DVARA Research

INDIA'S MOST RECENT MICROFINANCE CRISIS: THEORY, EMPIRICS & LEARNINGS

Dwijaraj Bhattacharya,
Indradeep Ghosh,
Shree Harini,
Navaneeth MS
&
Madhu Srinivas

WORKING PAPER

December 2025

India's Most Recent Microfinance Crisis: Theory, Empirics & Learnings
Dvara Research[1]
December 1, 2025[2]

Section 1: Introduction

The ongoing Non-Performing Assets (NPA) crisis in India's microfinance industry has attracted a lot of attention from a variety of stakeholders and commentators. However, an integrated picture that combines insights from studying all three principal actors implicated in this crisis – the regulator, the lenders, and the borrowers – is yet to emerge. This paper aims to fill that gap. In it, we take an explicitly theoretical approach to thinking about the crisis, by anchoring to two conceptual papers: Hyman Minsky's 1977 paper on the Financial Instability Hypothesis[3], and our own 2024 paper on how to view over-indebtedness as a cultural phenomenon[4]. Taken together, these two papers provide a unique perspective on the microfinance crisis that we think is novel.

The perspective is novel for two reasons. First, it allows us to construct a general theory of boom-bust cycles in microfinance markets. Such a theory is currently lacking in both academic and policy discourses, to the best of our knowledge[5]. The general theory we offer in this paper is not only general in terms of being applicable for understanding microfinance crises anywhere in the developing world, but also general in terms of implicating in some detail both the rational and affective dimensions of decision making by lenders and borrowers. In other words, the theoretical contribution of our paper represents also a methodological innovation since the affective dimension has not been properly theorized, if at all, in the existing literature. Furthermore, such an innovation carries over to the empirical domain, since we not only amass evidence in support of the theory, but this same step also allows us to demonstrate what kinds of evidence such a theory – one that implicates both the rational and affective dimensions – might demand for its falsification. This, too, is a novel contribution, we believe.

When one looks at the literature on the leading causes for microfinance crises in the past 20 years (2000-2020) in different parts of the developing world, some identifiable factors emerge. First, market saturation and multiple borrowing are highlighted as a major source of crises. Too fast a growth of the loan book for multiple microfinance institutions (MFIs) can

---

[1] The authors are Dwijaraj Bhattacharya, Indradeep Ghosh, Shree Harini, Navaneeth MS, and Madhu Srinivas.

[3] Minsky, Hyman P. "The Financial Instability Hypothesis: An Interpretation of Keynes and an Alternative to 'Standard' Theory." *Nebraska Journal of Economics and Business* 16, no. 1 (1977): 5–16

[4] Bhattacharya, Dwijaraj, and Indradeep Ghosh. "Exploring the Phenomenon of Debt Distress and Possible Solutions." In *Inclusive Finance India Report 2024*. ACCESS Development Services, 2024. https://dvararesearch.com/exploring-the-phenomenon-of-debt-distress-and-possible-solutions/

[5] Sriram (2025) may be a notable exception, but we would describe the paper as offering an excellent description of features shared by microfinance crises in India, rather than offering a general theory. See: Sriram, M S. "Where Medicine Is Poison." *Economic and Political Weekly* 60, no. 8 (2025): 10–14. https://doi.org/10.71279/epw.v60i8.42267.

cause them to lose the grasp they have on their processes and strategies[6]. The rapid expansion of loan books typically coincide with overlapping borrower bases and multiple loans per household[7], which signal an undermining of the delicate lender-borrower relationship and diminish the incentive to repay any single MFI[8] [9]. Eventually when repayment obligations surpass cashflows of households, systemic delinquencies emerge. Secondly, regulatory gaps such as unclear supervisory authority[10] or lack of internal controls[11] could create environments in which risky lending can flourish unchecked. Conversely, abrupt regulatory crackdowns or funding cut-off as a response to the increasing visibility of bad loans on MFIs' books, can precipitate a crisis on a wide scale (Andhra Pradesh crisis)[12]. Thirdly, some authors have argued that the MFI Industry has shifted its focus from serving a social mission towards profit-oriented models that have adopted unsustainable growth practices, such as inadequate credit-assessment, and overlending. Large capital injections from investors are cited as the principal causal factor in these arguments, on the understanding that such injections have created strong incentives for continued levels of high growth and profitability[13]. Fourth, coercive recovery practices by loan-collection agents of MFIs are argued to often erode borrower trust, fuel negative media attention, and provoke political responses[14]. Such practices have been linked to borrower distress and strategic default, amplifying repayment crises[15]. Furthermore, political Interference has been a cause of crisis in some areas where political actors may encourage non-repayment[16][17], or impose sudden restrictions on MFI operations. Such interference generates moral hazard among borrowers and therefore collapse of repayment rates across lenders. Additionally, the high interest rates charged by MFIs have been cited as a major source of borrower distress[18]. These "eye-watering interest

[6] D'Espallier, Bert, Marc Labie, and Philippe Louis. "Microcredit Crises and Unsustainable Growth: A Management Perspective." *In The Crises of Microcredit*, edited by Isabelle Guérin, Marc Labie, and Jean-Michel Servet. Zed Books, 2015. https://doi.org/10.5040/9781350250932.

[7] Rozas, Daniel, Karine Pinger, Mohammad Khaled, and Sarah El Yaalaoui. *Ending the Microfinance Crisis in Morocco*. International Finance Corporation, 2014. https://doi.org/10.1596/26054.

[8] Reille, Xavier, Greg Chen, and Stephen Rasmussen. *Growth and Vulnerabilities in Microfinance*. No. 10. CGAP Focus Note. CGAP, 2010. https://www.cgap.org/sites/default/files/CGAP-Focus-Note-Growth-and-Vulnerabilities-in-Microfinance-Feb-2010.pdf.

[9] Nair, Tara S. "Microfinance: Lessons from a Crisis." *Economic and Political Weekly* 46, no. 6 (2011): 23–26.

[10] Ibid.

[11] Siwale, Juliana, and John Ritchie. "Accounting for Microfinance Failure: Insights from Zambia." *International Journal of Critical Accounting* 5, no. 6 (2013): 641. https://doi.org/10.1504/IJCA.2013.059017.

[12] Andhra Pradesh 2010: Global Implications of the Crisis in Indian Microfinance. Focus Note 67. CGAP, 2010. https://www.cgap.org/sites/default/files/CGAP-Focus-Note-Andhra-Pradesh-2010-Global-Implications-of-the-Crisis-in-Indian-Microfinance-Nov-2010.pdf

[13] Bateman, Milford. "How Lending to the Poor Began, Grew, and Almost Destroyed a Generation in India." *Development and Change* 43, no. 6 (2012): 1385–402. https://doi.org/10.1111/j.1467-7660.2012.01804.x.

[14] Shylendra, H. S. "Microfinance Institutions in Andhra Pradesh: Crisis and Diagnosis." *Economic and Political Weekly* 41, no. 20 (2006): 1959–63.

[15] Ghate, Prabhu. *MFIs: Learning from Andhra Pradesh*. Microfinance in India A State of the Sector Report, 2006. Microfinance India, 2006. https://www.findevgateway.org/sites/default/files/publications/files/mfg-en-paper-microfinance-in-india-a-state-of-the-sector-report-2006-2006_0.pdf.

[16] Bastiaensen, Johan, Peter Marchetti, René Mendoza, and Francisco Pérez. "After the Nicaraguan Non-payment Crisis: Alternatives to Microfinance Narcissism." *Development and Change* 44, no. 4 (2013): 861–85. https://doi.org/10.1111/dech.12046.

[17] Ibid.

[18] Shylendra, "Microfinance Institutions in Andhra Pradesh: Crisis and Diagnosis," 1959

rates "[19] make repayment difficult, leading to widespread defaults and public backlash. This in turn causes political intervention to follow, destabilizing the entire sector. Together, these factors illustrate how the pursuit for growth, operational misconduct, competitive pressures, and weak regulatory environments interact to produce systemic microfinance failures.

We would situate our paper within this corpus of research, but once again call out its unique features relative to the existing literature. The theory we offer in our paper is general enough that it is able to incorporate many of the factors already described in the literature, as proximate causal factors, or symptoms, or epiphenomena. The fundamental point our general theory makes, however, is that it is hard to pinpoint precise first causes of crises, and this is because the affective dimension is implicated. The logic that operates in this dimension blurs the distinction between cause and effect, as we will describe in Section 2. This, however, does *not* prevent us from thinking about how to avoid pronounced booms and busts in microfinance in the future. Indeed, it offers a more sophisticated understanding of how to do so.

Our paper is organized as follows. Section 2 lays out the theory. The next three sections turn to the evidence for the ongoing microfinance crisis in India. Section 3 focuses on the regulator's actions, while Sections 4 and 5 draw attention to lender and borrower behaviours, respectively. Section 6 provides a distillation of what we have learned about the ongoing crisis from the data provided in Sections 3, 4 and 5. Section 7 concludes our paper by providing some recommendations for how the industry and the regulator might move forward from the crisis.

Section 2: The "Minsky plus Culture" Frame

It is a feature of the financial system, not a bug, that credit markets should seize up from time to time. There are many explanations of why this might happen. Since the Global Financial Crisis of 2008 (henceforth, GFC), however, one particular view has gained a great deal of currency. This is the explanation that economist Hyman Minsky provided in his 1977 paper on the Financial Instability Hypothesis (FIH)[20].

FIH offers a dynamic account of how financial systems evolve over the credit cycle. At its core is the idea that stability is not a persistent equilibrium; rather, periods of stable economic performance endogenously generate the behaviours that ultimately produce instability. The mechanism through which this occurs is the changing structure of borrower balance sheets and the shifting ways in which debt obligations are financed. This shifting implicates both sides of the credit market since lenders are in many instances borrowers themselves. Before describing the market dynamic that produces alternating periods of stability and instability, we start by characterising the three archetypal borrowers as laid out by Minsky —*hedgers*, *speculators*, and *Ponzi actors*—each defined by the relationship between a borrower's cashflows and their obligations.

---

[19] Sinclair, Hugh. *Confessions of a Microfinance Heretic: How Microlending Lost Its Way and Betrayed the Poor*. BK Currents. Berrett-Koehler Publishers, 2012.
[20] Ibid.

The hedgers are the most resilient, since their existing income is sufficient to meet both interest and principal payments. As such, they do not require refinancing and can withstand moderate financial shocks. When hedgers dominate, the system exhibits strong stability. Speculators occupy a more fragile position. Their cashflows allow them to service interest but not principal, requiring them to roll over debt upon maturity. Their stability depends on the existence of liquid credit markets and the willingness of lenders to refinance existing obligations. As long as credit remains abundant, speculative finance remains viable. Finally, Ponzi actors sit at the most fragile end of the spectrum. Their cashflows do not suffice even to meet interest payments, forcing them to borrow more simply to service past borrowing or to sell assets at prices that markets are willing to offer. Such positions are sustainable only while asset prices continue to appreciate or credit remains freely available. Any slowdown in asset markets or tightening in credit conditions renders Ponzi actors untenable.

Although all three types of borrowers coexist in any credit market, their relative prevalence shifts as the credit cycle advances. Following a downturn or crisis, lenders and borrowers display caution. Underwriting standards are conservative, leverage is modest, and balance sheets are strong. Most borrowers, in such a phase, are hedgers, and the system is robust. But periods of stability generate optimism: profits rise, defaults remain low, and asset prices climb. As the stability begins to look sustainable and historical memory of previous periods of instability continues to recede from consciousness, lenders loosen standards, borrowers take on greater leverage, and financial innovation expands the supply and complexity of credit. Hedgers, encouraged by favourable conditions, voluntarily assume greater risk and migrate into speculative positions becoming speculators. Finally, with continued optimism, the process accelerates. Asset prices rise, collateral values expand, and competition among lenders pushes them to finance riskier positions to maintain market share. Borrowers increasingly rely on expectations of future price appreciation or continued credit availability, rather than on current cashflows. Under these conditions, speculators become Ponzi actors as their obligations exceed what their income can reliably support. Thus, the emergence of Ponzi actors is not because of deception or irrationality per se but because favourable conditions encourage increasingly aggressive balance-sheet expansion.

Once a sufficient share of the system are speculators morphing into Ponzi actors, the financial structure becomes fragile. It now requires favourable conditions—rising asset prices and abundant liquidity—to remain stable. Any disturbance, whether a slowdown in growth, a tightening of credit, or even a pause in asset-price appreciation, can trigger a reversal. Speculators face rollover difficulties, while Ponzi actors are forced into asset sales, accelerating the downward movement in prices, and thereby increasingly eroding collateral values. These dynamics amplify one another, i.e., it becomes a reinforcing loop, pushing more borrowers into distress and generating cascading failures characteristic of financial crises. The cycle ends only through deleveraging, defaults, and the restoration of balance sheets, after which the system gradually returns to a hedger-dominant structure. Thus, the FIH suggests an endogenous transition from stability to fragility and from fragility to crisis.

Minsky's FIH is sufficiently well accepted by the academic economics profession that it appears as the main theoretical explanation of financial crises in Robert Aliber & Charles

Kindleberger's classic text on the history of financial crises[21]. In turn, Philip Mader (2018) has shown how the FIH could successfully explain the Andhra microfinance crisis of 2010[22]. In this paper, we assume, following Mader, that the FIH does offer a good description of how the microfinance industry in India operates. But it is not a complete description. For that, we will need to overlay Minsky with a layer of cultural reasoning, which will complete the picture in terms of making more precise the dynamics by which hedgers transform into speculators, and speculators into Ponzi actors.

We have laid out this cultural reasoning in our *Inclusive Finance India Report* chapter of 2024[23] (or the "IFI chapter") and we recount it briefly here. We posit that overlending and overborrowing are both cultural traits insofar as they are behaviours exhibited by large groups of actors[24], lenders in the former case and borrowers in the latter case. These behavioural traits appear first among a few select actors on each side of the market, usually those who enjoy some measure of stature in each group – typically, some of the larger microfinance institutions in a localized market on the lender's side, and some of the more high-status households in that same market on the borrower's side. They take root because of various precipitating factors that result in good performance of loan books and household balance sheets, and they contribute therefore to an overall sense of success and optimism on each side of the market. In the language of Minsky, we have all the conditions for a morphing of hedgers into speculators on each side of the market. As a result, these behavioural traits get transmitted through imitation, and so they become cultural traits, speeding up the growing incidence of speculation. The transmission of a behavioural trait through imitation is the first intimation that the logic at play, which we will call a cultural logic, is affective in nature. It operates not at a rational level in the human mind but at an emotional, affective level.

As imitation proliferates the cultural trait, the affective logic also comes into play on another front. Borrowers get confidence to churn loans (borrowing from one lender to repay another) because lenders are no longer performing proper credit assessment anymore – but at the same time, lenders get confidence to not perform proper credit assessment because borrowers are churning loans. As this continues, the incidence of the cultural trait on each side of the market only amplifies. Here is another quality of an affective logic. It cycles between cause and effect, blurring the distinction between the two. This is in contrast to the instrumental logics of mechanistic models that economists usually work with, and that Minsky was himself contesting in his 1977 paper. There, in the mechanistic models, it is assumed that the financial system is a machine-like totality, and that it functions according to a set of incontrovertible engineering laws. These laws are represented in mathematical form by the economist and such a representation, called a model, embodies the aforementioned instrumental logic. The logic is instrumental because it neatly separates cause and effect and

[21] Aliber, Robert Z., and Charles Poor Kindleberger. *Manias, Panics, and Crashes: A History of Financial Crises*. Seventh edition. Palgrave Macmillan, 2017.

[22] Mader, Philip. "The Instability of Commercial Microfinance: Understanding the Indian Crisis with Minsky." In *The Rise and Fall of Global Microcredit*. Routledge, 2018.

[23] Ibid.

[24] In its most general form, this is what a cultural trait is – a behaviour shared by a large group of human subjects owing to the imitation or emulation of a select set of actors (who are effectively, or position themselves as, pioneers) by the rest of the group.

therefore appears to give the user of the model some measure of engineering control over the machine that is supposedly being stewarded. Not so with affective logics, which grow in charge or intensity as they cycle between cause and effect, until the one is indistinguishable from the other.

When an affective, cultural logic is laid over Minsky's FIH, it does not produce a model but rather a frame. It is not a model because what we have is not a mathematical representation of the market, but rather a perspective on, or a certain way of viewing, the microfinance market. It is our contention that this way of viewing the microfinance market is not unlike how the influential 20th century economist John Maynard Keynes himself viewed financial markets, and we will return to this point later, in Section 6. More importantly for now, the frame is helpful for understanding the ongoing NPA crisis by virtue of helping us understand how both sides of the market can begin with mostly hedgers but end up with mostly Ponzi actors. Our task in this paper will be to substantiate this contention. We do so by concerning ourselves primarily with the boom (or mania) phase of the cycle that preceded the ongoing crisis.

We focus on the boom (or mania) phase for the following reasons. First, a lot of the current discourse on the MFI crisis is focusing on the aftermath or the bust phase (i.e., the NPA situation), but good diagnoses of how that came to pass are missing. During the initial stages of the bust phase, there were a number of opinion pieces from commentators that faulted factors external to the microfinance industry (such as extreme heat[25] or weak monsoons[26]) as responsible for the bust. Subsequently, as the bust deepened, commentators appeared to call out indiscriminate lending on the part of MFIs as also having contributed to high and rising NPAs[27]. But a careful empirical characterization of the nature of that indiscriminate lending remained elusive. Our work aims to the lay out such a characterization in considerable detail.

