

## Leapfrogging into Digital Credit: The Trade-off between Financial Inclusion and Portfolio Risk in Sub-Saharan Africa: A Comparative Analysis of Kenya and Ethiopia

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### **Abstract:**

*The rapid proliferation of mobile-based lending across Sub-Saharan Africa has generated a fundamental tension: digital credit promises financial inclusion at scale yet carries inherent portfolio risks that threaten lender stability and borrower welfare. This study examines this inclusion-risk trade-off through a comparative analysis of Kenya, a mature digital credit market, and Ethiopia, an emerging latecomer with significant leapfrogging potential. Drawing on bank-level loan performance data, regulatory frameworks, and institutional analysis spanning 2014–2025, the study documents Kenya's "develop first, regulate later" trajectory, which achieved remarkable inclusion, 5.5 million borrowers, and Sh76.8 billion in disbursements but at the cost of a micro-loan default crisis, with loans below KES 1,000 defaulting at 83.1 percent. Four determinants—loan appraisal, borrowing costs, disbursement management, and repayment terms mediate this trade-off. Ethiopia, by contrast, has adopted a proactive regulatory framework but constrained inclusion through a bank-account mandate that excludes the unbanked majority. Early risk indicators, unsecured lending at scale, fee opacity, and emerging defaults suggest vulnerabilities are already present. The comparative analysis yields five stylized facts and five policy recommendations for latecomer economies: recalibrate credit access, strengthen consumer protection, invest in financial infrastructure, adopt regulatory sandboxes, and enhance supervision. The findings extend leapfrogging theory, demonstrating that technological leapfrogging does not automatically imply regulatory leapfrogging. Ethiopia has a narrow window to integrate innovation, inclusion, and stability from the outset, offering lessons for emerging digital finance markets worldwide.*

### **Keywords:**

*digital credit; financial inclusion; portfolio risk; mobile lending; Sub-Saharan Africa*

## **I. Introduction**

### **1.1 Background and Problem Statement**

Sub-Saharan Africa has emerged as the global epicentre of mobile money. As of 2024, 40 percent of adults in the region had a mobile money account, representing the highest level of any world region and a sharp increase from 27 percent in 2021 (World Bank, 2024). This remarkable penetration has catalysed the rapid proliferation of mobile-based lending, as financial institutions and fintechs leverage digital infrastructure to extend credit to populations traditionally excluded from formal banking systems. The promise of digital credit is compelling: financial inclusion at scale, reduced transaction costs, and the democratization of access to capital for micro-, small-, and medium-sized enterprises (MSMEs). Yet this promise is shadowed by a fundamental tension: the very mechanisms that enable rapid inclusion—collateral-free loans, algorithm-driven approvals, and short repayment tenors, carry inherent portfolio risks that threaten the stability of lenders and the welfare of borrowers (Disse, 2024).

Kenya stands as the region's pioneer in digital credit. Since the introduction of M-PESA in 2007 and the subsequent launch of mobile lending platforms such as M-Shwari in 2012, Kenya has cultivated a mature digital credit ecosystem that serves millions of borrowers. The findings from empirical research demonstrate that loan appraisal processes, cost of loans, loan disbursement, and loan repayment periods have a substantial impact on loan performance of Kenyan banks (Ndiritu et al., 2026). However, this inclusion triumph has been accompanied by significant portfolio risk. Mobile-based lending has been found to positively and significantly affect loan default rates among commercial banks in Kenya ( $\beta = 0.414$ ,  $p = 0.004$ ) (Kathambi, 2023). The interest rate has likewise been shown to have a positive and significant influence on loan default rates ( $\beta = 0.482$ ,  $p = 0.002$ ) (Kathambi, 2023). More alarmingly, loans of KES 1,000 and below have recorded default rates exceeding 80 percent, while the broader digital lending sector has experienced non-performing loan ratios approaching 40 percent (Financial Sector Deepening Kenya, 2025). These figures reveal that Kenya's "develop first, regulate later" trajectory, while expanding access, has also entrenched portfolio risk and consumer vulnerability (Mwatosya, 2026).

Ethiopia, by contrast, represents a latecomer with significant leapfrogging potential. The country lags behind Sub-Saharan African peers in key financial inclusion indicators, with roughly 81 percent of the rural adult population remaining unbanked (World Bank, 2024). Nearly 70 percent of MSMEs lack access to credit, and 60 percent have never applied for a loan owing to lack of collateral (Centre for Effective Global Action, 2024). The launch of Telebirr, Ethio Telecom's mobile money platform, which has amassed over 52.5 million subscribers, has accelerated digital financial inclusion in the nation. Cooperative Bank of Oromia launched the first bank-based digital credit product, called Michu, in January 2022, offering uncollateralized digital credit to over 275,000 MSME applicants as of December 2024. Ethiopia's mobile wallet transaction volume has grown at a compound annual rate of approximately 219 percent between 2019 and 2024, substantially outpacing Kenya's growth over the same period (Ethiopian Economic Association, 2024). This rapid catch-up signals immense opportunity—but also heightened risk exposure, as unsecured lending scales without commensurate regulatory and institutional safeguards.

## **1.2 Research Gap and Contribution**

Existing scholarship on digital credit in Sub-Saharan Africa has predominantly focused on financial inclusion outcomes; measuring access, usage, and welfare effects (Demirgüç-Kunt et al., 2025). Comparatively less attention has been devoted to the portfolio risk trade-off that accompanies inclusion, particularly the determinants of loan performance and the mechanisms through which regulatory frameworks mediate this relationship. Furthermore, while individual country studies on Kenya exist, limited comparative analysis has examined how countries at different stages of digital financial development navigate the inclusion-risk nexus. Research on Ethiopia has highlighted that despite access to finance being the top challenge cited by MSMEs, digital working capital loans do not translate into improved MSME performance in the short term (Centre for Effective Global Action, 2024), underscoring the need for deeper comparative investigation.

This study addresses these gaps through three contributions. First, it empirically documents the inclusion-risk nexus in two contrasting contexts: Kenya's mature digital credit market and Ethiopia's emerging ecosystem. Second, it identifies and analyses the four key determinants of mobile loan performance, loan appraisal processes, and cost of loans, loan disbursement management, and loan repayment periods, which prior research has demonstrated to have a substantial impact on loan performance in Kenyan banks (Ndiritu et

al., 2026). Third, it derives actionable policy lessons for latecomer economies, offering a framework for balancing financial inclusion with portfolio stability.

### 1.3 Research Questions

The study is guided by three research questions:

- a. How does mobile-based lending affect loan performance, specifically default rates and non-performing loan ratios, in Kenya's commercial banking sector?
- b. What factors mediate the relationship between digital credit expansion and portfolio risk?
- c. What can Ethiopia, as a digital finance latecomer, learn from Kenya's experience to balance inclusion and stability?

### 1.4 Scope and Methodology

This study adopts a comparative case study design, selecting Kenya as the mature digital credit market and Ethiopia as the emerging market. The choice is justified by their contrasting stages of digital financial development, regulatory approaches, and inclusion trajectories (Muriaas et al., 2025). A mixed-methods approach is employed: quantitative analysis of bank-level loan performance data, including non-performing loan ratios, default rates, and disbursement volumes is complemented by qualitative analysis of regulatory frameworks, institutional arrangements, and policy responses. The temporal scope spans 2014 to 2025, capturing Kenya's regulatory evolution following the 2021 Central Bank of Kenya (Amendment) Act and Ethiopia's digital credit takeoff since Telebirr's launch. Secondary data are drawn from commercial bank financial reports, central bank publications, and peer-reviewed empirical studies on mobile lending performance in both countries.

## II. Review of Literature

### 2.1 Theoretical Foundations

This study is anchored in four complementary theoretical perspectives that collectively illuminate the inclusion-risk trade-off inherent in mobile-based lending.

Financial Inclusion Theory posits that expanding access to formal financial services, particularly for unbanked populations, micro-, small-, and medium-sized enterprises (MSMEs), and informal sector workers generates welfare-enhancing outcomes through improved consumption smoothing, investment capacity, and economic participation (Demirgüç-Kunt et al., 2025). In the Sub-Saharan African context, digital credit has emerged as a transformative mechanism for advancing financial inclusion, leveraging mobile money infrastructure to reach populations traditionally excluded from formal banking systems (Ugwuanyi et al., 2022). The theory suggests that digital credit reduces transaction costs, eliminates geographical barriers, and substitutes collateral requirements with alternative data-driven credit assessment, thereby democratizing access to capital. However, critics have cautioned that digital-only financial inclusion, when pursued without accompanying consumer protections, may expose vulnerable borrowers to predatory practices (Kim & Duvendack, 2025).

