Assessing the Effectiveness of Debt Recovery Channels for Recovering Non-Performing Assets of the Scheduled Commercial Banks in India: An Analytical Study

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Abstract

This paper assesses the effectiveness of different Debt Recovery Channels (DRCs) in resolving Non-Performing Assets (NPAs) of scheduled commercial banks in India, namely Lok Adalats (LAs), Debt Recovery Tribunals (DRTs), Asset Reconstruction Companies (ARCs), and the Insolvency and Bankruptcy Code (IBC). The analysis shows meaningful differences in effectiveness across these mechanisms, with IBC and ARCs achieving higher Debt Recovery Rates (DRRs) compared to LAs and DRTs. The relationship between DRR and case burden also varies across channels: increasing numbers of cases and higher amounts per case reduce effectiveness in LAs and DRTs, while ARCs remain relatively stable and the IBC is more resilient to rising caseloads. These findings highlight the role of institutional design and operational capacity in shaping the functioning of different DRCs and underscore the need for strengthening channel-specific capabilities to improve India's overall debt recovery framework.

Keywords:

Effectiveness,
Debt Recovery Channels (DRCs),
Non-Performing Assets (NPAs),
Debt Recovery Tribunals (DRTs),
Debt Recovery Rates (DRRs)

INTRODUCTION

Non-performing assets (NPAs) severely hamper commercial banks' profitability and operational effectiveness. They also degrade the value of their assets, negatively affecting their ability to lend and long-term sustainability (Baudino & Yun, 2017). Left unaddressed, NPAs can cause banks to fail and trap them in a vicious cycle of consequences, which, in turn, threaten their stability and growth (Mani et al., 2023). Rising NPAs and the deteriorating asset quality of commercial banks in India have recently caused some anxiety.

By 1998-99, the Gross NPAs to Gross Advances Ratio (GNPAR) had reached 14.7 percent, which, due to concerted efforts, declined to 4.9 percent in 2004-05 and further to 3.2 percent by 2012-13. However, it rose again to 11.2 percent by 2017-18. Since then, the NPAs gradually declined to 2.7 percent by the end of the 2024 fiscal. However, in absolute terms,

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NPAs kept rising from Rs. 58,722 Crores in 1998-99 to Rs. 10,35,294 Crores in 2017-18. Since then, the NPAs of the scheduled commercial banks have come down to Rs. 4,80,701 Crores by 2022-24 (Appendix 1).

The rise in NPAs in India may be attributed to the global economic slowdown, domestic policy uncertainty, sector-specific difficulties, and delays in detecting and settling stressed assets (Singh & Brar, 2016). The persistent rise in NPAs undermines banks' credibility and shakes depositors' faith in their banks. It may discourage people from depositing their savings in banks and prompt them even to withdraw their deposits, which could lead to credit contraction and a drop in commercial bank's efficiency, liquidity and profitability. The substantial write-offs that have occurred in recent years have been the primary cause of the decrease in NPAs. However, regulatory reforms and recoveries through various channels cannot be disregarded.

Criticality of Recovering NPAs

Banks must exercise strong credit discipline and due diligence to minimise loan failures and to maintain NPAs within manageable limits. The timely monitoring and recovery of stressed assets are crucial for the maintenance of solvency, liquidity, profitability, and compliance with capital adequacy norms (Bawa et al., 2019). Early loan realization can be helpful for asset quality preservation, as the proportion of NPAs in bank portfolios increases as a result of delayed recovery (Mohan & Ray, 2022). High NPAs impede economic growth, disrupt credit flow to the actual economy, and restrict a bank's lending capacity. Banks are encouraged to recycle funds for new lending through debt recovery, which in turn fosters economic development, consumption, and investment (Cucinelli, 2015) .

A critical aspect of credit risk mitigation is the reduction of delay or default risks in debt recovery. Persistently unresolved NPAs heighten credit risk concentration in bank portfolios, while successful recovery strengthens prudential risk management (Kadanda & Raj, 2018). Financial intermediaries are obligated to safeguard depositor funds by maintaining NPAs at prudent levels. The overall stability of the banking system and the confidence of depositors are both improved by the effective recovery of NPAs (Nayak & Chandiramani, 2022). To ensure financial stability and soundness, regulatory bodies impose prudent standards and capital requirements on banks. Speedy debt recovery assists banks in fulfilling regulatory obligations and maintaining capital adequacy ratios (Caprio & Honohan, 2000).

