A Framework for Detecting Over-indebtedness and Monitoring Indian Credit Markets

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Summary:

Excessive debt negatively affects households and can diminish any developmental gains from such debt. It also dampens a nation's economic growth and threatens its financial stability. India has had a checkered history of having experienced outbreaks of localised or regional borrower distress. Given that signs of borrower distress are raising their head most recently in the eastern and north-eastern states of India, there is a clear and urgent need for systematic course-correction. The regular off-site reporting formats currently deployed by the RBI for both NBFCs and banks are inadequate to shed light on the health of credit markets. Also, these formats are not able to capture the extent of indebtedness in the population. Thus, in this policy brief, we propose a Framework through which the RBI may simultaneously monitor Indian credit markets and detect the prevalence of over-indebtedness. Initially presented in our earlier report titled "Detecting Over-Indebtedness while Monitoring Credit Markets in India", the Framework was developed after a study of the literature on the subject, analysis of international best practices, and a study of all RBI-mandated regular off-site reporting formats.

In the Framework, we lay out the indicators that the RBI must capture from all lending institutions. These indicators are designed to provide the RBI with necessary insights into the credit markets at three levels, namely borrower-level, provider-level and market-level. We posit that with appropriate analytical tools, the RBI will be able to ascertain the prevalence of over-indebtedness amidst borrowers. In this policy brief, we also lay down the additional steps that the RBI must take, before operationalising the framework, and for its continued validation. After analysing the priority and ease of operationalisation of the recommendations, we propose a staggered implementation. Spread across four phases, these recommendations may be implemented within two years. Once implemented, the recommendations are expected to help the RBI effectively discharge its mandate of ensuring "systemic stability" and "consumer protection", especially in light of the uncertainties around debt stress induced by the COVID-19 crisis.

About Financial System Design Initiative:

The Financial System Design Initiative (FSD) within Dvara Research aims to build and further the vision of a well-functioning financial system for India that is built on three fundamental pillars: High Quality Origination, Orderly Risk Transmission, and Robust Risk Aggregation. Since 2008 when Dvara Research was founded, the Financial Systems Design Initiative has made several contributions to the Indian financial system and participated in strong formal engagements with financial sector regulators and the Government of India.

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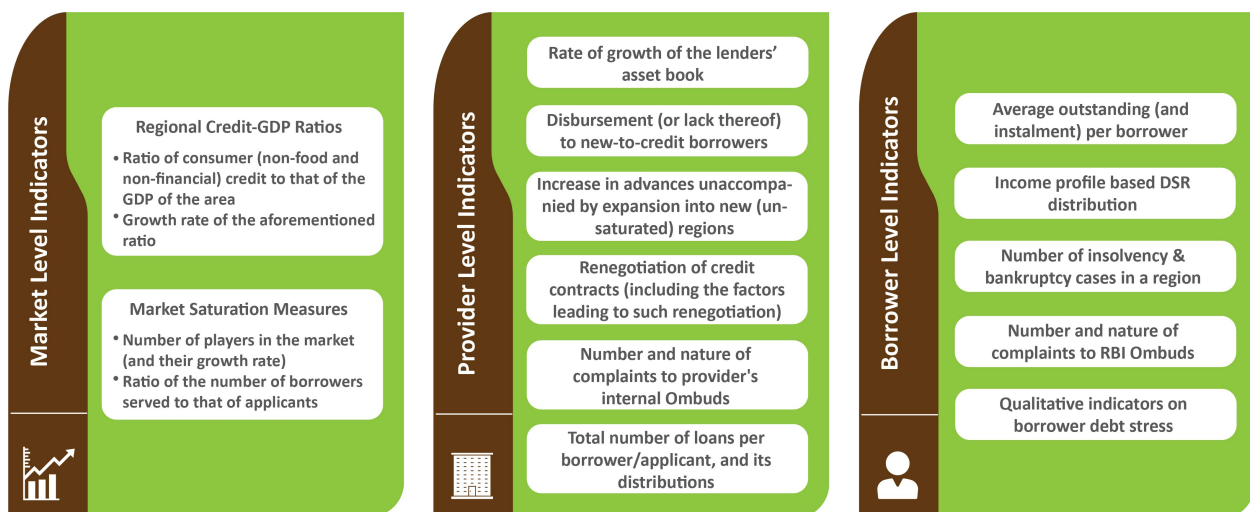
The Context and the Problem

Access to credit enables an individual and her household to gain better financial wellbeing and economic welfare outcomes for the entire society. However, excessive amounts of debt diminish all developmental gains. Excessive household debt also negatively affects overall economic growth and stability. Signs of borrower distress have been appearing in many states over the past years, and most recently in the eastern and north-eastern states of India. These crises tend to not end well for both borrowers and providers. Therefore, there is an urgent need to develop regulatory capacity to monitor India's credit markets and to prevent and manage distress caused by over-indebtedness (OI).