Portfolio Risk Theory, rooted in the adverse selection and moral hazard problems first articulated by Stiglitz and Weiss (1981), provides the countervailing lens. Adverse selection arises when lenders cannot adequately distinguish between high-risk and low-risk borrowers, potentially attracting riskier applicants who are more willing to accept unfavourable terms. Moral hazard emerges when borrowers, having secured uncollateralized loans, have diminished incentives to repay, particularly when repayment enforcement mechanisms are

weak (Kathambi, 2023). In the context of algorithm-driven digital lending, these information asymmetries are exacerbated by limited credit histories, reliance on non-traditional data sources, and the speed of automated approval processes (Disse, 2024). The theory predicts that rapid expansion of unsecured digital credit, absent robust risk assessment and monitoring, will systematically elevate non-performing loan (NPL) ratios.

Regulatory Governance Theory examines the role of state capacity, institutional design, and regulatory foresight in shaping financial market outcomes (Baxter, 2011). Effective regulation balances competing objectives: promoting innovation and inclusion while safeguarding financial stability and consumer welfare. The theory distinguishes between proactive regulations, anticipatory rule-making that establishes guardrails before market expansion and reactive regulation, which responds to crises after harm has occurred (Kim & Duvendack, 2025). Kenya's trajectory illustrates the consequences of reactive regulation: the digital credit market grew rapidly in a regulatory vacuum, leading to widespread consumer rights violations, aggressive debt collection, and exorbitant interest rates before the Central Bank of Kenya (Amendment) Act 2021 introduced licensing requirements (Kim & Duvendack, 2025). Regulatory governance theory thus informs the comparative analysis of how differing regulatory approaches, Kenya's belated intervention versus Ethiopia's prospective framework, mediate the inclusion-risk trade-off.

Leapfrogging Theory explains how latecomer economies can bypass intermediate stages of technological development, adopting advanced solutions directly and potentially achieving superior outcomes (Han & Wang, 2026). In the financial sector, leapfrogging is exemplified by the rapid adoption of mobile money and digital credit platforms, allowing countries with underdeveloped conventional banking systems to attain substantial levels of digital financial inclusion while bypassing traditional financial infrastructure (Oyelaran-Oyeyinka & Lal, 2023). However, leapfrogging carries inherent risks: latecomers may inherit the problems of pioneer alongside their technological solutions. Ethiopia's accelerated digital credit expansion, with Telebirr amassing over 52 million subscribers and mobile wallet transaction volumes growing at approximately 219% CAGR between 2019 and 2024, exemplifies leapfrogging potential. Yet the theory cautions that technological leapfrogging does not automatically imply regulatory leapfrogging; regulatory capacity and institutional safeguards must be developed in parallel to avoid replicating the pitfalls observed in pioneer markets (Admasu, 2022).

## **2.2 The Dual Nature of Digital Credit: A Conceptual Framework**

Building on these theoretical foundations, this study proposes a conceptual framework that captures the dual nature of digital credit as simultaneously an inclusion-enhancing and risk-generating mechanism.

The Inclusion Pathway operates through three primary channels. First, reduced transaction costs—digital platforms eliminate branch-based overheads, enabling small-ticket lending that would be economically unviable through traditional channels (Ndiritu et al., 2026). Second, eliminated collateral requirements—uncollateralized lending removes the primary barrier facing MSMEs and low-income households, who typically lack formal assets to pledge (Centre for Effective Global Action, 2024). Third, alternative data utilisation, mobile transaction histories, airtime top-ups, and digital footprints serve as proxies for creditworthiness, enabling algorithm-driven scoring for populations without formal credit histories (Disse, 2024). These mechanisms expand credit access to previously excluded populations, generating inclusion gains.



The Risk Pathway operates through countervailing mechanisms. Easy access without adequate affordability assessment can fuel over-indebtedness, as borrowers accumulate multiple loans across platforms (Kathambi, 2023). Limited credit history undermines accurate risk pricing, potentially attracting adverse selection. Aggressive lending practices, including short repayment tenors, high effective interest rates, and automated rollover features can trap borrowers in debt cycles, ultimately elevating default rates (Kim & Duvendack, 2025). The regulatory environment critically mediates which pathway predominates: strict consumer protection rules, interest rate caps, and robust disclosure requirements can mitigate risk without foreclosing inclusion; regulatory laxity permits risk accumulation that ultimately undermines both lender stability and borrower welfare.

[Conceptual diagram: A two-pathway model showing how regulatory design (strict vs. lax) shifts the equilibrium between inclusion breadth (measured by borrower outreach and loan volume) and portfolio quality (measured by NPL ratios and default rates). Strict regulation yields moderate inclusion with low risk; lax regulation yields high inclusion with elevated risk; optimal regulation balances both objectives.]

### 2.3 Determinants of Mobile Loan Performance: Evidence from the Literature

Empirical research has identified four key determinants that systematically influence mobile loan performance. Ndiritu et al. (2026), examining 38 commercial banks in Kenya, demonstrated that loan appraisal processes, cost of loans, loan disbursement management, and loan repayment periods have a substantial impact on loan performance. These four factors form the analytical lens for the empirical analysis in subsequent sections.

**Loan Appraisal Processes:** Rigorous screening mechanisms; incorporating alternative data sources, verifying borrower identities, and assessing repayment capacity, improve loan performance by reducing adverse selection (Ndiritu et al., 2026). Kenyan digital lenders that adopted robust appraisal processes experienced lower default rates, while those relying on minimal verification faced elevated NPLs (Kathambi, 2023). The integration of mobile transaction data with national identification systems, as being developed in Ethiopia through the "Fayda" digital ID, represents a promising approach to strengthening appraisal quality.

**Borrowing Costs:** Higher interest rates are positively and significantly associated with loan default rates ( $\beta = 0.482$ ,  $p = 0.002$ ) (Kathambi, 2023). Exorbitant rates exceeding 700% APR in some Kenyan and Ethiopian cases, render repayment infeasible for borrowers, particularly those with irregular incomes (Kim & Duvendack, 2025; Admasu, 2022). Hidden fees and opaque pricing exacerbate the problem by obscuring the true cost of borrowing. Conversely, lower, transparently disclosed costs improve repayment performance (Ndiritu et al., 2026).

**Disbursement Management:** Effective monitoring of fund utilisation reduces moral hazard by ensuring that loans are deployed for productive purposes (Ndiritu et al., 2026). In Kenya, weak disbursement oversight contributed to diversion of funds and subsequent defaults. Digital platforms that link loan disbursement to specific merchant payments or track expenditure patterns demonstrate improved performance.

**Repayment Terms:** Flexible, cash-flow-aligned repayment schedules improve repayment rates by accommodating borrowers' income seasonality (Ndiritu et al., 2026). Short, rigid tenors—characteristic of many digital credit products—mismatch with the cash flow cycles of MSMEs and informal sector workers, elevating default risk. Evidence from Mexico indicates

that even modest extensions in disbursement timing can significantly reduce default rates (VoxDev, 2025), suggesting that tenure flexibility is a critical performance determinant.

## 2.4 Regulatory Approaches to Digital Lending

Regulatory frameworks for digital lending exhibit significant variation across Sub-Saharan Africa, reflecting different stages of market development and institutional capacity.

**Kenya's Trajectory: From Regulatory Vacuum to Progressive Licensing:** Kenya's digital credit market expanded rapidly following the 2012 launch of M-Shwari, operating for nearly a decade without dedicated regulation (Kim & Duvendack, 2025). By 2021, the sector had grown to Ksh 437 billion (US\$3.04 billion) in annual disbursements, yet borrowers faced widespread consumer rights violations: exorbitant interest rates, aggressive debt collection causing mental distress, deceptive marketing, data privacy infringements, and unlicensed lenders (Kim & Duvendack, 2025). The Central Bank of Kenya (Amendment) Act 2021 introduced licensing requirements, followed by the Digital Credit Providers Regulations 2022, which established operational and compliance standards (Central Bank of Kenya, 2022). By July 2026, Kenya had licensed 252 digital credit providers, with cumulative disbursements reaching Ksh 150.56 billion (Central Bank of Kenya, 2026). However, gaps remain: the 2021 bill leaves significant consumer protection issues unaddressed and enforcement challenges persist (Kim & Duvendack, 2025). The 2025 Draft Non-Deposit Taking Credit Providers Regulations signal a further tightening of oversight, but Kenya's approach remains fundamentally reactive—regulation following market excess.