Second, characterizing the boom phase gives us an opportunity to offer an account of borrower behaviour during that phase. Such an account, at any reasonable level of depth, has been conspicuous by its absence in the commentary. Typically, the regulator as well as commentators, have tended to see the borrowers as victims, but it is possible that the borrower also had a role to play in stoking the mania, as described earlier. Characterizing borrower behaviour in concrete terms then allows us to put that theoretical case on a firmer footing. It also demonstrates how explaining the boom phase on the strength of provider misbehaviour alone is like expecting to hear a one-handed clap.

If both lender and borrower behaviours can be characterized in sufficient detail, then that also has vital implications for regulatory supervision – for it alerts us to the possibility that when

---

[25] Tendulkar, Reema, and Sonia Shenoy. "Why This Analyst Finds Microfinance a Compelling Investment Opportunity." CNBC TV18, June 27, 2024. https://www.cnbctv18.com/market/anand-rathi-microfinance-stocks-equitas-credit-access-fusion-micro-ujjivan-19434566.htm

[26] Ghosh, Shayan. "Largest Micro-Lender CreditAccess Grameen Joins Peers in Flagging Stress Pockets." Live Mint, August 2, 2024. https://www.livemint.com/industry/banking/largest-mfi-joins-peers-in-flagging-stress-pockets-11722508888850.html

[27] Mathew, George. "Microfinance Delinquencies Nearly Double to over Rs 28,000 Crore in a Year." *The Indian Express*, January 13, 2025. https://indianexpress.com/article/business/microfinance-delinquencies-nearly-double-to-over-rs-28000-crore-in-a-year-9773817/

the next boom begins to build momentum, the supervisor may expect to find its markers in some of the indicators that we use to characterize the most recent instance of a boom. Thus, our characterization of the boom phase offers clues for how the microfinance market may be monitored so that the buildup of mania can be identified, and so that suitable regulatory actions may then be taken in a timely manner to contain the boom, and by extension, to contain the subsequent bust also. Indeed, when we turn to the section on learnings, Section 6, after our empirical characterization is complete, we will claim that reducing the amplitude of the cycle is the best that one can hope for from a regulator, given that boom-bust cycles are the norm anyway in credit markets. And yet, this would be a tremendous achievement in itself, were it accomplished, because it would mean that the brutal and disruptive start-stop dynamic of credit markets that is a typical accompaniment to pronounced boom-bust cycles would be significantly mitigated.

Finally, because any detailed description of a boom phase has lessons for the regulator in the sense of preparing it for the next boom, it logically follows that the regulator is also an actor of interest in the boom phase. Thus, it is reasonable to assume that the regulator may also have contributed to the conditions underlying the boom phase. Therefore, and because the regulator provides the set and setting for the market to function, we begin our investigation into the boom phase of the most recent cycle, by discussing the role of the regulator.

Section 3: The Regulator

The MFI sector comprises less than 3% of all banking sector assets[28], but services around 6 Cr borrowers[29], with all the borrowers belonging to low-income households. These two facts underpin the RBI's approach to regulating and supervising the MFI market, as evidenced by various speeches delivered in recent years by the RBI's top management. For instance, at the CII NBFC Summit 2024, in a speech about the RBI's approach to regulating NBFCs, the Deputy Governor, Mr. Rajeshwar Rao remarked –

Microfinance loans are small-sized loans and constitutes a very small share in overall credit. Therefore, probability of financial stability concerns emanating from microfinance loans is quite low. However, in terms of numbers, microfinance loans affect a large number of borrowers and these borrowers belong to the vulnerable category. Therefore, it becomes necessary that the regulatory approach for microfinance loans is specifically targeted to protect the interests of these borrowers. With the objective of customer protection in mind, an entity-agnostic and activity-based comprehensive regulatory framework for microfinance loans has been put in place for microfinance loans provided by all regulated entities.[30]

If, according to Mr Rao, customer protection concerns have taken centre stage in the regulation and supervision of the MFI sector, then indeed, this is what we find when we

---

[28] *Report on Trend and Progress of Banking in India 2021-2022*. Reserve Bank of India, 2022.; MFIN India (https://mfinindia.org/microfinance/IndustryPortfolio); and Authors' calculations.
[29] *MFIN India Annual Report 2021-2022.* Microfinance Institutions Network (MFIN), 2022.https://mfinindia.org/assets/upload_image/publications/AnnualReports/AR%202021-22%20-%20Web.pdf
[30] Rao, M. Rajeshwar. "No More a Shadow (of a) Bank." Speeches and Media Interactions, Reserve Bank of India, February 9, 2024. https://rbi.org.in/scripts/BS_SpeechesView.aspx?Id=1416

analyse the 2022 MFI regulations. In the Consultative Document[31] released by the RBI prior to finalizing the regulations, the key concerns expressed were over indebtedness among borrowers, coercive recovery practices on the part of lenders, and the lenders depriving the borrowers of pricing benefits (i.e., loans at lower interest rates). The need was also expressed to harmonize the MFI regulatory framework by extending its scope to all lending entities that were advancing microfinance loans. This too demonstrated a concern for customer protection as earlier the regulations were only covering the customers of lenders registered as NBFC-MFIs, whose share of the microfinance market had been on a downward trend.

The final regulatory actions were announced in the Master Directions of March 2022[32]. Some of these actions were clearly aligned with the concerns expressed in the Consultative Document, such as extending regulatory coverage to all registered lenders, requiring lenders to assess both household income and household liabilities prior to lending, providing an indicative methodology for assessing household income, allowing lenders to come up with their own pricing models, requiring these models to be transparently communicated to both the borrower and the public at large, instituting a debt service ratio ceiling, and laying out guidelines for recovery practices. Less transparently traceable to customer protection concerns were the relaxations on end-use criteria and the number of lenders per borrower, which could arguably have pressed in the opposite direction. Notwithstanding these apparent wrinkles, the overall regulatory orientation was positioned by the RBI as one that encouraged the MFI industry to become more competitive and therefore more efficient, and at the same time more mindful of not trapping the borrower in a debt spiral.

And yet, we think that it is still possible for several reasons to read into the new regulations an implicit *caveat emptor* orientation. Firstly, almost the entire oversight, i.e., enforcement and supervision, of these regulations was left to the financial institution's board or the relevant SRO to perform. Secondly, the RBI did not think it appropriate to specify the kinds of punitive measures that a financial institution would be subjected to, if it were found to have transgressed the regulations. Though this omission did not limit the RBI's ability to penalise the institution, it inadvertently put all proposed regulation on the same plane, thereby missing an opportunity to signal to the industry which regulations were more critical from a borrower protection standpoint. Thirdly, there was no acknowledgment from the RBI on how the new regulations might produce perverse behaviour on the part of both lenders and borrowers (as we will see in the next two sections that they indeed did, with the benefit of hindsight). This last omission may be read, at first glance, in two ways – either the RBI simply did not expect that the regulations would encourage gaming, or the RBI believed that if it did induce gaming, it would be on the conscience of both lenders and borrowers. There is no implication of a *caveat emptor* orientation in either of these readings – in the first for straightforward reasons and in the second since lenders too would be expected to suffer the consequences of overlending. But there is a third reading, which is that the RBI believed that gaming of

---

[31] Consultative Document on Regulation of Microfinance." Reserve Bank of India, June 2021. https://rbi.org.in/Scripts/PublicationsView.aspx?id=20377#13

[32] "Master Direction – Reserve Bank of India (Regulatory Framework for Microfinance Loans) Directions, 2022." Reserve Bank of India, March 2022. https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=12256&Mode=0

regulations was more likely on the part of lenders, and therefore borrowers were expected to be vigilant against the consequences of such gaming. There may be some reason to subscribe to this third reading, given the extensive guidelines for lenders on information disclosures to the borrower in the form of Key Facts Statements. On the other hand, the detailed attention in the Master Directions on curbing coercive recovery practices appears to cushion the borrower from the harmful consequences of overborrowing.

Several further observations may be made on the regulatory stance during the boom phase, which we date (approximately) from Quarter 1 of FY 2022-23 to Quarter 4 of FY 2023-2024, a 2-year period. This choice of period will be validated in the next two sections. For now, if we accept that period as the boom phase, then it is clear that the RBI did not believe that boom-bust cycles are the norm rather than the exception in the microfinance market, since there is no mention of cyclical dynamics in either the Consultative Document or in the Master Directions. At the same time, the RBI took an accommodative view of microfinance loans being used for consumption purposes, even for buying gadgets or financing ceremonies – as made explicitly clear in the Frequently Asked Questions released in July 2022[33]. We will argue below that it is particularly in the context of such consumption spending that boom-bust cycles can become pronounced and amplified, and therefore the RBI's lack of appreciation that the microfinance market could be routinely subject to such phenomena is especially problematic. We may conclude that the RBI was not viewing the microfinance market through a Minsky frame. This error of omission probably explains why the RBI did not demonstrate an explicit concern for the potential gaming of regulations (which would, in Minskyian terms, occur when hedgers turn first into speculators and then into Ponzi actors), or did not employ any communicative efforts at moral suasion to discipline either lenders or borrowers during the aforementioned 2-year period[34]. In fact, in November 2023, when the RBI increased the risk weights of retail loans of NBFCs flagging abnormally high growth in certain sub-sectors of consumer credit, it specifically excluded MFI/SHG loans from this increase, suggesting that it saw no evidence of a credit bubble in the microfinance market[35]. In sum, the RBI failed to recognize the microfinance boom phase for what it actually was, or failed rather to anticipate it in its regulatory stance. Next, we attempt to characterize the boom phase in different ways from lender side data.

---

[33] Frequently Asked Questions. "Regulatory Framework for Microfinance Loans." Reserve Bank of India, January 2025. https://www.rbi.org.in/Scripts/FAQView.aspx?Id=147

[34] Research has shown that national culture, and therefore strategic communication from policymakers, matters for the efficacy of macroprudential policies. See, for instance – Lu, Yiming, and Yu Wang. "Macroprudential Policies, National Culture, and Bank Systemic Risk: A Cross-Country Comparison." *Finance Research Letters* 58 (2023): 104295. https://doi.org/10.1016/j.frl.2023.104295 . The RBI is well aware of the importance of communication for monetary policy. See, for instance – Central Banking in Uncertain Times: The Indian Experience, Shri Shaktikanta Das, Governor RBI, June 13, 2023 - https://www.bis.org/review/r230622l.pdf). It is also not averse to using moral suasion to remind MFIs of their social objectives. See, for instance – Micro finance: Empowering a Billion Dreams (Inaugural Address by Shri M. Rajeshwar Rao, Deputy Governor, Reserve Bank of India - October 27, 2021 - at the Sa-Dhan National Conference on "Revitalizing Financial Inclusion") - https://www.rbi.org.in/Scripts/BS_SpeechesView.aspx?Id=1137)

[35] "Regulatory Measures towards Consumer Credit and Bank Credit to NBFCs." Reserve Bank of India, November 2023. https://rbi.org.in/Scripts/NotificationUser.aspx?Id=12567&Mode=0

Section 4: The Lender

The lenders' actions during the boom phase of the cycle are important to understand, not only because they provide us a window into how that phase may be characterized in empirical terms, but also because they are typically papered over in a summary style by much of the commentary once the NPA crisis breaks. We think, on the other hand, that a careful, detailed investigation into lender actions during the boom phase can be eye opening.

We begin our analysis by examining the lenders' growth trajectory. Thereafter, we use interviews that we conducted with leaders, managers, and frontline staff from over 12 MFIs of varying sizes across the country, to identify some of the underlying drivers of lender behaviour. Finally, we study publicly listed lenders of microfinance loans and analyse their earnings calls and annual reports to capture the sentiment prevailing during the boom phase. By combining quantitative and qualitative approaches, we are able to not only report stylized facts but also interpret those facts in light of perceptions that were revealed to us by industry participants.

Overall, our analysis indicates the following: The growth trajectory captures the mania that a Minskyian dynamic would typically exhibit, while the interviews reveal that industry participants were indeed worried about the sources of growth. Yet, public avowals by industry leaders in earnings calls and annual reports suggest a mood of celebration, even euphoria.

Section 4.1: What was the Growth Trajectory?

To understand the growth trajectory of the sector, we study three primary metrics: how the client base grew; how the portfolio grew; and what the growth in disbursements looked like. The long view (spanning more than a decade) is presented in Figures 1, 2, and 3. It is necessary to present this view first since the cyclical nature of the market comes forth quite clearly.
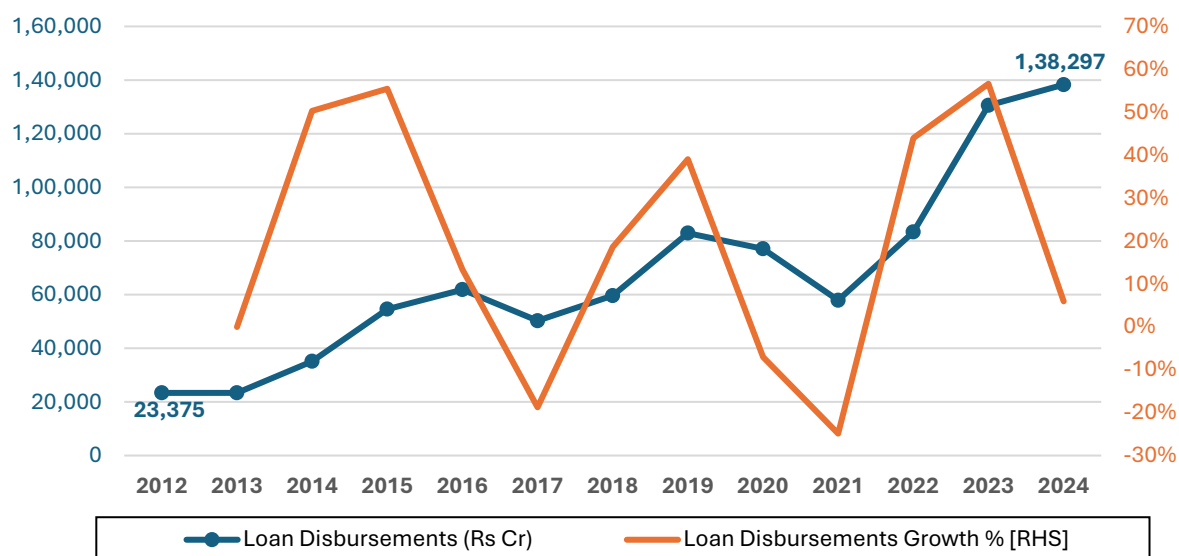
Figure-1: Growth and Growth Rate in MFI Clients
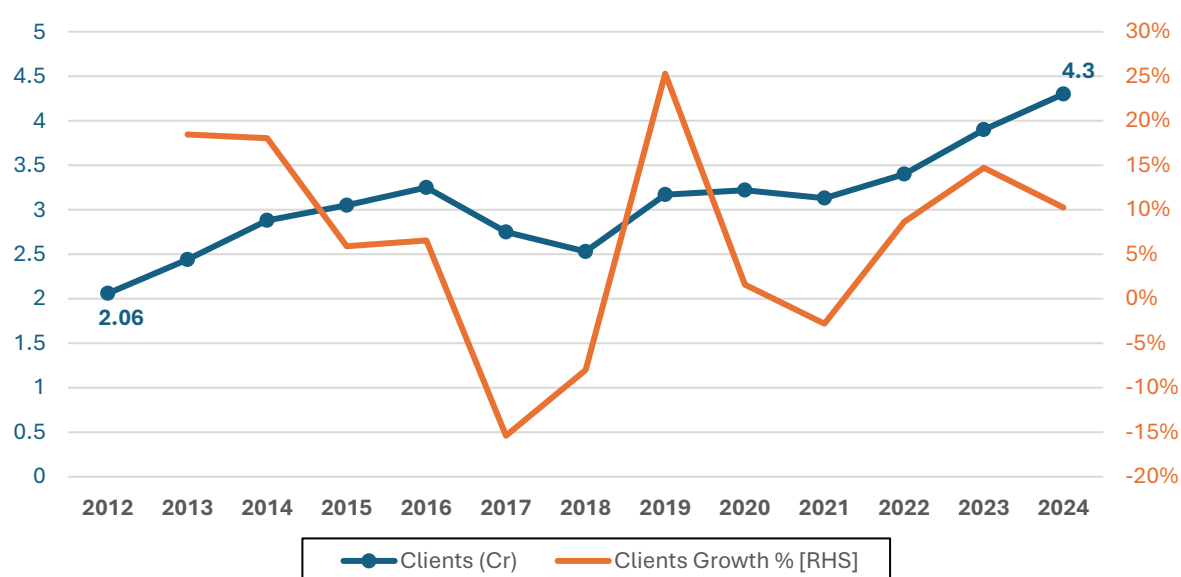
Source: MFIN Annual Report, Authors' calculations

Between March 31, 2012, and March 31, 2024, the client base of the microfinance sector grew from 2.06 crores to 4.3 crores. This represents an average annual growth rate of 6.9% and a Compounded Annual Growth Rate (CAGR) of 5.8%.