The Reserve Bank of India (RBI) uses various approaches to prevent OI, including ex-ante micro-prudential tools, like mandatory credit bureau checks and placing loan exposure limits on entities like NBFC-MFIs. It also uses ex-ante macro-prudential tools, like asset-level risk-weighting and prescriptions on asset provisioning. However, without a clear definition of OI, and the non-targeted nature (to prevent OI) of these policies, they have come up short in preventing OI. Further, these policies often lead to market distortions. Unfortunately, the RBI currently does not require reporting of several indicators which are essential for credit markets' monitoring and detection of OI.

What Must Be Done?

To discharge the mandate of ensuring "systemic stability" and "consumer protection", the RBI must monitor the health of the Indian credit markets. For this, the RBI needs to first have visibility over several indicators, at a market-, provider-, and borrower-level. These indicators must also be captured at an appropriate level of geographic granularity (e.g., district-level) and across borrower segments. Thereafter, the RBI may incorporate these indicators as inputs to analytical tools to measure the levels of indebtedness, and over-indebtedness across all districts of India. Certain indicators, like the debt serviceability of borrowers, will be more effective in estimating the levels of indebtedness. Other indicators, like Debt-GDP (or GVA) ratio, will be pivotal in estimating whether a particular geography is underserved or overheated. A Framework comprising of indicators across various levels is discussed in Figure-1.

Figure-1: Monitoring and Detection-Component Indicators of the Framework

Market Level Indicators

Regional Credit-GDP Ratios
- Ratio of consumer (non-food and non-financial) credit to that of the GDP of the area
- Growth rate of the aforementioned ratio

Market Saturation Measures
- Number of players in the market (and their growth rate)
- Ratio of the number of borrowers served to that of applicants

Provider Level Indicators

- Rate of growth of the lenders' asset book
- Disbursement (or lack thereof) to new-to-credit borrowers
- Increase in advances unaccompanied by expansion into new (un-saturated) regions
- Renegotiation of credit contracts (including the factors leading to such renegotiation)
- Number and nature of complaints to provider's internal Ombuds
- Total number of loans per borrower/applicant, and its distributions

Borrower Level Indicators

- Average outstanding (and instalment) per borrower
- Income profile based DSR distribution
- Number of insolvency & bankruptcy cases in a region
- Number and nature of complaints to RBI Ombuds
- Qualitative indicators on borrower debt stress

Market level indicators estimate the productivity of credit and the relationship between demand and supply in the credit market. Credit-GDP ratios are traditional indicators of overheating in credit markets. It is used alike by regulators for monitoring purposes and providers for estimating business potential. Similarly, high market saturation indicates a greater degree of credit penetration, often correlated with a higher incidence of OI.

Provider level indicators present the next level of granularity on the health of credit markets. Features of the providers' asset book could shed light on over-lending. To exemplify, providers' uninhibited growth in specific geographies or among specific demographic categories could inadvertently lead to the overburdening of borrowers. Thus, measures reflective of such rapid growth of the asset book act as an early-warning indicator for borrower distress. These can also help the RBI narrow down its scrutiny to specific districts and credit activities. This is especially important when a granular view of the borrower profile is not available, or when it is impractical to undertake on-site supervision of all activities of credit providers.

Borrower level indicators measure the various aspects of a borrower's liability profile. One key borrower-level indicator here is a measure of the income profile-based debt serviceability. One approach may be to deploy the Debt Service Capacity Ratio (DSR), which measures the ratio of disposable income of the borrower to that of her repayment obligation.

$$\text{Debt Service Capacity Ratio} = \frac{\text{Income of the Borrower - Expenditure of the Borrower}}{\text{Repayment Obligation of the Borrower}}$$

This is relevant for loans taken for consumption purposes or where a direct increase in income-generation beyond current levels is not evident (for instance, loans for medical treatment, or school fees). For production or business expansion loans, expected DSR should be captured, in addition to DSR. Unlike DSR, expected DSR would also include the future cash-flows expected from the productive activity for which the loan is to be deployed. This distinction is important since the newly generated future cash-flows would be used for both making the lending decision and for servicing the loan by the borrower. Thus, in all cases, where the lender reasonably expects the loan to be for consumption purposes, only DSR should be reported. In cases where the lender reasonably expects the loan to be used for productive purposes, both DSR and expected DSR should be captured.