**Ethiopia's Approach: Bank-Account Prerequisite and Emerging Framework:** Ethiopia's digital lending sector is at an earlier stage, with Telebirr Mela, a credit facility offering loans up to ETB 10,000 per month based on transaction history—representing a major initiative (Admasu, 2022). However, the regulatory landscape is not yet equipped to govern the expanding uncollateralised digital lending market (Admasu, 2022). Current National Bank of Ethiopia (NBE) regulations require Ethiopian banks to maintain NPLs below 5% of their total loan portfolio, but these rules were not designed for digital lending specifically (Capital Ethiopia, 2025). The Licensing and Authorization of Payment Instrument Issuers Directive governs payment instrument issuers like Telebirr but lacks specific provisions for digital lending (Shega, 2025). A critical constraint is the bank-account prerequisite: digital lending is currently limited to individuals with formal bank accounts, excluding the majority of Ethiopia's population and limiting inclusion gains (Centre for Effective Global Action, 2024). The absence of robust legal protections, lack of digital lending-specific regulations, and weak enforcement may expose borrowers to unfair lending practices, including exorbitant fees and unfair debt collection (Admasu, 2022). Calls for dedicated digital lending legislation, fee caps, and enhanced transparency are growing (Shega, 2025).

**The Broader Sub-Saharan African Context:** Regulatory approaches across the region are uneven. Some countries have adopted regulatory sandboxes to test innovations in controlled environments; others maintain fragmented oversight across payments and lending functions (Prastowo, 2024). The diversity of approaches provides a natural experiment for examining how regulatory design shapes the inclusion-risk trade-off.

### III. Research Methods

#### 3.1 Kenya's Digital Credit Experience: Inclusion Achieved, Risk Manifested

##### a. The Evolution of Kenya's Digital Credit Ecosystem

Kenya's digital credit ecosystem traces its origins to the launch of M-PESA in 2007, a mobile money platform that fundamentally transformed the country's financial landscape. M-PESA provided the foundational infrastructure, a ubiquitous, real-time payments system, upon which digital lending could be built. By 2012, Safaricom partnered with the Commercial Bank of Africa (now NCBA) to launch M-Shwari, the first large-scale mobile-based lending product, offering instant, collateral-free loans to M-PESA users based on their transaction histories (Ndiritu et al., 2026). M-Shwari rapidly gained traction, controlling approximately 34 percent of the digital loan market by 2025, followed by KCB M-PESA with roughly 15 percent (Search Result 0).

The ecosystem subsequently diversified to encompass multiple categories of players. Commercial banks entered the space through partnerships with mobile network operators or proprietary platforms, NCBA's M-Shwari, KCB's KCB M-PESA, Family Bank's Pesa-pap, and Absa Bank's Timiza represent key examples (Ndiritu et al., 2026). Mobile network operators, particularly Safaricom, extended their role beyond payments to direct lending through products like Fuliza, an overdraft facility for M-PESA users. As of 2021, 16.9 percent of Kenyan adults were borrowing from mobile network operators (Search Result 0). Unregulated digital credit providers, fintechs such as Tala, Branch, and M-KOPA, entered the market using machine learning algorithms to assess creditworthiness by scanning personal data on borrowers' phones, including contacts, mobile money transactions, and social media footprints (Business Daily, 2025). By 2025, over 84.8 percent of Kenyan adults were accessing financial services digitally, opening substantial opportunities for these innovative loan products (Search Result 0).

The scale of the sector's growth is remarkable. By June 2025, licensed digital credit providers had disbursed 5.5 million loans valued at Sh76.8 billion (Central Bank of Kenya, 2025). Active loan accounts surged from 2.4 million in December 2023 to four million by December 2024, signalling robust demand among Kenyans historically excluded from formal banking (Financial Sector Deepening Kenya, 2025). As of December 2024, commercial banks charged an average lending rate of approximately 16.89 percent, while the industry's gross non-performing loan (NPL) ratio eased slightly to 16.4 percent but remained near a 20-year high (Central Bank of Kenya, 2024).

##### b. Inclusion Outcomes: What Was Achieved

Kenya's digital credit revolution delivered substantial financial inclusion gains, particularly for micro-, small-, and medium-sized enterprises (MSMEs) and low-income households. The banking sector surpassed its annual commitment to lend Sh150 billion to MSMEs, disbursing Sh153 billion by September 2025 (Kenya Bankers Association, 2025). By year-end, total MSME lending reached an extraordinary Sh326.5 billion (approximately US\$2.5 billion), more than double the initial target, with Equity Bank leading at Sh90.7 billion (Ecofin Agency, 2026).

Digital lending became a financial lifeline for millions of small entrepreneurs, gig workers, and traders. Borrowers accessed credit for medical bills, school fees, and business working capital, and critically, daily consumption. The Digital Financial Services Association of Kenya (DFSAC) reported that Kenyans were borrowing approximately Sh13 billion

monthly from digital lenders, much of which was directed toward food and other basic needs (Standard Media, 2025). This reflected both the reach of digital credit and the economic pressures facing low-income households. Just five years prior, digital lenders served only 600,000 borrowers; by June 2025, that number had grown to 5.5 million (Central Bank of Kenya, 2025).

Yet this inclusion achievement masks a fundamental paradox. While 84.8 percent of Kenyan adults had formal access to financial services, only 42.1 percent were financially literate, and just 18.3 percent were financially healthy (Search Result 4). This disparity between access and capability has profound implications for loan performance, as borrowers often take out loans without fully understanding repayment terms or interest accumulation.

**c. Portfolio Risk Outcomes: The Default Crisis**

The inclusion gains achieved through digital credit have been accompanied by alarming portfolio risk, particularly in the micro-loan segment. Central Bank of Kenya data reveals a stark gradient in default rates by loan size shown in Table 1.

**Table 1.** Digital Loan Default Rates by Loan Size (June 2025)

| Loan Category        | NPL Ratio (%) |
|----------------------|---------------|
| Below Sh1,000        | 83.1          |
| Sh1,000 – Sh5,000    | 69.4          |
| Sh5,001 – Sh50,000   | Declining     |
| Sh50,001 – Sh100,000 | 16.4          |

*Source: Central Bank of Kenya, Financial Sector Stability Report, 2025*

Loans of Sh1, 000 and below recorded an NPL ratio of 83.1 percent, meaning more than eight out of every ten such loans were in default (Central Bank of Kenya, 2025). Loans between Sh1, 000 and Sh5,000 defaulted at 69.4 percent. By contrast, borrowers taking loans between Sh50, 001 and Sh100, 000 had the lowest NPL ratio of 16.4 percent (Business Daily, 2025). Regulators suspect the trend is driven in part by moral hazard, as a regulatory rule bars digital lenders from listing defaulters of amounts below Sh1,000 with Credit Reference Bureaus (CRBs), removing a critical enforcement mechanism (Fintech Association of Kenya, 2025).

Despite these micro-loan defaults, the overall non-performing loan ratio for the digital lending sector stood at 15.9 percent in June 2025, slightly below the commercial bank average of 17.2 percent (Central Bank of Kenya, 2025). This aggregate figure, however, masks severe concentration risk in the micro-loan segment. The CBK has cautioned that while micro-loans are in high demand for emergencies and daily working capital, their small size may be insufficient to meaningfully boost incomes or generate the repayment capacity required, making them inherently risky (Fintech Association of Kenya, 2025).

Borrower distress is widespread. A report by Financial Sector Deepening (FSD) Kenya revealed that mobile loans account for the largest percentage of loan rejections at 33.7 percent, with over four million adults, 14 percent of the population being denied loans due to high expected defaults (Tuko, 2025). Many borrowers take multiple loans across platforms and cannot repay, creating a debt trap that erodes consumer trust and threatens the sustainability of the digital credit model.



#### **d. The Four Determinants in Kenya's Context**

Ndiritu et al. (2026) identified four key determinants; loan appraisal processes, cost of loans, loan disbursement, and loan repayment period that substantially impact loan performance in Kenyan banks. Each manifests distinctively in Kenya's digital lending landscape.