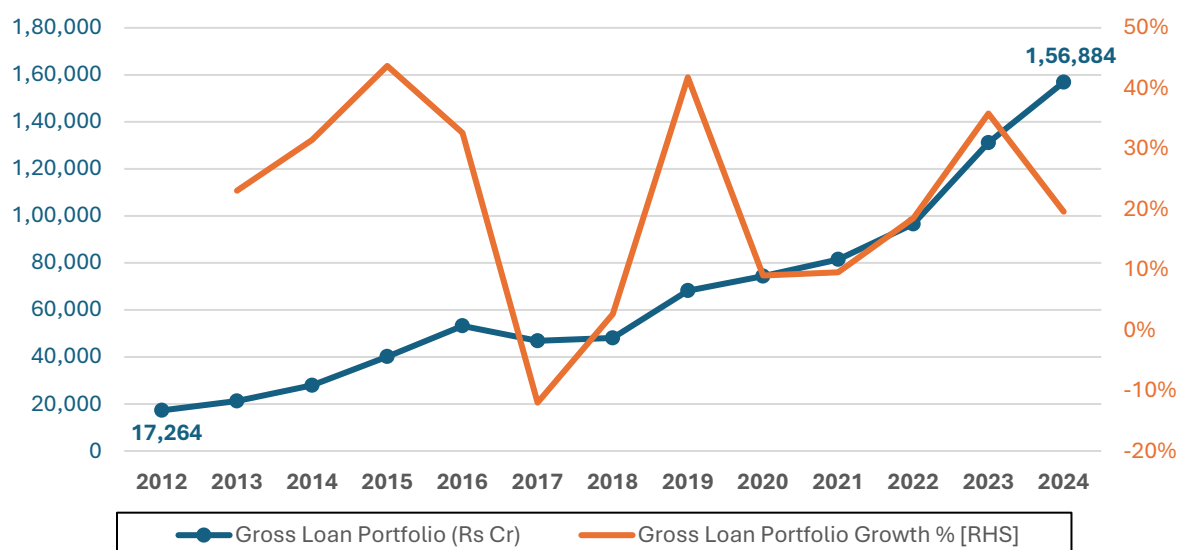**Figure-2: Growth and Growth Rate in Disbursements**

Source: MFIN Annual Report, Authors' calculations

Between 2012 and 2024, disbursements by the microfinance sector grew from ₹23.3 thousand crores to ₹138.2 thousand crores. This represents an average annual growth rate of 21.3% and a CAGR of 18.5%.

**Figure-3: Growth and Growth Rate in Gross Loan Portfolio**

Source: MFIN Annual Report, Authors' calculations

Finally, between 2012 and 2024, the Gross Loan Portfolio (GLP) grew from ₹17.2 thousand crores to ₹156.7 thousand crores. This equates to an average annual growth rate of 18.5% and a CAGR of 21.3%.

These patterns, when viewed together, reveal three characteristics of MFI market growth that are central to understanding the latest episode of a boom phase.

1. The growth appears to be cyclical. There are periods when the sector shrank in terms of the number of clients, disbursements, and GLP. However, immediately after that, the sector also grew rapidly. The proposition that all busts are preceded by a boom and all booms are succeeded by a bust is apparent when we study the evolution of the sector in the longer run.

2. The growth in GLP was primarily driven by disbursement growth, i.e., the sector's growth appears to be driven by an increase in the amount lent to clients rather than the number of clients to whom the sector has lent.

3. If we plot the average GLP per client —i.e., an approximation of the average amount of loan outstanding per client — and the rate at which individual borrowers are taking additional credit, the average growth rate stands at 13.4%, with a CAGR of 12% between 2012 and 24. See Figure-4.

Figure-4: Growth and Growth Rate in average GLP/Client
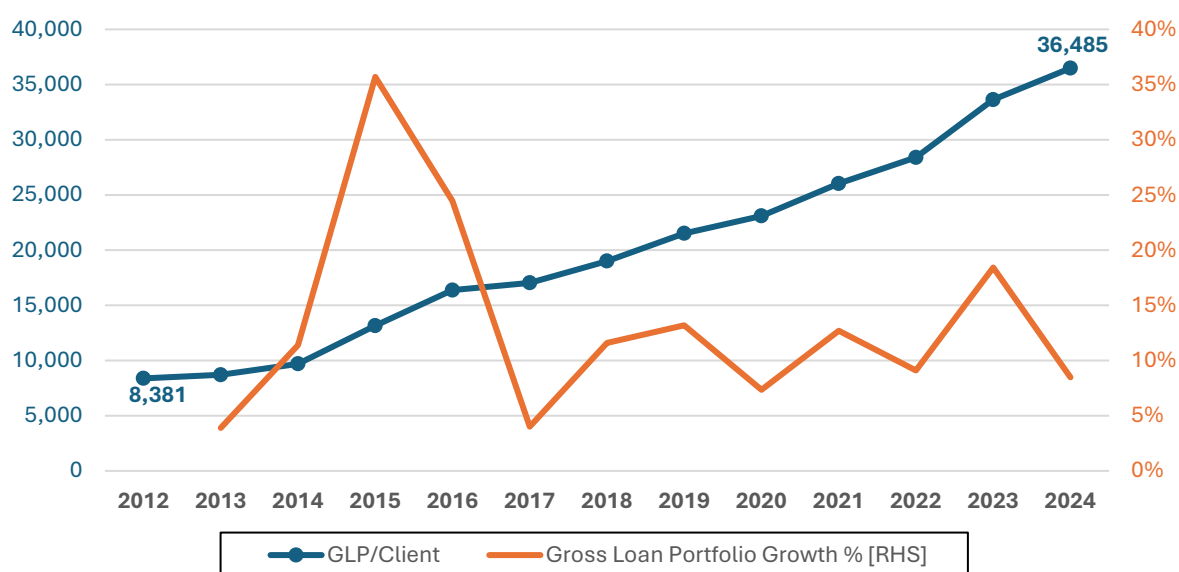
Source: MFIN Annual Report, Authors' calculations

Figure 4 reveals that, immediately prior to the current crisis, there was a significant increase in the average outstanding per client. Between 2012 and 2016, the sector witnessed significant growth. This is to be expected, since the sector was nascent, with limited penetration, as such, had scope for rapid expansion. However, as the sector matured, the growth rate rarely slowed down, though there were exceptions. In 2017, for example, the impact of demonetisation was felt that led to a negative growth of 10% in GLP and negative 15% in number of clients and negative 20% in the amount disbursed.

Beyond 2017, however, the sector continued its growth trajectory. In fact, in 2019, despite having already grown by 400% over the prior decade, it witnessed a further growth of 25% in

clients, and approximately 40% in terms of GLP and disbursements. 2020 and 2021 marked the impact of COVID, after which the growth trajectory intensified further, especially in the aftermath of the new regulations, which expanded the addressable market.

As briefly previewed in the previous section, there were two key changes to the 2022 regulatory regime that underpinned this growth. First, the household income limit was changed from ₹1,25,000 for rural households and ₹2,00,000 for non-rural households to a uniform ₹3,00,000. This, in theory, was expected to significantly increase the client base. The second change pertained to the maximum indebtedness limits, which were increased from ₹1,25,000 to ₹1,50,000, representing a modest increase relative to the income limits. However, the increase was not universally applicable. A household must earn above ₹2,50,000 to see an increase in its indebtedness limit, since, instead of a universal ceiling of ₹1,25,000, the new regulations introduced a dynamic cap on indebtedness at 50% of household income. Additionally, all of the household's loans were to be included in the indebtedness limit, unlike earlier, when only borrowers' outstandings were considered.

Given these changes, indeed, a new growth wave was possible. But since the significant change was only in qualifying income, the expectation would be that growth is driven by new clients rather than additional loans to existing clients.

The trajectory during the boom phase (FY 2022-23 to FY 2023-24) contradicted this expectation. While the growth rate in the number of clients remained fairly low (average growth rate of 8.1% vs. 8.4%), the growth rate of disbursements (to new and existing clients) increased significantly (average growth rate of 35.5 % vs. 16.9%). The promise of serving new clients did not materialise; instead, existing clients were heavily leveraged with additional loans. To understand this phenomenon, we have to realise that the changes in household income levels were not very meaningful. In theory, it more than doubled for rural households and increased by ~30% for non-rural households, but in practice, given the notoriously difficult task of income assessment, it is more than likely that these households were already being served by MFIs.

Section 4.2: How was the Growth Achieved?

Between February and September 2024, we conducted 120 interactions across 13 microfinance institutions, including 30 interviews with leadership teams (CEOs and senior managers) and 90 interviews with field-level, branch-level, and regional staff[36]. The overarching theme underscoring post-regulation lending practices was a pervasive fear: "If we don't lend, another MFI will." This competitive pressure, articulated by MFI leaders, was driven by four interlocking forces: 1) Investor and Creditor Pressure, 2) Target-Driven Underwriting, 3) Unreliable and Gameable Data, and 4) The Bandwagon Effect (A Race to the Bottom). We discuss each of these in turn below.

---

[36] See: Bhattacharya, Dwijaraj, Priyadarshini Ganesan, and Sowmini G Prasad. *Emerging Trends and Shifts in Microfinance*. Dvara Research, 2025. https://dvararesearch.com/emerging-trends-and-shifts-in-microfinance/

Investor and Creditor Pressure: The Growth Mandate

When the RBI lifted caps on interest rates and removed restrictions on the number of lenders per borrower, it effectively signalled to investors that microfinance was entering a new phase of maturity. Equity and debt inflows into the sector more than doubled between FY 2021 and FY 2023, rising from ₹4,637 crore in FY21 to over ₹13,000 crore in FY23[37]. As one CEO admitted, "Funds are flowing into the sector to capitalise on the increased interest rates and the apparent insensitivity of customers to interest rates." This new wave of capital arrived with a mandate for rapid deployment and aggressive, fast-paced growth. Eager to prove profitability after pandemic losses, MFIs pursued 'deepening' rather than 'broadening'—lending more to existing customers in existing geographies—as it was economically more efficient than expanding into new, uncertain markets. Almost all MFI leaders suggested in our interviews attested to this fact. Thus, if the RBI had wished for competitive efficiency, it got it, but of a perverse kind.

The economic logic was straightforward. Expanding into virgin areas meant higher acquisition costs, new infrastructure, and uncertain repayment behaviour. Deepening, on the other hand, meant leveraging existing networks and borrower familiarity. But this strategy had an unintended (but not unforeseeable) outcome: the same borrowers became the common target of multiple lenders. With the removal of the "two-lender rule,"[38]competition intensified. MFIs began competing not on price or product quality, but on speed and scale. As one CEO put it, "there is intense competition, but it is not reflected in interest rates." Instead, the race was for faster disbursals and larger tickets. Every rupee deployed was a signal of vitality to funders, every uptick in loan book a badge of competitive strength.

The "deepening" phenomenon thus had a dual driver — external pressure from investors and internal pressure from management. This manifested in perverse incentives for field officers.

Target-Driven Underwriting

Under the new regime, MFIs were required to assess repayment capacity through a "Fixed Obligation to Income Ratio" (FOIR) capped at 50% of household income. They were also to develop board-approved policies for household income assessment. In theory, this was meant to anchor credit decisions in affordability. In practice, it became a bureaucratic checkbox that subordinated judgment to targets. A CEO's remark captures the core problem: "Household income is a big black hole." This, despite the RBI's indicative method for household income assessment, as announced alongside the Master Directions. Without verifiable documentation in informal economies, the income figure was whatever the borrower claimed — or, more precisely, whatever the loan officer needed it to be.

---

[37] See: *The Bharat Microfinance Report 2021*. Sa-Dhan, 2021. https://www.sa-dhan.net/wp-content/uploads/2023/05/BMR-2021_c.pdf; *The Bharat Microfinance Report 2023. Sa-Dhan, 2023.* https://www.sa-dhan.net/wp-content/uploads/2024/01/Bharat-Microfinance-Report-2023_compressed.pdf

[38] The two-lender rule refers to the pre-2022 regulation that no lender can be the third lender to the borrower. See: Tiwari, Anukriti , and Sowmini G Prasad. "Our Response to RBI's Consultative Document on Regulation of Microfinance." *Dvara Research*, 2021. https://dvararesearch.com/our-response-to-rbis-consultative-document-on-regulation-of-microfinance/

Field interviews revealed how regulatory intent got lost in translation. Almost all loan officers operationalised the 50% FOIR as a flat ceiling of ₹12,500 in EMIs, irrespective of actual income. This understanding was also shared by many branch- and regional-level employees. This simplification was not an innocent misunderstanding; it was an adaptation to institutional incentives. Loan officers were evaluated on disbursement and recovery targets, not on underwriting accuracy. The conversations revealed that targets and incentives feature heavily on the loan officers' minds, and they would continually "optimise for the highest possible monthly take-home salary."

The conflict of interest here was structural. A field officer's job security and bonuses depended on meeting loan volume targets, while prudence risked rejection rates that could be interpreted as underperformance. "We would accommodate old customers who are just above the threshold by modifying household incomes or outstanding EMI amounts," one officer explained. In other words, loan approval was the default; ineligibility was a problem to be solved, not a warning to be heeded, in many cases. While rejections did occur in some cases, especially for mature customers in the 5th or 6th cycle, since their spouse's loans were also included in the FOIR calculation, these were not very common. Despite some exceptions, the general rule was a culture where compliance became performative, and we use the word "culture" here advisedly – we will return to it later. Income data was collected because the regulations required so, not because it informed a meaningful risk assessment.

Unreliable and Game-able Data
The backbone of the underwriting model was supposed to be data — specifically, credit bureau records. Every loan was to be reported, cross-checked, and reconciled, ensuring that household obligations did not exceed permissible limits. But in practice, this system was porous, outdated, and easily manipulated. MFIs themselves admitted as much. MFI CEOs noted – "there is currently no way to ascertain whether the income recorded with the credit bureau is the actual reality of the customer." Further, all respondents reported that data updates were delayed. In many cases, SHG and KCC loans were often missing, and, needless to mention, informal borrowings were invisible. This opacity created the perfect conditions for gaming the system. Loan officers learned how to navigate credit bureau lags to disburse new loans before old delinquencies appeared. Customers, too, benefited from or exploited loopholes, like using multiple IDs or borrowing under different household members' names. As one officer said candidly, "They (customers) often lie. We ask them why there is a mismatch, and we make a final decision based on their explanation."

Essentially, the credit bureau, meant to be the market's memory, became its mirage. Everyone saw what they wanted to see: investors saw credit penetration, regulators saw compliance, and MFIs saw growth potential. Meanwhile, the data's inaccuracies allowed systemic risk to accumulate invisibly.

The Bandwagon Effect
Once a few institutions adopted aggressive lending practices to meet growth and funding targets, others were compelled to follow suit. The compromised credit assessment culture proliferated, as culture usually does, by imitation. Field staff across regions reported encountering multiple MFI representatives visiting the same households within a short span

of time. As one officer remarked, "Whether we find customers or not, we keep running into other MFI staff, since 10–15 MFIs operate in the same region." In such an environment, prudence quickly became a competitive disadvantage. Institutions that adopted stricter underwriting standards risked losing clients to competitors and appearing less dynamic to investors. This produced what several respondents described as a "race to disburse." A senior executive put it bluntly: "We can't afford to slow down when others are growing."

The convergence of incentives across institutions created a collective action problem: each was acting rationally in pursuit of growth, yet the aggregate effect was market saturation and elevated systemic risk, which possibility as the previous section argued, the RBI had already written out of hand or at least did not consider salient enough to inform its regulatory orientation.

In summarizing the learnings from our qualitative data, we may say that the FY 2022-23 to FY 2023-24 microfinance boom was shaped less by deliberate regulatory evasion than by the interaction of incentives, data limitations, and structural competition. Investor expectations for rapid portfolio expansion encouraged MFIs to deepen existing markets rather than broaden outreach. Internally, target-driven underwriting practices compromised the quality of credit assessment and created conflicts of interest for field staff. Weak supervisory mechanisms and unreliable data systems further enabled the gaming of regulatory safeguards. Finally, once aggressive growth strategies became the industry norm, competitive and funding pressures ensured widespread imitation.

However, in public discourse, the omnipresent concerns (from the interviews) were seldom reflected. A study of the earnings calls and annual reports (but mostly of earnings calls) of publicly listed entities operating in the sector revealed an apparent euphoria between 2022 and 2024. Next, we discuss this contrast.

Section 4.3: How was the Growth "Sold"?
To understand the public narrative, we analysed the collective communication strategy of major MFIs and Small Finance Banks (SFBs) operating in the microfinance segment. These included Satin Creditcare, Credit Access, Fusion Finance, Muthoot Microfin, Spandana Sphoorty, Arman FS, Ujjivan, ESAF, Suryoday, and Utkarsh SFB. Their annual reports and, especially, analyst calls were relied on to parse the narrative for clues about the industry sentiment as evidenced by public declarations.

Our analysis suggests that the industry successfully constructed a two-part narrative designed to shield its rapid post-crisis growth from investor scrutiny. Emerging from the deep COVID-19 asset quality crisis, this strategy aggressively compartmentalised all existing problems as "legacy" or "COVID-distressed" while simultaneously proclaiming the "pristine" quality of the newly disbursed loan portfolio under the March 2022 harmonised regulatory regime. The narrative evolved through three stages.

Stage-1: FY 2021-22, Or The Great Segregation – Blaming the Past
The transition year of FY 2021-22 (the period between the release of the Consultative Document and the release of the Master Directions) was defined by the relentless effort to

clean up balance sheets and establish a clear distinction between the pre- and post-crisis portfolios. Analyst calls from Q4 FY 2021-22 and Q1 FY 2022-23 show a near-unanimous strategy: attributing high Gross Non-Performing Assets (GNPA) or Portfolio at Risk (PAR) to specific, non-recurring historical events.

Institutions that faced acute regional stress consistently assured investors and other commentators that, while headline asset quality figures appeared elevated, this was solely due to the "stagnant" legacy pool, which was no longer receiving disbursements. The focus was on collection efficiency (CE) metrics for the current, or "performing" book, which were reported as near-perfect (typically 99%+). This was the primary mechanism for establishing the aforementioned firewall.

The Small Finance Banks (SFBs) employed similar language. During their FY 2021-22 Q3 calls, management would differentiate clearly between the GNPA arising from the restructured or older portfolios (the "legacy") and the newly minted books, which were reported as having minimal to zero slippages. This allowed them to communicate significant write-offs and provisioning efforts—actions necessary to clean the balance sheet—not as systemic failures, but as a final, decisive action against the past. This messaging consistently assured the market that elevated credit costs were provisions against the vintage pre-March 2020 pool and residual COVID-restructured assets, while the newly disbursed current book showed collection efficiency above 99.5%, indicating a definitively superior underwriting quality.

