviors by different segments of the population (e.g., divided by age or region) which helped contrast results obtained through phone surveys
  - **Learn about different experiences by gender,** for example, whether women were as good at repaying loans as men or have as much access to credit as men do
  - **Discover consumer protection issues,** for example, how different repayment rates are based on number of loans taken, time of loan request, or loan size; and whether business models keep building credit scoring models based on large numbers of first-time loans

- Results of granular data analyses contributed to new microfinance and financial consumer protection regulations. The microfinance regulations from 2018 and 2019 incorporated digital lenders into BoT's regulatory and supervisory perimeter. The 2019 Financial Consumer Protection Regulations gave BoT responsibility for consumer protection supervision and the power to use a range of market monitoring tools. The regulations emphasized the need for better disclosure of credit terms and creditworthiness assessments.

Limitations and implementation challenges

- The complete submission of filled granular transactional data templates took over six months, especially since the project included new actors such as unregulated fintechs and MNOs that had no prior experience sharing data with BoT and were not directly supervised by the bank.
- Demographic-related data was hard to obtain, primarily because most of these data had to be submitted directly by MNOs that owned the e-money issuers which digital lenders partnered with. Demographic data were deemed sensitive and not directly shareable by e-money issuers or, in fact, digital lenders. Third-party participation (the consulting firm and CGAP) in the project generated concerns by unregulated digital lenders and MNOs on the confidentiality of shared granular data. These concerns required clarification that data access protocols would ensure that the data remain confidential. In addition, several quality and completeness issues arose in the demographic data collected by MNOs, rendering some of the data unusable.
- As the first-ever exercise for collecting granular digital credit data, the data were not standardized. This required the consulting firm to have multiple exchanges with providers to ensure data quality and, following guidance developed by the project team, render the data comparable across digital lenders by standardizing the different data fields and terms each lender used.
- It was important to set up an adequate system to transfer a high volume of data in a secure, confidential, and stable manner. BoT did not regularly collect granular data so it did not have a fully automated data reporting and collection system for the rapid transfer, security, integrity, and validation of this type of data. An ad-hoc solution was set up for the pilot. Should BoT choose to collect granular data on an ongoing basis for repeated use in market monitoring in the future, it would need a more advanced data collection system. Otherwise, BoT will need to combine more frequent aggregated data with less frequent granular data collection.

Future plans for the tool

- The tool was implemented once as part of an initiative to better understand the evolution, performance, and risks of the digital credit market in Tanzania, and to provide inputs into the regulatory process under development that led to the issuance of microfinance and financial consumer protection regulations. It was only at the

end of 2019 that BoT assumed the explicit responsibilities and powers to carry out financial consumer protection supervision and monitoring, including in the digital credit market, and to use a range of market monitoring tools. As the new framework is operationalized, BoT is better positioned to again apply the analytical tool for continued monitoring of the digital credit market or to monitor new providers.

Learnings

- Granular data analysis in an emerging sector that includes actors outside the supervisory perimeter takes significant effort, including moral suasion, to collect and clean data.
- Assurances of data confidentiality are important, especially when third parties are both part of the team that implements the reporting tool *and* reporting entities.
- Granular data analysis provides unique data points to gain depth in assessing consumer risks, through segmentation analysis and by identifying potential patterns of borrowers falling into debt traps, as well as evidence on how good payers progressively gain access to larger and cheaper loans. It is a particularly relevant tool for analyzing situations women encounter when procuring loans, and whether they may be discriminated against.
- Segmented granular data can be used, together with demand-side market monitoring tools (e.g., phone surveys and social media monitoring), to gain a comprehensive picture of the issues consumers face and the benefits they receive in a fast-growing and emerging sector.
- Granular data analysis can help authorities strengthen the case for regulatory measures, develop new aggregated data reporting templates for emerging sectors, and gather inputs for follow-up through institution-focused supervision.
- To facilitate calculations of performance indicators, granular data reporting on digital credit should require specific information on whether and when each loan was repaid, and on what day. Reporting should clearly separate fees from interest, as each loan should clearly set out the value disbursed, interest charged, initial fees charged, repayment amount required (i.e., principal plus interest), and extra fees for late repayment.