**Loan Appraisal Processes:** Kenyan digital lenders have adopted risk-based lending models that leverage alternative data, mobile transaction histories, airtime top-ups, and digital footprints to assess creditworthiness. However, the reliance on algorithmic scoring without adequate verification has proven problematic. Machine learning algorithms assess borrowers by scanning personal data on their phones, but this approach may not adequately capture repayment capacity, particularly for borrowers with irregular incomes (Business Daily, 2025). The CBK's 2025 draft regulations on non-deposit taking credit providers aim to strengthen appraisal by mandating data minimization and requiring valid data protection registration, but enforcement remains a challenge (Business Daily, 2025).

**Cost of Loans:** Despite the CBK lowering its base lending rate (CBR) to 9.75 percent in June 2025, Kenyan banks remain cautious about loan uptake, with most anticipating only a slight increase in credit demand (Tuko, 2025). Digital lenders have historically charged 20–30 percent per 30-day loan, with effective annual percentage rates often exceeding 500 percent when fees are included. Some lenders have charged as high as 550 percent interest deceptively disguised as "processing fees" (Fintech Association of Kenya, 2025). This predatory pricing renders repayment infeasible for many borrowers, directly contributing to elevated default rates. The CBK has responded with interest rate caps and pricing controls, but the legacy of high-cost lending continues to affect borrower behaviour and trust.

**Loan Disbursement:** Limited monitoring of fund utilisation for small-ticket loans has exacerbated moral hazard. Unlike traditional bank loans, where disbursement may be tied to specific purposes, digital loans are typically deposited directly into borrowers' mobile wallets with no oversight on usage. The DFSAK reports that much of the Sh13 billion borrowed monthly goes toward consumption rather than income-generating activities (Standard Media, 2025). Economist Samuel Nyandemo argues that such borrowing "does not add any value to the economy" (Standard Media, 2025), highlighting disconnects between disbursement and productive investment that undermines repayment capacity.

**Loan Repayment Period:** Short repayment periods, typically ranging from one week to two months are mismatched with borrowers' cash flow cycles (Business Daily, 2025). Micro-entrepreneurs and informal workers often have irregular incomes that do not align with rigid weekly or monthly repayment schedules. The CBK acknowledges that the short tenure of loans makes them relevant for meeting emergency needs but cautions that when loans are too small, they do not enable households and businesses to make investments that can boost their earnings and help with repayment (Business Daily, 2025). Some digital lenders have responded by raising minimum loan sizes above Sh1,000, prioritising recoverability over inclusion (Fintech Association of Kenya, 2025).

#### **e. Kenya's Regulatory Response**

Kenya's regulatory approach to digital lending has evolved from a near-total vacuum to progressive licensing and pricing controls, though it remains fundamentally reactive, regulation following market excess rather than anticipating it.

2021: Initiation of Regulatory Reforms

The CBK (Amendment) Act 2021, approved by Parliament on 7 December 2021 and coming into effect on 31 December 2021, introduced section 33S, which established licensing requirements for digital credit providers (Cliffe Dekker Hofmeyr, 2025). This legislative intervention was precipitated by widespread consumer protection concerns: predatory lending practices, unethical debt collection methods, threats and embarrassment of borrowers, data privacy infringements, and unlicensed lenders operating with impunity (Kim & Duvendack, 2025). The CBK (Digital Credit Providers) Regulations 2022 operationalized the amendments, addressing concerns relating to high costs of loans, unethical debt collection, and abuse of personal information (Central Bank of Kenya, 2022).

2024: Expanded Authority

The Business Laws (Amendment) Act 2024 amended the CBK Act by deleting references to "digital credit business" in sections 33S and 57 and replacing them with "non-deposit taking credit business" (Cliffe Dekker Hofmeyr, 2025). This change broadened the CBK's regulatory purview beyond digital lenders to encompass all credit providers that do not take customer deposits but offer loans through digital platforms and other channels (The Kenya Times, 2025).

2025: Interest Rate Caps and Pricing Controls

The CBK introduced interest rate caps and pricing controls to curb excessive rates and hidden fees. The regulator also published the draft CBK (Non-Deposit Taking Credit Providers) Regulations 2025, inviting public views on tighter regulation of credit providers outside the traditional banking sector (Business Daily, 2025). These proposed regulations embed data protection principles, privacy-by-design, data minimization, and purpose limitation, and require non-deposit taking credit providers to hold valid data protection registration certificates from the Office of the Data Protection Commissioner (Business Daily, 2025).

Licensing Progress and Enforcement

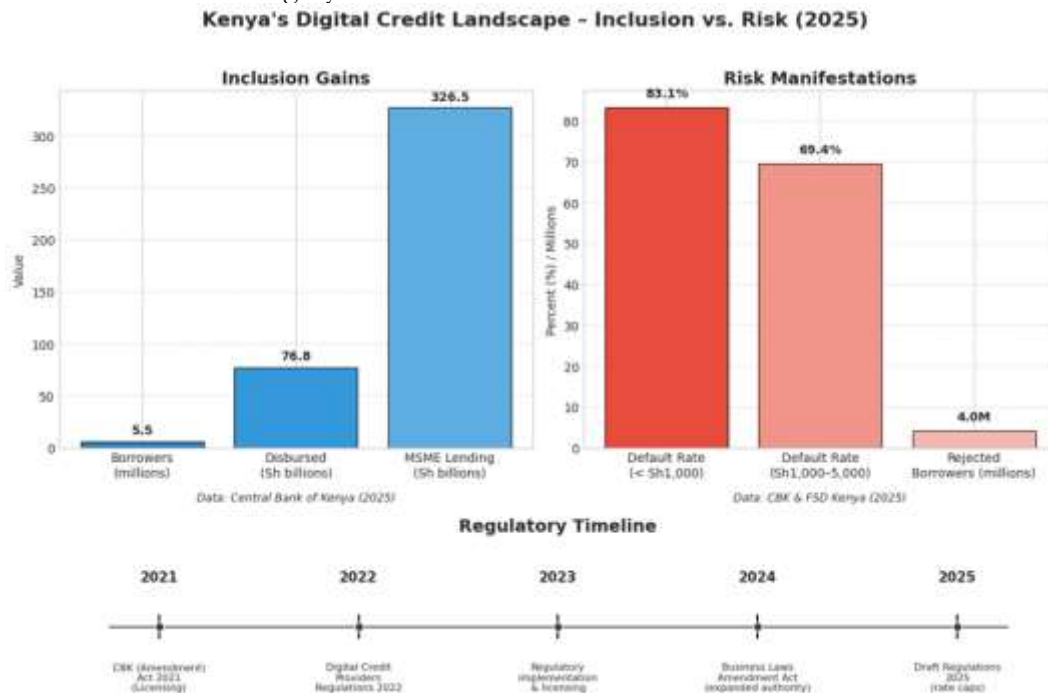
By September 2025, the CBK had licensed 153 digital credit providers following the licensing of 41 in June and 27 in September (Central Bank of Kenya, 2025). More than 700 applications had been received since March 2022, indicating both immense market interest and the scale of the regulatory challenge (Central Bank of Kenya, 2025). The CBK has also demonstrated enforcement capacity: in 2024, it fined 11 commercial lenders for breaking lending, capital, and governance rules (Search Result 0).

Critical Insight: Regulation after Damage

Kenya's regulatory response, while progressively strengthening, came after significant market damage had already occurred. The CBK Amendment Bill was pursued for several years before parliamentary approval in December 2021 (Kim & Duvendack, 2025). By then, predatory lending practices, consumer rights violations, and the micro-loan default crisis were already entrenched. The 2025 regulations aim to close gaps in the 2022 framework, but industry actors had continued to exploit legal and enforcement weaknesses (Business Daily, 2025). The small claims court case *M-collect Limited vs. Mbwana Kalua* (SCCCOMM/E9994/2025) highlighted the legal ambiguities facing unlicensed DCPs, with the court dismissing matters filed by DCPs it deemed in violation of section 33S (Cliffe Dekker Hofmeyr, 2025).

#### f. Interim Summary: Kenya's "Develop First, Regulate Later" Legacy

Kenya's digital credit experience offers a compelling case study of the inclusion-risk trade-off. The country achieved financial inclusion at remarkable scale—5.5 million borrowers, Sh76.8 billion in disbursements, and Sh326.5 billion in MSME lending. Yet these gains came at the cost of elevated portfolio risk and consumer vulnerability. The micro-loan segment (sub-Sh5, 000) represents the epicentre of the crisis, with default rates exceeding 80 percent in the smallest category.