By successfully pinning all distress on legacy issues, the institutions effectively granted themselves a clean slate for the future, absolving the newly implemented post-COVID underwriting processes from any immediate attention.

Stage-2: FY 2022-23, Or The New Regulation Shield and the Pristine Mandate
The FY 2022-23 brought the full implementation of the harmonised regulatory framework (RBI circular on 'Regulatory Framework for Microfinance Loans' effective April 2022). This was a significant inflexion point, as it enabled greater operational flexibility and removed the lender limit on borrowers. Instead of acknowledging the inherent risk of over-indebtedness that the relaxed framework could introduce—especially given the continued pressure for AUM growth—MFIs and SFBs reframed the new rules as an enhancement of risk management. The public narrative shifted from fighting COVID to celebrating regulatory excellence.

Institutions driving aggressive growth frequently highlighted that the new Risk-Based Pricing (RBP) and the simplified debt-to-income (DTI) computation meant their underwriting was now "scientific" and "risk-calibrated." The core problem, however, as discussed earlier, was the assessment of income and existing debt, which remained difficult and prone to inaccuracy, but was seldom acknowledged. The analyst calls actively deflected concerns about the looseness of DTI checks and the potential for multiple loans per customer. Instead, management teams frequently argued that the new framework encouraged a "true partnership approach" with the borrower, and that technology platforms, bolstered by DTI guidelines, ensured every post-April 2022 loan was fully assessed for repayment capacity, making the quality of this new vintage superior to anything seen historically. The message was clear: because the loans adhered to the new DTI ratio (not exceeding 50%), they were, by

definition, pristine. Any suggestion that high AUM growth might be masking poor income assessment was met with reference to this new, regulatory-approved quality standard, making the book seem inherently flawless.

Stage-3: FY 2023-24, Or Isolated Pockets and the Denial of Systemic Flaws
By early 2024, the narrative faced its first significant test. While headline GNPAs for the overall book continued to drop, driven by high write-offs and portfolio growth, subtle signs of stress began to appear in the newly originated books—specifically, an uptick in Portfolio at Risk (PAR) metrics (30/60 days past due) in certain regions. The institutions responded by employing the second component of their rhetorical strategy: blaming isolated cases of distress. Any increase in slippages was quickly framed as a function of external, non-replicable factors: localised weather events (unseasonal rains), political disruptions, or specific geographical regions that were already known to be problematic.

For instance, larger entities might report slightly higher short-term PAR. Still, the explanation would link it to localised flood damage or a small pocket of unrest in a single district. Management asserted that such a marginal rise in PAR 30+ was strictly due to localised issues following external events, framing it as an operational, temporary issue, not a credit underwriting challenge, thereby confirming that the core, pan-India book continued to perform impeccably. This was crucial because it allowed the institutions to maintain the core thesis—that the underwriting process itself remained flawless—while addressing temporary fluctuations. This consistent denial of internal, systemic flaws—such as relaxed DTI verification due to growth pressure or the cumulative impact of the new regulations on over-leveraging— allowed the MFIs and SFBs to continue rapid disbursement and growth, selling a portfolio to the market that was described as virtually without risk, save for the occasional, unavoidable "act of God" or regional anomaly.

Thus, we observe that the sector employed three distinct phases and two distinct strategies between FY 2021-22 and FY 2023-24. By establishing a rigid distinction between the "legacy" portfolio (the scapegoat for all past failures) and the "pristine" new book (the symbol of regulatory compliance and technological prowess), the industry managed market expectations. This communication strategy allowed them to maintain a high-growth trajectory while aggressively provisioning for past losses, successfully deflecting the more challenging questions about the genuine sustainability and risk profile of the new, rapidly growing microfinance books in the post-COVID regulatory environment. This is captured in the figure below, which plots the sentiment of analyst calls from 2020-24.

Figure-5: Cumulative Sentiment Score Based on Analysis of NBFCs, MFIs and SFBs[39]
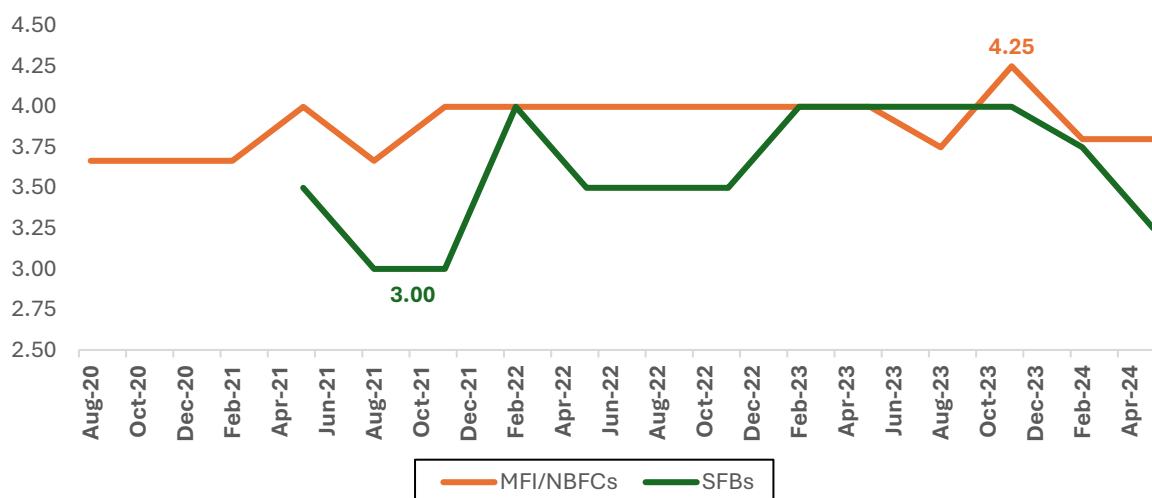
Source: FSP Transcripts, Authors' Calculations

Using Azure's Text Analytics, we model the sentiment present across the analyst calls. A score ranging from 1 to 5 was assigned to each transcript, then averaged for each category (of provider) and quarter. A score of 1 suggests extreme pessimism, 2 suggests pessimism, 3: neutral, 4: optimism and 5 as extreme optimism. As evident from Figure-5, the observed range was between 3 and 4.25. From the observation, two key features stand out: the microfinance sector was more optimistic than the SFBs in general, and optimism did not falter throughout the period FY 2021-22 to FY 2023-24. This is in direct contrast to the evolution of the industry's internal assessment, as discussed in the previous section.

In concluding this section, our analysis points to a significant growth spurt during the boom phase, which was clearly unsustainable. This lack of sustainability was apparent both in the data and in the information, we were able to gather from our interviews with MFI personnel. In those interviews, we also learned about operational deficiencies and investor pressures. Yet, public commentary offered a sharply contrasting narrative to all of this. Listed entities consistently pushed a "pristine" narrative of post-March 2022 disbursements, seldom acknowledging the quicksand beneath the growth. Together, these ensured that disbursements continued to grow, along with borrower leverage. It is to this third and last aspect that we now turn.

Section 5: The Borrower

Often, especially in the context of financial inclusion efforts, when the bust phase in the credit market begins, the borrower is viewed as a victim. We do not think that such a reflexive attitude is helpful in properly diagnosing the origins of the NPA crisis, as the borrowers do have some responsibility to bear as well. As lender optimism builds during the early stages of the boom phase, this optimism does not translate into an automatic slackening of credit assessment procedures unless borrowers participate in some way to ensure that lender optimism can be sustained or even stoked higher. This happens via the phenomenon of loan

---

[39] The data was not always present for all the providers and quarters. See Annexure-X for the details of quarter vs. provider data availability.

churning, i.e., borrowing from one lender to repay another, so that lenders continue to enjoy high repayment rates.

Further, we also may expect the churning of loans to pick up pace quickly during the boom phase. Our hypothesis, laid out in detail in the IFI chapter, is that this happens because in addition to the churning being aided by lenders slackening on credit assessment, the churning is in fact necessitated by the expenditure of the loans on status goods competition among borrowers, which can ratchet up very quickly, via imitation of one borrower by another. Once status goods consumption proliferates in this way, and along with it, the churning of loans as well, then both of these phenomena also become cultural traits, just as the phenomenon of a slackening in credit assessment appears as a cultural trait on the lender's side. We showed in the IFI chapter (and also argued in Section 2 above) how these two cultural traits feed into and amplify each other, and this too is the reason that the boom phase becomes quickly pronounced and a site of growing euphoria.

Our point for the reader to appreciate is that poor credit assessment on the part of lenders, coupled with loan churning among borrowers, is precisely the interactive dynamic that imparts to the boom phase of a boom-bust cycle its kinetic power as well as its amplification mechanism. In this section, we present some evidence to show that this sort of dynamic unfolds during the boom phase on the borrower side quite naturally in the microfinance market where credit is often used for status goods consumption, which is also a form of competition among borrowers.

Section 5.1: CMIE Data

First, we consider the Center for Monitoring the Indian Economy's Consumer Pyramids Household Survey (CMIE CPHS) dataset which is India's only high frequency panel dataset of households, allowing us to document household participation in different kinds of credit markets, both formal and informal. By participation, we mean that the data allows us to observe whether a household has borrowed from a particular source or not, but not the actual loan outstanding amounts. The CMIE CPHS data also allows us to document the uses to which households put their borrowings.

Even though the CMIE CPHS dataset covers about 1,70,000 households in all, only about 126,000 households are repeated in the survey for the period we have chosen, which is Jan-Apr 2021 to Sep-Dec 2024[40], a year before the boom phase picks up momentum, up until about 6 months after the bust begins to set in. Data on these households therefore offer a true balanced panel for us to analyse trends. Figure 6 shows the percentage of all households who had microfinance borrowings. We see this number on an upward trend from the start of the period until Sep-Dec 2023, after which it begins to decline. Between May-Aug 2022 and Sep-Dec 2023, the number almost doubles from approximately 8% to approximately 14%.

---

[40] The CMIE CPHS data is collected in three 4-month waves every year: Jan-Apr, May-Aug, Sep-Dec.
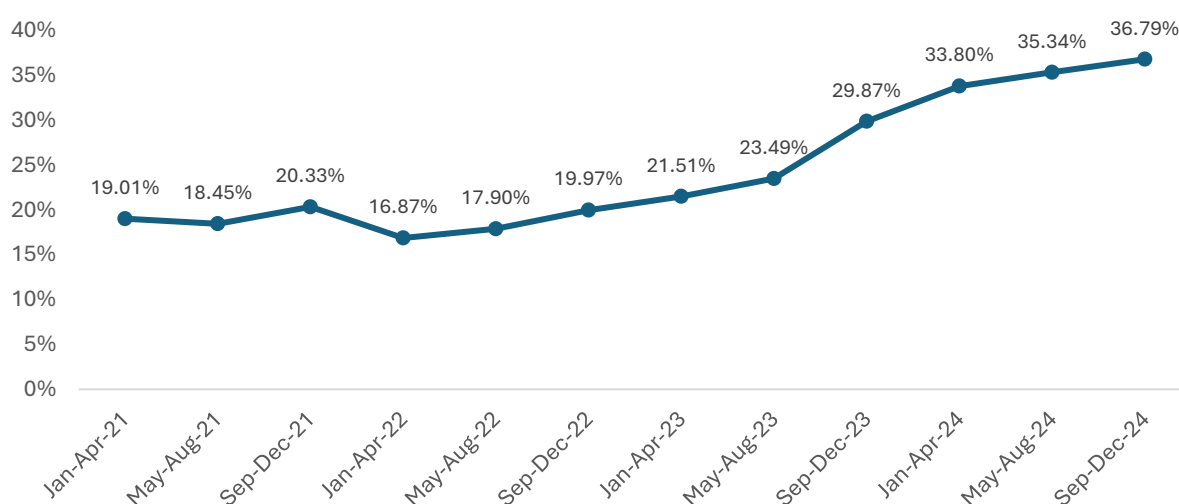
Figure 6: Share of Microfinance-borrowing Households Among All Households
Sample: Panel of 120,155 Households
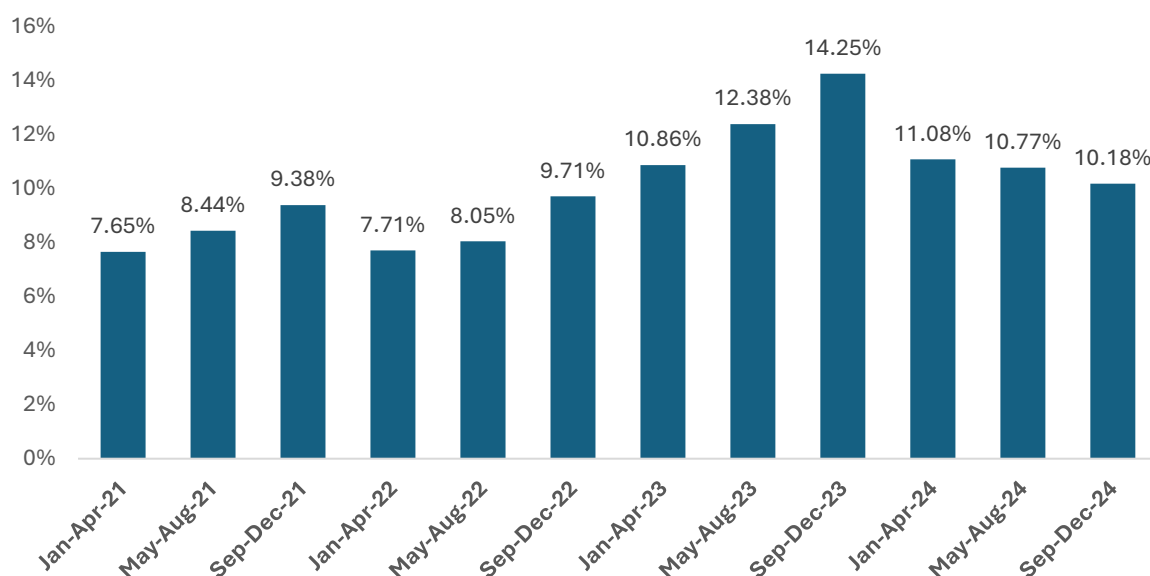
Source: CMIE CPHS, Authors' calculations

Figure 7 increases the resolution – it shows the percentage of borrowing households who had microfinance borrowings. We see an even more pronounced upward trend relative to the first graph, with the number increasing from approximately 18% in May-Aug 2022 to approximately 30% in Sep-Dec 2023, and then continuing to rise by another 7 percentage points by Sep-Dec 2024.

Figure 7: Share of Microfinance-borrowing Households Among All Borrowing Households
**Sample: Panel of 120,155 Households**

Source: CMIE CPHS, Authors' calculations

Thus, even after the bust phase set in, the percentage of borrowing households who were borrowing from microfinance institutions increased. Further, comparing Figures 6 and 7, we

find that whereas the percentage of all households who had microfinance borrowings increased by approximately 2 percentage points between May-Aug 2022 and Sep-Dec 2024, the percentage of borrowing households who had microfinance borrowings increased by approximately 20 percentage points. Although both the share of all households with microfinance loans and the share of borrowing households who relied on microfinance increased between May–Aug 2022 and Sep–Dec 2024, the latter increased much more sharply. When the microfinance share among borrowers grows substantially faster than the microfinance share among all households, it indicates that the overall pool of households taking any kind of loan has likely shrunk. In other words, microfinance became a larger part of household borrowing not only because its own footprint expanded, but also because fewer households were borrowing from other sources.

This, in turn, suggests that loans from sources other than microfinance were being retired during this period. What might have been these sources? Figure 8 provides the answer. It plots through time the shares of borrowing households that were borrowing from different sources. We see that mainly, shops and relatives/friends as loan sources became less significant for borrowing households between May-Aug 2022 and Sep-Dec 2024, with the share of borrowing households that were borrowing from shops more than halving during this period.

