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Beyond access: Towards productive inclusion in the era of fintech

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BEYOND ACCESS

Towards productive inclusion in the era of fintech

Marie Kolling, Kevin Donovan and Adam Moe Fejerskov

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EXECUTIVE SUMMARY

This paper examines how financial technology (fintech) impacts financial inclusion and inequality, drawing wider recommendations on how to ensure ‘productive inclusion’ from recent developments in Africa and Latin America with case studies on Kenyan and Brazilian experiences. While fintech has expanded access to financial services, the Kenyan and Brazilian cases demonstrate that diverse fintech models often entrench market concentration, reduce accountability and limit development opportunities. Despite popular narratives of innovative technologies, in both countries the proliferation of fintech targeting low-income populations has led to a major crisis of consumer indebtedness.

The increased use of fintech for household lending, with evidence that fintech is fuelling over-indebtedness, has significant consequences to development financing debates like those occurring under the auspices of the 4th International Conference on Financing Development (FfD4). Vital to conversations on the future of financing for development are not only sovereign debt but also the increased burden of household debt and its potentially detrimental consequences for global prosperity. In other words, FfD4 should recognise the linked nature of household and sovereign indebtedness while considering instruments and policies that can address both scales of financial need.

The paper challenges assumptions that expanding financial access automatically improves economic well-being. Our findings suggest that what we term ‘productive inclusion’ requires financial technologies offering affordable credit designed to further socially inclusive economic productivity. Policymakers should enhance consumer and data protection with regulations addressing credit discrimination, data privacy and exploitative interests and fees, supported by effective enforcement mechanisms. Requirements for transparent communication of loan costs that are intuitive to people without considerable financial experience, as well as implementation and monitoring of regulations are essential herein, just as strengthened social protection policies would reduce citizens’ reliance on credit to cover basic needs.

Finally, addressing regulatory gaps through comprehensive oversight of bank and non-bank financial institutions and ensuring coordination across regulatory authorities would help mitigate the negative impacts of fintech expansion. Without appropriate design, regulation and complementary social policies, the constant expansion of credit options for the poor will likely exacerbate rather than reduce inequality, transforming financial inclusion into a vehicle for the steady rise in debt-to-income ratios rather than sustainable development.

INTRODUCTION

Debt poses a critical challenge to sustainable development. Multilateral discussions on the reforms needed to tackle the inequalities embedded in the international financial architecture predominantly focus on the growing sovereign debt crisis across regions and the disconcerting trends in many countries' public debt-to-GDP ratios (UNCTAD, 2024). A significant oversight in these vital conversations – such as those under the auspices of the UN process on International Conferences on Financing for Development, including FfD4 in Seville, Spain in July 2025 – is the increased burden of household debt and its potentially detrimental consequences for global prosperity, as evidenced by the rising debt-to-income ratio across continents (Bunn et al., 2021; Kar, 2018; Lavinas et al., 2024; IMF, 2024; FinAccess, 2024). Consumer debt and sovereign debt are closely linked phenomena, and their relation is often underestimated: as states increasingly divert financing to debt servicing, a decline in spending on social services like housing, healthcare and education compels low-income households to fund these expenditures through consumer debt.

Moreover, conditions of poverty produce a demand for credit, which is often used as a safety net to fill income gaps – a development observed across the globe (Kar, 2018; Montgomerie, 2013; Marambio-Tapia, 2022; Soederberg, 2014). The demand for credit has been met by financial inclusion policies and micro-credit programmes, integrating the lives of the poor into the realm of finance capital. The outcomes of micro-credit are ambiguous as it has often failed to deliver on its promises of turning women living in poverty into successful micro-entrepreneurs. Yet women continue to seek these loans in their efforts to make ends meet, although the credit rarely enables sustained household well-being and poverty alleviation (Kar, 2018). Instead, they are accompanied by a rapid increase in consumption-oriented credit catering to the poor, significantly facilitated by new financial technologies.

The advent of digital finance and fintech has been heralded as a potentially transformative force for expanding financial inclusion, particularly in emerging economies where 'conventional' banking infrastructure may be underdeveloped (Cevik, 2024a; Demirgüç-Kunt et al., 2018; Lensink et al., 2022), with financial inclusion seen as a driver to reduce poverty, increase resilience and improve the lives of the poor, particularly women. Digital finance can dramatically reduce transaction costs for financial services, with digital accounts costing as little as US\$10 annually per customer, which can be 90% less expensive than conventional bank accounts (UNEN, 2021). This cost advantage stems from reduced need for physical infrastructure, streamlined operations and automation of routine processes (Ozili, 2018). Further, digital finance expands the geographical reach of financial services by eliminating the constraints of physical proximity to banking facilities. Particularly in remote areas, mobile-based financial services can reach previously underserved populations without requiring costly physical infrastructure (CPMI-World Bank, 2020).

Focusing on the intersections between developments in financial inclusion and novel financial technologies promoting widely accessible services, this paper explores the elements needed to enable fintech to constructively serve populations living in poverty and foster gender equality and resilience. We specifically emphasise the need for a renewed focus on what we call 'productive inclusion', referring to lending conditions that safeguard household financial stability and well-being. This entails working with a

different and more meaningful inclusion concept that redirects our attention from access to meaningful use and economic outcomes for people everywhere. Advancing financial inclusion requires more than access; it requires ensuring that the terms of inclusion from fintech advance sustainable development goals, especially in an era of climate change, sovereign indebtedness and conflict. In other words, merely counting the number of bank accounts or the proportion of citizens with access to credit is insufficient. What matters is how people are included in financial services – at what cost? with what outcomes?

The relationship between fintech development and financial inclusion is complex and varies significantly across regions and technologies (Cevik, 2024a). In this paper, we start by reviewing the grey literature on financial inclusion, digital finance and fintech from an overarching perspective across Africa and Latin America and then discuss evidence from two regional contexts: Kenya and Brazil. These large and influential markets offer important lessons for policy-makers considering how to best enable fintech that serves people living in both absolute and relative poverty, advancing gender equality and resilience while avoiding threats of over-indebtedness, intersectional inequalities and personal data misuse.

In Kenya and Brazil, fintech has advanced financial inclusion but through distinct trajectories in terms of the innovation in financial infrastructure and technologies, the central actors in this development, and the regulatory frameworks enabling the development. In East Africa, Kenya has been a leading global market for fintech, but while the growth of M-Pesa mobile money service after 2007 brought widespread applause, the digital lending applications that multiplied after 2016 led to a major crisis of consumer indebtedness (Suri, 2017; Kusimba, 2021; Donovan and Park, 2022). In addition, limited oversight of user data has raised concerns about surveillance and private appropriation. In Brazil, the COVID-19 pandemic accelerated the already ignited ‘fintech revolution’, pushing a policy agenda of financial inclusion and financial citizenship. The rapid expansion of fintech payments and credit options has propelled record-high levels of household debt, while record-high revenues have concomitantly been reported in the financial sector. The issue of trapping low-income borrowers in debt cycles from consumer credit resembles the findings from the (non-digital) micro-credit scholarship, where aggressive lending and repayment pressure combined with a lack of transformative impact have raised questions about the effectiveness of small loans to drive social change (Banerjee et al., 2015; Taylor, 2012).

Drawing on the cases, the paper reflects on how the currently prevailing fintech models entrench a concentrated market that reduces accountability and oversight while limiting the developmental opportunities of fintech. Kenya’s case shows how short-term, expensive fintech instruments impede social services and economic development. Brazil’s case highlights the risks of rising economic vulnerability and gender inequality within a context of long-term and expensive credit products, credit as social policy, and the limits of financial literacy as an effective remedy against predatory lending and over-indebtedness. Before delving into these two contexts and their learnings, we start with a survey of the current state-of-evidence on financial inclusion and digital finance.

FINANCIAL INCLUSION AND DIGITAL FINANCE IN AFRICA

Africa alone processed 82 billion mobile money transactions worth US\$1.1 trillion in 2024 (GSMA, 2025). The rapid evolution of financial technology (fintech) on the continent has fundamentally transformed the financial services landscape. The distinctive patterns of fintech adoption in Africa reflect the continent's unique socioeconomic conditions, including limited traditional banking infrastructure, expanding mobile phone penetration and significant unbanked populations (Mothobi and Kebotsamang, 2024). Africa has witnessed remarkable growth in digital financial services, with fintech companies nearly tripling from approximately 450 in 2020 to over 1,260 by 2024 (EIB, 2024) and mobile money platforms, digital lending services, payment systems, and more recently, blockchain-based solutions having proliferated across the continent (Rodima-Taylor, 2022).

In some countries, fintech innovations have developed as alternatives or additions to well-established banking systems, whereas African fintech has frequently emerged to fill fundamental gaps in financial service provision (OECD, 2024). The continent's fintech ecosystem has evolved through several distinct phases, characterised by different technological capabilities and market dynamics. Mobile money services represented the first major wave of fintech innovation in Africa, beginning with the landmark launch of M-Pesa in Kenya in 2007 by Safaricom (Mbiti and Weil, 2013). Building on existing telecommunications infrastructure and agent networks, mobile money created a parallel financial system that rapidly outpaced traditional banking in terms of user accessibility (Grzybowski et al., 2023b). The success of M-Pesa catalysed similar developments across the continent, with notable implementations including Orange Money in West Africa, MTN Mobile Money in multiple markets and EcoCash in Zimbabwe, to name a few.

The second phase of fintech evolution in Africa was characterised by a diversification of services beyond basic transfers, including digital lending, insurance and investment platforms. Companies like Tala in Kenya expanded from providing small-scale digital credit to offering broader financial management tools (McKinsey, 2022). Similarly, in Nigeria, FairMoney evolved from a digital lender to a provider of comprehensive banking services, facilitated by obtaining a micro-finance banking license. These developments reflect a broader trend towards more sophisticated fintech ecosystems that address a wider range of financial needs beyond basic payments and transfers. Recent years have witnessed a third phase of evolution, characterised by the emergence of more specialised fintech services and increasing integration with traditional financial institutions. Buy Now Pay Later (BNPL) services have gained traction in markets like Nigeria, where they serve as a significant credit source for micro and small enterprises (CGAP, 2022). The Nigerian BNPL market exemplifies how these services adapt to local conditions, with two predominant models: one providing inventory financing to micro and small enterprises (MSEs) and another facilitating purchases of productive assets or consumer goods (CGAP, 2022).

The quality and depth of financial inclusion achieved through fintech varies considerably, just as high default rates on digital loans present a challenge. In Kenya, 50.9% of people who borrowed through mobile banking apps and 46.3% who borrowed from digital app loans reported defaulting on repayment in 2021, compared to lower default rates for traditional lending sources (KIPPRRA, 2023). These high default rates

raise concerns about predatory lending practices and the potential for digital credit to exacerbate rather than alleviate financial vulnerability. One major concern is the high cost of fintech loans – sometimes equivalent to interest rates over 100%. These outcomes are also shaped by structural inequalities as individuals with higher income, better education and formal employment are more likely to adopt and benefit from digital financial services (Allen et al., 2016). These patterns suggest the risk of reinforcing rather than reducing existing socioeconomic disparities. Moreover, despite a proliferation of digital lenders and efforts to improve data sharing so that reliable borrowers have future loans priced accordingly, there is little evidence that the cost of credit is decreasing through these market mechanisms (Putnam et al., 2021).

Significant regional variations exist in the development and adoption of fintech across Africa, reflecting differences in infrastructure, regulatory approaches and economic conditions. East Africa, particularly Kenya, Tanzania and Uganda, has been at the forefront of mobile money adoption (McKinsey, 2022). West African fintech ecosystems show more diverse patterns, with a more liberal environment in Ghana (where more than half of the population use digital financial services) compared with a history of stronger regulatory limitations in Nigeria (though evidence suggests considerable recent uptake) (Mothobi and Kebotsamang, 2024; Akolgo, 2023; Jalal-Eddeen, 2025), and a distinct use of services like Orange Money in Senegal and other Francophone African countries. In Southern Africa, South Africa holds a relatively high rate of traditional banking, but lower mobile money adoption compared with East African countries, while Mozambique exemplifies the challenges facing lower-income countries in the region, with only 25% of the population using digital finance despite various initiatives to promote financial inclusion (Mothobi and Kebotsamang, 2024).

Regional variations are pronounced on the state of regulatory frameworks as well. After nearly a decade of relatively unregulated digital credit expansion, Kenya's central bank published the Digital Credit Providers Regulations in 2022, requiring all digital credit providers to be licensed and establishing consumer protection provisions (Central Bank of Kenya, 2022). Two years later, additional rules were introduced, though their efficacy has yet to be determined (EY, 2025). Tanzania has adopted a 'mandate and monitor' approach, with digital credit governed under the same regulatory framework that applies to all financial service providers. South Africa follows an activities-based regulatory model centred on the National Credit Act, which has been described as the 'gold standard' in Africa due to its strong consumer protection focus (NCA, 2024). Other countries have relied on 'regulatory sandboxes' as tools for balancing innovation with oversight, including Mauritius (Pervez, 2022). Co-ordination across different regulatory authorities remains a particular challenge on the continent: the banking sector, telecommunications industry and capital markets often fall under different regulatory bodies, creating potential for fragmentation or regulatory gaps in overseeing fintech activities.