Regulatory Interventions

In light of the necessity of expediting debt recovery to reduce NPAs, governments and financial sector regulators have been under pressure to devise appropriate responses to the challenges posed by the increasing number of NPAs. Consequently, numerous measures have been implemented over time to alleviate the menace of NPAs . The Reserve Bank of India (RBI) has undertaken periodic Asset Quality Reviews (AQRs) to detect hidden NPAs and guarantee transparent reporting of banks' financial positions through such stress tests (Mohan & Ray, 2022). Complementing this, the Prompt Corrective Action (PCA) framework mandates corrective steps when banks breach specified financial thresholds, thereby strengthening supervisory discipline (Bhusan et al., 2022).

To facilitate resolution outside lengthy legal processes, banks have access to multiple restructuring and settlement mechanisms. The One-Time Settlement (OTS) scheme allows mutually agreed lump-sum settlements between lenders and stressed borrowers (RBI, 2005). Frameworks such as Corporate Debt Restructuring (CDR), Strategic Debt Restructuring (SDR), and the Scheme for Sustainable Structuring of Stressed Assets (S4A) allows lenders to restructure unsustainable debt, convert a portion into equity, or bifurcate stressed assets into sustainable and unsustainable components to expedite their resolution and preserve firms' viability (Mathew, 2017). The Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002, further empowers lending banks to enforce security interests by seizing and selling collateral property without court intervention.

Additional policy measures have focused on strengthening bank balance sheets through recapitalisation of Public Sector Banks (PSBs) to enhance their loss-absorption capacity. Banks are also required to maintain lists of wilful defaulters, restrict their access to credit, and share such information to deter future defaults. In essence, it is recognised that zero NPA is utopian, but zero tolerance for NPAs is essential for tackling NPAs . While creating, delivering, and managing loans, bankers remember that “Bad loans are sown in good times” (Bhadury & Pratap, 2018).

Debt Recovery Channels (DRC)

The SCBs have the ability to access additional Debt Recovery Channels (DRCs) alongside to the routine recovery processes, which will facilitate a cost-effective and speedy debt recovery. Prominent among these include: (1) Lok Adalats, or People's

Court, are intended to expedite NPA recoveries through alternate dispute resolution. SCBs have been encouraged by the RBI to utilize this mechanism to recover loans, with an increased limit of up to Rs 20 crore; (2) Debt Recovery Tribunals (DRTs) and the Debt Recovery Appellate Tribunals (DRATs) were instituted under the Debt Recovery and Bankruptcy Act 1993 to facilitate the recovery of debts exceeding Rs. 20 lakhs; (3) Assets Reconstruction Companies (ARCs) have been set up under the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act 2002 to acquire the NPA of SCBs, particularly the Public Sector Banks, at a discounted rates or haircuts; and (4) The Insolvency and Bankruptcy Code (IBC) 2016 establishes a comprehensive legislative framework for the efficient and integrated resolution of stressed assets. It establishes a consolidated framework for individuals, partnership firms, and companies to adhere to during bankruptcy and insolvency (Bhagwati, 2022).

Challenges Involved in the NPA Recovery

A comprehensive approach that includes proactive risk management, effective recovery mechanisms, robust legal frameworks, and a facilitative regulatory framework is necessary for NPA recovery. Timely intervention and early identification of stressed assets are essential for enhancing the prospects of NPA recovery and minimizing losses (Woo, 2000).

Recovering non-performing assets (NPAs) is as challenging as necessary. The dynamics of macroeconomic conditions, institutional frameworks, and loan characteristics influence recovery outcomes. Debt recovery and dispute resolution processes often experience delays as a result of the lengthy and intricate legal procedures, which favour defaulting debtors at the expense of lending banks (Zafar et al., 2013). The recovery procedure is further complicated by collateral-related issues, such as disputes over valuation (Bajaj et al., 2021).

In some instances, banks may encounter challenges during identifying and restructuring nonperforming assets (NPAs), which includes framing sustainable repayment plans . The difficulty of resolution is further compounded by operational challenges, including the identification of wilful defaulters, non-cooperative borrowers, and cases involving fraud (Jayadev & Padma, 2020). In addition, creditors' repayment capacity is weakened, asset values are reduced, and recovery efforts are impeded by economic downturns or sector-specific stress (Dutt et al., 2024).