When captured across various income segments of the borrower, DSR (or expected DSR) identifies specific borrower segments that may potentially experience debt stress. Further, the reporting must also be conducted across income segments and not at an aggregate level, since in aggregate data, the high DSR of high-income borrowers may overshadow the low DSR of low-income borrowers. Additionally, indicators such as the number of complaints to the Ombuds, and the number of insolvency and bankruptcy cases must also be sought to ascertain the prevalence of OI in a geography.

Upon collection of the data proposed under the Framework, RBI must aggregate the data and apply appropriate analytical tools to predict OI. Further, the RBI must have a validation strategy, whereunder consumer-level qualitative indicators concerning debt stress faced, sacrifices made, etc., are captured. These

qualitative indicators may be sourced through third-party localised demand surveys. Further, these surveys should be based on early warning signals from the analytical tools of the Framework. Thus, the surveys are expected to validate the results of the Framework, as well as the efficacy of the indicators in the Framework itself.

Also, periodic, commissioned thematic studies, which study one aspect of the credit market[2], should also be deployed to enhance RBI's oversight over India's credit markets.

How Wide is the Gap between the Present Monitoring Paradigm and the Proposed One?

Analysing the 168 regular off-site reporting formats for Non-Banking Financial Companies (NBFCs) and Scheduled Commercial Banks (SCBs), it is apparent that the data presently being collected is inadequate to build the proposed Framework. Reporting formats for NBFCs, even Systemically Important NBFCs (NBFC-SIs), do not simultaneously capture various indicators, like average loan outstanding of a borrower, type of borrower, the economic activity of borrower, and geography and quantum of disbursement. The RBI's visibility over the asset book of NBFC-SIs is found to be limited to a balance sheet level split of sectors. Thus, details on the geography of disbursement/servicing, or debt serviceability of the borrower, or the loan ticket sizes are absent.

RBI has better visibility for banks. The Basic Statistical Return-1 (BSR-1) format captures much of the needed information on the portfolio of banks. However, the reporting under the BSR-1 formats is different for small loans (up to INR 200,000) and larger loans. The BSR-1B format captures district-level details of aggregate loans given to each occupational and organisation category by their credit limits (up to INR 25,000 and between INR 25,000 and 200,000). However, the data recording format prevents a combined analysis of the various parameters it records. In contrast, the BSR-1A format, which is for larger loans, captures data at a loan level rather than at an aggregate level. Similarly, no formats presently capture data on the income profile-based debt serviceability of the borrowers. Thus, the lacunae in the existing reporting paradigm prevent the operationalisation of the Framework.

A Pathway for Change

The proposed Monitoring and Detection Framework, when deployed alongside algorithms to predict the prevalence of overindebtedness, will improve the RBI's supervision and monitoring capability significantly. However, to completely operationalise such a Framework, several changes are required. Some of the interventions are beyond the purview of the RBI, hence considered to have low-ease. To exemplify, though the Framework requires the RBI to monitor insolvency and bankruptcy cases, this can be operationalised only after the government notifies Part III of the Insolvency and Bankruptcy Code (2016) which deals with natural persons (including unincorporated businesses).

Similarly, a complete deployment of the Framework would require providers to make alterations to their Core Banking Solutions (CBSs) and Loan Management Systems (LMSs), which is expected to be time-consuming. It would also take some time for the RBI to define over-indebtedness in consultation with all stak-

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[2]Akin to research commissioned by UK's Financial Conduct Authority to study the interactions of the ageing population with financial services, and the review into the unsecured credit market

-eholders, design aggregation measures for the various indicators and develop analytical capacity to meaningfully interpret the data being reported. Therefore, a staggered transition pathway may be adopted for the deployment.

**Figure 2: Steps in The Transition Pathway**

Chronology	The RBI Must:	Priority	Ease
Phase-1	Record fresh disbursements at a district level from all providers	Very High	High
	Redesign BSR-1B format in the lines of BSR-1A format	Very High	High
	Collect data in a manner that allows for combined analysis of various parameters, like geography of disbursement, type of credit, etc.	Very High	High
Phase-2	Propose a standard approach for the calculation of debt serviceability (for reporting purposes only)	Very High	Moderate
	Collect data on debt serviceability of borrowers at District Level	Very High	High
	Commission subject-specific surveys, akin to FCA surveys	Very High	High
Phase-3	Develop a uniform definition of OI in India	High	Moderate
	Operationalise the Framework	Very High	Moderate
	Collect data points mentioned in the Framework	Very High	Moderate
	Aggregate data thus collected under the Framework	Very High	Moderate
Phase-4	Design and deploy an algorithm to detect patterns of localised overheating in credit markets and under-supply of credit	High	Low
	Commission sample surveys for validation of results and the algorithm	High	High