Data privacy and security issues are crucial too, with digital lending apps often requiring permissions that grant access to users' private information and behavioural data, which predatory lenders could potentially exploit for harmful debt collection practices when borrowers default (Langley and Leyshon, 2022). At the same time, regulatory harmonisation efforts are gaining momentum, with initiatives like the Fintech Regulatory Framework adopted in August 2023 by the Committee of African Banking Supervisors

aiming to create a more consistent regulatory environment across the continent (European Investment Bank, 2024).

FINANCIAL INCLUSION AND DIGITAL FINANCE IN LATIN AMERICA

Fintech has significantly transformed the financial sector in Latin America over the past decade, disrupting traditional banking services and creating new opportunities for financial access in a context characterised by a large unbanked population, weak competition among traditional financial institutions and high intermediation costs (Frost, 2020). Digital infrastructure has improved considerably across the region, across both internet and mobile penetration (Bakker et al., 2023), yet significant digital gaps persist, particularly between urban and rural areas, affecting the reach of digital financial services to the most vulnerable populations (Aguilar et al., 2024). The COVID-19 pandemic accelerated the expansion of digital financial services across Latin America as mobility restrictions highlighted the importance of remote access to financial services (Auer et al., 2022).

Yet, approximately 45% of the region's adults lack access to bank accounts (Demirgüç-Kunt et al., 2022), an exclusion that has deep structural roots, including high informality, geographical barriers, stringent documentation requirements for accessing traditional financial services (Rojas-Suárez, 2016), as well as high fees and interest rate spreads that have historically discouraged participation in the formal financial system (Cantú and Ulloa, 2020). However, Brazil stands out with 96% of the population accessing bank accounts and other financial services (Banco Central do Brasil, 2021: 8).

Central banks across the region have played a critical role in developing fast payment systems (FPS) that enable immediate, low-cost and convenient payment solutions. These systems have experienced rapid growth, with transaction volumes increasing substantially in recent years (Frost et al., 2024). By the end of 2024, at least 15 countries in Latin America had implemented an FPS, reflecting the global momentum towards modernising payment infrastructure (Aurazo et al., 2024b).

Brazil's app for instant payment transfers, PIX, developed by the central bank, was launched in November 2020, and quickly changed the payment landscape and ignited Brazil's transition towards an increasingly cashless society. By May 2025, PIX had 167 million users and 20 million companies actively using it (of a population of 211 million people). Mexico's CoDi (Cobro Digital) had 20.3 million validated accounts by September 2024, and in Costa Rica, SINPE Móvil had approximately 4.1 million active subscriptions, by August 2024, among a population of slightly more than 5 million people (Aurazo et al., 2024b).

The pandemic-driven shift towards digital payment systems on the continent created both challenges and opportunities for fintech companies and traditional financial institutions and prompted regulatory adaptations to facilitate digital service provision while managing associated risks (Aurazo et al., 2024b). Fintechs and digital banks grew exponentially during the pandemic with 60 fully digital banks operating in the region by 2023, up from just ten in 2017. About three-quarters of their customers are previously unbanked or underbanked consumers and small and medium enterprises (SMEs) (Bakker et al., 2023).

Mercado Libre, the leading digital platform company in Latin America, from Argentina, has moved from online retail to being a significant player in digital payments and credit, with fintech accounting for 34% of its revenue by 2021. The company's fintech business has been praised for overcoming structurally underdeveloped financial markets and promoting financial inclusion. However, its data-driven business model, constantly monitoring and nudging both consumers and sellers means that the result is not financial inclusion for all, but a more accurate identification of who can be a (perpetual) credit subject, that does not seem to be including the unbanked (Franco, Graña, & Rikap, 2024). Another critique of the platform's asymmetric relations with its users is that if someone can't repay a loan, Mercado Libre has more ways to enforce payment than traditional banks or even other fintech companies. They can suspend e-commerce accounts or, for sellers, remove their listings or lower their search ranking. The fear of these consequences acts as a strong incentive to repay. Because Mercado Libre collects so much data on user behavior, some credit recipients might find themselves in a more vulnerable position than if they owed money to a traditional bank (Franco et al., 2024, p. 26).

Digital remittances have expanded significantly in the region, particularly in the Caribbean and Central America where remittance flows are economically vital, as seen by the almost threefold increase between 2017 and 2021, despite a fall in the average transaction value (Bakker et al., 2023). Cross-border payments continue to face challenges, however, due especially to regulatory complexity, correspondent banking relationships and exchange rate management, preventing the same level of efficiency gains seen in domestic payment systems. Initiatives to address these challenges include the development of regional payment systems, such as the Sistema de Interconexión de Pagos (System of Payment Interconnection, 'SIPA') and the Transfer 365 FPS for retail payments among Central American countries and the Dominican Republic (Aurazo et al., 2024b).

While offering potential benefits for productive financial inclusion, the rapid expansion of fintech in Latin America also introduces significant risks and vulnerabilities, particularly for lower-income populations. As digital financial services become more prevalent, concerns about predatory lending practices, reluctance to provide transparent communication about the actual cost of credit products, fraud, cybersecurity breaches, data privacy violations and consumer protection gaps have emerged as critical issues requiring regulatory attention and policy intervention.

The speed and convenience of digital credit can lead to over-indebtedness among low-income borrowers as digital lenders sometimes charge exorbitant interest rates or include hidden fees in their products, taking advantage of information asymmetries between providers and consumers (Aguilar et al. 2024). In Mexico, for instance, some digital lending platforms have been found to charge annual percentage rates exceeding 200% for small, short-term loans targeted at individuals with limited credit histories (Berkmen et al., 2019). Furthermore, collection practices by some digital lenders can be aggressive and potentially abusive, causing significant harm to consumers (Ziegler et al., 2022).

Regulatory gaps and inconsistencies further exacerbate these risks. While traditional financial institutions are subject to extensive consumer protection regulations, many fintech companies operate in regulatory grey areas or under less stringent requirements (Bakker et al., 2023). This regulatory asymmetry can create opportunities for exploitative

practices. In Argentina, for example, digital lenders outside the traditional banking system were initially not subject to the same interest rate caps and disclosure requirements as banks, creating potential for predatory lending (Bakker et al., 2023). Similarly, in Chile, digital wallet providers were not initially required to maintain the same level of consumer protection measures as traditional financial institutions (Cantú and Ulloa, 2020). The lack of adequate recourse mechanisms compounds these issues. Many fintech platforms have inadequate complaint mechanisms and dispute resolution processes, leaving consumers with limited options when things go wrong, an issue we return to in the country sections.

REGULATORY GAPS AND MARKET CONCENTRATION

The evolving nature of digital finance creates significant challenges for regulatory frameworks and institutions designed for traditional financial services. The complex and cross-border nature of many fintech innovations creates potential for regulatory arbitrage. Fintech activities span different types of financial services – deposits, lending, capital raising, insurance, investment management and payments – making comprehensive regulation difficult. Many fintech companies do not take deposits – sometimes called non-bank financial institutions (NBFI) – and therefore fall outside normal regulatory regimes (which are principally designed to protect depositor money). The G7 (2019) have emphasised the need for globally co-ordinated and consistent responses to mitigate cross-border regulatory arbitrage, particularly for innovations like stablecoins that operate across jurisdictions. Traditional prudential frameworks may not adequately address the risks posed by new entrants and business models in digital finance. Regulatory authorities, particularly in emerging and developing economies, often face significant capacity constraints in understanding and supervising fintech innovations (Coelho et al., 2019).

The digital finance landscape increasingly exhibits tendencies towards market concentration that could undermine inclusion objectives and create new forms of financial exclusion. In many settings, mobile money services exhibit, at best, duopolistic market structure (Paelo and Roberts, 2022). Digital platforms benefit from powerful network effects that can lead to winner-takes-all dynamics, even as services like M-Pesa provide a platform on which other services can operate (e.g. lenders). Super apps, which provide end users with a one-stop shop for a variety of services, create ecosystems that connect large numbers of individuals and firms, generating network effects and economies of scale (D'Silva et al., 2019). This 'stickiness' can affect market entry, making it difficult for users to change to another platform (King, 2019; Ruehl and Kynge, 2019). Likewise, the concentration of data among large players creates competitive imbalances that may harm financial inclusion. These companies may leverage their existing large customer bases and data expertise to become central actors in mainstream corporate landscapes rather than niche players in technology, finance or retail (CPMI-World Bank, 2020). This data advantage could allow established players to cherry-pick profitable segments of the population while leaving more vulnerable populations underserved (Bernards, 2019b).

A fundamental challenge in promoting productive inclusion concerns the potential trade-offs between financial stability and broader access to financial services. While digital

innovation can expand financial access, it may also introduce new risks to financial stability if not properly managed (Beck, 2020). This tension requires careful calibration of regulatory frameworks to support innovation while safeguarding the integrity of the financial system. The entry of non-traditional players into financial services creates additional stability concerns as they may fall outside the traditional regulatory perimeter despite performing functions similar to regulated financial institutions (Beck, 2020).

CASE: FINTECH LENDING AND FINANCIAL WELL-BEING IN KENYA

Kenya has one of the most advanced fintech economies in the Africa. After its 2007 launch, the mobile money service M-Pesa quickly became ubiquitous, used not only for peer-to-peer transfers but also an array of commercial functions. Beginning in 2016, mobile money was also widely adopted for further financial services, most significantly loans.¹ By 2019, as many as fifty fintech applications offered credit through mobile money channels. These lenders relied on digital data extracted from mobile phone usage in order to develop credit scoring algorithms for what the industry calls ‘thin file’ customers, referring to those without lengthy histories of bank borrowing. In addition to these novel calculative capacities, the ubiquity of M-Pesa provided a low-cost infrastructure for the dispersal and repayment of loans. Further, the country’s regulators supported the expansion of credit (for instance, through the inauguration of credit reference bureaus) and cultivated a permissive legal regime that, at most, provided a light touch on fintech.

Initial observers heralded digital lending as the next stage in Kenya’s path towards financial inclusion, but by 2019, it was clear that not all access was advancing sustainable development and equality. While fintech loans were accessible, they were overwhelmingly short-term and extraordinarily expensive (with interest rates equivalent to more than 100% APR in some cases). Reports began to surface of increased debt burdens, the misuse of personal data, aggressive repayment pressure and even fintech-related suicides. In 2019, a machine operator described fintech loans as ‘a kind of slavery’. He complained that ‘You don’t know how they calculate interest. I tried to find out but I cannot find out. I was calculating but could not find out’ (Donovan and Park, 2019). This opacity and a sense of exploitation have emerged as common themes.

The limited ability to repay debts was exacerbated by COVID-19, commodity inflation and sovereign indebtedness. By February 2021, 14 million Kenyans were ‘blacklisted’ in the credit reference bureaus (Guguyu, 2021). Subsequent efforts have endeavoured to provide a more effective regulatory regime, but as Mazer and Garz (2024: 93) put it ‘These negative aspects of digital credit have impacted millions of borrowers over the first decade of digital credit in Kenya’.

In contrast to an initial enthusiasm for M-Pesa, the lessons of Kenya’s turn to digital lending are cautionary. The next section discusses the use of fintech loans, particularly how the structure and expense of the financial instruments affects their use by Kenyans. The subsequent section presents evidence of fintech’s role in the declining financial health of Kenyans. The final section discusses lessons for governance and regulation.

¹ A smaller number of savings and insurance products also use the mobile money networks, but these have not reached the same scale as credit facilities.

The growth and effects of fintech in Kenya

Fintech was a major driver of financial inclusion in Kenya. At its beginning, M-Pesa became a ubiquitous means of payment. Later, fintech generalised access to consumer debt markets through the provision of nearly instantaneous loans calculated automatically and paid through M-Pesa. Between 2012 and 2018, the proportion of Kenyans with credit access nearly doubled from 19.8% to 38.7%. During the same period, the number of Kenyans taking digital loans grew from none to 21%. Of the adult population, 12.8% were accessing exclusively digital credit (i.e. no traditional sources) (Johnen et al., 2021). The growth was even more vertiginous in subsequent years: by 2021, 74% of Kenyans were reported to have access to credit, 'driven in large part by digital credit' (Mazer and Garz, 2024: 82). From the perspective of the Central Bank of Kenya's FinAccess Household Survey Report (2024: 35), the increase in Kenyans with credit access from 34% in 2016 to 64% in 2024 'may be attributed to the rise of app-based digital loans and mobile money credit'.