Recovery proceedings incur considerable legal, administrative, and valuation expenses, which diminish the final amount realized and lower the profitability and efficiency of the recovery bank (Das & Uppal, 2021). Even when assets are transferred to ARCs, banks often experience substantial haircuts or write-offs, which have a detrimental impact on the profitability and capital adequacy of the lending institutions. This is due to the fact that the recovery amount is significantly reduced, resulting in losses (Ahmed, 2021).

In uncertain market conditions, banks find it challenging to determine the value of distressed assets, which delays recovery decisions and raises the risk of mispricing (Babu et al., 2023). The likelihood of recovery is also influenced by external factors, including market dynamics, government policies, regulatory changes, and geopolitical developments (Dey, 2018).

EXISTING RESEARCH EVIDENCE

Research has demonstrated that the effectiveness of debt recovery mechanisms is crucial for the enhancement of bank's efficiency and performance. Evidence from Nigeria shows that commercial banks' profitability and asset quality are substantially improved by debt rescheduling, collateral repossession, and mortgage auctions (Odumusor et al., 2023). Over time, regulatory reforms and improved governance in Bangladesh significantly reduced non-performing loans (Amin et al., 2019). Research conducted in North America has also demonstrated that loan-level characteristics, including leverage, contract terms, and collateral, have a more significant impact on recovery outcomes than borrower characteristics (Khieu et al., 2012).

The literature provides a wide range of perspectives on the determinants of NPAs and the functioning of recovery channels in the Indian context. Between 2004 and 2018, secured loans were found not to guarantee better recoveries (Bajaj et al., 2021). Research evaluating the Insolvency and Bankruptcy Code (IBC) reports improvements in credit availability, lower financing costs and better performance of distressed firms (Bose et al., 2021; Fatima & Ashraf, 2020). Empirical evidence from 2016–20 suggests that the IBC outperforms traditional mechanisms such as Lok Adalats, DRTs and ARCs (Mohan & Das, 2021). Earlier work also shows that SARFAESI-based enforcement improved recoveries and strengthened bank stability and profitability of lender banks (Kumar et al., 2017; Shaardha & Jain, 2016). However, contrasting findings indicate that existing channels

often remain inadequate, pointing to delays, bottlenecks and limited institutional capacity (Sahoo & Majhi, 2020; Unny, 2011; Visaria, 2009). Additional studies note that stringent recovery measures reduce NPAs only temporarily and that some loan categories—such as term and real estate loans—are more recoverable (Misra et al., 2016). Drawing from global experience, decentralised restructuring strategy has also been suggested for large economy like India to recover NPAs (Mukherjee, 2003).

Recent empirical work emphasises how institutional design and enforcement quality shape recovery outcomes. For Korean SMEs, specific legal actions significantly influence loss given default (Han & Jang, 2013), while Indian evidence highlights that indirect evergreening practices distort asset quality and weaken recovery mechanisms (Kashyap et al., 2023). International research also shows that transparent, time-bound auction mechanisms improve recovery rates (Thorburn, 2000). Broader analyses of India's insolvency architecture underline persistent challenges such as delays, litigation burdens and capacity constraints (Agarwal et al., 2020; Das et al., 2020). More recent findings reveal that firms resolved under the IBC show operational recovery and value preservation despite procedural bottlenecks (Ram Mohan & Gopalakrishnan, 2023).

The above studies show that many research studies have been undertaken to examine the effectiveness of DRCs in the Indian context. However, since most studies were conducted before the Insolvency and Bankruptcy Code (IBC) was implemented, only some studies cover this new mechanism. Besides, the present study is based on the latest available data up to the end of the 2024 fiscal year. Thus, it comments on the contemporary situation and adds value to the existing body of knowledge.

OVERVIEW OF DEBT RECOVERY PERFORMANCE

Debt recovery data for the past 25 years reveal a peculiar trend across all recovery channels, as presented in Appendix 2. The debt recovery rate (DRR) increased during the first four to five years under study. Afterwards, a declining trend was recorded throughout the rest of the study period. Taken as a whole, for example, the overall DRR (all four channels put together) went up from 20.9 percent in 2003-04 to 50.1 percent in 2007-08, but after that, they persistently declined to 16.5 percent in 2023-24. This is not only true for the DRR collectively but also individually. In the case of the Lok Adalats (LAs), the DRR increased from 13.5 percent in 2003-04 to 20.3 percent in 2005-06, after which it kept declining to reach a mere 1.8 percent in 2022-23, except in 2011-12 when the DRR had increased from 3.7 percent in 2010-11 to 11.8 percent.