**Figure 1:** Kenya's digital credit landscape juxtaposes inclusion achievements (left) against risk manifestations (right), with regulatory timeline (bottom).

Figure 1 presents Kenya's digital credit landscape, juxtaposing inclusion achievements against risk manifestations. The left panel documents substantial inclusion gains: 5.5 million borrowers accessing credit, Sh76.8 billion in disbursements, and Sh326.5 billion directed to MSMEs, demonstrating digital credit's transformative reach (Central Bank of Kenya, 2025). Critically, the right panel reveals the associated risk crisis. Default rates escalate dramatically for smaller loans, reaching 83.1% for loans below Sh1,000 and 69.4% for loans between Sh1,000–5,000 (Financial Sector Deepening Kenya, 2025), while 4 million Kenyans face loan rejection due to high expected defaults. This stark asymmetry, inclusion gains accompanied by severe portfolio deterioration, encapsulates Kenya's "develop first, regulate later" legacy. The regulatory timeline (bottom) traces the belated policy response, underscoring that regulation arrived after significant market damage had already occurred.

Regulatory catch-up is underway but faces persistent challenges: enforcement gaps, legacy debt, and the fundamental tension between inclusion and recoverability. As digital lenders raise minimum loan sizes to avoid CRB listing restrictions, they risk locking out the very borrowers the digital credit revolution was meant to empower (Fintech Association of Kenya, 2025). The ultimate test for Kenya's digital finance model is whether lenders can strike a sustainable balance, offering fast, accessible credit without fuelling a repayment trap that erodes consumer trust and unravels the gains of financial inclusion.

## IV. Result and Discussion

### 4.1 Ethiopia's Digital Credit Trajectory: Leapfrogging with Regulatory Constraints

#### a. The Emergence of Digital Credit in Ethiopia

Ethiopia's digital credit ecosystem has emerged rapidly, built upon the foundation of Telebirr, Ethio Telecom's mobile money platform launched in May 2021 with Huawei's technical support (Ecofin Agency, 2026). Telebirr had grown to 54.84 million users at the end of June 2025 and processed 2.38 trillion birr (approximately \$14.8 billion) in transactions during the 2024/25 fiscal year alone, with cumulative transactions since launch reaching nearly 5 trillion birr (Ecofin Agency, 2026; Ethiopian News Agency, 2025a). Daily transaction volumes have reached approximately \$68.8 million, demonstrating Ethiopia's rapid acceptance of digital financial services (Business Insider Africa, 2026). The platform's trajectory is ambitious: Telebirr users are expected to reach 62.5 million by the end of the current fiscal year, with a transaction value of 4.43 trillion birr, and the company projects 75 million users with 21.3 trillion birr in transaction volume by 2028 (Xinhua, 2025).

Ethiopia's digital economy is expanding in parallel. The digital economy currently accounts for approximately 8 percent of national GDP, surpassing the global average of 5.4 percent, thanks to aggressive infrastructure expansion ([Press.et](#), 2025). By 2028, the digital economy could contribute approximately ETB 1.3 trillion (about USD 10 billion) to GDP, according to GSMA projections (Digital Policy Alert, 2025). The government's "Digital Ethiopia 2025" strategy has been completed, achieving its intended goals "to an almost full extent," and the Council of Ministers has approved the ambitious "Digital Ethiopia 2030" strategy to accelerate broadband expansion and further increase the digital economy's contribution to national GDP (Ethiopian News Agency, 2025b; Sputnik, 2025).

Several key digital lending platforms have emerged. Michu, Cooperative Bank of Oromia's fully digital lending platform launched in partnership with KIFIYA Financial Technology, has disbursed over ETB 40 billion to entrepreneurs nationwide without requiring collateral and now serves 2.44 million accounts (Cooperative Bank of Oromia, 2025). The platform includes a women-focused product supporting female entrepreneurs and has integrated nearly 600,000 farmers into its digital Farm Pass ecosystem (Cooperative Bank of Oromia, 2025). The Commercial Bank of Ethiopia (CBE) disbursed 3.9 billion birr through digital platforms in eight months, benefiting 717,000 customers as of February 28, 2025 (Ethiopian News Agency, 2025c). CBE has also launched "CBE Beje," a digital savings and loan service offering collateral-free loans ranging from 500 to 150,000 birr through the CBE Birr Plus application. In the previous year, CBE disbursed over 9.1 billion birr digitally, including 5.8 billion via Telebirr and 3.3 billion via CBE Birr (Birr Metrics, 2025). Oromia Bank's Milkii platform, launched in May 2025, has disbursed more than ETB 307.9 million in loans to 83,166 customers within its first five months, processing transactions averaging ETB 5 million daily (Ethiopian Business Review, 2025). Milkii offers flexible repayment periods ranging from 60 to 180 days. In July 2025, Awash Bank partnered with M-PESA Ethiopia to launch "Errif be M-PESA," an overdraft service delivering digital credit directly through mobile phones to customers who have been actively using M-PESA for at least 90 days (Microfinance Gateway, 2025).

#### b. Inclusion Outcomes: Promise and Constraint

Ethiopia's digital lending expansion has delivered notable inclusion achievements. The digital lending platforms described above have extended uncollateralised credit to hundreds of thousands of borrowers—2.44 million accounts through Michu, 717,000 through CBE's

digital platforms, and over 83,000 through Milkii. These figures represent significant progress in a country where roughly 81 percent of the rural adult population remains unbanked (World Bank, 2024).

However, a critical regulatory mandate constrains inclusion. The National Bank of Ethiopia (NBE), in its current policy framework, limits digital lending to institutions that are already licensed as financial institutions and crucially, requires borrowers to have active bank accounts (Modern Ghana, 2025). This is not merely a design choice but a regulatory requirement. As one industry observer noted, "the reliance on bank accounts as the foundation for digital credit isn't just a design choice; it's a regulatory mandate" (Modern Ghana, 2025). The requirement effectively excludes the majority of Ethiopia's population from digital credit, given that a significant portion remains unbanked. Mobile money wallets like Telebirr, while widely adopted, are often tied only to a phone number with minimal identity verification, limiting their use for credit scoring (Modern Ghana, 2025).

This stands in stark contrast to Kenya's model, where mobile lending was accessible directly via mobile money, bypassing the bank-account barrier entirely. In Kenya, borrowers could access credit through M-PESA without ever opening a formal bank account, a design that enabled rapid inclusion at scale. Ethiopia's regulatory approach, while perhaps intended to ensure financial stability and consumer protection, has inadvertently created what one observer calls "innovation for the included and silence for the rest" (Modern Ghana, 2025). The distinction is profound: Kenya's model prioritised inclusion first, managing risk subsequently; Ethiopia's model prioritises formal banking integration, potentially sacrificing inclusion for control.

The promise of leapfrogging is thus constrained by a regulatory framework that remains anchored in traditional banking paradigms. The national digital ID program "FAYDA" could potentially help solve the Know Your Customer (KYC) challenge by linking mobile money users to verified identities, but this requires national rollout, cross-platform integration, and a fundamental shift in how creditworthiness is defined (Modern Ghana, 2025). Until then, Ethiopia's digital lending apps remain "bridges to nowhere for the people who need them most" (Modern Ghana, 2025).

### **c. Early Signs of Portfolio Risk**

While comprehensive non-performing loan data for Ethiopia's digital lending sector is still emerging, early indicators warrant serious attention.

**Unsecured Lending at Scale:** Michu has disbursed over ETB 40 billion in uncollateralized loans (Cooperative Bank of Oromia, 2025). While this demonstrates remarkable reach, the absence of collateral removes the primary enforcement mechanism available to traditional lenders. Kenya's experience demonstrates that uncollateralized lending at scale, particularly in micro-loan segments, is associated with elevated default rates. Ethiopia's rapid disbursement growth may outpace credit assessment capabilities, raising concerns about adverse selection.

**Fee Opacity and Predatory Pricing:** Some institutions have been observed disguising interest as "commissions" or other fees, mirroring Kenya's early predatory lending patterns. The Financial Consumer Protection Directive (FCP/01/2020) explicitly requires interest to be disclosed as an annual percentage rate (APR), yet enforcement remains uneven (National Bank of Ethiopia, 2020). Some digital lending products have been observed charging monthly



interest that masks effective annual rates far higher than advertised. The strategic push for digital lending by commercial banks and microfinance institutions, while welcome for financial inclusion, has been accompanied by pricing tactics that may violate the NBE's consumer protection framework.