As a first step, the RBI must overcome major shortcomings in its present monitoring framework by requiring the reporting of fresh disbursements on a granular basis at a useful frequency by all credit providers. As discussed earlier, the data currently reported to the RBI through BSR-1A format is ill-suited for combined analysis. Hence, the format needs to be updated to include loan-level reporting on a host of parameters such as disbursement amount, outstanding amount, district of disbursement, type of loans, borrower segment. Similarly, a new section must be introduced in BSR formats to capture distributions of DSRs and the number of existing loans per borrower across income categories. These changes can be made immediately by the RBI with relative ease of compliance by providers (since most of the data is already being reported to credit bureaus). Thus, the high-priority, high-ease recommendations form Phase-1 of the transition pathway, which may be operationalised within few months.

Phase-2 proposes additional indicators to be added to the existing reporting formats. However, before this can be operationalised, the RBI would have to design a methodology to calculate the debt serviceability of borrowers. Phase-2 also includes thematic surveys, since such surveys would provide much-needed insights into the credit markets, till such time the Framework is operationalised. Thus, high priority recommendations, with moderate ease of implementation (due to the time required) form Phase-2, and may be deployed within 6 months of implementation of Phase-1.

Phase-3 and 4 are the final stages of the deployment of the Framework, and its continued fine-tuning. Within Phase-3, it is not necessary to record every parameter from the onset, and different indicators may be deployed in a staggered manner (see Annexure-1). However, most of the indicators may be deployed within 12-months of implementation of Phase-1, allowing providers adequate time to make changes to their CBSs and LMSs. Recommendations under Phase-4 may then be operationalised to complete the transition from the present, inadequate monitoring regime. An indicative timeline, including potential overlaps, are discussed in Figure-3.

Figure-3: Implementation Phases and Timelines
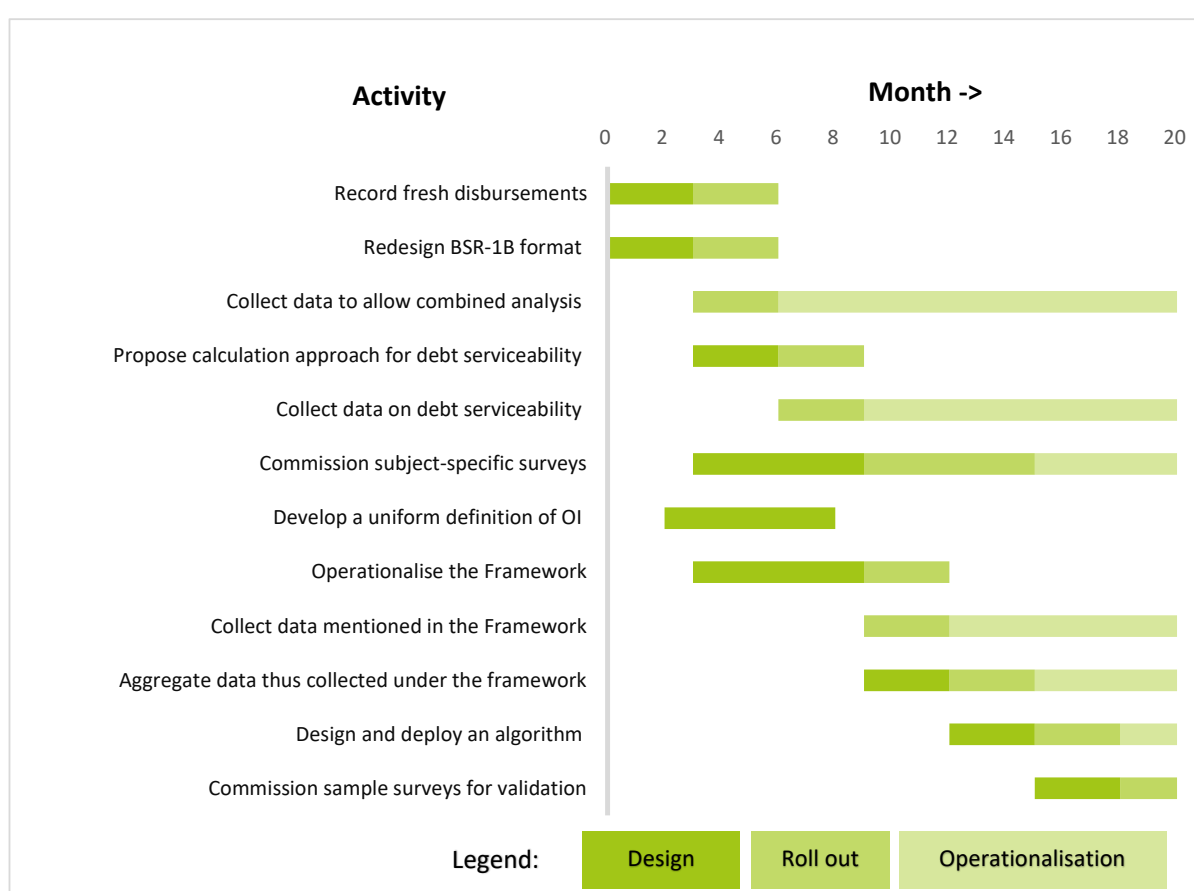
Concluding Remarks