These new borrowers tend to be poorer and less educated than traditional borrowers, yet women have been included less in regulated digital lending. In fact, the large growth of the new market actually *increased* the gender gap between men and women who were financially included. In other words, because men were using fintech loans so much more than women, the overall difference in access to finance widened. This is largely attributable to women's pre-existing barriers to education and income, but it is also the result of the product design of the largest digital lender, M-Shwari, which privileged male borrowers' economic attributes (Johnen and Mußhoff, 2023).

What are fintech loans used for? While proponents often champion their utility in commercial investment, a national survey in 2019 found that the loans are most often used for basic household and emergency expenses. Around three quarters of digital borrowers were using fintech for basic personal consumption (FinAccess, 2019: 13). Data from the following year suggests the same pattern: among the nearly 800 borrowers surveyed, purchasing household expenses was the most commonly reported use of loans (Putnam et al., 2021). Likewise, economists found no statistically significant evidence that users could translate loans into increased savings or asset ownership: indeed, 'given the [small] size of these loans, this is to be expected' (Suri et al., 2021: 3).

The design of fintech loans, however, raises questions about the utility of these instruments. Most of the products on offer are short-term, usually 30 days, and renewable twice. Short-term working capital may have some utility, but it is hardly the patient capital needed for productive investment.

Figure 1. Interest rates for major Kenyan fintech lenders

	M-Shwari	KCB M-Pesa	Equity EAZZY Loan	Tala	Fuliza
<i>Loan interest rate (monthly)</i>	7.5%	3.66%	3.66%	15%	–
<i>Loan interest rate (APR)</i>	90%	44%	72%	180%	148.5%

Source: MSC 'Making Credit Truly Responsible', 2019.

In addition, fintech loans are very expensive. This is particularly notable because digital lending is far cheaper than doing so at brick-and-mortar bank branches. Industry leader M-Shwari charges 7.5% of the loan amount, repayable in thirty days. If the loan is not repaid, it is rolled over for another thirty days with an additional 7.5% fee. The Competition Authority of Kenya (CAK) refers to this as a 'penalty rate', and across their sampled lenders, CAK found the median and mean penalty rate incurred by late borrowers to be 12% and 52%, respectively. A related concern is that many borrowers (37.5%) repay their loans early, effectively paying a full month of interest rate while only using the capital for part of the month. The CAK authors calculate an 'effective APR', finding a mean effective APR of 280.5% and a median effective APR of 96.5%. Women are somewhat more affected, paying an average of 269% effective APR compared to men's 252%.

The cumulative effect of these fees is that if fintech loans were assessed according to the industry-standard APR, their costs would far exceed the interest rates of banks. Combined with the reality that most loans are being used for personal consumption, the effect of this is to add a significant surcharge onto food or other household expenses. One study found that frequent, reliable borrowers were actually charged higher interest rates over time, suggesting creditworthiness is not being rewarded (Putnam et al., 2021: vi–vii).

Moreover, during the years 2012–2018, when fintech loans were increasing rapidly, there was not an increase in loans issued by banks. This suggests that inclusion in digital credit does not facilitate 'a substantive pathway to formal credit' (Johnen et al., 2021: 6). One reason for this is that it seems fintech companies were only sharing *negative* data with credit bureaus, a practice that seems driven by efforts to 'hoard' good customers from competitors. In turn, reliable borrowers were unable to prove their good credit standing to other institutions, thereby limiting the emergence of a competitive credit market.

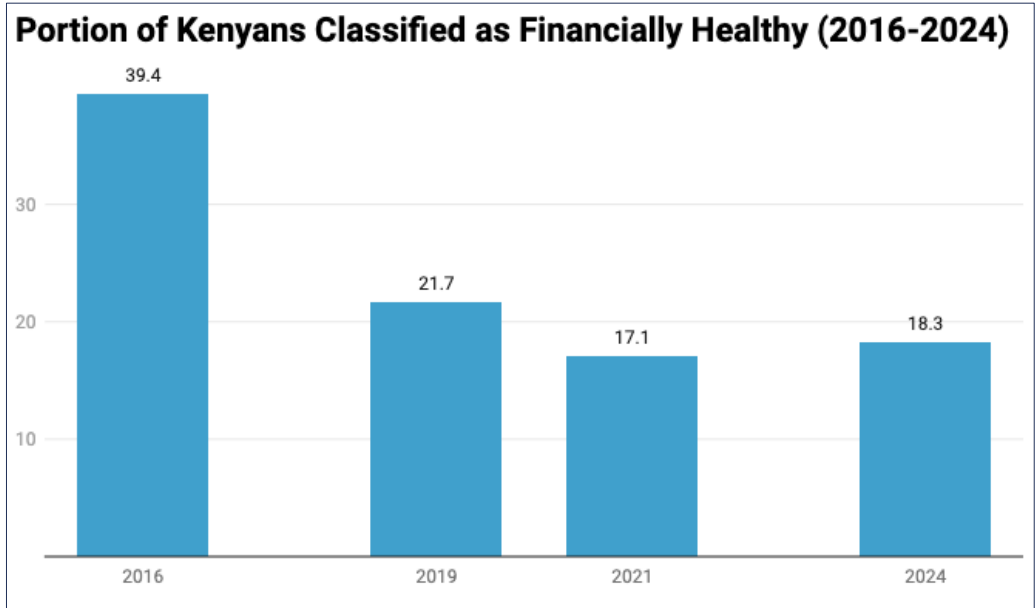
One final development was the launch in 2022 of what Kenyan President William Ruto called 'the Hustler Fund', a government initiative to issue digital loans (Muinde, 2023). For Ruto, this was an important part of an economically populist campaign which promised to support small entrepreneurs and others (Lockwood, 2023). When it was launched, many Kenyans were willing to borrow from it – with more than 20 billion shillings (around US\$169 million) lent in months – but subsequent reporting found the Fund was subject to large amount of non-repayment. As with private lending, many

Kenyans used the loans for daily needs, unable to invest in productive enterprises. Others have raised concerns that the funds were misappropriated by elites, after an audit found a large number of loans given to minors or even the unborn (Mburu, 2025).

Fintech and declining financial health

Beginning in 2016, national survey results were used to construct an index of ‘financial health’. Modelled after the Global Multidimensional Poverty Index, this measured Kenyans’ ability to (a) manage day-to-day needs, (b) cope with shocks and (c) invest in future goals. There has been a decline in the portion of Kenyans classified as financially healthy over the four cycles it has been calculated (2016–2024). As summarised in 2021, the steady decline ‘calls into question the assumption that financial inclusion in its current form will necessarily lead to improvements in financial well-being’. While there have been important macro-economic difficulties during this period – including COVID-19, sovereign indebtedness and price inflation – it is notable that this decline began before 2020 and has not meaningfully recovered from its 2021 trough.

Figure 2. Portion of Kenyans classified as financially healthy (2016–2024)



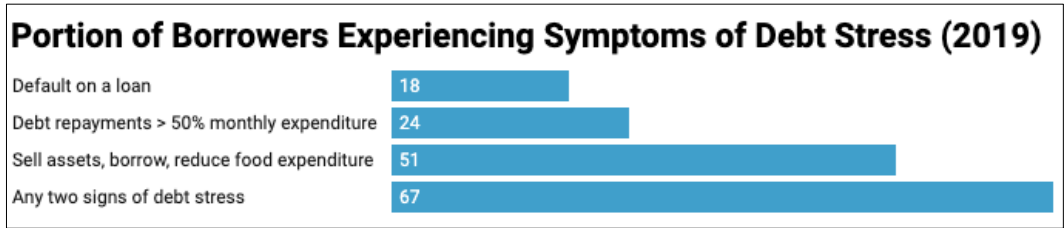
Source: FinAccess surveys 2016-2024.

The 2024 report finds that only 18.3% of adults are able to meet day-to-day needs, cope with shocks and invest in the future. Overall, women fare worse than men and the poor worse than the wealthy, and Kenyans who depend on agriculture or casual work are in worse financial health than those who are employed or own a business (FinAccess, 2024).

How are financial technologies and financial health linked? Ideally, novel instruments for saving, borrowing, payment and insurance would facilitate improved financial health, but evidence from Kenya suggests that since 2016 fintech has had the opposite effect. Much of this is linked to the predominance of digital debt in fintech models: the focus on lending to previously excluded Kenyans has increased *debt stress* to worrying degrees.

Evidence of debt stress includes: (i) defaulting on loans; (ii) repayment accounting for more than 50% of monthly expenditure; and (iii) selling assets, borrowing again, or reducing food expenditure to repay loans. By 2019, 67% of borrowers were experiencing at least two indicators of debt stress.

Figure 3. Percentage of borrowers experiencing symptoms of debt stress (2019)



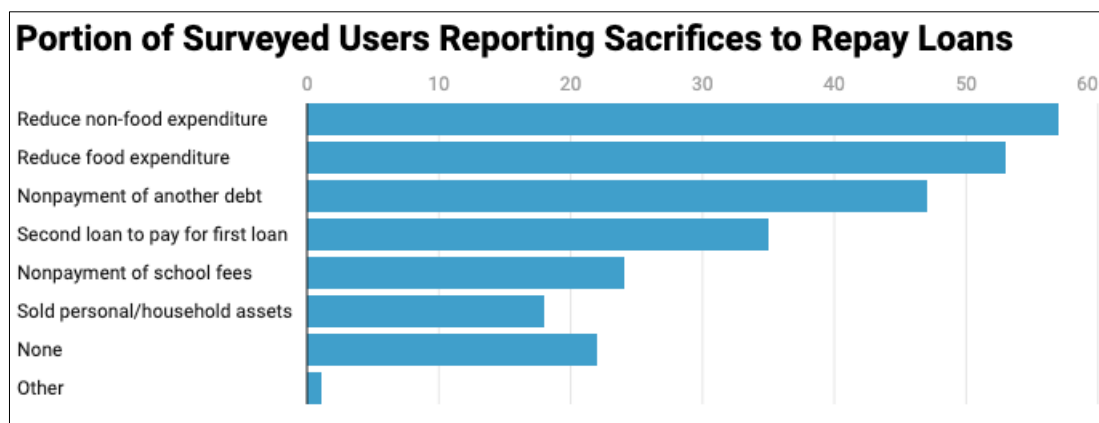
Source: FinAccess 2019.

Subsequent research identifies additional evidence that fintech loans exceed people’s ability to manage their debts, including: sacrificing and loan stacking to repay debts; late repayment and complete defaults; blacklisting by credit bureaus.

Having fallen into these already difficult situations, borrowers often experience additional consequences, including being subject to aggressive repayment efforts and having bad credit reports limit future opportunities. One high profile phenomenon involved the use of phone contact details by collection agents who called family and colleagues in an effort to pressure defaulting borrowers to repay their loans. Such social shaming was highly offensive to many Kenyans, and it was not an expected use of their personal information. Another study found that the burden of fintech debt was undermining financial security and economic independence of sex workers, including encouraging risky decision-making (Macharia et al., 2023).

Sacrificing and loan stacking to repay debt: Determining ‘how much debt is too much debt’ is never easy, but one indicator of over-indebtedness is whether borrowers need to sacrifice other consumption or borrow again in order to make repayments. A (pre-COVID-19) 2020 survey by the CAK found that most fintech borrowers reduced food and non-food expenditure to repay loans (Putnam et al., 2021). A third reported taking a new loan or not repaying a different loan. Around a quarter reported not paying school fees, while nearly 20% reported selling assets to repay a loan.

Figure 4. Percentage of surveyed loan users reporting sacrifices to repay loan



Source: Redrawn from Putnam et al., 2021.

A 2024 national survey found a variety of repayment strategies, including borrowing again (33%), using savings (49%) and reducing food consumption (60%). ‘Loan stacking’ refers to borrowing either serially or simultaneously, and evidence suggests it is a common strategy. In 2019, 62% of borrowers had more than one digital loan. A different study from the months just prior to COVID-19 found that 33% had multiple loans; after the onset of the pandemic, they found 44% were taking multiple loans. The rationale for such borrowing include meeting emergencies (52%), overcoming the small size of loans (35%) or repaying a prior loan (7%).

Late repayments and full defaults: While some Kenyans are able to scrap together enough money to repay their debts, many struggle to do so. Data from credit bureaus between 2016–18 found that of 16.4 million digital loans, 16% were classified as ‘non-performing’, meaning they were unpaid for more than 90 days. Around half of these were for less than US\$10 (MSC, 2019: 4). A 2020 survey found 77% of borrowers were late repaying loans at some point (Putnam et al., 2021). In 2019, the rates of default were notably higher for fintech loans (13.8%) than bank loans (6.4%), but it is also worth noting that the highest portion of defaults is for so-called ‘shop credit’, where a shopkeeper sells goods without immediate repayment (FinAccess, 2019).