**Figure 8: Share of Households Borrowing from a Given Source Among All Borrowing Households
Sample: Panel of 120,155 Households**
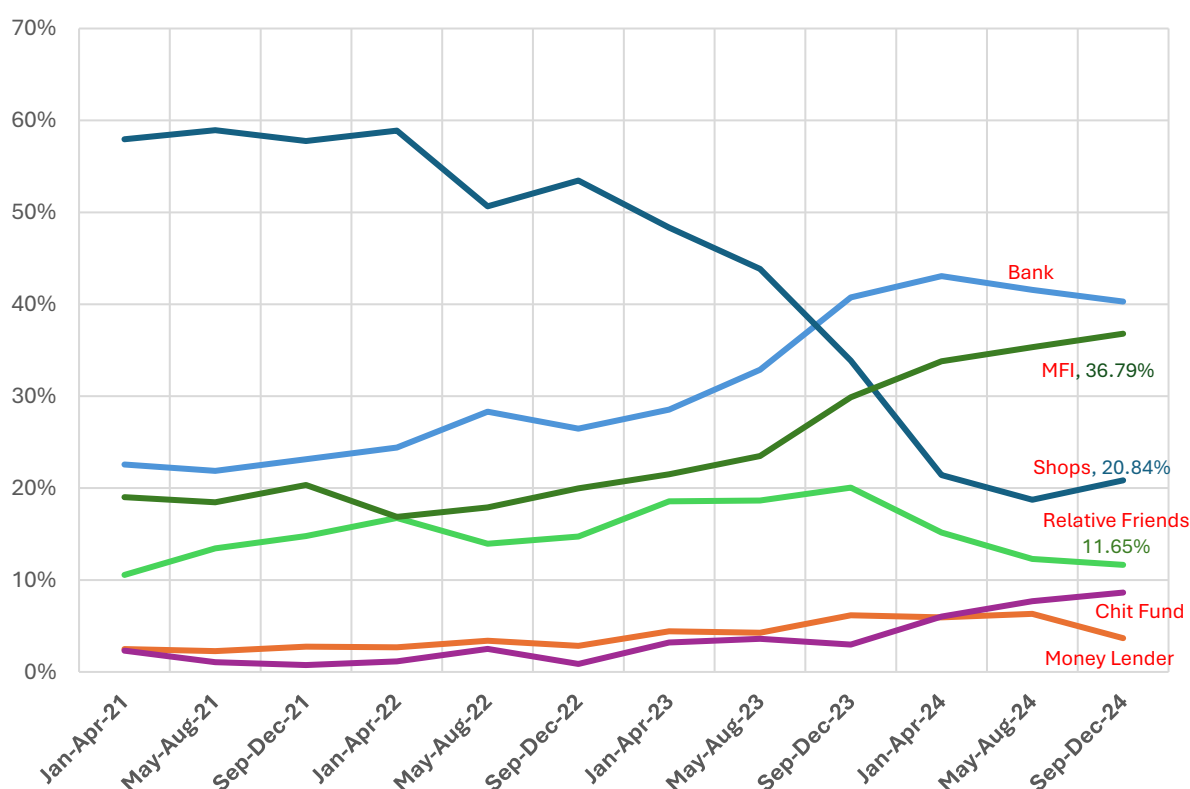
Source: CMIE CPHS, Authors' calculations

How were the loans that were retired being paid off? If loans were being churned, then the answer would be other loans. Therefore, we examine the use of loans by households. Figure

9 shows the trends in the percentages of borrowing households, no matter the source of the loan, that were borrowing for a given purpose. The figure is to be read as follows: in Jan-Apr 2021, approximately 65% of all borrowers were borrowing for consumption purposes[41], approximately 10% were borrowing for vehicle purchases, and approximately 12% were borrowing for repaying loans. The figure clearly indicates that the share of borrowing households that were borrowing for consumption purposes declined significantly (more than halved) between May-Aug 2022 and Sep-Dec 2024, while the share of borrowing households that were borrowing to repay loans increased significantly (more than doubled) during this same period.

Figure 9: Share of Households Borrowing for a Given Purpose Among All Borrowing Households
Sample: Panel of 120,155 Households

Period	Consumption Expenditure	Education	Medical Expenses	Vechile	Wedding	Consumer Durables	Repayment
Jan-Apr-21	64.81%	0.31%	0.49%	10.43%	1.77%	5.02%	12.22%
May-Aug-21	65.80%	0.29%	0.51%	9.90%	1.79%	4.00%	11.63%
Sep-Dec-21	64.96%	0.25%	0.59%	10.98%	2.12%	4.40%	13.43%
Jan-Apr-22	67.00%	0.30%	0.51%	11.55%	2.13%	3.71%	13.09%
May-Aug-22	59.26%	0.34%	0.49%	13.71%	1.91%	3.42%	15.14%
Sep-Dec-22	59.88%	0.69%	0.78%	14.28%	2.12%	4.73%	15.53%
Jan-Apr-23	56.41%	0.60%	0.89%	17.18%	2.33%	5.82%	15.73%
May-Aug-23	51.39%	0.75%	1.17%	19.47%	2.96%	8.39%	17.36%
Sep-Dec-23	42.74%	1.08%	1.72%	21.61%	3.56%	9.77%	20.76%
Jan-Apr-24	27.79%	0.72%	1.58%	21.53%	2.82%	8.12%	24.43%
May-Aug-24	19.45%	0.98%	1.15%	22.42%	2.15%	8.30%	29.29%
Sep-Dec-24	19.81%	0.68%	0.75%	20.38%	2.46%	6.62%	28.91%

Source: CMIE CPHS, Authors' calculations

Figure 10 increases the resolution to just MFI-borrowings. It shows the trends in the percentages of MFI-borrowing households that were borrowing for a given purpose (i.e., trend in the ratio given by the number of households borrowing from MFIs for a given purpose divided by the number of households borrowing from any source for that same purpose). The first thing to note is that among households that were borrowing for consumption purposes, the share of households that were borrowing from MFIs for those purposes remains consistently small throughout the entire period under consideration. This is in stark contrast to the corresponding shares for vehicles and consumer durables. We would characterize both of these latter categories as falling under the rubric of status goods. Weddings too belong to the same rubric, and we find that between May-Aug 2022 and Sep-Dec 2024, the share of MFI-borrowing households among households that were borrowing from any source for weddings remained roughly the same, and almost always quite a bit higher than the share of MFI-borrowing households among households that were borrowing from any source for consumption purposes. The most remarkable stylized fact to be gleaned from Figure 10, however, is the share of MFI-borrowing households among households that were borrowing from any source to repay loans, and how this share changes over time. Not only does this

---

[41] This covers necessities, i.e., daily provisions such as food and beverages, liquor and tobacco products, clothing, rents and bills, entertainment, cosmetics toiletries, fuel, transport, communications, or other regular household expenses.

share consistently bear out that repaying loans was the most significant purpose of MFI borrowings (only consumer durables is more significant in the first few waves of the dataset), but this share increases by almost 20 percentage points between May-Aug 2022 and Sep-Dec 2024.

Figure 10: Share of MFI-Borrowing Households Borrowing for a Given Purpose Among All MFI-Borrowing Households
Sample: Panel of 120,155 Households

Period	Consumption Expenditure	Education	Medical Expenses	Vechile	Wedding	Consumer Durables	Repayment
Jan-Apr-21	1.14%	21.05%	5.59%	59.87%	5.26%	70.01%	64.50%
May-Aug-21	0.74%	35.14%	9.38%	58.91%	6.18%	76.10%	72.62%
Sep-Dec-21	1.06%	25.45%	5.45%	52.84%	4.65%	70.59%	70.20%
Jan-Apr-22	1.28%	34.88%	6.33%	44.13%	6.66%	58.66%	59.49%
May-Aug-22	1.16%	21.48%	12.95%	35.85%	10.25%	52.60%	55.47%
Sep-Dec-22	1.10%	25.59%	12.54%	42.72%	7.52%	34.54%	58.88%
Jan-Apr-23	1.88%	27.67%	8.97%	41.61%	9.10%	34.74%	57.20%
May-Aug-23	2.88%	15.08%	6.71%	36.59%	8.71%	28.19%	59.66%
Sep-Dec-23	6.20%	14.21%	8.46%	27.85%	13.16%	32.79%	69.61%
Jan-Apr-24	9.72%	11.29%	9.58%	21.40%	11.83%	47.49%	74.88%
May-Aug-24	3.85%	6.79%	10.00%	25.60%	8.79%	43.26%	75.32%
Sep-Dec-24	2.12%	9.64%	8.65%	30.81%	8.26%	41.11%	78.56%

Source: CMIE CPHS, Authors' calculations

What Figures 6-10 taken together indicate is that (a) between May-Aug 2022 and Sep-Dec 2024, more and more borrowing households were coming to rely on MFI borrowings, and fewer and fewer of them were coming to rely on borrowings from shops or from relatives/friends, (b) the increasing share of MFI-borrowing households among all borrowing households was matched by an increasing reliance on MFI-borrowings to repay other loans, and (c) aside from loan repayments, the status goods categories of vehicles and consumer durables were significant purposes for MFI borrowings among households that were borrowing from any source to spend on those categories. We next discuss these results in a little more detail.

The combination of (a) and (b) is revealing since it hints that MFI loans were being used to repay loans from shops and loans from relatives/friends. This defies rational calculation since the latter types of loans are typically much lower interest rate loans than the former type of loans. And yet, this is what we would expect if we believed that borrowing and repayment patterns are driven as much by social relations, which are imbued with affect, as by rational calculation. To validate further the connection between MFI loans on the one hand and loans from shops and loans from relatives/friends, respectively, on the other, we ran two regressions.

For the first regression, we only considered a sample of 27,874 households who had a shop loan in any wave during the 12 waves of the CMIE CPHS survey spanned by our focus period of Jan-Apr 2021 to Sep-Dec 2024. An observation is then a household-wave combination, and

there are 27,874 times 12 observations[42]. We created two dummy variables for each observation. The first dummy variable takes the value 1 if the household-wave observation registers no shop loan for the household in that wave but a shop loan for the household in the previous wave. Thus, this dummy captures the closure of shop loans for a household-wave combination. The second dummy takes the value 1 if the household-wave observation registers the presence of a microfinance loan for the household in that wave. We then regress the first dummy on the second dummy, while controlling for household characteristics such as income group, age group, education group, gender group, etc. The specification used was a fixed effects panel logit model, since the Hausman test rejected a random effects model. That is, we are examining whether the presence of an MFI loan is associated, via a logistic relation, with the closure of a shop loan. We find that it is, and significantly so in both statistical and economic senses. The results are shown in the 2nd and 3rd columns of Table 1. Households with MFI loans were 73.7% more likely to close shop loans, and this odds ratio is statistically significant at the 1% level.

For the second regression, we only considered a sample of 18,944 households who had a loan from a relative/friend in any wave during the 12 waves. Again, we construct dummies in a similar manner as just described, and the objective now is to examine whether the presence of an MFI loan is associated with the closure of a loan from a relative/friend. We find that is, and significantly so in a statistical sense, but somewhat less significantly so in an economic sense. The results are shown in columns 4 and 5 of Table 1. Households with MFI loans were 27.3% more likely to close loans from relatives/friends, and this odds ratio is statistically significant at the 1% level.

Table 1: Does the Presence of Microfinance Borrowings explain Closure of Shop Loans and Closure of Loans from Relatives/Friends?

Explanatory Variables	Closure of Loans from Shops		Closure of Loans from Relatives/Friends	
	Odds Ratio (M1)	P-Value	Odds Ratio (M2)	P-Value
MFI Borrowing	1.737	0.000	1.273	0.000
Control Variables				
Income Group				
less than 2.50 lakh	1.355	0.000	1.234	0.000
less than 10 lakh	1.666	0.000	1.318	0.000
greater than 10 lakh	1.605	0.000	1.153	0.043
less than 1 lakh	1.564	0.000	1.216	0.184
Age Group				
Balanced households with no Seniors	0.937	0.350	0.881	0.189
Children - dominant	0.825	0.311	0.814	0.443
Grown-up - dominant	1.067	0.350	0.920	0.382

---

[42] Strictly speaking, the actual number of observations available for the regression is smaller than this mathematical product since we use a fixed-effects logit estimator and most software packages will drop observations belonging to units with no within-unit variation in the dependent variable.

Other households of the Young	1.005	0.956	1.106	0.363
Other households of Grown-ups	1.045	0.524	0.991	0.928
Seniors - dominant	1.280	0.002	0.941	0.571
Youngsters - dominant	0.830	0.012	0.849	0.108
Education Group				
Medium	0.982	0.801	0.928	0.422
High	0.965	0.590	0.853	0.058
Gender Group				
Female Dominated	0.929	0.219	0.891	0.143
Female Majority	0.897	0.003	0.946	0.245
Male Dominated	0.910	0.048	0.829	0.003
Male Majority	0.981	0.541	0.911	0.023
Only Females	1.134	0.105	0.953	0.613
Only Males	1.070	0.482	1.068	0.593
Occupation Group				
Business & Salaried Employees	1.011	0.861	1.061	0.482
Entrepreneurs	1.197	0.004	1.144	0.098
Home-based Workers	0.869	0.214	1.070	0.604
Industrial Workers	0.964	0.484	1.139	0.052
Legislators/Social Workers/Activists	1.770	0.021	1.950	0.071
Managers/Supervisors	1.064	0.711	0.880	0.633
Miscellaneous	1.125	0.117	0.970	0.752
Non-industrial Technical Employees	0.956	0.387	0.954	0.474
Organised Farmers	0.924	0.143	0.983	0.809
Qualified Self-employed Professionals	1.140	0.366	1.278	0.297
Retired/Aged	0.985	0.765	1.046	0.497
Self-employed Entrepreneurs	0.953	0.294	1.008	0.893
Small Traders/Hawkers	0.949	0.405	1.172	0.034
Small/Marginal Farmers	1.018	0.700	1.039	0.530
Support Staff	0.887	0.022	1.098	0.159
Wage Labourers	0.854	0.000	0.930	0.186
White-collar Clerical Employees	0.975	0.695	1.142	0.131
White-collar Professional Employees	1.019	0.773	0.950	0.570
No. of Houses owned	1.315	0.000	1.102	0.108
LR chi2(39)	*846.420*	*0.000*	*203.700*	*0.000*
No. of Observations	*241584*		*129721*	
No. of Households	*27,874*		*18,944*	

Source: CMIE CPHS, Authors' calculations

Both regressions reinforce the summary observations from the figures earlier – that formal MFI loans and informal loans from shops and relatives/friends interact in ways that go beyond a simplistic framing of formal loans being always economic substitutes for informal loans, especially because that framing would deem it somewhat necessary that low-interest rate loans be used to refinance high-interest rate loans[43]. Here, on the other hand, we find that the interaction between the two kinds of loans traversed relational pathways that exceeded or even transgressed straightforward rational calculations. Further, we also find that it was the shop-loan borrowing households who spent the loan mostly for consumption purposes, whereas it was the relatives/friends-loan borrowing households who spent the loan mostly for weddings[44]. Thus, if MFI loans were being used to repay these other loans, it means that MFI loans were indirectly financing both the consumption of necessities and also the consumption of status goods. This is over and above result (c), which shows that MFI loans were directly financing status goods consumption.

Despite its many advantages, the CMIE CPHS data has been known to suffer from biases of representation, and also, it does not tell us about the intensive margin – what the values of the borrowings were from different sources and therefore what the actual debt-financed expenditures were for the different categories of spending. Therefore, we continue our empirical investigation into the borrowers' behaviour by consulting another panel dataset, which does contain intensive margin data.

Section 5.2: IFP Data

This panel dataset was collected from 10 villages in districts of Tamil Nadu lying between Cuddalore and Kallakurichi, by researchers from the French Institute of Pondicherry (IFP)[45]. The data was collected in two rounds, in 2016/17 (pertaining to the 2015/16 year and immediately prior months), and in 2020/21 (pertaining to the 2019/20 year and immediately prior months). Surveys were administered for both households as well as individuals, and we will be concerned with the household-level data only as that offers a full-spectrum view of household finances. The number of households for which panel data is available across the two rounds is 485. However, the first round covered 6 additional households that were not covered in the second round. We are unable to separate these 6 households out, as the only marker for a household being repeated is a tag in the second round which identifies the household as one that is being repeated, but there is no other marker common to both rounds

---

[43] We say "somewhat" here because there is a rational argument for repaying a low-interest rate loan with a high-interest rate outside of the interest-cost consideration, and that is if the former type of loan is small-ticket and large in number on any particular household balance sheet, while the latter type of loan is large-ticket and small in number on that same balance sheet. In other words, there is an aggregation benefit to be exploited, and this would make rational sense in the context that we are considering because indeed, on any particular household balance sheet, MFI loans are likely to be lumpy and few in number, while shop loans are likely to be much smaller-sized and larger in number.

[44] Among households that borrow to meet consumption expenditure, the share that borrow from shops for this purpose starts at 88% in Jan-Apr 2021, declines steadily to reach 68% in Jan-Apr 2024, and then picks back up to end at 89% in Sep-Dec 2024. Among households that borrow for weddings, the share that borrow from relatives/friends for this purpose hovers between 45% and 65% during the entirety of the period under consideration.

[45] We acknowledge a debt of gratitude to the IFP researchers (Isabelle Guerin and Jalil Nordman, in particular) for sharing their data with us.

that would allow us to map a repeated household in the second round to its counterpart in the first round. Therefore, our sample is 491 households for 2016/17 and 485 households for 2020/21. For these households, the following information of interest to us is available – expenditures on different spending categories, all loans taken along with amount and source for each loan, and the "effective reason" at the time of using each loan (as opposed to the "stated reason" at the time of borrowing each loan, which could have been different). Our objective is to use data on these variables to examine the phenomenon of status goods consumption, and the use of microfinance loans to fund such consumption.

Two possible objections to our use of the IFP data need to be addressed before we proceed. The first is that the period that the IFP data spans does not correspond to the boom phase of the most recent cycle, and the second is that the very confined locus of data collection is not representative of India. Both points are conceded, but we believe that there is still something to be gained from examining this data, and that is because it spans a period containing the boom phase of a boom-bust cycle. We refer back to Figures 2 and 3, in which a cycle is clearly observable between 2015 (one peak) and 2019 (the next peak). Therefore, if we expect that boom phases in all boom-bust cycles bear some characteristic features such as an increase in loan churning, or an increase in status goods consumption financed by borrowings, then we have good reason to examine the IFP data, even if it does not span the period of the most recent cycle, or if it is not representative of India. We note that data on borrowers' use of microfinance loans is difficult to come by, and therefore the borrower-side features of a boom phase are to a very large degree understudied. Detailed panel data on the borrower's activities with loans is extremely rare to come by in India. We will see that even with the IFP data, there will be some degree of measurement error in reaching the conclusions that we reach. But the data is the best we have, and it gets us quite close to the answers we are seeking to find. Above all, our work with the IFP data is meant to highlight the importance of such data in terms of both understanding the borrower's side and also validating the kinds of theoretical arguments we have made earlier in our IFI chapter. Without such data, it would be impossible to properly explore such theoretical arguments, and it is largely the absence of such data that has resulted in such theoretical arguments not even being considered by the financial inclusion policy discourse in the first place.

We begin with some definitions. In the IFP dataset, among spending categories, "goods" refers to mostly white goods or consumer durables such as cars, bikes, fridges, furniture, cell phones, DVDs, cameras, dish antennas, etc. but also one item that is not strictly a consumer durable, viz. a tailoring machine. There is no way for us to separate this item out in the data and therefore we acknowledge a small degree of measurement error, which we believe is acceptable since it is only the one item, in classifying "goods" as consumer durables. Alongside goods, we also include the following other IFP spending categories under the rubric of "status goods" – marriages within the household, ceremonies and festivals for household members, ceremonies and festivals for members outside the household, deaths within the household. The other spending categories represented in the IFP dataset are food, education, health, and rent.