**Limited Impact on MSE Outcomes:** Preliminary findings from a randomised controlled trial conducted by the Centre for Effective Global Action suggest that digital credit, both with and without financial literacy training, has limited impact on improving key outcomes for MSEs in Ethiopia, such as profit, employment, and household consumption (Centre for Effective Global Action, 2024). While financial literacy training reduced the likelihood of loan defaults and penalties, the finding raises fundamental questions about whether credit is reaching productive uses or merely fuelling consumption. This echoes Kenya's experience, where a significant portion of digital borrowing was directed toward daily consumption rather than income-generating activities.

**Regulatory Compliance Gaps:** The NBE requires Ethiopian banks to maintain their non-performing loans below 5 percent of their total loan portfolio. However, the NBE is expected to revise this maximum ratio for institutions participating in digital lending programmes, suggesting recognition that current NPL thresholds may be unrealistic for uncollateralized digital lending (Capital Ethiopia, 2025). Meanwhile, concerns about compounding interest on micro-loans have emerged, with critics warning that "promoting digital lending as easy money that people can access without strings is false and should be regulated" (Modern Ghana, 2025).

**The Debt Trap Risk:** In September 2025, Ethio Telecom issued legal warnings to customers with unpaid Telebirr loans, invoking Law No. 1772 and classifying unpaid debts as public funds (Modern Ghana, 2025). This aggressive debt collection approach, occurring within a regulatory framework described as "underdeveloped" for digital lending (Admasu, 2022), raises concerns about consumer vulnerability and the potential for debt cycles.

#### **d. The Regulatory Landscape: Constraints and Recent Reforms**

Ethiopia's regulatory framework for digital lending is evolving but remains characterised by significant constraints and gaps.

**Current Mandate:** The NBE limits digital lending to institutions already licensed as financial institutions, and borrowers must have active bank accounts (Modern Ghana, 2025). The NBE's current regulations require Ethiopian banks to maintain NPLs below 5 percent of their total loan portfolio (Capital Ethiopia, 2025), a threshold that may be difficult to sustain given the inherent risk profile of uncollateralized digital lending.

**Positive Developments:** Several reforms signal progress. The Establishment Proclamation (No. 1359/2025) gives the NBE broader authority, including a legal framework for central bank digital currency. The Regulatory Sandbox Directive applies to all financial institutions licensed by the National Bank that seek to test innovations within a controlled environment (National Bank of Ethiopia, 2025). Ethiopia's draft Regulatory Sandbox Directive mirrors similar frameworks in Kenya and Nigeria, but with its own timing and context. The NBE is poised to launch the sandbox by the end of 2025. The Financial Consumer Protection (FCP) Directive (No. FCP/01/2020) requires APR calculation and full fee disclosure, prohibits unfair contractual terms, and bars financial providers from charging interest in advance for credit (National Bank of Ethiopia, 2020). The directive mandates that

financial services providers treat all financial consumers equitably, respectfully, honestly, and fairly throughout their relationship. The online interbank money market platform launched in November 2024 represents part of broader financial sector reforms.

**Critical Gaps:** No explicit interest rate caps exist for digital lenders. While some platforms like Milkii advertise a maximum APR of 10 percent, others charge significantly higher rates: Michu Kiyya charges 3.75 percent interest per month, while Michu Wabi charges 8 percent per month plus a 2 percent access fee, effective annual rates exceeding 100 percent (Modern Ghana, 2025). Enforcement mechanisms remain underdeveloped. The FCP directive's requirements are not consistently monitored or enforced. The bank-account mandate remains a binding constraint on inclusion, and while FAYDA (the national digital ID) could potentially enable mobile-only credit scoring, full integration has not yet been achieved (Modern Ghana, 2025).

#### **e. The Leapfrogging Opportunity and the Risks of Inheriting Kenya's Problems**

Ethiopia stands at a critical juncture. As a latecomer to digital credit, it possesses a significant leapfrogging opportunity: it can bypass Kenya's painful "develop first, regulate later" trajectory and design a regulatory framework that proactively balances inclusion and stability from the outset (Han & Wang, 2026).

However, early signs suggest Ethiopia risks both limiting inclusion and still facing future risk crises. The bank-account mandate constrains inclusion without necessarily reducing risk; it excludes the unbanked majority while leaving substantive risk drivers (opaque pricing, weak appraisal, limited enforcement) unaddressed (Modern Ghana, 2025). The emergence of disguised fees and predatory pricing despite the existence of the FCP directive, suggests that regulatory arbitrage is already occurring. As one commentator observed, "the pricing tactics being deployed are in direct violation of the National Bank of Ethiopia's Financial Consumer Protection Directive" (Modern Ghana, 2025). The compounding interest charged on Telebirr micro-loans has drawn criticism, with warnings that "the trend is really worrying in Ethiopia" (Modern Ghana, 2025).

Ethiopia also risks inheriting Kenya's problems without fully replicating its inclusion gains. Kenya achieved remarkable inclusion before the default crisis emerged. Ethiopia, by contrast, may face a default crisis without having first achieved comparable inclusion, a worst-of-both-worlds outcome where the population remains largely unbanked yet lenders still suffer portfolio deterioration (Admasu, 2022).

The critical question is: Can Ethiopia design a regulatory framework that proactively balances inclusion and risk, rather than reactively cleaning up after a crisis? The answer depends on several factors: whether the NBE will relax the bank-account mandate once FAYDA enables robust KYC; whether explicit interest rate caps and enhanced enforcement will be introduced; and whether the regulatory sandbox will successfully foster innovation while containing risk (Admasu, 2022; Modern Ghana, 2025).

#### **f. Interim Summary: Ethiopia at the Crossroads**

Ethiopia's digital credit trajectory reveals a nation at a crossroads. Digital credit is scaling rapidly—ETB 40 billion through Michu, 3.9 billion birr through CBE, 307 million birr through Milkii, and new partnerships like Awash Bank-M-PESA emerging. Telebirr's 54.84 million users and 2.38 trillion birr in annual transactions demonstrate the underlying digital infrastructure's capacity (Ecofin Agency, 2026; Ethiopian News Agency, 2025a).

Yet regulatory constraints, particularly the bank-account mandate; limit inclusion potential, excluding the majority of Ethiopians from the very digital credit designed to serve them (Modern Ghana, 2025). Early risk indicators, unsecured lending at scale, fee opacity, limited impact on MSE outcomes, and emerging debt collection controversies suggest vulnerabilities are already present (Centre for Effective Global Action, 2024; Modern Ghana, 2025).

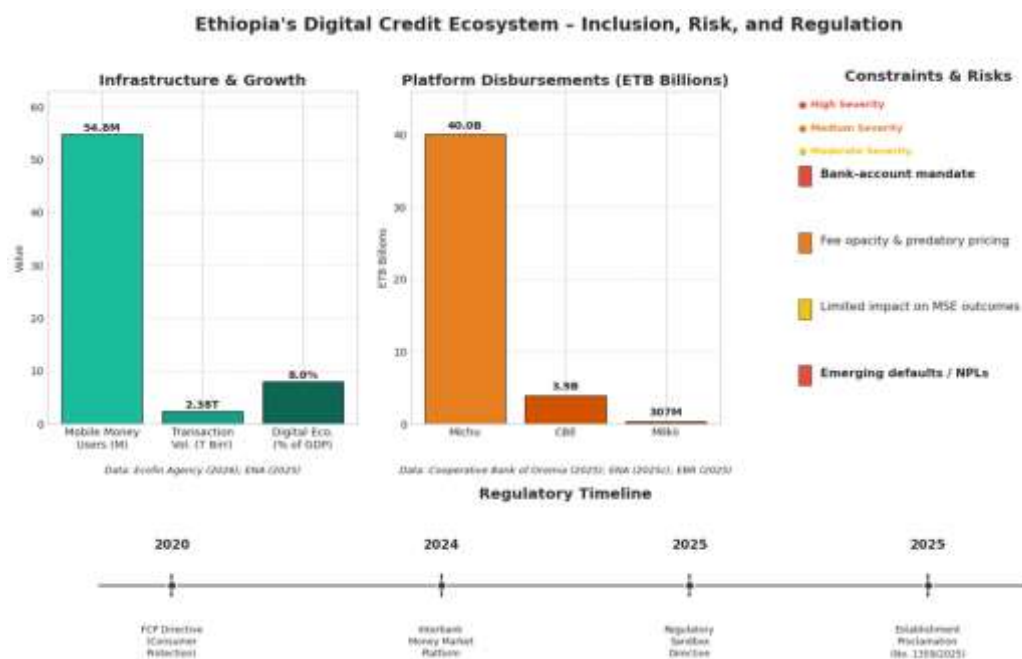
Ethiopia has a narrow window to implement proactive regulation before problems become entrenched. The NBE's regulatory sandbox, the FCP directive, and the potential of FAYDA-enabled KYC offer tools for a balanced approach. The question is whether Ethiopia will use them to chart a different course, one where innovation, inclusion, and stability are integrated from the start or whether it will repeat Kenya's experience of inclusion achieved at the cost of portfolio risk and consumer vulnerability.