Blacklisting by credit bureaus: Default can lead to ‘blacklisting’ in credit bureaus, meaning failure to repay with one provider may lead to exclusion from other instruments. In March 2017, MSC found more than 2.7 million negative listings for mobile loans in credit bureaus, with digital borrowers more likely to be listed than bank borrowers (MSC, 2017). In addition to jeopardising future borrowing, this can have consequences for access to jobs, housing and other outcomes: in 2019, university graduates complained that to apply for employment they needed to bring a certificate from credit bureaus (Donovan and Park, 2022). The outcry was so severe that in 2023, President Ruto announced millions of blacklisted Kenyans were being removed from the lists (Mumbi, 2023). While this may be an appropriate response, it also calls into question the utility of credit bureaus as financial records.

Box 1. Financial literacy and financial opacity

The improvement of financial literacy is often considered a means to improve the outcomes of borrowing. Indeed, studies suggest many Kenyan fintech users are unfamiliar with the specific costs of borrowing. A 2020 survey found that only 27% of fintech borrowers knew the fees charged by providers; a 2024 study found 20% of Kenyans were unable to compute the cost of 10% interest on a loan of KSh. 1,000. Most surveyed Kenyans report relying on themselves or friends and family for financial advice, rather than specialist institutions (FinAccess, 2024: 49–50).

However, there is also evidence that many Kenyans have an adroit sense of finance. Kenya's central bank created a Financial Literacy Index which is composed of answers to three questions in a national survey. These questions test knowledge of interest rates, inflation and risk diversification (FinAccess 2024).¹ A large portion of Kenyans do fairly well – especially those with some degree of schooling. In 2024, 42.1% of Kenyans were deemed highly financial literate, 40.6% literate and 14.5% partially literate.

Perhaps more important than limited financial literacy is the opacity of fintech, impeding the full financial comprehension of borrowers. For instance, until 2016, M-Shwari did not disclose the cost of its loans before borrowing. Price shrouding, hidden fees and non-standard disclosures are all common in fintech (Cassara et al., 2024: 36–60). In 2021, nearly a third of users reported 'unexpected or unclear charges' from fintech (CBK, KNBS and FSD Kenya, 2021: 36). In part, this is because early repayment, late repayment and loan rollover can meaningfully change the cost. In other cases, fintech companies are bundling insurance, appraisal fees and excise taxes in ways that are not always evident. It is therefore important to combine financial literacy promotion with consumer protection rules (see IPA 2024). But it is equally important to bear in mind that 'studies on financial literacy show a very limited effect... on financial behaviour, including savings behaviour' (World Bank, 2015: 53).

Governance and regulation of fintech

Kenya's worrying trajectory should be seen in light of a decade of policy-making. While the government's 'test and see' approach to M-Pesa has widely been lauded (Tarazi, 2010) – wherein the central bank worked with Safaricom to monitor but not regulate mobile money innovations – the same approach has been critiqued by observers concerning fintech lending. The structural power of Safaricom and financial institutions inhibited rule-making (Upadhyaya et al., 2025). One industry participant said 'There is no honeymoon period. One day you have no credit access, and the next day you have very bad actors' (quoted in Mazer and Garz, 2024: 94).

Instead of a unified and purpose-driven approach to fintech, the government of Kenya has what two experts characterise as 'piecemeal supervision, ad hoc enforcement, and anti-competitive market concentration to the detriment of consumers' (Mazer and Garz, 2024: 86). They note that policies have been too late and too narrow, with limited resourcing and enforcement. The Central Bank of Kenya (CBK), for instance, still lacks a dedicated consumer protection unit. Instead of formal rules, 'regulatory ambiguity...

resulted in increased consumer risks, lack of accountability, and an uneven playing field' among providers (Mazer and Garz, 2024: 89).²

Some efforts in 2016 and 2018 to improve consumer protection and introduce a market conduct authority were resisted by regulators and subsequently abandoned. Eventually, more substantive efforts were introduced. Some focused on aggressive recollection, such as the 2022 Digital Credit Provider Regulations, which prohibited accessing borrowers' contact lists, posting their information online to shame them and unauthorised calls or messages to contacts. Other efforts required fintech lenders to write off non-performing loans, for example the 2022 Credit Repair Framework, which required digital lenders to discount by at least 50% non-performing loans, reclassify those affected as 'performing' rather than 'non-performing' and enter into a new, more affordable repayment plan. The Central Bank of Kenya estimated this latter framework would affect 4.2 million borrowers with an outstanding loan value of US\$210 million – indicative of the extent of the over-indebtedness crisis. Further changes in 2024 removed the category of 'digital credit provider' to regulate all non-deposit-taking lenders in the same way, with requirements to follow credit pricing models (currently being debated in Kenya) (EY, 2025).

Regulators should be alert to signs of over-indebtedness discussed above and actively monitor borrower complaints, perhaps through an ombudsman or similar authority. The CAK Market Inquiry focused on the fact that early repayment still results in the full monthly fee being charged. In response, the authors advocated refunding a portion of charges for early repayment. They also advocated reducing the fees charged to consistently reliable borrowers. Overall, prices should be reasonable and costs transparently displayed in ways that are intuitive to people without considerable financial experience. Fintech lenders should be encouraged or required to use risk-based pricing that rewards reliable repayment, and a wider suite of credit instruments (i.e. with longer terms) should be incentivised. Competition policy must be designed to avoid consolidation and encourage price reductions and market innovations.

Credit data sharing rules need to address privacy, which is relevant given that fintech firms collect highly detailed, personal information and disclose it to third parties (CIPIT, 2021). In 2022 the Kenyan Office of the Data Protection Commissioner noted more than half of the complaints it had received were about fintech firms and began an audit of 40 non-bank fintech lenders (ODPC, 2024). Credit data should also encourage accuracy and risk-based pricing. Individual autonomy could be furthered by allowing users to move their data held by one fintech provider to another. But, in addition, there needs to be due consideration to fair lending rules. Gendered and racial biases in credit calculations have a long-standing pedigree, and an era of big data and algorithmic scoring raise questions about auditing credit decisions in order to ensure women and others are not unfairly excluded or priced.

Relatedly, it would be a mistake to see the harms of fintech lending as addressable by policies targeting digital data and debt alone. It is also necessary to understand the problems of fintech as symptomatic of wider troubles, including a limited social safety net and public services that are costly, ineffective and out-of-reach. Reducing the need

² In a notable case, NCBA and Safaricom were able to convince the courts that the 7.5% charge on 30-day loans by their product M-Shwari was not an 'interest rate' but instead a 'facilitation fee' – meaning it was regulated like a non-bank and exempt from limits on interest rates. The CAK Market Inquiry study notes that 'Banks exploited this loophole' of reclassifying interest rates as facilitation fees (Putnam et al., 2021: 31).

for money to access reliable healthcare and schooling, for instance, would eliminate major drivers of indebtedness, as would providing cash transfers or work guarantees that ensure a universal income floor. Unlike savings and loans – which move money across time – social safety nets provide new resources to vulnerable populations, lessening their need to balance competing pressures.

CASE: FROM FINANCIAL INCLUSION TO FINANCIAL CITIZENSHIP IN BRAZIL

Brazil is at the forefront of financial inclusion after two decades of facilitating access to banking and other financial services, today accessed by 96% of the population (Banco Central do Brasil, 2021: 8). The roll-out of consumer credit for low-income populations has been driven by policies on financial inclusion and financial citizenship, as will be examined below, but also a comprehensive reform agenda that encouraged the rise of new players and new business models in Brazil credit market (Barroso, Barata and Nechio, 2019). Brazil has become a hub for start-ups, including fintechs that have been transforming Brazil's banking sector and credit industry and accelerated inclusion of Brazil's low-income population by digitising services and financial products, reducing bureaucracy, eliminating fees and automating credit assessments powered by AI, big data and predictive analytics. Financial inclusion is often heralded as a strategy for poverty reduction, but with the inclusion into Brazil's highly digitised economy, debt from consumer credit has reached record-high levels among Brazilians. In the wake of the COVID-19 pandemic it reached above 78%, decreasing to 76.1% in January 2025 (CNC, 2024; Saraiva, 2025). This has driven the record-high revenues reported in the financial sector. The population is increasingly using credit to sustain daily life and necessary consumption, compensating for insufficient income. Worryingly, the low-income population has recourse only to the most expensive credit and experiences the highest default rates (Sarno, 2020; Banco Central do Brasil, 2021).

This case study on Brazil starts by tracing the proliferation of consumer credit for the poor. This development has been central to policies on what the Brazilian government coins financial citizenship that encompasses four interconnected pillars examined below. Then, the section traces recent developments around governance, data protection and financial justice and proceeds by discussing speculative lending practices and how these pose limits to the effects of promoting financial education, one of the four pillars of financial citizenship. These three sections draw on fieldwork conducted in São Paulo and Bahia (2023–24) on digital finance and credit among actors in the financial sector and low-income families.

The final section turns to insights from ethnographic research conducted in Bahia between 2012–2024. It shows that for families living below the poverty line, access to credit mediated by digital credit services, coupled with their engagement in informal credit practices (such as buying on tab at local stores and vendors), created a 'double burden of debt' (Kolling, 2020). Hence, as research in other regions has documented (James, 2015; Green et al., 2023), gaining access to credit offered by the financial sector does not necessarily replace the informal credit market; the two develop in tandem. For Brazil's central bank, promoting financial inclusion initially meant: 'providing access to financial services adequate to the needs of the population' (BCB, 2009). The concept was expanded to be the 'process of effective access and use by the

population of financial services adequate to their needs, contributing to their quality of life' (BCB, 2010). In the central bank's financial inclusion report from 2015, it 'defined full financial inclusion as the "state in which the entire population has access to and makes use of, in a simple, balanced, and conscious manner, financial services that bring well-being gains to the citizen, conveniently and at affordable prices"'. (Banco Central do Brasil, 2018: 14).

Since 2013, the financial inclusion agenda has become part of a wider agenda of developing financial citizenship that concerns rights and duties that enable 'a citizen to manage well his or her financial resources, in a context structured for the well-being of individuals and the financial stability of the country' (Banco Central do Brasil, 2018b: 8). They have sometimes linked this to an agenda of 'financial democratisation' (Banco Central do Brasil, 2021: 5). Financial citizenship encompasses four interconnected pillars: financial inclusion, financial education, consumer protection within financial services and active participation in discussions about the financial system, as illustrated in Figure 5 below. Recognising this as a long-term endeavour, the central bank emphasises the need for integrated efforts across these areas, noting that even gradual progress signifies advancement (Banco Central do Brasil, 2018a: 8).

Figure 5. Elements of financial citizenship



Source: Banco Central do Brasil, 2018.

The proliferation of consumer credit through digital finance

Credit is considered an important aspect of financial citizenship by Brazil's central bank and an important opportunity and service for people's financial management and well-being (Banco Central do Brasil, 2021: 14; Banco Central do Brasil, 2018a: 21).

Brazil experienced a decade of economic growth, from the early 2000s to 2013. During this period, with the centre-left Workers' Party government (2003–2016), consumption was perceived as a right, and access to productive and consumer credit became a tool for poverty reduction and a means to both financial and social inclusion (Badue and Ribeiro, 2018; Barone and Sader, 2008; IPEA, 2014). Financial inclusion policies sought

to improve access to banking and credit services for previously unbanked, poor Brazilians by expanding financial infrastructure and promoting new services and products (Nakane and Rocha, 2012). The distribution of the Bolsa Família programme to millions of families across the country via the public bank Caixa Econômica Federal further facilitated this inclusion. In 2024, 20,7 million families were enrolled, receiving monthly stipends. This amounts to 54,3 million people out of a population of 211 million.³

Policies and initiatives have encouraged private sector financial inclusion and direct credit towards the poor. For instance, in 2003, a federal law mandated that private banks allocate 2% of deposits to low-income lending (Barone and Sader, 2008). Banks responded with new loan options and increased credit card offerings. By 2013, 76% of Brazilians held a debit or credit card (ABECS, 2013). Brazil's financial sector continued to push for debit and credit card growth to expand the formal economy and financial access (Casacchi, 2018). Consumer debt started to become normalised among low-income households, with the IMF noting the 'robust expansion' of credit cards across all income groups (IMF, 2013: 7).