The case with the Debt Recovery Tribunals (DRT) has been somewhat different. Their DRR presents a wave-like trend that suddenly jumps to a higher level after a few years of decline. The trend line, however, shows that, on average, their DRR has been higher during the initial years of study but declined somewhat sharply by the end of 2023 fiscals. The DRR of the Assets Reconstruction Companies (ARCs) presents a very similar trend, with the only difference being that it does not decline as sharply as in the case of LAs and DRTs. The Insolvency and Bankruptcy Code (IBC) came into existence much later. Its DRR data is available only from 2017-18 to 2022-24. Even during this short period, its DRR evinces a declining trend as it declined from 49.6 percent in 2017-18 to 28.3 percent in 2023-24.

This phenomenon contradicts the general understanding that debt recovery channels (DRCs) must improve as institutions gain experience and expertise over time. We notice here that DRC performance tends to decline with time. Is it that enthusiasm is high during the early years of launching a DRC mechanism, leading to better performance and higher DRR, and as time elapses, enthusiasm wanes, and effectiveness declines? Nevertheless, this would be a mere conjecture and must be tested.

Besides, the waning enthusiasm logic sounds too simplistic, for it ignores several other changes that may occur in the debt recovery process over time. For example, with time, the cases referred to a DRC, the amount involved in the cases referred, the per case amount involved and the amount recovered may all change. Most likely, they all are likely to increase, which may, in turn, increase the debt recovery burdens (DRB) on the DRCs. Conversely, all or some of these variables may decline, leading to a lower amount recovered by a DRC. This may give the impression that the efficiency and effectiveness of the DRC to resolve disputes and recover debt has declined.

Available data for 14 years from 2010-11 to 2023-24 strongly indicate this possibility. For example, in the case of the Lok Adalats (LA), the number of cases referred to them increased from 6.16 Lakh in 2010-11 to 44.57 Lakh in 2015-16. For the next two years, the number of cases referred to it declined to rise again in 2020-21, when 19.49 lakh cases were referred to them. Since then, the number of cases referred to them has shot up to 126.848 Lakh at the end of the 2024 fiscal year. It is not only that the

number of cases changed, but the amount involved in these cases also drastically increased from Rs. 5,300 Crores in 2010-11 to Rs. 67,801 Crores in 2019-20 and then reduced to Rs.28,084 Crores in 2020-21, which suddenly shot up to Rs. 189,694 Crores in 2023-24. So has been the case with the amount involved per case, though the increase has not been as pronounced. The amount recovered went up from Rs. 200 Crores in 2011-12 to Rs. 3,322 Crores in 2023-24. Curiously, the DRR during the corresponding period declined from 11.76 percent to 1.80 percent (Appendix 3(a)).

The case with DRTs has been the same. The number of cases referred to them increased from 12,872 in 2010-11 to 31,414 in 2023-24. The amount involved in the cases also increased from Rs. 14,100 Crores in 2010-11 to 2,25,361 Crores in 2020-21. In 2020-21, the amount involved in the cases referred to the DRTs recorded a sudden decline to Rs. 68,956 Crores to jump to Rs. 402,636 Crores the following year. The per-case amount increased from 1.10 to 7.16 crores during the corresponding period. As was the case with LAs, while the amount recovered through DRTs rose from 3,900 Crores in 2010-11 to Rs. 16,202 Crores in 2023-24, their DRR during the corresponding period declined from 27.66 percent to 15.20 percent (Appendix 3(b)).

In the case of the debt recovery by the Assets Reconstruction Companies (ARCs) established under the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act 2002, the number of cases referred to them recorded a relatively marginal increase from 118,642 to 231,407 during the period under study. However, the amount involved in these cases has increased exponentially from Rs. 30,600 Crores in 2010-11 to Rs. 123,363 Crores in 2023-24. The per-case amount involved in the ARC had increased from Rs. 25.79 Lakh in 2010-11 to Rs. 186.29 Lakh in 2019-20. Since then, the same has declined to Rs. 53.30 Lakh in 2023-24. As was the case with the other DRCs, while the amount recovered increased from Rs. 11,600 Crores in 2010-11 to Rs. 30,460 Crores in 2023-24, the DRR during the corresponding period declined from 37.91 percent to 24.70 percent (Appendix 3(c)).