It is important to note that while these spending categories are the choices offered to the respondent when data is collected on household expenses, these same choices are not exactly

replicated when the respondent is asked about the stated and effective reasons for borrowing. This is to be expected as the latter two reasons will include the category of repaying other loans which is not a natural candidate to be considered as a "spending" category. Still, it is a shortcoming of the data that whereas "goods" is a spending category, it is not explicitly one of the effective reasons for borrowing. Instead, the choices for the effective reason are the following: family expenses, health expenses, house expenses, marriage, education, ceremonies, relatives, death, investment, agriculture, and repayment of previous loans. We infer from reading the survey manual that the "goods" category is captured in this list under "family expenses" and "house expenses". We do not encounter the same problem with the other status good types, all of which appear in exactly the same form under spending categories and under effective reasons for borrowing.

The first step in our analysis will be to look just at the "goods" category, or consumer durables. We ask how economically significant expenditure on consumer durables is, for the households in the 10 villages under question. Figure 11 provides the answer. It shows for each of the rounds of data, the percentage of households for which "goods" is the top spending category, among the top two spending categories, and among the top three spending categories.

Figure 11: Distribution of Households by Rank of "Goods" Expenditure in Total Household Expenditure (Sample: 491 Households in 2016/17, 485 Households in 2020/21)
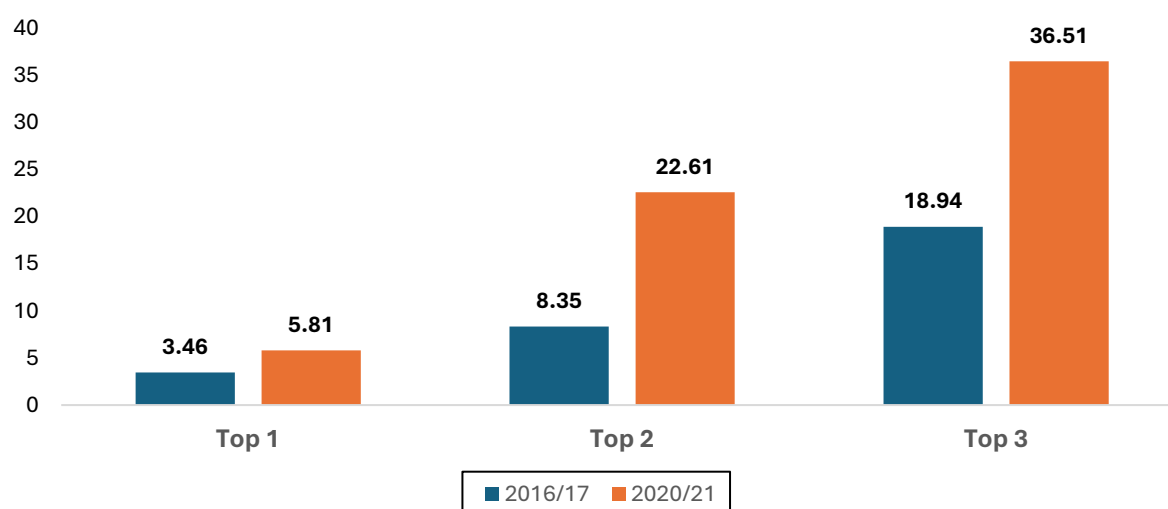
Source: IFP, Authors' calculations

The important thing to note from the figure is not only that more than 1 out of 5 households reports "goods" as one of the top 2 spending categories in 2020/21, but that this percentage has consistently increased for each of the rank types we look at, between 2016/17 and 2020/21. This is necessary (but not sufficient) evidence for our hypothesis that "goods" consumption is likely to demonstrate network effects – in other words, such consumption spreads by imitation, and is therefore a cultural trait. Next, when we enlarge the scope of our inquiry to cover all status goods, as defined above, we find the same pattern, and of course much higher proportions of households in each rank type. Status goods are among the top 2 spending categories for at least 3 out of 4 households in both 2016/17 and 2020/21. Figure 12 illustrates.

Figure 12: Distribution of Households by Rank of Status Goods Expenditure in Total Household Expenditure (Sample: 491 Households in 2016/17, 485 Households in 2020/21)
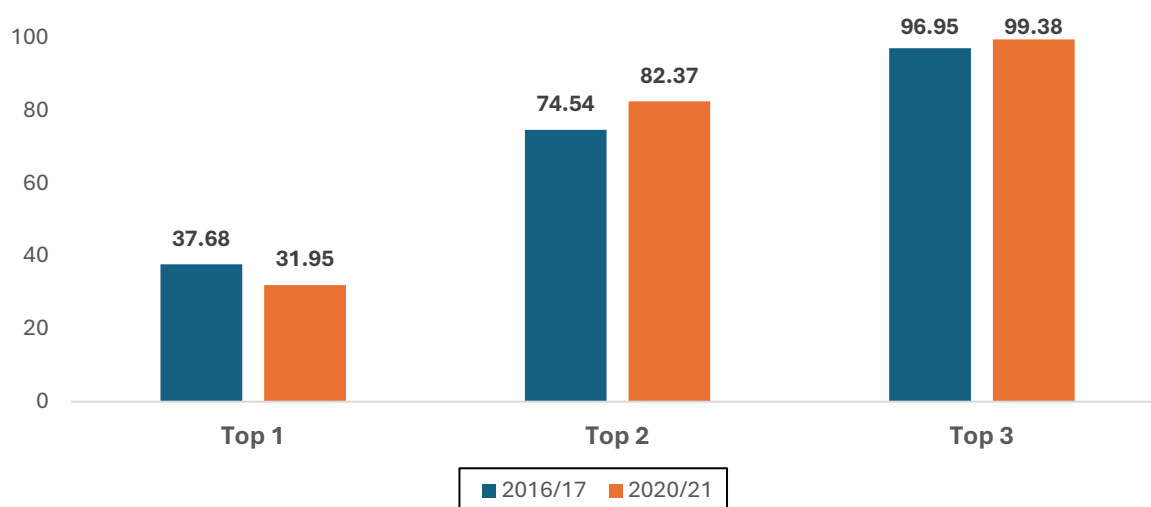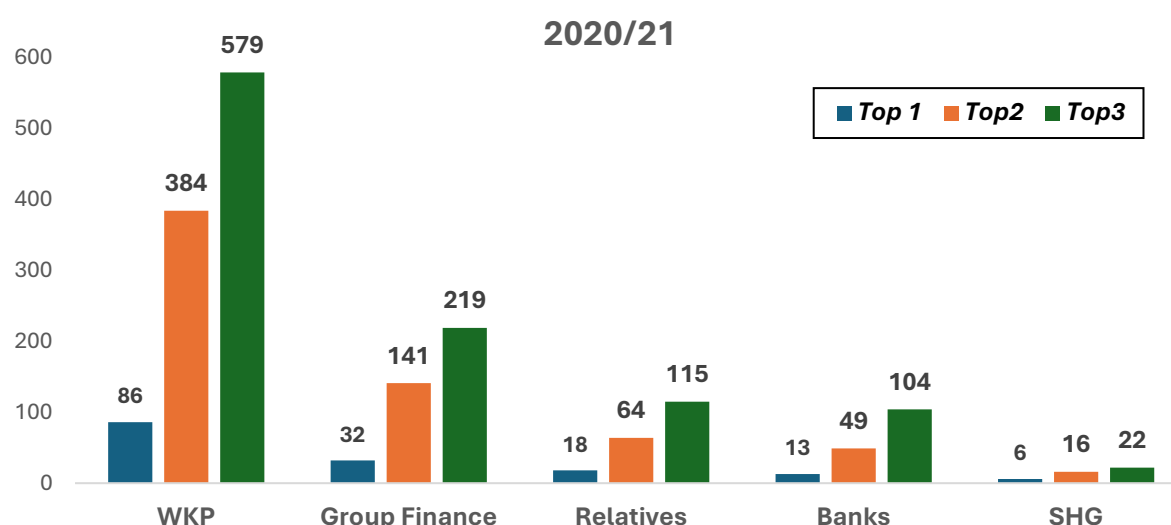
If status goods is one of the top 2 spending categories for 3 out of 4 households in 2016/17 and 2020/21, then either food or education or health turn out to be the other for most of these households (but we do not show the numbers here for want of space). Next, we inquire into the sources of borrowing for the households for whom "goods" was the top, or one of the top 2, or one of the top 3, spending categories. Figure 13 shows the data for 2016/17 and 2020/21. Here, "WKP" refers to a Well-Known Person (outside of the immediate or even extended family)[46], "Finance" refers to a Moneylender, and "Group finance" refers to JLG loans. The figure is to be read as follows: in 2016/17, for households for whom "goods" spending was in the top 2 spending categories, 61 loans were sourced from WKP, and so on.

Figure 13: Borrowing Source for Households in Rank Groups for "Goods" Spending (Sample: 491 Households in 2016/17, 485 Households in 2020/21)

---
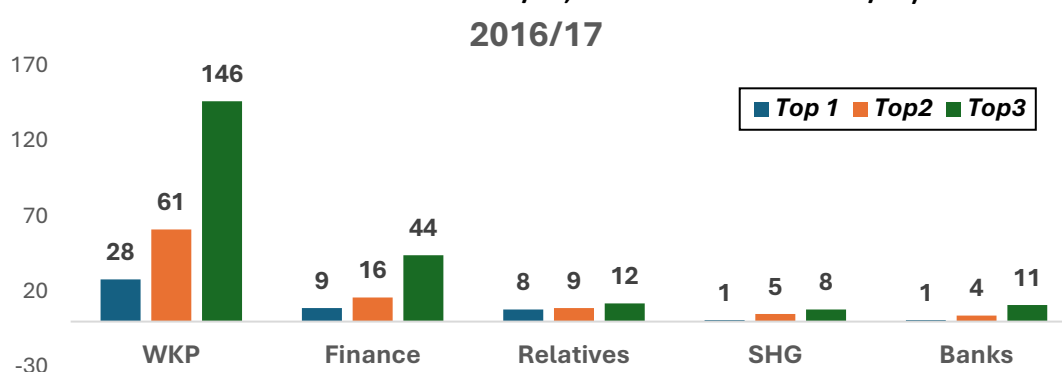
[46] The survey questionnaire uses the Tamil word "Therinjavanga", which can have different meanings, but for the survey, it refers to people one knows that are not part of one's family or relatives. These are familiar contacts such as one's father's friend, someone from one's old neighbourhood, or any other acquaintance – anyone, in other words, that is not a family member or a relative.

2020/21

	Top 1	Top2	Top3
WKP	86	384	579
Group Finance	32	141	219
Relatives	18	64	115
Banks	13	49	104
SHG	6	16	22

Source: IFP, Authors' calculations

We may combine the categories of "Group finance", "SHGs" and "Banks" to create the composite category of "microfinance" loans. What Figure 13 then reveals is that between 2016/17 and 2020/21, microfinance loans gain significant ground relative to other sources to become the second most important source of borrowings for households for whom "goods" is one of the top 2 spending categories. This is not yet evidence of a network effect in action, since we would expect to see necessary evidence of this at the level of households, and not at the level of loans. And indeed, this is what we find when we look at the households behind the loans shown in Figure 13. In 2016/17, 32 households in the top 2 "goods" spending category were borrowing from WKPs, 15 in this category were borrowing from "Finance" (i.e., moneylenders), 11 from Relatives, 5 from SHGs, and 3 from Banks. In 2020/21, moneylenders had been displaced altogether from the top 5 loan sources – 101 households were borrowing from WKPs, 54 from "Group Finance" (i.e., JLGs), 30 from Relatives, 21 from Banks, and 15 from SHGs. Comparing 2016/17 and 2020/21, then, provides necessary evidence for a network effect at the overall level of borrowing, and also for microfinance loans. That is, there is necessary evidence that as microfinance became more readily available during the boom phase between 2015/16 and 2019/20, more and more households began to borrow from that source. The same patterns emerge for households in the top 1 spending category, and for households in the top 3 spending category.

Further, the same patterns also emerge when we look at the composite spending category of status goods. Figure 14 shows the numbers for loans.

Figure 14: Borrowing Source for Households in Rank Groups for Status Goods Spending (Sample: 491 Households in 2016/17, 485 Households in 2020/21)
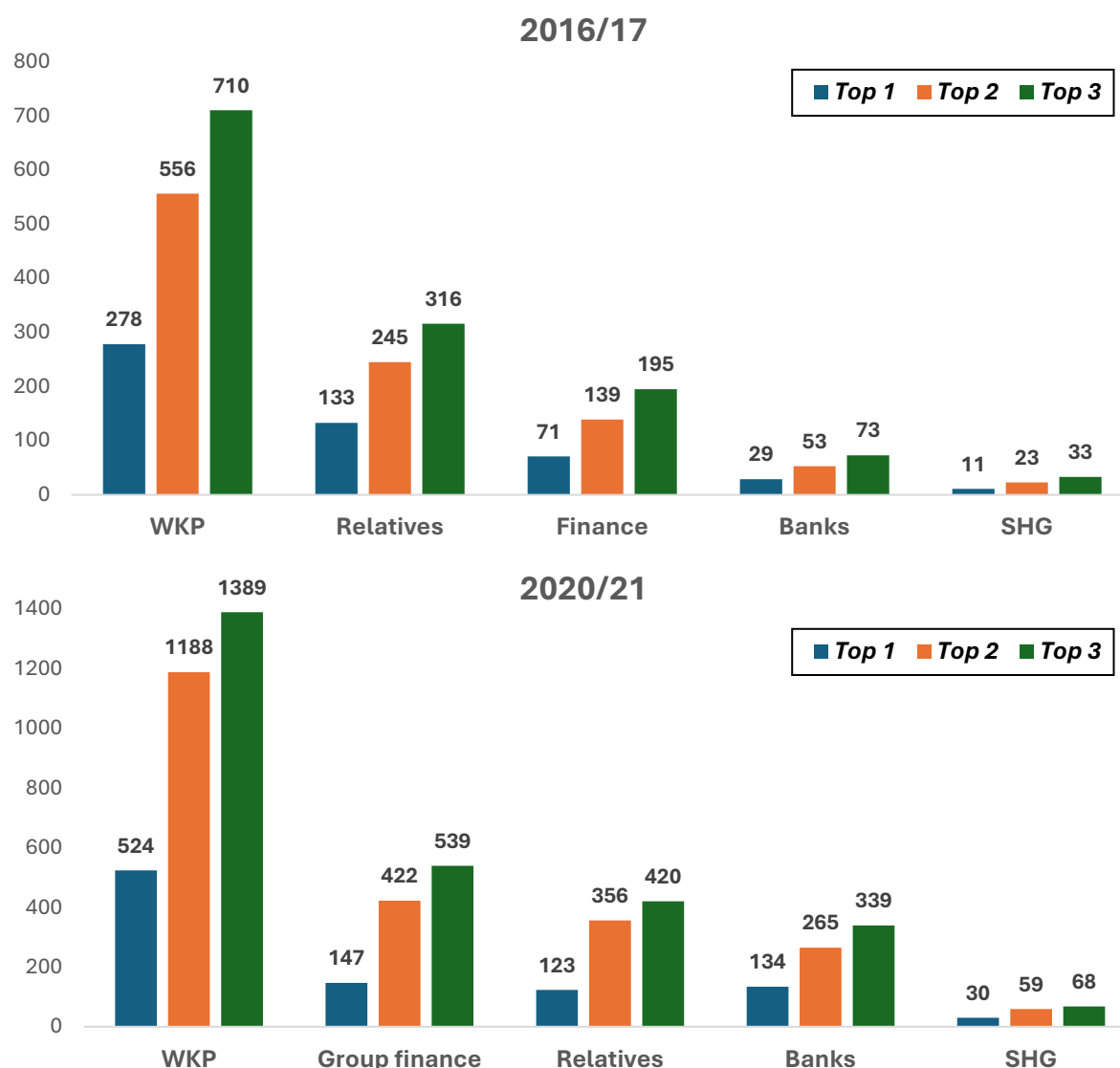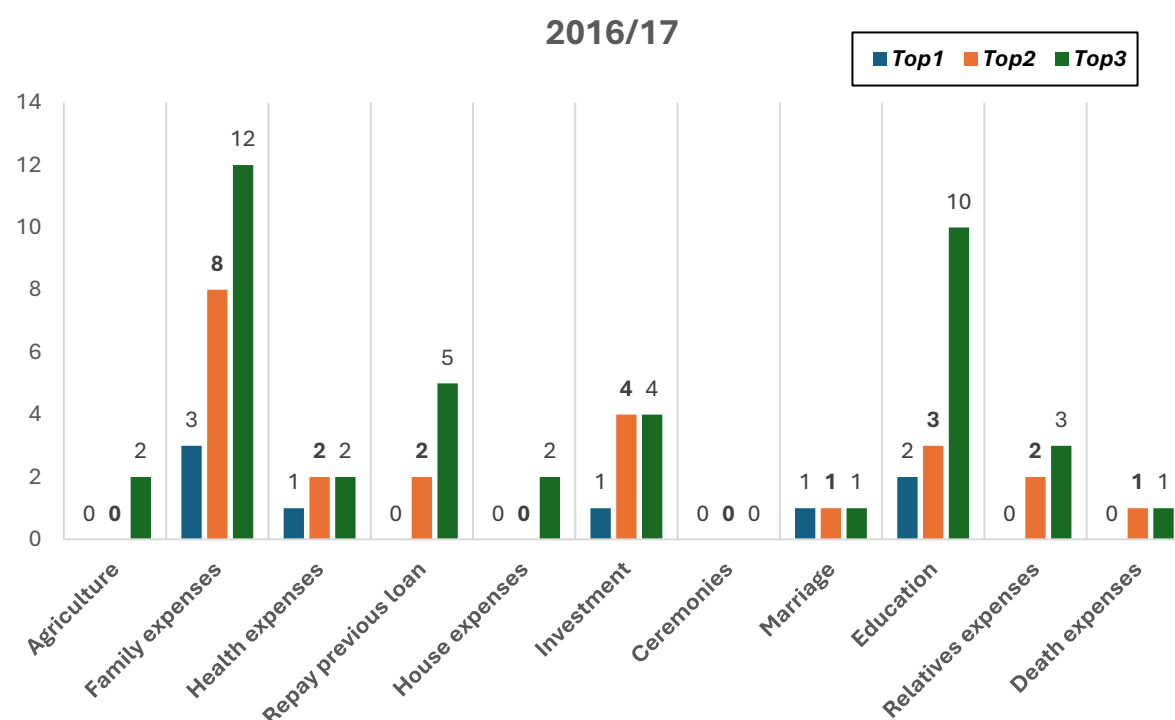

Source: IFP, Authors' calculations

The numbers in Figure 14 provide necessary evidence for a network effect at the level of households. In 2016/17, 262 households in the top 2 status goods spending category were borrowing from WKPs, 147 in this category were borrowing from Relatives, 103 from "Finance" (i.e., moneylenders), 38 from Banks, and 23 from SHGs. In 2020/21, moneylenders had again been displaced altogether from the top 5 loan sources – 344 households were borrowing from WKPs, 160 from "Group Finance" (i.e., JLGs), 156 from Relatives, 123 from Banks, and 52 from SHGs. The same patterns emerge for households in the top 1 spending category, and for households in the top 3 spending category.