A popular feature of credit cards in Brazil, both among retailers and consumers, is that any purchase can be divided into multiple monthly instalments, at varying and often obscured interest rates, and paid over time. Moreover, when a credit card bill arrives, the holder can choose to either pay the full amount or a minimum amount, rolling over the remaining balance. However, this extended payment comes with extremely high interest rates, the highest in the market, reaching above 450% annually on the original debt (Villela Haury, 2023; UOL Economia, 2025). Although a law enacted in January 2024 aimed to limit revolving interest on credit card debt to 100%, banks do not appear to be adhering to this regulation, and therefore the problem of exorbitant credit card interest persists (UOL Economia, 2025).⁴

As such, credit cards are the most common and among the most expensive form of consumer credit in Brazil (Banco Central do Brasil, 2018; CNC, 2023). This includes retailer-issued credit cards, which often merely require a valid ID and a tax ID (a personal registration number with the Internal Revenue Service), which are documents millions of poor women were incentivised to obtain to sign up for cash transfers. Many store cards are co-branded with international networks and operated by fintechs. Digital banks have further propelled credit card access, as financial liberalisation and new business models have also encouraged new entrants. The digital banks offer credit cards with no or low fees. Since 2016, there has been a steady increase in digital credit from fintech lenders. Between 2019 and 2022, fintech and digital bank credit card users surged by 310%, from 8.9 million to 36.5 million (Banco Central do Brasil, 2023: 55).

Before fintech disrupted the banking market, Brazil's five largest banks (Bradesco, Itaú, Caixa Econômica Federal, Banco do Brasil and Santander) had nearly 90% of the credit card market share. By 2022, the credit card market share by fintechs and digital banks

³ Government website announcing 20,7 million families enrolled in Bolsa Família: <https://www.gov.br/secom/pt-br/assuntos/noticias/2024/09/bolsa-familia-contempla-54-milhoes-de-pessoas-brasileiras-em-setembro>

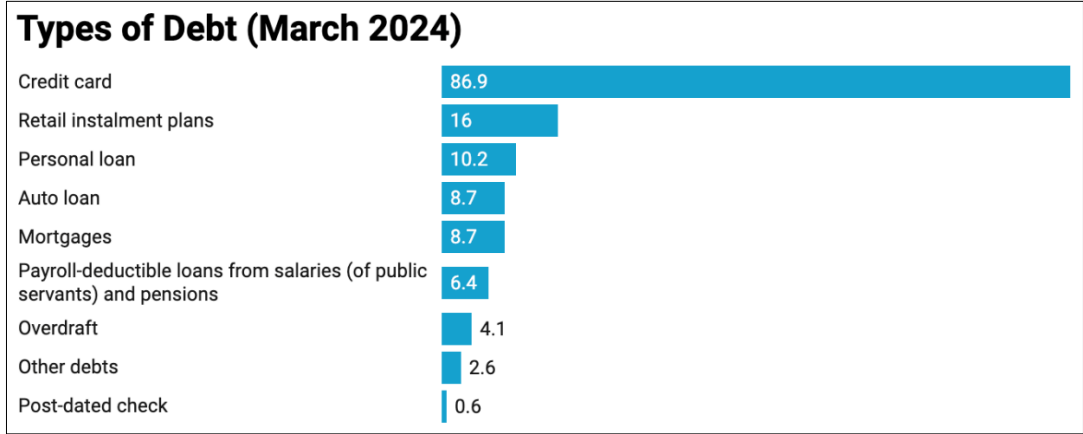
⁴ Brazil's central bank monitors the effects of this legislation by displaying accumulated percentages of the amount of interest and financial charges on revolving and instalment credit card operations: www.bcb.gov.br/estatisticas/juros-cartao-de-credito. On the law to cap credit card interest rates, see <https://www.bcb.gov.br/detalhenoticia/775/noticia>

had reached approximately 31%, spurred by lower-income clients, including clients with no proven income (Fitch Ratings 2023).

By the end of 2024, there were 235 million active credits cards in Brazil, more than the total population of 211 million.⁵ However, the credit card market is in competition with a steady increase in the buy-now-pay-later market and new payment and installment solutions, such as the new feature in the instant payment system, PIX. The new feature called ‘Automatic PIX’, will enable paying for a purchase in installments. This is a key feature of credit cards’ appeal to all income groups in Brazil. While the preferences towards particular consumer credit modalities might change in the near future, the use of installments will continue, and the risk of accruing debt.

The graph below shows the main types of formal household debt in Brazil in March 2024, demonstrating the dominance of credit card debt. Credit card debt represented a substantial 86.9% of household debt, and reinforcing its position for years as the most frequent type of debt. The survey was conducted by the National Confederation of Trade in Goods, Services and Tourism, which produces regular reports on household debt in Brazil.

Figure 6. Types of debt in Brazil (in percent) (March 2024)



Source: Confederação Nacional do Comércio de Bens, Serviços e Turismo (National Confederation of Trade in Goods, Services and Tourism).

Credit as social policy

In Brazil, the expansion of the credit market has been modelled on liberal economies such as the US and the UK, where credit has been embraced as a form of welfare policy and a means to promote economic prosperity without having to fight for higher wages or accept a more redistributive welfare state (Lavinias, 2017: 640). Different governments have launched consumer credit initiatives as social policy. One example is the federal credit scheme, launched in 2013, *Minha Casa Melhor* (My Better House). It offered beneficiaries of the flagship public housing programme *Minha Casa Minha Vida* (My House My Life), a credit card with BRL 5000 at a 5% interest rate per year with up to 48

⁵ Brazil's central bank on credit card use and the number of active credit cards: [people.https://www.bcb.gov.br/detalhenoticia/20616/nota?utm_source=\(direct\)&utm_medium=newsletter&utm_campaign=will-brazil-retire-credit-cards&_bhlid=247916f1bfc8789055c3c229bead993a4c2f260f](https://www.bcb.gov.br/detalhenoticia/20616/nota?utm_source=(direct)&utm_medium=newsletter&utm_campaign=will-brazil-retire-credit-cards&_bhlid=247916f1bfc8789055c3c229bead993a4c2f260f)

months to pay. It was designated for furniture and kitchen appliances in 13,000 accredited stores nationwide.⁶

In 2022, to remedy income scarcity, another federal consumer credit initiative was launched during presidential elections, when Bolsonaro (2019–2022) was seeking re-election. The *Programa Renda e Oportunidade* offered, among other initiatives, consumer credit to beneficiaries of poverty reduction programmes including recipients of the cash transfer programme who were offered loans at a monthly interest of 3.5%, directly deducted from monthly payments (up to 40% for two years).⁷ It resulted in significant debt for many women, the beneficiaries of the programme, contributing to record-high national debt levels by the end of 2022 (BBC, 2023).

Despite the pandemic's impact on incomes, the federal government took limited action to suspend debts related to mortgages, rents or current accounts (Lavinhas and Lins, 2024). Following the Workers' Party's return to office in January 2023, the government announced the *Desenrola Brasil* debt renegotiation programme to assist those burdened by loans from the 'Income and Opportunity Programme' and other low-income groups. Initially targeting 32 million people with defaulted debts from 2019–2022 registered with credit bureaus as federal public policy to improve households' financial well-being, by the end of 2023 the programme had reached nearly eleven million people. It primarily focused on renegotiating consumer bills and later expanded to include micro-entrepreneur and student loans (Lavinhas and Lins, 2024).

Meanwhile, the Lula government has also expanded access to credit by introducing a law that enables people working in the private sector to obtain payroll loans with favourable conditions and reduced interest rates, following the existing model serving civil servants. The law was adopted in March 2025. It was introduced in response to the high percentage of 60 % of workers in Brazil, reporting having difficulty making ends meet at the end of the month and 83 % reporting that they have to resort to loans in case of a financial emergencies. Facilitating access to the payroll loans, which has a lower interest rate in comparison to the general credit market in Brazil, was therefore intended to improve 'workers' financial health' through credit.⁸

Beyond *Desenrola Brasil*, the credit sector frequently organises debt renegotiation initiatives that aim to help consumers manage debt and achieve financial recovery, like the latest debt renegotiation campaign by Brazil's prominent digital bank, Nubank. The initiative 'offers discounts of up to 99.9% and special conditions to help customers manage their debts and achieve financial recovery'.⁹ Credit bureaus organise annual 'debt fairs', advertised through large public campaigns announcing huge discounts on loans, similar to the Nubank campaign, which attract a lot of people seeking help to

⁶ Credit scheme for beneficiaries of flagship housing project: Cartão 'Minha Casa Melhor' financiará móveis, eletrodomésticos e eletrônicos: https://www.gov.br/mdh/pt-br/navegue-por-temas/politicas-para-mulheres/arquivo/area-imprensa/ultimas_noticias/2013/06/13-06-2013-cartao-201cminha-casa-melhor201d-financiara-moveis-eletrrodomesticos-e-eletronicos

⁷ More information on the federal government programme 'Income and Opportunities': <https://oglobo.globo.com/economia/noticia/2022/09/consignado-do-auxilio-brasil-tera-juro-de-ate-35percent-ao-mes-taxa-e-maior-do-que-a-do-inss.ghtml> www.gov.br/mds/pt-br/auxilio-brasil/credito-consignado

⁸ For more on the new bill adopted March 2025 that allows payroll loans to private employee from the 'credit news' at Serasa Experian's website: <https://www.serasaexperian.com.br/sala-de-imprensa/servicos-de-credito/consignado-privado-nova-mp-viabiliza-mais-credito-com-tecnologia-conectividade-e-automacao-como-pilares-para-uma-implementacao-eficaz/>

⁹ For more information on Nubank's debt renegotiation campaign: <https://international.nubank.com.br/pt-br/consumidores/nubank-lanca-recomeco-campanha-de-renegociacao-de-dividas/>

refinance their debt. These fairs have increasingly become digital events and ongoing throughout the year, like the one by the biggest credit bureau in Brazil, Serasa Experian, that offered negotiation opportunities with up to 90% with more than 200 companies ‘to become debt-free’.¹⁰ These debt fairs recognise that over-indebtedness and the inability to repay loans are major phenomena, but while they offer relief, they are not necessarily attempting to wipe away loans in perpetuity. Lenders have an interest in re-issuing loans almost immediately following the write-offs in the same manner as the *Desenrola Brasil* programme, which aimed to restructure lower-income household debt and to assist households in default to regain access to credit (IMF, 2024).

Governance, data protection and financial justice

Data about people’s personal and financial lives is a cornerstone of the credit market, exchanged among financial institutions and Brazil’s credit bureaus, which analyse it for credit scoring and sell it to credit providers. Consequently, the methods of data collection, storage and commercialisation significantly affect individuals’ credit access and terms. The enactment of Brazil’s General Data Protection Law ‘*Lei Geral de Proteção de Dados*’ (LGPD) in August 2020 was therefore a major development. This federal law, inspired by the EU’s GDPR, unified 40 existing laws to regulate the processing of personal data in Brazil. The LGPD established rules for the collection, use, processing and storage of personal data and applies to any business or organisation that processes the personal data of individuals in Brazil, regardless of where the entity is located. It is enforced by the National Data Protection Authority (*Autoridade Nacional de Proteção de Dados* – ANPD), an authority under the Brazilian Ministry of Justice and Public Security.

The ANPD oversees and regulates how organisations handle personal data in accordance with the LGPD, and includes monitoring compliance and applying sanctions for violations, issuing guidelines for the law’s implementation, reviewing and approving data protection impact assessments, and promoting the adoption of standards for services and products that enhance personal data protection (Jones Day White Paper, 2024). In July 2024, the ANPD suspended the implementation of a new privacy policy by Meta until it submitted an acceptable Adjustment Plan. The privacy policy concerned the use of personal data for training generative artificial intelligence systems processed within Meta’s platforms, such as Facebook, Messenger and Instagram. The ANPD has also opened an investigation of four banks for allegedly using personal data from the Brazilian National Social Security Institute (INSS) to make unsolicited credit offers to individuals receiving Social Security benefits. This investigation was triggered by complaints from individuals who were contacted by financial institutions with credit offers linked to their benefits, leading the ANPD to examine the data sharing practices between the INSS and these banks (Jones Day White Paper, 2024).

In Brazil, people are bombarded with credit offers through telemarketing, direct messages on social media platforms and advertisements in both digital and public spaces. Throughout Kolling’s fieldwork (2023–24), people reported such instances as common occurrences, never knowing how the credit providers got their number or how they knew that the person had, as in the case above, been granted a social security

¹⁰ For more on Serasa Experian’s debt renegotiation scheme: <https://www.serasa.com.br/limpa-nome-online/feirao/>

benefit, or paid an outstanding debt and been removed from a credit bureau's list of people with defaulted debt.

If individuals face rights violations concerning their data, or regarding undisclosed fees or interest rate hikes, seeking help can be challenging. Whether mediated digitally, which is often the case, or when there is a physical store or bank branch involved, direct engagement with credit providers generally proves ineffective, though other avenues exist. One option is the Consumer Protection Agencies, present in every Brazilian state capital and sometimes at the municipal level. These agencies aim to enforce consumer protection policies, and typically offer debt negotiation services, although the process can be lengthy. Another avenue is the judiciary, increasingly used for issues like digital financial fraud and scams, which saw a significant rise in Brazil post-pandemic. Between 2018 and 2022, registered fraud grew in Brazil by 326.3% (FBSP, 2023: 94). However, legal proceedings can also be time-consuming, and outstanding debts continue to accrue interest regardless of the legal dispute.