To get the proposed supervisory capacity at the RBI up and running, it would be necessary to make changes to providers' reporting systems, and this would entail them bearing additional costs. However, concerns that such costs would put providers out of business are unsubstantiated, since in most cases, it would only require minor changes to the already existing IT infrastructure. Also, many of the data elements we propose are already being reported to CICs, suggesting the exercise will not be prohibitively costly since providers now will just have to aggregate such data and report to the RBI. Finally, with adequate safeguards for the personal data, once the Framework is adopted, the improved supervisory capacity of the RBI is expected to play a pivotal role in helping the RBI discharge its mandate towards financial stability and customer protection.

Annexure-1: Priority and Ease of Implementation of various Indicators under the Framework

Theme	High-Level Indicator	Component Data	Presently being Collected by RBI at a district level?	Priority	Ease of Regulatory Change	Ease of Compliance
Credit to GDP	Regional Credit to GDP	Non-financial private sector consumer credit	Yes, partially	Very High	High	High
		District level GDP	Uncertain		Medium	Not Applicable
Market Saturation	Number of Players in the market	District level number of operating institutions	Yes	Not Applicable	Not Applicable	Not Applicable
		District level number of operating branches	Yes			
	The ratio of number of borrowers served to that of applicants	District level number of borrowers	Yes, Partially	Very High	High	High
		District level number of applicants	No		High	High
Provider Profile	Rate of growth of Providers' asset book	Amount of new loans disbursed	No	Very High	High	High
		Loan type	No		High	High
		Number of new loans disbursed	No		High	High
	Disbursement to new borrowers	Credit history of the borrower (To ascertain new to credit)	No	Very High	High	Medium
		Record of disbursements	Yes, Indirectly		High	High
	Non-territorial expansion of MFIs	Number of new loans disbursed	No	Very High	High	High
		Amount of new loans disbursed	No		High	High
		District code of loans disbursed	No		High	High
	Re-negotiation of contracts	Terms of contract	No	High	Medium	Medium
		Change in point of payment	No		High	Low
	Multiple Lending	Total number of loans per borrower/ applicant	No	Very High	High	High

Consumer Liability Profile						
	Borrower Debt Stress	Complaints made to the provider's internal ombuds	No	Very High	High	High
	Average Outstanding and Instalment	Principal (I)	Yes, Partially	High	High	High
		Interest (I)	Yes, Partially		High	High
		Tenure (I)	Yes, Partially		High	High
		Type of Loan	Yes, Partially		High	High
		Service History	No		Low	High
		Actual Instalment	No		High	High
		Repaid Instalment	No		Low	High
		Outstanding	No		Low	High
	DSR Per Borrower and Its Transition	DSR	No	Very High	Medium	Medium
		Expected DSR (for Productive Loans)	No	Very High	Medium	Medium
	Insolvency and Bankruptcy Cases in Geography	Consumer Profile Identifier (CPI)	No	High	Low	High
		Type of Case	No			
		Expected Amount in Default	No			
		Actual Amount in Default	No			
		Admitted Amount in Default	No			
		Factors Leading to the case	No			
	Nature and Number of Complaints to RBI's Ombudsperson	Consumer Profile	Yes	High	High	High
		Type of Complaint(s)	Yes			
		When and Why the issue emerged?	Yes			
		Institution(s) involved	Yes			
		Status of Complaint(s)	Yes			
		Time taken for resolution	Uncertain			