Now, it is important to recognize that the source of borrowing cannot be explicitly tied to the spending category since the latter is not necessarily the effective reason for the former. Thus, we cannot yet claim that we have demonstrated what we set out to do – that microfinance loans were being used, and increasingly so, as the boom gained momentum, to finance status

goods consumption. For this, it is necessary to triangulate the three kinds of data (importance of spending category, source of borrowing no matter the end-use, and effective reason for a particular kind of borrowing), precisely because the categories for effective reason do not exactly replicate those for spending.

Therefore, next, we investigate the effective reasons for microfinance loans (from "Group finance", "SHGs", or "Banks") for each of the types of households under consideration – those for whom "goods"/status goods were the top spending category, those whom these were one of the top 2 spending categories, and those for whom these were one of the top 3 spending categories. Figure 15 shows the data for "goods", while Figure 16 shows the data for status goods. Figure 15 is to be read as follows: in 2016/17, for households for whom "goods" spending was in the top 2 spending categories, 8 MFI-borrowings were for family expenses, and so on. Similarly, for Figure 16.

Figure 15: Effective Reason for MFI Borrowings for Households in Rank Groups for "Goods" Spending (Sample: 491 Households in 2016/17, 485 Households in 2020/21)
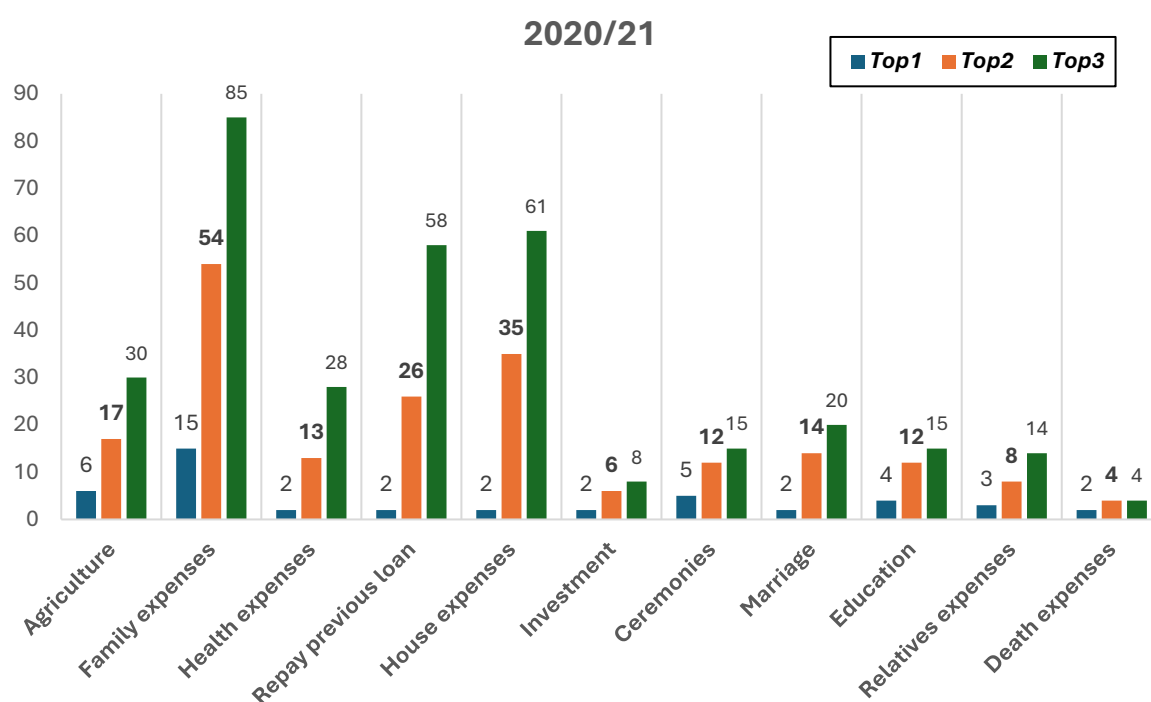
2020/21

Source: IFP, Authors' calculations
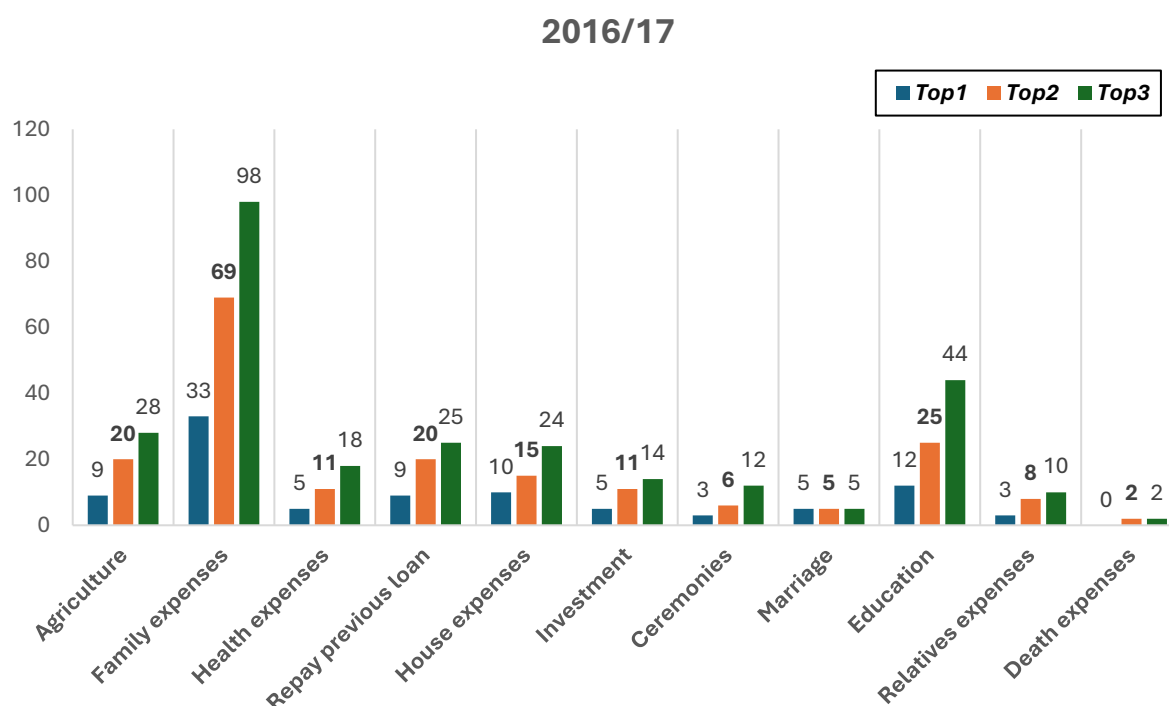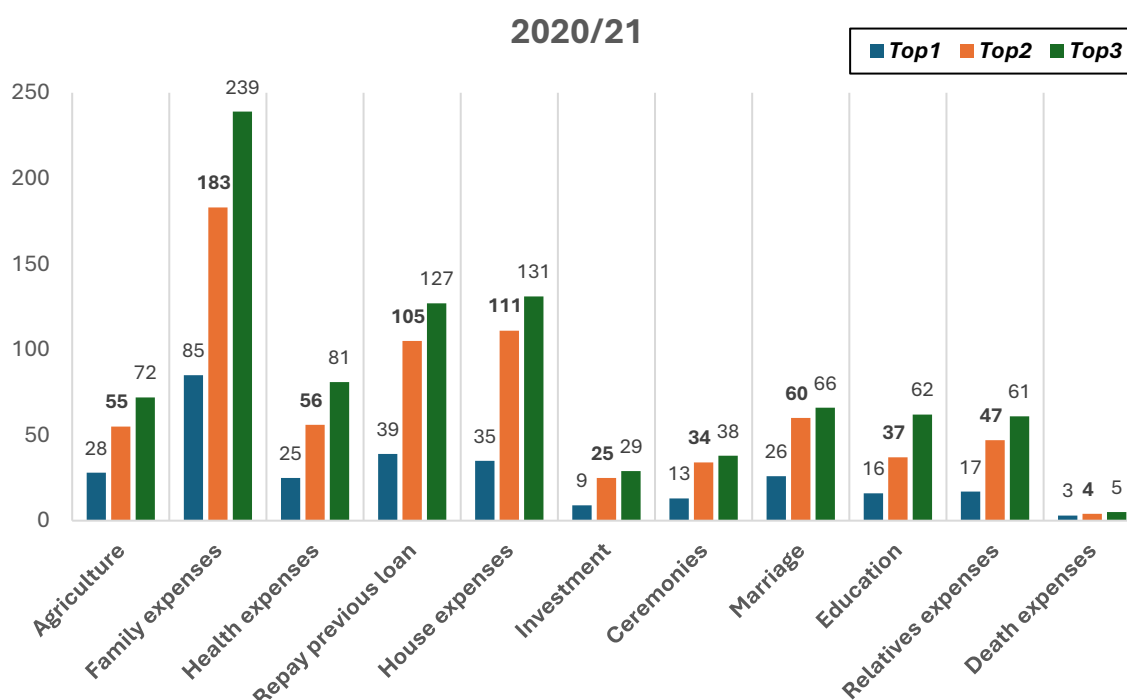
Figure 16: Effective Reason for MFI Borrowings for Households in Rank Groups for Status Goods Spending (Sample: 491 Households in 2016/17, 485 Households in 2020/21)

2016/17

2020/21

Legend: ■ Top1 ■ Top2 ■ Top3

Category	Top1	Top2	Top3
Agriculture	28	55	72
Family expenses	85	183	239
Health expenses	25	56	81
Repay previous loan	39	105	127
House expenses	35	111	131
Investment	9	25	29
Ceremonies	13	34	38
Marriage	26	60	66
Education	16	37	62
Relatives expenses	17	47	61
Death expenses	3	4	5

Source: IFP, Authors' calculations

For ease of interpretation (but without loss of generality), we draw the reader's attention to only the orange bars in each of the four bar charts shown in Figures 15 and 16, indicating the data for households for whom the relevant spending categories ("goods" or status goods) were one of the top 2. Now, consider the composite category formed by combining the following effective reasons – family expenses, house expenses, ceremonies, relatives expenses, marriage, and death expenses. This composite is not exactly equivalent to status goods, but it comes close (food expenses are the only confounding variable that, by virtue of its presence in the composite but not in status goods, prevents us from establishing an exact correspondence). The most important takeaway from these figures is that between 2016/17 and 2020/21, microfinance gains in tremendous significance as a borrowing source for the consumption of this composite category. If we assume that the role of microfinance in funding food expenses could not have increased significantly between 2016/17 and 2020/21, and we also take into account the growing significance of microfinance between 2016/17 and 2020/21 in general (from Figures 13 and 14) – here is the triangulation – then we are able to arrive at the result we are seeking to establish, which is that microfinance grew significantly in importance between 2016/17 and 2020/21 as a source of borrowing for status goods consumption. Further, what is even more striking, but perfectly in alignment with our hypothesis, and what we also observed in the CMIE data, is the significant increase in the importance of microfinance loans for repaying other loans, between 2016/17 and 2020/21. It is possible to show, when the number of households is considered instead of the number of loans – just as we have done for Figures 13 and 14 – that the increase in importance of microfinance in funding status goods consumption and in repaying other loans is also necessary evidence of network effects.

The reader may object that our assumption about the role of microfinance in funding food expenses having undergone no change between 2016/17 and 2020/21 cannot be correct. This is a reasonable objection since the 2020/21 data covers the Covid period, and it is likely that during lockdown, with little regular income coming in, the households in these 10 villages may have increased their reliance on microfinance for food expenses. Two counterarguments would help to maintain the validity of our earlier conclusion. The first is that if we remove family expenses and house expenses from the composite category, then our argument goes through for at least the remaining kinds of status goods, as it is indeed the case that for relatives expenses, ceremonies, marriage and death expenses, the importance of microfinance clearly increased between 2016/17 and 2020/21, and no triangulation is needed to see this. Guerin et al. (2024), who work with the same data, report a similar finding – that during Covid, the majority of borrowings by the households were for "social reproduction" purposes, such as ceremonies (accounting for 45% of borrowings) and social obligations such as receiving guests and helping others (accounting for another 28.6%)[47]. Now, the Guerin et al. (2024) claim is not about microfinance per se, but rather for all loans no matter the source, but we may infer that microfinance is heavily implicated, given what we report in Figures 15 and 16. The second counterargument is that the CMIE data has already shown us that throughout its 12 waves, shop loans (and not microfinance) were a highly significant source of borrowing for meeting consumption expenditures, of which food was a major item. And it is quite likely that the "WKP" category in the IFP data overlaps to a significant extent with the (implied) shop-owners category in the CMIE data. After all, there is no separate category in the IFP data that captures shop loans. The reasonable inference to be drawn then is that food expenses during Covid were mostly met out of WKP loans and not directly out of microfinance loans, even if microfinance loans may have been used later to retire the WKP loans, as we saw happen in the context of CMIE data.

Finally, the surest sign of growing mania on the borrowers' side of the market is an increasing number of loans on any single household's balance sheet. Therefore, we look at this number next. Figure 17 shows the distribution of households by the total number of loans they held, as well as, for each loan number, the number of households that were borrowing from one of the three microfinance sources.

---

[47] Guérin, Isabelle , Nithya Joseph, Sébastien Michiels, et al. *A Crisis like No Other: Gendered Burdens and Caste Dynamics of Debt and Food Insecurity during the COVID-19 Pandemic in Tamil Nadu*. French Institute of Pondicherry, French National Research Institute for Sustainable Development (IRD) and King's College London, 2024. https://odriis.hypotheses.org/projects/data/depletedbydebt

Figure 17: Distribution of Households Across Number of Loans
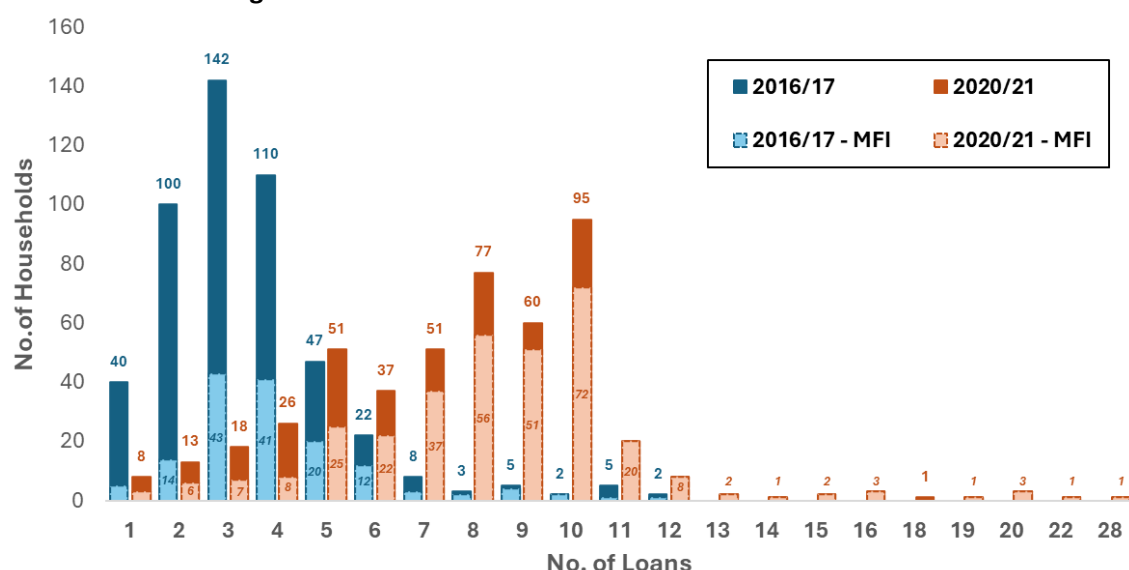
Source: IFP, Authors' calculations

In 2016/17, 486 borrowing households held a total of 1,697 loans, averaging 3 loans per household, with the largest group (142 households) holding 3 loans each. By 2020/21, the total number of loans had more than doubled, reaching 3,713 across 479 borrowing households. The average number of loans per household also more than doubled, increasing from 3 to 8, with the highest number of households (95) holding 10 loans each. This shift in the distribution, moving from a peak of 3 loans per household in 2016/17 to a peak of 10 loans per household in 2020/21, clearly reflects the significant escalation in borrowing during this period. Furthermore, Figure 17 shows that as the number of households with a higher number of loans increased, the share among those households that were borrowing from microfinance sources also increased. Thus, in 2016/17, out of the 142 households that had 3 loans each, only 43 among them had borrowed from microfinance sources. But in 2020/21, out of the 95 households that had 10 loans each, as many as 72 among them had borrowed from microfinance sources.