Faced with these limitations, many people resort to social media platforms and websites like *Reclame AQUI* to report issues with companies and their services, including banks and other credit providers. The online forums provide a space for complaints that can potentially put the companies' reputations at stake and pressure them to improve their services and transparency measures. Still, when companies do not respond to that pressure, it merely offers people a space to vent their frustrations, and perhaps, seeing that others experience similar problems can offer a sense of moral support in struggles around indebtedness often cast an individual problem. This can then spark a sense of agency to be able to warn others, as some interlocutors reported.

The limits of financial education in combatting over-indebtedness

Financial education was among the four pillars of the central bank's financial citizenship agenda. Today, the Central Bank of Brazil adopts the Organisation for Economic Co-operation and Development's (OECD) definition of financial education, which defines it as 'the process by which financial consumers and investors improve their understanding of financial products, concepts and risks and, through information, objective advice, developing the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being'. This OECD definition was adopted as the basis of Brazil's National Strategy for Financial Education in 2010 (Ribeiro 2020), prompted by OECD's efforts to promote financial inclusion in the wake of the global financial crisis it its' initiative, launched in 2009, to promote national strategies for financial education (OECD 2015).

Among financial institutions and international organisations, financial illiteracy is often cited as a key issue making the poor 'more susceptible to predatory lending practices and higher interest rates' as it reads in the 2024 UN report *Financing for Sustainable Development*. Centring the solution on financial literacy places a responsibility on the individual to be better informed and assumes that the necessary information is available for people to assess. However, opacity is in fact a widespread characteristic of the financial sector.

In Brazil, insights from Kolling's recent fieldwork (2023–24) show that opacity pertains to the credit assessments and pricing that have been automated and are handled by algorithms. Each bank and credit bureau have their own scoring systems and

information is not available to the public about the exact criteria used in the rating or which personal data factors into the assessments. With automation and algorithmic predictive analysis, creditworthiness is determined through statistical models that estimate the risk of default, rather than through individual assessment. The price of the credit offered is determined according to the rating, making it difficult for people not only to contest their credit ratings and the decisions made about being offered or denied credit.

Another issue is that critical information is written in fine print, or not disclosed at all, such as total price of the credit offered once all instalments are paid, as well as fees and increased interest rates in the event of falling behind on repayments. The information in fine print is often written in a technical language, rendering many to merely skim it or skip it altogether, while enabling credit providers to claim that information was provided.

A third issue concerns the incentives and pressures employees of credit companies face when offering credit. They work under pressure to meet monthly targets for selling specific amounts of different credit products. If they fail to meet the targets, they risk being fired. If they succeed, they receive a bonus. The targets compete with considerations of customers' economic circumstances and ensuring that credit offers do not harm their finances.

Considering the many aspects of opacity, financial education is unlikely to be an effective remedy to level the playing field and surely cannot stand alone. Regulating the financial sector to lower interest rates and provide transparency would make financial inclusion more just and more sustainable for economically disadvantaged groups who are now exposed to new sources of indebtedness that perpetuate economic vulnerability and inequality.

Living on credit: between opportunity and vulnerability

The final section turns to some of the lived experiences of living on credit in the wake of the increased access to consumer credit offered by a range of financial actors, as outline above. Kolling's research has documented the female labour of accessing credit and juggling debt through ethnographic research in housing projects in the city of Salvador, Northeast Brazil between 2012-2024. In Salvador, nearly 50% of households are headed by females, of which the majority are single-parent households (IPEA, 2017: 68). This statistic was reflected in the household compositions in the communities in this study where many of the households had a monthly income equivalent to 50% of a minimum wage or less and below the poverty line in Brazil.

The research shows that the women in Salvador's housing projects had acquired a 'double burden of debt', utilising both local informal credit schemes alongside a variety of credit options in the formal and digitalised economy. In other words, it is not the case that inclusion in 'formal' finance has displaced 'informal' instruments but rather expanded the credit options.

As such, despite the increased access to formal credit and the accumulation of financialised debt, individuals experiencing poverty continued to engage with informalised credit systems. This was evidenced by practices such as buying on credit at local stores (*fiado*), borrowing from informal lenders or loan sharks (*agiotas*) and relying on loans from neighbours, relatives or employers (*emprestando nome*). The extent of

debt within the informal economy remains statistically invisible. Consequently, the expansion of fintech and financial sector credit does not inherently supplant informal credit markets; rather, the two appear to develop concurrently.

In Salvador's peripheral neighbourhoods, women have come to depend on credit to provide for their families, improve their homes and deal with unexpected events. They opened lines of credit at stores, ran tabs with formal and informal shop owners, set up small loans from relatives or employers or delayed payment to vendors or utility companies to temporarily extend their credit. They use credit cards, including, when possible, cards borrowed from someone else, such as a relative, neighbour, friend or employer.

Living on credit fostered interdependencies within and between households, among neighbours and kin, in dealing with shortages of cash and credit. Women would seek to borrow a card when their own limit was reached or their application for a new credit card was rejected, a practice called 'name lending'. This involved obtaining credit or loans using someone else's creditworthiness, a common practice in Brazil. But repayments were unreliable, and the unpaid debt was then relegated to the person whose name was used to obtain the credit. Thus, lending one's name risked losing credit and future access to credit until the debt was repaid, risking the lender becoming a debtor themselves. Residents hereby became caught in debt cycles, seeking those with 'clean' names while trying to clear their own.

The research questioned why individuals who survived on an irregular income below the poverty line, with vulnerable businesses and household economies, allowed credit sales or name lending, risking their own financial stability and creditworthiness. Everyone faced financial difficulties and needed credit. Clara Han's work (2011, 2012) on debt among poor families in Santiago, Chile, provided insight. She found that in economically vulnerable families, indebtedness through various credit forms was part of efforts to maintain family unity. This perspective suggested that offering credit to relatives or neighbours, despite the risk, could be an act of care. As debt entered social relations, the relationships became characterised by both care and exploitation that amplified financial instability and social vulnerability through gendered burdens of debt (see Kolling 2020, 2021, 2022).

DISCUSSION

While digital technologies have dramatically expanded access to financial services for underserved populations, the evidence from Kenya and Brazil demonstrates that inclusion alone is insufficient to improve economic well-being. What we term 'productive inclusion' requires financial technologies that offer affordable credit designed to further socially inclusive economic productivity rather than extractive consumption finance. Digital infrastructures and large data sets should enable lower-cost financial services that build financial resilience among low-income households, boost employment and reduce inequality; yet current market incentives have instead produced high-interest loans that add significant surcharges to basic consumption needs and fail to provide the patient capital necessary for productive investment. This misalignment between the potential of fintech and the current trends calls for regulatory interventions, business model innovations and complementary social policies that can transform digital credit

options from a tool of extraction to one that genuinely supports sustainable development. In order to combat over-indebtedness in the current context, there are a variety of actions to facilitate more transparency on how credit analysis is conducted and how credit products are priced. Also necessary are lowering interest rates and fees, and in turn accepting lower profits and possibly more flexibility in repayments, despite there being little appetite for such changes among commercial credit operators.

Kenyan experiences show well that people living in poverty and accessing digital credit would benefit from longer-term financing to commercial ventures that have positive productivity gains. For the needs of households and informal markets, developing co-operative models – driven less by profit than reinvesting in members – should also be supported, targeting growth, employment and productivity. Such a more economically developmental fintech would require a shift in business models away from short-term credit to more patient capital.

In Brazil, many consumer credit options are already offered in long-term instalments, for instance credit cards offer splitting purchases into multiple instalments and to roll-over credit card invoices. Hence, in this context, it is not the lack of more extended payment periods that is the issue; on the contrary, the many opportunities to extend repayment through installments for months or years can snare people in debt traps for long periods of time with detrimental impacts on their household economy. Here, using patient capital would enable more flexibility in repayments and other ways of accommodating people seeking credit who have low, unstable and irregular incomes as well as little savings, if any. These individuals have limited financial resilience in case of everyday emergencies.

In both Kenya and Brazil, as well as further afield, regulators should encourage the design of financial instruments to improve user comprehension. This can include:

- Costs must be communicated clearly before borrowing. Whether this is best done as a percentage or a total sum, or both, is an open question, but not in the ‘fine print’ of technical language that nobody reads.
- South Africa’s National Credit Act of 2025 stipulates that lenders must use ‘plain language’ to communicate with borrowers. In multilingual settings, this should also be provided in suitable form.
- It may also be appropriate to provide brief scenarios, as is common in lending elsewhere, where the consequences of changes in interest rates are made evident before borrowing. For instance, fintech borrowers may wish to understand the different consequences of using a loan for household consumption versus business investment.
- Delays in providing credit rather than instantaneous issuance might also improve financial outcomes.

The expansion of fintech and digital banking means people increasingly interact with financial services and credit provision through apps, websites, and chatbots. Even in person, employees often rely solely on “the system’s” digital output, leaving both customers and service providers unclear about the specifics of the products offered. This limits people’s ability to challenge credit ratings or contest credit decisions and their

terms. Many fintech platforms have inadequate complaint mechanisms and dispute resolution processes.

Hence, consumer protection must be fit for a digital era, focusing on credit discrimination, data privacy, equitable access and effective recourse. At a minimum, people need access to efficient and accessible dispute resolution services, whether these are mandated for financial services providers, offered by the government or non-profit initiatives. Moreover, fintech firms must have obligations to ensure the accuracy and integrity of the data they use, as well as expectations to not make credit decisions in discriminatory ways against protected categories.

In South Africa, there are rules against ‘reckless lending’ – defined as loans issued without assessing borrowers’ financial circumstances, their understanding of risks and obligations and the chances of over-indebtedness (National Credit Act of 2005). Recent guidelines from the Smart Campaign (2020) and FinCoNet (2017) suggests a wider mandate for consumer protection in fintech, including:

- Transparent and responsible pricing (i.e. proportionate and unlikely to lead to over-indebtedness), with appropriate disclosure of key information by firms and brokers;
- Appropriate product design and delivery, including for the prevention of over-indebtedness;
- Comprehensive regulatory scope for consumer protection supervisors, with appropriate oversight tools to identify and mitigate risks;
- Consumer access to recourse mechanisms, including requirements for human interaction and fair and responsive treatment of customers;
- Rules around security, privacy and data portability to reduce consumer lock-in; and
- Research on consumer experience and evolving market dynamics.

Ultimately, effective consumer protection in the era of digital finance requires a proactive and adaptable regulatory framework that prioritises people’s well-being and a level playing field that adheres to fair and transparent practices. Sharing legal and regulatory expertise across countries on fair credit, non-discrimination and data governance can facilitate effective solutions. This includes a focus on developing frameworks that prevent algorithmic credit scoring from creating discriminatory outcomes, establishing comprehensive consumer protection regulations for non-deposit-taking credit providers, and implementing strict data governance policies that limit how financial institutions can accumulate and sell personal digital data.

It is pertinent to move past dichotomous framings of, on the one hand, ‘consumer debt’ and, on the other, ‘sovereign debt’, recognising how these are closely linked phenomena. On the one hand, financial liberalisation since the 1990s has both facilitated greater sovereign access to international credit markets and increased the consumer lending market. As debt servicing obligations have risen in recent decades, squeezing state budgets, there has been a reduction of spending on social services at precisely the same time that demographic growth has increased the need for such services. As a result, households now rely on consumer debt to pay for a large portion of

social services. For instance, a lack of public housing and the marketisation of education and healthcare (including the introduction of fees) means more and more people must borrow to access social services.

As the data presented above for Kenya and Brazil makes clear, the conducive regulation for fintech has facilitated the further inclusion of working people into credit markets but not for productive economic purposes so much as basic household needs and medical and other emergencies. Addressing the global financial architecture and sovereign indebtedness should be seen, in part, as a means to improve public service delivery so that citizens are less obliged to borrow. The alternative will see fintech loans used to substitute for provisioning by fiscally constrained states.

CONCLUSION: INCLUSION IN THE DIGITAL ECONOMY AND GLOBAL PROSPERITY

The expansion of financial technology has dramatically transformed access to financial services across the globe, but as our examination of Kenya and Brazil demonstrates, the mere extension of financial services does not guarantee improved economic well-being for vulnerable populations. The realities discussed in this paper shows that digital financial inclusion may both empower and exploit, depending on the design of technologies, regulatory frameworks and broader socioeconomic contexts. What we term ‘productive inclusion’ represents a critical shift in perspective. Rather than commending increases in account ownership or transaction volumes as end goals, productive inclusion focuses on whether financial technologies genuinely enhance economic opportunity, resilience and equality. This approach demands financial instruments that serve sustainable economic activity, boost employment and reduce disparities rather than extracting wealth from already marginalised communities.