**Table 2.** Ethiopia's Digital Credit Landscape Key Platforms and Metrics (2025)

| Platform          | Institution                 | Launch    | Users/Accounts      | Disbursement               | Key Features                                      |
|-------------------|-----------------------------|-----------|---------------------|----------------------------|---------------------------------------------------|
| Michu             | Cooperative Bank of Oromia  | 2022      | 2.44 million        | ETB 40+ billion            | AI-driven, collateral-free, women-focused product |
| CBE Digital Loans | Commercial Bank of Ethiopia | 2024      | 717,000 customers   | ETB 3.9 billion (8 months) | Collateral-free, 500–150,000 birr                 |
| Milkii            | Oromia Bank                 | May 2025  | 83,166 customers    | ETB 307.9 million          | Flexible 60–180 day terms                         |
| Errif be M-PESA   | Awash Bank + M-PESA         | July 2025 | Active M-PESA users | —                          | Overdraft service                                 |

*Source: Compiled from Cooperative Bank of Oromia (2025), Ethiopian News Agency (2025c), Ethiopian Business Review (2025), and Microfinance Gateway (2025).*

Table 2 presents Ethiopia's digital credit landscape, illustrating the rapid scaling of mobile lending platforms across the country. Michu, launched in 2022 by Cooperative Bank of Oromia, has achieved dominant market position with 2.44 million accounts and ETB 40+ billion in disbursements, offering AI-driven, collateral-free lending with a women-focused product (Table 2). The Commercial Bank of Ethiopia's digital loans, launched in 2024, have reached 717,000 customers with ETB 3.9 billion disbursed over eight months, offering collateral-free loans ranging from 500 to 150,000 birr (Table 2). Milkii, Oromia Bank's platform launched in May 2025, has disbursed ETB 307.9 million to 83,166 customers with flexible 60–180 day terms (Table 2). The July 2025 partnership between Awash Bank and M-PESA Ethiopia, offering overdraft services to active M-PESA users, signals deepening collaboration between traditional banks and mobile network operators (Table 2). Collectively, these platforms demonstrate Ethiopia's leapfrogging potential, yet the bank-account mandate, requiring borrowers to have formal accounts limits inclusion. The emergence of unsecured lending at scale, fee opacity concerns, and limited enforcement of consumer protection directives suggest early risk indicators are already present.



**Figure 2:** Ethiopia's digital credit ecosystem depicts rapid infrastructure growth (left), platform disbursements (centre), and binding constraints with early risk indicators (right).

Figure 2 presents Ethiopia's digital credit ecosystem across three analytical dimensions. The left panel documents robust infrastructure: Telebirr's 54.8 million users, 2.38 trillion birr in transaction volume, and a digital economy contributing 8% of GDP, surpassing the global average of 5.4% (Figure 2, left). The middle panel reveals rapid platform disbursements: Michu has disbursed ETB 40 billion, CBE ETB 3.9 billion, and Milkii ETB 307 million since its May 2025 launch (Figure 2, mid). However, the right panel exposes critical constraints: the bank-account mandate excludes the unbanked majority, fee opacity mirrors Kenya's predatory lending patterns, limited impact on MSE outcomes raises productivity concerns, and emerging defaults signal nascent portfolio risk (Figure 2, right). The regulatory timeline (bottom) traces Ethiopia's proactive framework, from the 2020 FCP Directive to the 2025 Sandbox Directive and Establishment Proclamation, offering a foundation to balance inclusion and stability before problems become entrenched (Figure 2, bottom).

## 4.2 Comparative Analysis and Policy Implications

### a. Comparative Framework: Kenya vs. Ethiopia

Kenya and Ethiopia represent contrasting trajectories in digital credit development, offering a natural experiment for examining how regulatory design, institutional context, and market maturity shape the inclusion-risk trade-off. Table 3 synthesises the key dimensions of comparison.

**Table 3.** Comparative Framework – Kenya vs. Ethiopia Digital Credit Ecosystems

| Dimension            | Kenya                                                  | Ethiopia                                      |
|----------------------|--------------------------------------------------------|-----------------------------------------------|
| Maturity             | Mature (2007–present)                                  | Emerging (2020–present)                       |
| Inclusion Model      | Mobile-money-first (no bank account required)          | Bank-account-mandatory                        |
| Digital Credit Scale | 16.9% adults borrow from MNOs; 5.5M borrowers          | ETB 40B+ disbursed via Michu; 2.44M accounts  |
| NPL/Default Rates    | 83.1% on sub-KES 1,000 loans; 69.4% on KES 1,000–5,000 | Emerging; NBE threshold 5% but under revision |

|                     |                                                       |                                                    |
|---------------------|-------------------------------------------------------|----------------------------------------------------|
| Regulatory Approach | Reactive (post-crisis)                                | Proactive (in principle) but restrictive           |
| Consumer Protection | Strengthening (rate caps, licensing, 2025 draft regs) | Developing (FCP directive, sandbox forthcoming)    |
| Key Risk            | Micro-loan default epidemic                           | Inclusion constrained + potential hidden fee abuse |

*Sources: Compiled from Central Bank of Kenya (2025); Kim & Duwendack (2025); Cooperative Bank of Oromia (2025); Modern Ghana (2025).*

Kenya's model prioritised rapid inclusion through mobile-money-first design, enabling borrowers to access credit without formal bank accounts. This approach achieved remarkable scale—16.9 percent of adults borrowing from mobile network operators and 5.5 million digital borrowers by mid-2025—but at the cost of a micro-loan default crisis, with 83.1 percent of loans below KES 1,000 in default. Regulation followed market excess: the CBK (Amendment) Act 2021 introduced licensing requirements, followed by the Digital Credit Providers Regulations 2022 and the 2025 draft Non-Deposit Taking Credit Providers Regulations.

Ethiopia, by contrast, has adopted a bank-account-mandatory model that limits digital lending to individuals with formal bank accounts. While this approach may facilitate KYC and repayment tracking, it excludes the majority of Ethiopia's population; roughly 81 percent of rural adults remain unbanked—from digital credit. The NBE has made progress through the Financial Consumer Protection Directive (FCP/01/2020), the Regulatory Sandbox Directive (FIS/XX/2025), and the Establishment Proclamation (No. 1359/2025). However, enforcement gaps and the absence of explicit interest rate caps leave consumers vulnerable.

## **b. Stylized Facts from the Comparative Analysis**

The Kenya-Ethiopia comparison yields five stylised facts with implications for digital credit governance in latecomer economies.

Fact 1: Mobile lending can achieve rapid inclusion at scale, but micro-loan segments are particularly vulnerable to default. Kenya's experience demonstrates that uncollateralized digital lending expands access dramatically; 5.5 million borrowers, Sh76.8 billion in disbursements, yet micro-loans (sub-KES 5,000) exhibit default rates exceeding 69 percent. The smallest loans (below KES 1,000) default at 83.1 percent. This pattern is likely to emerge in Ethiopia as unsecured lending scales, particularly given that Michu has already disbursed over ETB 40 billion without collateral.

Fact 2: Regulatory timing matters immensely. Kenya's reactive regulation, the CBK (Amendment) Act 2021 came nearly a decade after M-Shwari's 2012 launch, allowed predatory practices to become entrenched: exorbitant interest rates exceeding 550 percent APR, aggressive debt collection causing mental distress, deceptive marketing, and unlicensed lenders. Ethiopia's proactive stance, with the FCP directive (2020), sandbox directive (2025), and establishment proclamation (2025) already in place—is commendable. However, Ethiopia must avoid overly restrictive rules that undermine inclusion while failing to address substantive risk drivers.