In concluding this section, our analysis of CMIE and IFP datasets strongly suggests that the boom phase of a boom-bust cycle demonstrates characteristic features of an affective logic gaining momentum on the borrower's side of the market. This logic implicates an increased propensity to use microfinance loans for status goods consumption and for repaying other loans. It is important to note that these two activities occur simultaneously, because that provides much of the kinetic power for the logic to cycle between the borrower's side of the market and the lender's side, as described at the beginning of this section.

Section 6: What Have We Learned?

In the last three sections we have discussed the key contributory factors that germinated the mania and fuelled its propagation and also characterized the forms that the mania assumed on the two sides of the market. However, to truly appreciate the implication of what we have presented so far, we must confront the dominant discourse and the dogmas it perpetuates. To do this, we reprise the distinction between instrumental logics and affective logics (or

between models and frames) that was introduced in Section 2 and develop that distinction in a little more detail here, in terms of what it means for regulatory practice.

Our first observation is that much of the discourse on financial market regulation appears to take a mostly mechanistic view of credit markets. That is, the credit market is presumed to function like a machine subject to certain objectively quantifiable laws, and the regulator is presumed to have a workhorse analytical model of the laws by virtue of having played a significant role in making the market, or designing the machine, as it were. The regulator's role is then imagined to be one of finetuning the machine (i.e., choosing the right parametric values for its model, or the right "knob settings", as it were) so that it performs optimally (i.e., achieves its aim of allocating capital properly at minimum cost). If the credit market fails to allocate capital properly, then it is logical to conclude that the regulator is to blame either for having got the parameters wrong even if the model is correct, or for having got the model itself wrong.

As Keynes pointed out in Chapter 12 of his General Theory (1937), the mechanistic view is a rather incomplete understanding of how financial markets actually function[48]. A good deal of affect, or emotion, or what Keynes called "waves of optimism and pessimism", are as fundamental to financial market functioning as is any kind of natural or engineering law. Thus, it is highly unlikely that the regulator's approach to finetuning a credit market for optimality will yield any sustained measure of success. Cycles are features of the credit system rather than bugs, and the regulator's role is then more properly imagined as putting in place counterbalancing systems that will attempt to reduce the amplitude of those cycles.

It should also be remembered that if credit markets are routinely subject to manias, panics and crashes, then disequilibrium is the norm rather than the exception in these markets. This has consequences again for how to think about regulation, since the regulator's role is often imagined, according to the mechanistic view, as one of helping to correct market failures. But the notion of market failure depends axiomatically on the presumption of equilibrium being the norm rather than the exception. The presumption of equilibrium is the foundation and basis of the Arrow-Debreu general equilibrium model and the celebrated welfare theorems arising from that model, with all their downstream implications for market failures and the like. That is, conceptually downstream from Arrow-Debreu, the category of "market failure" is meant to describe equilibria that appear to be compromised for various reasons, when measured against a suitable Pareto Optimality metric. But still, this category's members are first and last equilibrium phenomena! On the other hand, if affective forces are part of regular market functioning and if disequilibrium is the norm, then Arrow-Debreu is not the right setting for thinking about credit markets, and when the market suddenly seizes up during the

---

[48] Keynes, John Maynard. "The State of Long-Term Expectation." In *The General Theory of Employment, Interest, and Money*. Palgrave Macmillan US, 1937.

bust phase, that is not market failure[49]. It is rather, the market doing exactly what it is supposed to do, when participants are overcome by anxiety and dread. The proper regulatory response is not to pacify market participants and talk them back to a state of calm and repose, but to allow the affective condition to play out as much as possible. That is, an affective logic operates during the bust phase of the cycle as well, and it is this that gives the overhang of mania room for sobering, often taking the double-form of a shutdown of insolvent financial institutions and an exclusion of delinquent borrowers from the credit market. In turn, this makes it easier for the regulator to ensure that the next time around, the mania during the boom phase is not allowed to get out of hand, because only then can the anxiety during the bust phase also be contained.

Again, Ch. 12 of Keynes' General Theory provides the right way to think about this. In that chapter, he describes the liquidity function of a financial market as being both a blessing and a curse – a blessing because liquidity is what makes the possibility of investment real (insofar as that possibility rides on the expectation that divestment is also possible), but also a curse because it can sometimes fall hostage to waves of optimism and pessimism that have little to do with fundamental valuations. It would be easy then to avoid boom-bust cycles by shutting down the liquidity function once investments have been made (Keynes likens this to a till-death-do-us-part marriage contract), i.e., after the boom has already occurred, but would one have a viable, functioning, financial market then? Would investments be forthcoming for such a market to even be made? Keynes' answer is correctly – of course, not.

It is in the foreground of such an understanding, that we may attempt to render a summary of the lessons to be learned from the 2022/24 boom phase. The first lesson we take away is that the account of how lenders and borrowers behaved during this phase is indicative of a cultural logic at play, in the sense that we described earlier in this paper (see Section 2). Thus, we observe from the empirical evidence in the previous sections, that as the boom phase intensified, the affective charge also intensified. Lender optimism and loan portfolios grew

---

[49] The Arrow-Debreu general equilibrium model is a mathematical model, owing its origins to Nobel Prize winning economists Kenneth Arrow and Gerard Debreu, of the conditions under which equilibrium obtains in multiple markets all at once. Since its inception, this model has been particularly favoured for studying the correspondence between competitive equilibria achieved through market allocations and Pareto or social optimality. Under a specific set of conditions laid down by Arrow-Debreu, that correspondence is an exact match - that is, competitive equilibria are Pareto optimal and also socially optimal. But if the Arrow-Debreu conditions fail, then the correspondence becomes inexact, and a gap opens up between competitive equilibria and social optimality. Now, there are different ways in which a gap may open up, such as if externalities are present, or if some of the goods being exchanged are public goods, or if information about the good being exchanged is not symmetrically distributed between the buyers and the sellers. Each of these instances represents a different type of market failure - the market fails, in each case, precisely because it fails to deliver a socially optimal solution, *not because it fails to achieve an equilibrium*. That is, in every case of market failure, an equilibrium is indeed obtained, but the equilibrium fails to be socially optimal. Our critique of Arrow-Debreu and the equilibrium economics it has spawned strikes, therefore, at the heart of the market failure concept, because we are saying that equilibrium is not the norm in financial markets, but it would have to be, as a necessary condition, for market failure to be even conceived as a conceptual phenomenon that is relevant for the study of financial markets. This critique is well known in heterodox economics circles, but it has largely been ignored by mainstream economists – we think, to the latter's detriment. For a good reference for this kind of critique of Arrow-Debreu, see: Shaikh, Anwar. *Capitalism: Competition, Conflict, Crises*. Oxford University Press, 2016.

while loan churning and status goods consumption by borrowers also grew apace. This is the mania gaining in momentum. It is then only a matter of time before the growing incidence of speculation morphs into a growing incidence of Ponzi behaviour on either side of the market, ultimately unravelling in the form of an NPA crisis. If, under such conditions, the presumptive regulatory stance is one of stewarding a machine, then obviously the regulator fails, because the purely instrumental logic of the regulator's calculations, lacking any real affective charge, runs straight into a vortex of affect without offering much resistance. Indeed, as we have described in previous sections, the RBI's regulatory stance was co-opted and gamed by both sides of the market as the mania intensified. Not only that, the RBI's new regulatory framework amounted to a substantial deregulation of the microfinance market, and this heightened the potential for gaming, which we see manifest as sharp increases in borrower leverage and lender assets over a very short period of time.

While the lenders and borrowers may be faulted for not exercising moral restraint, the regulator may also be faulted for not taking a more adaptive stance with its deregulatory actions. An adaptive stance would have recommended small incremental changes rather than the discontinuous large relaxations that were actually undertaken. Further, there was little or no public acknowledgment of the hazards that could follow on the heels of the regulatory relaxations, and therefore little or no explicit public efforts by the regulator at moral suasion through cautionary dispatches to industry members or Self-Regulatory Organizations (SROs). Industry commentators have also blamed the arbitrary income and liability thresholds announced as part of the deregulations, coupled with little guidance from the regulator to MFIs on how to effect those thresholds in practice. Here, the regulator may be deemed less culpable since the perception of arbitrariness is partly a matter of not fully accounting for the limits of what a regulator is capable of doing, when the underlying market dynamics are non-mechanistic. In a mechanistic world, thresholds might and should be deliberately calibrated, but in a non-mechanistic world, it is as much a matter of judgment as it is one of computation. Still, the intrinsic difficulties of performing such a calibration exercise notwithstanding, a proper adaptive stance would have required the regulator, after having announced the thresholds, and such greatly relaxed thresholds at that, to continuously and assiduously monitor markets for any signs of mania buildup, and to act decisively if such signs became visible. The fact that that did not happen till the mania had already gathered a great deal of momentum, signals that the regulator failed to see the microfinance market for what it really is, a complex adaptive system whose dynamics are as driven by affective forces as by rational calculations.

One can extend the above diagnosis to the bust phase also, since there too the regulator's actions have been large and discontinuous. However, given the focus of our paper, we do not unpack the bust phase.

Section 7: Concluding Remarks and Recommendations

In a previous policy brief, titled, "*How Should the RBI Respond to the Microfinance Crisis? (2025)*"[50], we outlined the short-term measures necessary for stabilising the system—relating to liquidity, provisioning, and borrower protection. Those remain important. But the deeper question this paper raises is a longer run one: if microfinance markets naturally exhibit cyclical behaviour, what can policy realistically do? One might argue that the premise itself precludes resolution—that booms and busts are inevitable. At one level, this is correct: cycles cannot be eliminated. But policy can meaningfully influence their amplitude, reducing the intensity of the boom and thereby tempering the severity of the bust. We have seen what happens when policy does not orient itself in this way. Not only is the boom very pronounced but the cycle unfolds almost violently within a very contracted period of time. There is a greatly increased probability, then, of abrupt start-stop dynamics punctuated by large and dramatic regulatory easings and then, once the panic sets in, large and dramatic regulatory tightening. Such regulatory postures betray an engineering perspective on the microfinance system. Accomplishing a moderation of amplitude requires moving away from that perspective, in which cause and effect are assumed to be neatly separable and where models appear to offer stable control, because such a perspective underestimates how quickly market actors adapt and how strongly affective processes shape outcomes. It also encourages a false sense of predictability: when a regulatory change initially appears to work, it becomes difficult to distinguish structural soundness (competence) from temporary good fortune (chance).

The recommendations that follow build on this insight. They propose an approach to microfinance governance that is incremental, diagnostic, and contextually aware. The goal is modest but essential: to build a system that bends with the cycle but is far less likely to break under it.

Recommendation 1: Adaptive Regulation

The 2022 reforms demonstrated how multiple structural changes, introduced simultaneously, can interact in unexpected ways. Expanding the income threshold broadened the theoretical client base; raising the indebtedness limit marginally expanded headroom; removing the lender limit heightened competition; and pricing freedom sharpened investor expectations. Taken together, these adjustments emboldened lenders to pursue rapid growth—largely by deepening exposure among existing clients—without offering regulators the opportunity to disentangle which component of the reform was driving which behaviour.

Adaptive regulation addresses this problem by structuring policy changes as incremental, measured, and testable interventions rather than comprehensive redesigns. Under such an approach:

1. Policy changes are introduced sequentially, allowing regulators to observe behavioural responses before implementing additional reforms.

---

[50] Neelam, Amulya, Dwijaraj Bhattacharya, Navaneeth M. S., and Anjali Nambiar. "How Should the RBI Respond to the Microfinance Crisis?" Dvara Research, 2025. https://dvararesearch.com/wp-content/uploads/2025/05/How-Should-the-RBI-Respond-to-the-Microfinance-Crisis.pdf

2. Short review cycles assess whether changes produce intended or unintended effects—for instance, whether a higher income threshold genuinely expands outreach or merely fuels larger loans among existing clients.
3. Gaming is assumed rather than discovered. Income assessment procedures, FOIR checks, and credit bureau verifications are all subject to predictable patterns of strategic adaptation. Regulation must be calibrated with these adaptations in mind.
4. Feedback loops between regulatory change and market behaviour must be integral to regulatory design. If a shift in one parameter visibly accelerates credit deepening or lender overlap, the framework must be able to adjust swiftly.

Adaptive regulation recognises that policy not only guides markets but is also interpreted, internalised, and repurposed by them. Its objective is to ensure that regulation evolves at least as quickly as the behaviours it seeks to shape.

Recommendation 2: Strengthening Supervision and Market Monitoring

Supervision must move beyond periodic, backward-looking checks toward a richer understanding of how both households and providers behave as markets expand. Effective monitoring, therefore, requires attention to the interactions between household financial conditions and the competitive dynamics of providers.

A useful starting point is the fact that credit bureaus already maintain household-level mapping in the aftermath of the 2022 regulations. This makes it possible to observe cumulative exposure across lenders, detect when disbursement growth outpaces genuine client expansion, and see when loan cycles begin to shorten. The same data also reveals anomalies: sudden, widespread shifts in reported household size, income, or composition—signals that information may be reshaped to preserve eligibility. Because these changes often appear well before delinquency, they serve as early cues that the market's underlying rhythm is accelerating too quickly.

But borrower-level signals are only one part of what supervision must watch. Household exposure patterns need to be read alongside provider-side behaviour: whether multiple lenders begin saturating the same geographies, whether ticket sizes converge across institutions, whether new lending is increasingly concentrated in districts that are already heavily leveraged, and whether credit absorption capacities—local incomes, occupational structures, and sectoral resilience—are being stretched. These spatial and institutional patterns typically shift months before portfolio stress appears and provide a clearer view of when competition has tipped from healthy expansion into momentum-driven lending.

Even with improved bureau data (that allows for household-level discovery), some forms of strain remain invisible until households themselves articulate them. This is why any credible monitoring architecture must incorporate periodic household-level surveys. These surveys provide an external view of distress-coping strategies, informal debt, and livelihood changes that households may use to sustain repayment even when stretched. They offer a reality check against bureau signals, helping to distinguish between genuine stability and stability sustained through short-term adjustments.

Taken together—a closer reading of household exposure, early detection of provider clustering and geographic saturation, and periodic validation through household surveys—supervision can become more anticipatory. Instead of reacting to delinquency, it can recognise when both sides of the market are reinforcing one another in ways that heighten systemic vulnerability and intervene before this momentum becomes unmanageable.

Our earlier report and policy brief, *Detecting Over-Indebtedness while Monitoring Credit Markets in India* (2021)[51] and *A Framework for Detecting Over-Indebtedness and Monitoring Indian Credit Markets* (2021)[52], offer a blueprint for operationalising such an approach.

Recommendation 3: Rethinking Delegation — Boards and SROs

The microfinance governance structure relies heavily on two delegated mechanisms: the board-level oversight of individual institutions and the industry-level oversight of SROs. Both mechanisms proved insufficient to contain the exuberance of the boom.

Providers' boards are meant to serve as the primary line of defence against imprudent growth. Yet in practice, annual reviews often become procedural, partly because of the sheer number of policies that must be reviewed. Board qualifications and experience also vary widely, and growth pressures frequently overshadow prudential concerns. For boards to play the supervisory role expected of them, oversight must be anchored in enforceable expectations: clearer qualification norms, differentiated review cycles, and explicit accountability for underwriting failures.

SRO governance structures, meanwhile, tend to dilute responsibility, with supervisory authority dispersed across institutions that are themselves deeply invested in growth. This creates conflicts of interest, limits the voice of smaller institutions, and results in fragmented responses during periods of stress. A reimagined SRO framework would require greater independence, clearer mandates, and well-defined boundaries between advisory functions and regulatory authority.

Together, these reforms would strengthen the delegation architecture so that it becomes a meaningful complement to regulatory and supervisory oversight rather than a symbolic or procedural layer.

In conclusion, microfinance cycles will continue. But cycles need not be destructive. With adaptive regulation, contextually informed monitoring, and a more robust governance structure, the market can absorb cyclical pressures without experiencing large-scale distress. The aim should not be an efficient or optimal regulatory framework, which would presuppose

---

[51] Bhattacharya, Dwijaraj, Amulya Neelam, and Deepti George.
"Detecting Over-Indebtedness while Monitoring Credit Markets in India." Dvara Research, 2021.
https://dvararesearch.com/wp-content/uploads/2024/01/Detecting-Over-Indebtedness-while-Monitoring-Credit-Markets-in-India.pdf

[52] Neelam, Amulya, Deepti George, and Dwijaraj Bhattacharya.
"A Framework for Detecting Over-Indebtedness and Monitoring Indian Credit Markets." Dvara Research, 2025.
https://dvararesearch.com/wp-content/uploads/2025/05/A-Framework-for-Detecting-Over-indebtedness-and-Monitoring-Indian-Credit-Markets.pdf.

that one is only solving a computational problem, but an efficiently or optimally *evolving* framework, which instead presupposes that one is solving a value judgment problem. The latter kind of problem fully envelopes the former kind of problem but exceeds the former's scope substantially, and requires a mixture of adaptive, context-sensitive, and ethical approaches for its proper resolution.