The concerning patterns observed in both Kenya and Brazil – high-cost loans predominantly used for consumption, rising debt stress, declining financial well-being and the persistence of informal borrowing alongside formal credit – signal that current models of fintech expansion often fail to deliver on the promise of inclusive prosperity. In the Kenyan context, digital loans are predominantly short-term, whereas in Brazil, the issues arise from the duration of repayment plans that trap people in debt for years on end. The proliferation of digital credit easily risks creating new forms of financial dependency and vulnerability for low-income populations and women in particular as they face structural disadvantages in accessing and benefitting from digital finance and take on various types of credit as part of their care burden and women’s unpaid domestic labour and reproductive work.

Addressing these challenges requires co-ordinated action across multiple fronts. Regulatory frameworks must evolve to encompass the full range of fintech activities, including non-deposit-taking lenders that often escape traditional banking supervision. Consumer protection needs strengthening with particular attention to transparency, fair pricing, data privacy and recourse mechanisms. The opacity of algorithmic credit scoring demands special scrutiny to prevent new forms of discrimination in lending. And beyond regulation, the connection between household debt and public service provision cannot be ignored. When citizens must borrow to access healthcare, education or housing,

financial inclusion becomes a poor substitute for effective social policy. Similarly, sovereign debt constraints that limit public investment can indirectly drive household borrowing, highlighting the interconnected nature of public and private indebtedness.

The potential of fintech to contribute positively to sustainable development remains significant but currently also unrealised. However, co-operative models that prioritise community well-being over profit maximisation may offer promising alternatives, just as public digital infrastructure that ensures equitable access while limiting private rent-seeking deserves greater investment and support. Financial literacy initiatives – typically important but also overstated in global policy efforts such as Financing for Development frameworks – cannot alone protect consumers from predatory or exploitative practices. Structural reforms that address power imbalances between lenders and borrowers are equally necessary.

As the global community pushes forward efforts under the new normative framework on Financing for Development, these insights on digital finance and inequality must inform discussions on aligning financial flows with the Sustainable Development Goals. The experiences of Kenya and Brazil demonstrate that the design, governance and regulation of financial technologies profoundly influence whether digital finance advances or undermines inclusive prosperity.

The future of financial inclusion lies not in maximising the number of people with access to credit but in ensuring that financial technologies genuinely serve human development objectives. This requires moving beyond simplistic narratives about the inherent benefits of digitalisation towards more nuanced approaches that recognise both the opportunities and risks of an increasingly digitised financial landscape, reaching low-income communities whose limited capital resources are enfolded into global financial circuits.

REFERENCES

- ABECS (Associação Brasileira das Empresas de Cartões de Crédito e Serviços). (2013). 'Posse de Cartão Chega a 76% Dos Brasileiros, Diz Abecs'.
- Aguilar, A., Frost, J., Guerra, R., Kamin, S., and Tombini, A. (2024). *Digital payments, informality and economic growth*. BIS Working Paper No. 1196, July.
- Akolgo, I. A. (2023). On the contradictions of Africa's fintech boom: Evidence from Ghana. *Review of International Political Economy*, 30(5): 1639–1659.
- Allen, F., Demirguc-Kunt, A., Klapper, L., and Peria, M. S. M. (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of Financial Intermediation*, 27: 1–30.
- Araujo, D., Cantú, C., Chinchilla, A., Franco, C., Frost, J., and Oconitrillo, A. (2024). *Fast payments and banking: Costa Rica's SINPE Móvil*. BIS Paper No. 152, December.
- Auer, R., Cornelli, G., and Frost, J. (2022). *The pandemic, cash and retail payment behaviour: insights from the future of payments database*. BIS Working Paper No. 1055, December.
- Aurazo, J., Cantú, C., Frost, J., Kosse, A., and Velasquez, C. (2024b). *A revolution in digital payments: faster, user-friendlier and cheaper*. BIS Paper No. 152, December.
- Badue, A. F., and Ribeiro, F. (2018). Gendered Redistribution and Family Debt: The Ambiguities of a Cash Transfer Program in Brazil. *Economic Anthropology*, 5(2): 261–73. <https://doi.org/10.1002/sea2.12122>
- BBC. (2023). 'Brasil bate recorde de endividados: "Com nome sujo, a gente não é nada".' February 16, 2023. (incomplete?)
- Bakker, B. B., Garcia-Nunes, B., Lian, W., Liu, Y., Perez Marulanda, C., Siddiq, A., Sumlinski, M., Vasilyev, D., and Yang, Y. (2023). *The Rise and Impact of Fintech in Latin America*. IMF Fintech Note 2023/003, International Monetary Fund, Washington, DC.
- Banco Central do Brasil. (2018a). *O que é cidadania financeira? Definição, papel dos atores e possíveis ações*. <https://www.bcb.gov.br/cidadaniafinanceira>
- Banco Central do Brasil. (2018b). *Report on Financial Citizenship 2018*. <https://www.bcb.gov.br/en/publications/repfincitizenship>
- Banco Central do Brasil. (2021). *Financial Citizenship Report 2021*. <https://www.bcb.gov.br/cidadaniafinanceira>
- Banco Central do Brasil. (2023). *Relatório de Economia Bancária 2022*. Brasília, DF. www.bcb.gov.br/content/publicacoes/relatorioeconomiabancaria/reb2022p.pdf. <https://g1.globo.com/economia/noticia/2023/02/16/brasil-bate-recorde-de-endividados-com-nome-sujo-a-gente-nao-e-nada.ghtml>.
- Banerjee, A., Karlan, D., and Zinman, J. (2015). Six Randomized Evaluations of Microcredit: Introduction and Further Steps. *American Economic Journal: Applied Economics*, 7(1): 1–21. <https://doi.org/10.1257/app.20140287>

- Barone, F. M., and Sader, E. (2008). Acesso Ao Crédito No Brasil: Evolução e Perspectivas, *Revista de Administração Pública*, 42(6): 1249–1267.
- Barroso, J., Barata R. B., and Nechio, F. (2019). *Financial market development, monetary policy and financial stability in Brazil*. BIS Papers No 113.
www.bis.org/publ/bppdf/bispap113_d.pdf
- Beck, T. (2020). *Fintech and financial inclusion: Opportunities and pitfalls*. ADBI Working Paper 1165. Tokyo: Asian Development Bank Institute.
- Berkmen, P., Beaton, K., Gershenson, D., Arze del Granado, J., Ishi, K., Kim, M., Kopp, E., and Rousset, M. (2019). *Fintech in Latin America and the Caribbean: stocktaking*. IMF Working Papers, No. WP/19/71, March.
- Bernards, N. (2019b). Tracing mutations of neoliberal development governance: ‘Fintech’, failure and the politics of marketization. *EPA: Economy and Space*, 51(7): 1442–1459.
- Bunn, P., Chadha, J., Lazarowicz, T., Millard, S., and Rockall, E. (2021). *Household debt and labour supply*. Staff Working Paper No. 941 Bank of England
<https://www.bankofengland.co.uk/-/media/boe/files/working-paper/2021/household-debt-and-labour-supply.pdf>
- Cantú, C., and Ulloa, B. (2020). *The Dawn of Fintech in Latin America: Landscape, Prospects and Challenges*. BIS Papers No. 112, Bank for International Settlements.
- Cassara, D., Zapanta, A., and Garz, S. (2024). *Mobile Instant Credit: Impacts, Challenges and Lessons for Consumer Protection*. IPA and CEGA.
- Casacchi, M. (2018). *Campeão de Vendas*. Panorama ABECS, 16th edition. October.
- CBK, KNBS and FSD Kenya (2021). 2021 FinAccess Household Survey: Key Findings. Nairobi, Kenya. Available at: <https://www.knbs.or.ke/wp-content/uploads/2021/12/2021-FinAccess-Survey-launch-presentation.pdf>
- Central Bank of Kenya. (2022). Publication of Regulations for Digital Credit Providers and Commencement of their Supervision. Retrieved from
[https://www.centralbank.go.ke/uploads/press_releases/2119450187_Press percent20Release percent20- percent20Publication percent20of percent20Regulations percent20for percent20Digital percent20Credit percent20Providers percent20and percent20Commencement percent20of percent20their percent20Supervision.pdf](https://www.centralbank.go.ke/uploads/press_releases/2119450187_Press_percent20Release_percent20- percent20Publication percent20of percent20Regulations percent20for percent20Digital percent20Credit percent20Providers percent20and percent20Commencement percent20of percent20their percent20Supervision.pdf)
- Central Bank of Kenya. (2024). FinAccess Survey, available at:
<https://www.centralbank.go.ke/2024/12/13/10960/>
- Cevik, S. (2024a). *Promise (Un)kept? Fintech and Financial Inclusion*. IMF Working Paper No. 24/131. Washington, DC: International Monetary Fund.
- CGAP. (2022). BNPL in Nigeria: Emerging Fintech Innovations for MSEs. Retrieved from <https://www.cgap.org/blog/bnpl-in-nigeria-emerging-fintech-innovations-for-mses>
- CIPIT. (2021). Privacy and Data Protection Practices of Digital Lending Apps in Kenya, Strathmore University, available at: <https://cipit.strathmore.edu/privacy-and-data-protection-practices-of-digital-lending-apps-in-kenya-report/>

- CNC - Confederação Nacional do Comércio de Bens, Serviços e Turismo. (2023). *Pesquisa de Endividamento e Inadimplência do Consumidor (Peic)*. Edição setembro 2023. Available from https://portaldocomercio.org.br/publicacoes_posts/pesquisa-de-endividamento-e-inadimplencia-do-consumidor-peic-setembro-de-2023/.
- CNC - Confederação Nacional do Comércio de Bens, Serviços e Turismo. (2024). *Pesquisa de Endividamento e Inadimplência do Consumidor (Peic)*. Edição março 2024. Available from https://portaldocomercio.org.br/publicacoes_posts/pesquisa-de-endividamento-e-inadimplencia-do-consumidor-peic-marco-de-2024/.
- Coelho, R., De Simoni, M., and Prenio, J. (2019). *Suptech applications for anti-money laundering. FSI Insights on policy implementation*, No. 18, Financial Stability Institute, August.
- CPMI-World Bank. (2020). Payment aspects of financial inclusion in the fintech era, April.
- D'Silva, D., Filková, Z., Packer, F., and Tiwari, S. (2019). *The design of digital financial infrastructure: lessons from India*. BIS Papers, No. 106, December.
- Demirgüç-Kunt, A., Klapper, L., Singer, D., and Ansar, S. (2022). The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19. World Bank, Washington, DC.
- Donovan, K., and Park, E. (2019). Perpetual Debt in the Silicon Savannah. *Boston Review*, available at <https://www.bostonreview.net/articles/perpetual-debt-silicon-savannah/>
- Donovan, K., and Park, E. (2022). Algorithmic Intimacy: The Data Economy of Predatory Inclusion. *Social Anthropology*, 30(2): 120–139.
- Donovan, K., and Park, E. (2022). Knowledge/Seizure: Debt and Data in Kenya's Zero Balance Economy. *Antipode*, 54: 1063–1085. <https://doi.org/10.1111/anti.12815>
- European Investment Bank. (2024). Digital Financial Services in Africa. In *Finance in Africa: Unlocking investment in an era of digital transformation and climate transition* (pp. 117–130).
- EY. (2025). Kenya enacts Business Laws (Amendment) Act, 2024. Available at <https://globaltaxnews.ey.com/news/2025-0217-kenya-enacts-business-laws-amendment-act-2024>
- FBSP - Fórum Brasileiro de Segurança Pública. (2023). 17º Anuário Brasileiro de Segurança
- Pública 2023. São Paulo: Fórum Brasileiro de Segurança Pública, 2023. <https://forumseguranca.org.br/wp-content/uploads/2023/07/anuario-2023.pdf>
- FinAccess. (2019). Household Survey. Retrieved from <https://www.fsdkenya.org/publications/the-2019-finaccess-household-survey/>
- FinCoNet. (2017). Report on the Digitalisation of Short-Term, High-Cost Consumer Credit.
- Franco, S. F., Graña, J. M., & Rikap, C. (2024). Dependency in the Digital Age? The Experience of Mercado Libre in Latin America. *Development and Change*, 55(3), 429–464. <https://doi.org/10.1111/dech.12839>