Fact 3: The bank-account prerequisite is a double-edged sword. While it may facilitate KYC and repayment tracking, it excludes the very populations digital credit aims to serve. Kenya's mobile-money-first model enabled inclusion at scale; Ethiopia's bank-account



mandate constrains inclusion without necessarily reducing risk, as evidenced by emerging fee opacity and predatory pricing concerns.

Fact 4: Financial literacy is a critical mediator. Kenya's low financial literacy (42.1 percent) and financial health (18.3 percent) correlate with high default rates. In Ethiopia, preliminary findings from a randomised controlled trial suggest that digital credit, even with financial literacy training, has limited impact on improving key MSE outcomes such as profit, employment, and household consumption. While financial literacy training reduced the likelihood of loan defaults and penalties, systemic issues, short loan durations, high borrowing costs, and small loan amounts, limited borrowers' ability to invest in substantial business growth.

Fact 5: Unsecured lending at scale is inherently risky. Both countries have embraced collateral-free digital loans, but Kenya's experience shows that without robust credit scoring and repayment enforcement, defaults will follow. Ethiopia's rapid disbursement growth, ETB 40 billion through Michu, 3.9 billion through CBE may outpace credit assessment capabilities. The NBE's current requirement that banks maintain NPLs below 5 percent may be unrealistic for uncollateralised digital lending, and the NBE is expected to revise this threshold.

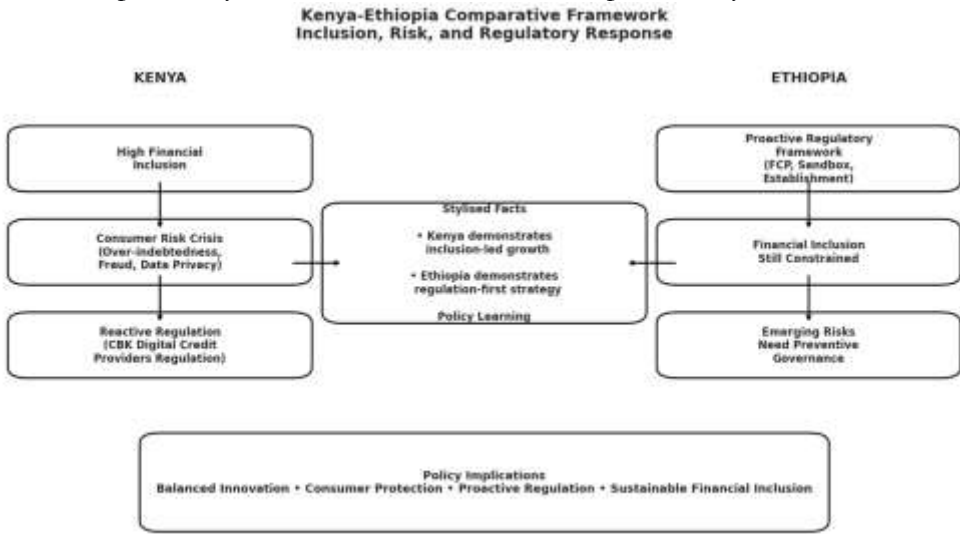
### c. Implications for Theory

The Kenya-Ethiopia comparison enriches and extends three theoretical domains. Leapfrogging Theory: The comparison demonstrates that technological leapfrogging does not automatically imply regulatory leapfrogging. Ethiopia has adopted mobile money and digital lending technologies rapidly; Telebirr's 54.84 million users and 2.38 trillion birr in annual transactions exemplify technological leapfrogging. However, regulatory capacity and institutional safeguards must be built in parallel. Ethiopia's proactive regulatory framework, encompassing the FCP Directive, Sandbox Directive, and Establishment Proclamation, reflects a strategic approach to regulatory leapfrogging by creating an enabling environment for financial innovation while accelerating the development of a modern digital financial ecosystem. Yet the bank-account mandate reveals that regulatory frameworks can inadvertently constrain the very inclusion they aim to enable. As Han and Wang (2026) demonstrate, leapfrogging in mobile payments requires not just technology adoption but complementary institutional development.

Financial Inclusion Theory: The Kenya-Ethiopia comparison extends financial inclusion theory by demonstrating that inclusion without adequate consumer protection and risk management can undermine the very welfare gains it promises. Kenya achieved remarkable inclusion, 5.5 million borrowers, Sh76.8 billion in disbursements, yet the micro-loan default crisis (83.1 percent on sub-KES 1,000 loans) threatens the sustainability of the digital credit model. In Ethiopia, preliminary evidence suggests that digital credit has limited impact on improving key MSE outcomes such as profit, employment, and household consumption. Financial inclusion alone is insufficient; product design, consumer protection, and financial capability are equally critical.

Regulatory Governance Theory: The comparison illustrates how the timing and design of regulation shape market outcomes in digital finance. Kenya's reactive regulation, the CBK (Amendment) Act 2021 came after a decade of market growth allowed predatory practices to become entrenched. Ethiopia's proactive stance, with consumer protection and sandbox frameworks already in place, offers an opportunity to avoid Kenya's mistakes. However, proactive regulation that is overly restrictive (the bank-account mandate) can undermine

inclusion without addressing risk. The optimal regulatory design balances inclusion and stability through proportionate, evidence-based rules that adapt to market evolution. As Kim and Duvendack (2025) demonstrate, even well-intentioned regulation can leave significant gaps if not accompanied by robust enforcement and complementary institutional reforms.



**Figure 3:** Kenya-Ethiopia comparative framework contrasts Kenya's inclusion-led reactive trajectory (left) with Ethiopia's regulation-first constrained approach (right), with policy implications (bottom).

Figure 3 presents a comparative framework contrasting Kenya's and Ethiopia's digital credit trajectories. The left panel illustrates Kenya's inclusion-led growth pathway: high financial inclusion achieved through mobile-money-first design, followed by a consumer risk crisis, manifested in over-indebtedness, fraud, and data privacy violations and culminating in reactive regulation through the CBK Digital Credit Providers Regulation (Figure 3, left). The right panel depicts Ethiopia's regulation-first strategy: proactive regulatory framework (FCP Directive, Sandbox, Establishment Proclamation) yet with financial inclusion still constrained by the bank-account mandate, and emerging risks requiring preventive governance (Figure 3, right). The bottom panel synthesises stylised facts and policy implications, emphasising balanced innovation, consumer protection, proactive regulation, and sustainable financial inclusion as essential for latecomer economies navigating the inclusion-risk trade-off (Figure 3, bottom). Kenya's experience demonstrates that inclusion without adequate consumer protection yields unsustainable outcomes, while Ethiopia's constraints reveal that proactive regulation must avoid overly restrictive rules that undermine access. The comparative framework underscores that optimal regulatory design balances inclusion and stability through proportionate, evidence-based governance.

## V. Conclusion

### Summary of Key Findings

This study examined the inclusion-risk trade-off in mobile-based lending through a comparative analysis of Kenya and Ethiopia. The findings demonstrate that mobile-based lending in Kenya has delivered significant financial inclusion gains, 5.5 million borrowers and Sh76.8 billion in disbursements but at the cost of elevated portfolio risk, particularly in the micro-loan segment where default rates exceed 80 percent. Four determinants, loan approval processes, borrowing costs, disbursement management, and repayment terms, mediate this trade-off, with Kenya's experience revealing that weaknesses across all four areas contributed to the default crisis.

Ethiopia is rapidly scaling digital credit, ETB 40 billion through Michu, 2.44 million accounts but faces a critical choice: adopt Kenya's "develop first, regulate later" path, or chart a new course that proactively balances inclusion and stability. Ethiopia's current bank-account mandate limits inclusion without necessarily reducing risks, a regulatory design flaw requiring urgent reconsideration. The comparative analysis yields five stylized facts and five concrete policy recommendations for latecomer economies.

### Contribution to Knowledge

This study makes four contributions. First, it provides the first systematic comparative analysis of the inclusion-risk trade-off in Kenya and Ethiopia. Second, it offers empirically grounded identification of the four determinants of mobile loan performance. Third, it develops a policy framework for balancing financial inclusion and portfolio risk in emerging digital credit markets. Fourth, it extends leapfrogging theory to the regulatory domain, demonstrating that technological leapfrogging does not automatically imply regulatory leapfrogging.

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