- Frost, J. (2020). *The Economic Forces Driving Fintech Adoption Across Countries*. BIS Working Papers No. 838, Bank for International Settlements.
- Frost, J., Koo Wilkens, P., Kosse, A., Shreeti, V., and Velasquez, C. (2024). Fast payments: design and adoption. *BIS Quarterly Review*, March.
- G7. (2019). Investigating the impact of global stablecoins, October.
- Grzybowski, L., Lindlacher, V., and Mothobi, O. (2023b). Mobile money and financial inclusion in sub-Saharan Africa. *Information Economics and Policy*, 65: 101064.
- GSMA. (2025). *The State of the Industry Report on Mobile Money 2025*.
- Guguyu, O. (2021) Borrowers blacklisted on CRBs hit 14 million, *Business Daily*, 2 February 2021.
- IMF. (2013). *Brazil: Technical Note on Consumer Credit Growth and Household Financial Stress*, IMF Country Report 13/149, December 2012. Washington, D.C. Available from www.imf.org/external/pubs/ft/scr/2013/cr13149.pdf
- IMF. (2024). IMF Country Report, Brazil. July 2024, no. 24/209.
<https://www.elibrary.imf.org/downloadpdf/view/journals/002/2024/209/002.2024.issue-209-en.pdf>
- IPEA - Instituto de Pesquisa Econômica Aplicada. (2014). *Objetivo de Desenvolvimento Do Milênio. Relatório Nacional de Acompanhamento*. Brasília, DF.
<https://repositorio.ipea.gov.br/handle/11058/3205>
- IPA (Innovations for Poverty Action). (2024). Mobile Instant Credit: Impacts, Challenges, and Lessons for Consumer Protection.
- Jalal-Eddeen, S. (2025). Algorithmic governance or extortion? Everyday experiences of fintech for loans in Nigeria. *New Political Economy*, 30(2): 254–266.
- James, Deborah. (2015). *Money from Nothing: Indebtedness and Aspiration in South Africa*. Stanford, CA: Stanford University Press.
- Johnen, C., Parlasca, M., and Mußhoff, O. (2021). Promises and pitfalls of digital credit: Empirical evidence from Kenya. *PLoS ONE*, 16(7).
- Johnen, C., and Mußhoff, O. (2023). Digital credit and the gender gap in financial inclusion: Empirical evidence from Kenya. *Journal of International Development*, 35(2): 272–295.
- Jones Day White Paper. (2024). *Brazil Amps Up Enforcement of Data Protection Law*.
<https://www.jonesday.com/en/insights/2024/09/brazil-amps-up-enforcement-of-data-protection-law>
- King, M. (2019). The competitive threat from TechFins and BigTech in financial services. In Michael King and Richard Nesbitt (Eds.), *The technological revolution in financial services* (pp. X–Y). City: University of Toronto Press.
- KIPPRA. (2023). Regulation of Digital Credit Providers in Kenya: Policy Issues and Options. Kenya Institute for Public Policy Research and Analysis.

- Kolling, M. (2022). *Entre Cuidado e Exploração. Quando a Dívida Entra nas Relações de Família e Vizinhaça num Bairro Periférico*. *Iberoamericana – Nordic Journal of Latin American and Caribbean Studies*. Missing volume, number, pages numbers.
- Kolling, M. (2021). Selling hope on credit: Women's livelihoods, debt, and the production of urban informality in Brazil. *Contemporary Social Science*. 17(3), 262–275.
- Kolling, M. (2020). Debt and dirty names: Tracing cashlessness and urban marginality in Brazil. In A. Sen, J. Lindquist, and M. Kolling (Eds.), *Who's cashing in? Contemporary perspectives on new monies and global cashlessness* (pp. 19–31). London & New York: Berghahn Books.
https://www.berghahnbooks.com/downloads/OpenAccess/SenWho/SenWho_02.pdf
- Kusimba, S. (2021). *Reimagining Money: Kenya in the Digital Finance Revolution*. City: Stanford University Press.
- Langley, P., and Leyshon, A. (2022). Neo-colonial credit: FinTech platforms in Africa. *Journal of Cultural Economy*, 15(4): 401–415.
- Lavinas, L. (2017). *The Takeover of Social Policy by Financialization*. New York: Palgrave Macmillan.
- Lavinas, L., and Lins, B. M. (2024). Desenrola Brazil. Debt management as social policy under Lula 3. *Phenomenal World*,
<https://www.phenomenalworld.org/analysis/desenrola-brazil/>
- Lavinas, L., Araújo, E., and Rubin, P. (2024). Income transfers and household debt. The advancing collateralization of social policy in the midst of restructuring crises. *Brazilian Journal of Political Economy*, 44: 298–318. <https://doi.org/10.1590/0101-31572024-3511>
- Lensink, R., Hamilton, C., and Adjasi, C. (2022). *Advanced introduction to financial inclusion*. City: Edward Elgar Publishing.
- Lockwood, P. (2023). Hustler populism, anti-Jubilee backlash, and economic injustice in Kenya's 2022 elections. *African Affairs* 122(487): 205-224.
- Macharia, P., Moore, S., Thomann, M. et al. (2023). The precarity of mobile loan debt and repayment among female sex workers in Nairobi, Kenya: Implications for sexual health. *Global Public Health*, 18(1).
- Marambio-Tapia, A. (2022). Normalización de la Deuda y Retailización del Crédito como Pilares del Neoliberalismo Chileno Avanzado. *Iberoamericana – Nordic Journal of Latin American and Caribbean Studies*, 51(1):14–25. <http://doi.org/10.16993/iberoamericana.529>
- Mazer, R., and Garz, S. (2024). Fast growth and slow policy: a decade of digital credit in Kenya. *Oxford Review of Economic Policy*, 40: 82–103.

- Mbiti, I., and Weil, D. N. (2013). The home economics of e-money: Velocity, cash management, and discount rates of M-Pesa users. *American Economic Review*, 103(3): 369–374.
- Mburu, P. (2025). Mystery of underage, ‘unborn’ Kenyans on Sh32m Hustler Fund loan list, *Business Daily*, 26 February 2025.
- McKinsey. (2022). *Fintech in Africa: The end of the beginning*. City: McKinsey & Company.
- MSC. (2017). *Where Credit is Due: Customer Experience of Digital Credit in Kenya* (2017), MicroSave Consulting, available at: <https://www.microsave.net/2017/03/22/where-credit-is-due-customer-experience-of-digital-credit-in-kenya/>
- MSC. (2019). *Making Digital Credit Truly Responsible*. Nairobi: MicroSave Consulting.
- Montgomerie, J. (2013). America’s Debt Safety-Net. *Public Administration*, 91: 871–888. <https://doi.org/10.1111/j.1467-9299.2012.02094.x>
- Muinde, J. (2023). The ‘Hustler’ Fund: Kenya’s Approach to National Transformation. *African Arguments* 5 January 2023, available at <https://africanarguments.org/2023/01/the-hustler-fund-kenyas-approach-to-national-transformation/>
- Mumbi, L. (2023). 7 million borrowers have been removed from CRB – Ruto. *The Star* 2 July 2023, available at <https://www.the-star.co.ke/news/big-read/2023-07-02-7-million-borrowers-have-been-removed-from-crb-ruto>
- Nakane, M. I., and de Paula Rocha, B. (2012). *Policy Innovations to Improve Access to Financial Services: The Case of Brazil*. Washington, DC.
- Green, W. N., Chhom, T., Mony, R., and Estes, J. (2023). The Underside of Microfinance: Performance Indicators and Informal Debt in Cambodia. *Development & Change*, 2023. <https://doi.org/10.1111/dech.12778>
- NCA (National Credit Act). (2024). The National Credit Act Explained - Brief Summary.
- ODPC. (2024). Press Release: ODPC to Audit 40 Digital Lenders and Issues Enforcement Notice against a Health Service Provider, available at: <https://www.odpc.go.ke/wp-content/uploads/2024/02/Approved-Press-Release-on-DCP039s-and-Health-Provider-1-1.pdf>
- OECD. (2024). *FinTech lending in Sub-Saharan Africa: Lessons from African economies*. City: OECD Publishing.
- Onkokame, M., and Kebotsamang, K. (2024). The impact of network coverage on adoption of Fintech and financial inclusion in sub-Saharan Africa. *Journal of Economic Structures*, 13(1): 1–19.
- Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4): 329–340.
- Paelo, A., and Roberts, S. (2022). Competition and regulation of mobile money platforms in Africa: A comparative analysis of Kenya and Uganda. *Review of Industrial Organization*, 60 (3): 463–489.

- Pervez, O. (2022). *The Fintech Landscape in India and Africa: A Primer*. Observer Research Foundation Issue Brief No. 584.
- Putnam, D., Mazer, R., and Blackmon, W. (2021). Report on the Competition Authority of Kenya Digital Market Inquiry. Nairobi: Innovations for Poverty Action, 2021.
- PWC. (2024). Pesquisa Fintechs de Crédito Digital 2024. Crescimento movido a flexibilidade e resiliência. <https://www.pwc.com.br/pt/estudos/setores-atividade/financeiro/2024/pesquisa-fintechs-de-credito-digital-2024.html>
- Ribeiro, C. T. (2020). Agenda Em Políticas Públicas: A Estratégia de Educação Financeira No Brasil à Luz Do Modelo de Múltiplos Fluxos. *Cadernos EBAPE.BR* 18 (3): 486–97. <https://doi.org/10.1590/1679-395120190038>.
- Rodima-Taylor, D., and Langley, P. (2022). Special Issue ‘Fintech in Africa’ in *Journal of Cultural Economy*, 15(4).
- Rojas-Suárez, L. (2016). *Financial Inclusion in Latin America: Facts, Obstacles and Central Banks’ Policy Issues*. IDB Discussion Paper No. 464, Inter-American Development Bank, Washington, DC.
- Ruehl, M., and Kyngé, J. (2019). Fintech: the rise of the Asian ‘super app’. *Financial Times*, 12 December.
- Sarno, P. (2020). ‘Endividamento das famílias no Brasil recente: algumas reflexões.’ In Instituto Equit Gênero, Economia e Cidadania Global ed. *O Sistema financeiro e o endividamento das mulheres*. Rio de Janeiro: Instituto Equit.
- Smart Campaign. (2020). Client protection Principles, available at: <https://www.centerforfinancialinclusion.org/research/consumer-protection/smart-campaign/>
- Soederberg, S. (2014). *Debtfare states and the poverty industry: Money, discipline and the surplus population*. London: Routledge.
- Kar, S. (2018). *Financializing Poverty: Labor and Risk in Indian Microfinance*. Stanford: Stanford University Press.
- Saraiva, A. (2025). Household debt and delinquency decline in Brazil, but burden grows. *Valor Economico*. <https://valorinternational.globo.com/economy/news/2025/02/07/household-debt-and-delinquency-decline-in-brazil-but-burden-grows.ghtml>
- Suri, T. (2017). Mobile Money. *Annual Review of Economics*, 9(1): 497–520. <https://doi.org/10.1146/annurev-economics-063016-103638>
- Suri, T., Bharadwaj, P., and Jack, W. (2021). Fintech and household resilience to shocks: Evidence from digital loans in Kenya. *Journal of Development Economics* 153.
- Tarazi, M. Branchless Banking: The Test and See Approach, CGAP (Feb. 2010), available at: <https://www.cgap.org/blog/branchless-banking-test-and-see-approach>

Taylor, M. 2012. The Antinomies of 'Financial Inclusion: Debt, Distress and the Workings of Indian Microfinance'. *Journal of Agrarian Change*, 12(4): 601–10.
<https://doi.org/10.1111/j.1471-0366.2012.00377.x>

Upadhyaya R., Weitzberg K., and Bonyo, L. (year). Digital credit providers, regulatory frameworks, and structural power: A case study of digital microcredit regulation in Kenya. *Finance and Society*. Published online 2025:1-23. doi:10.1017/fas.2025.4

UNEN (2021). Fintech and Digital Finance for Financial Inclusion. United Nations Economist Network, Policy Brief.

UOL Economia. (2025). Juro médio do rotativo do cartão sobe em fevereiro para 450,6 percent ao ano, revela BC. Published online April 9th, 2025.
<https://economia.uol.com.br/noticias/estadao-conteudo/2025/04/09/juro-medio-do-rotativo-do-cartao-sobe-em-fevereiro-para-4506-ao-ano-revela-bc.htm>

UNCTAD. (2024). [A world of debt 2024: A growing burden to global prosperity](https://unctad.org/system/files/official-document/osgttinf2024d1_en.pdf).
https://unctad.org/system/files/official-document/osgttinf2024d1_en.pdf

Villela Haüy, R. (2023). O Endividamento Sob A Ótica Do Mercado De Crédito. *Novos Olhares Sociais*, 6(1):5–33. <https://periodicos.ufrb.edu.br/index.php/novos-olhares-sociais/article/view/4710>

World Bank. (2015). Financial inclusion—A foothold on the ladder toward prosperity? Washington, D.C.: World Bank Independent Evaluation Group.

Ziegler, T., Ferri de Camargo Paes, F., López Closs, C., Soki, E., Herrera, D., and Sarmiento, J. (2022). *The SME Access to Digital Finance Study: A Deep Dive into the Latin American Fintech Ecosystem*. Judge Business School, University of Cambridge, UK.