As regards the recovery of debts by the Insolvency and Bankruptcy Code (IBC), the number of cases rose from 704 in 2017-18 to 1,986 in 2019-20. In 2020-21, it declined to 536 but increased again to reach 1,002 in 2023-24. In contrast, the amount involved in these cases rose from Rs. 9,929 Crores in 2017-18 to Rs. 163,943 Crores in 2023-24. In 2017-23, the figures had been as high as 224,935 Crores. The per-case amount also followed the same trend. It increased from Rs. 4,926 Crores in 2017-18 to Rs. 104,117 Crores in 2019-20, whereafter it declined and rose again to reach Rs. 46,340 Crores in 2023-24. Following the trend depicted by all other DRCs, the IBCs also evinces that the amount recovered through this process had increased from Rs. 4,926 Crores in 2017-18 to Rs. 46,340 Crores in 2023-24. However, their DRR during the corresponding period declined from 49.61 percent to 28.30 percent (Appendix 3(d)).

Taking all four channels together, the number of cases referred to them increased from 7.47 Lakh in 2010-11 to 129.48 Lakh in 2023-24. So has been the case with the amount involved in these cases, which rose from Rs. 0.50 Lakh Crores to Rs. 5.84 Lakh Crores. The per-case amount, however, fluctuated through the period of study. The recovered amount increased from Rs. 15,700 Crores in 2010-11 to Rs. 96,325 Crores in 2023-24, even though the recovery rate over these two periods declined from 31.40 percent to 16.50 percent (Appendix 3(e)).

METHODOLOGY

While it is established that the DRR of different DRCs declines as time passes, it is still being determined if this is equally significant for all the DRCs. Using the null hypothesis that there is no significant difference in the DRRs across various DRCs, we seek to evaluate and comment on the performance of four prominent DRCs comprising the Lok Adalats (LA), Debt Recovery Tribunals (DRTs), Assets Reconstruction Companies (ARCs), and Insolvency and Bankruptcy Code (IBC). This is sought to be achieved using the Analysis of Variance (ANOVA).

As indicated earlier, the passage of time alone cannot be the plausible determinant of the DRRs because of the critical changes in some related variables. Therefore, correlating a few identified variables with the DRR appears imminent. To achieve this objective, Karl Pearson's Coefficient of Correlation has been calculated between the DRRs as a Dependent Variable (DV) and the Number of Cases (NoC), the Amounts Involved (AI), and the Per Case Amount (PCA) as Independent Variables (IVs). As mentioned in the preceding paragraphs, the variables used as IVs undergo significant growth over time, and each of them can potentially affect DRCs' performance as measured by their DRRs. As these variables change, they may exert or ease pressure on the DRCs, affecting their effectiveness positively or negatively.

The above two analyses are based on fourteen years of data from

2010-11 to 2023-24 as downloaded from the RBI Data Warehouse. However, the analysis concerning the IBC is based on only seven years of data downloaded from the same source. The background details reported in Appendices 1 and 2 of the paper are based on 21 years of data from 2003-04 to 2023-24. The choice of the period has been guided and constrained by the availability of data on the identified parameters. The period under study encompasses the rise and fall in the NPAs of the SCBs and the DRRs of different DRCs. Although the period under study is relatively short, the study presents the latest data.

ANALYSIS AND INTERPRETATION

The descriptive statistics reveal clear differences in the average Debt Recovery Rates (DRRs) across debt recovery channels (Table 1). Lok Adalats (LAs) and Debt Recovery Tribunals (DRTs) exhibit comparatively lower mean recovery rates, whereas Asset Reconstruction Companies (ARCs) and the Insolvency and Bankruptcy Code (IBC) demonstrate substantially higher recovery performance. These differences reflect the distinct institutional mandates and case profiles of each channel. The relatively narrow dispersion of DRRs for LAs, DRTs, and ARCs reflects stability arising from longer time coverage, while the wider variability observed under the IBC is attributable to its shorter operational history and evolving implementation. Similar patterns of higher recovery under formal resolution mechanisms have been reported in earlier studies on the IBC and SARFAESI framework (Bose et al., 2021; Mohan & Das, 2021), reinforcing the role of structured resolution processes in improving recovery outcomes.

The Single Factor ANOVA results confirm that the mean DRRs differ significantly across the four DRCs (Table 2). The null hypothesis of equal recovery performance is rejected at the 5 percent level, indicating that recovery effectiveness is not uniform across mechanisms. This finding aligns with the institutional view that recovery outcomes depend not only on legal authority but also on procedural design, creditor participation, and case complexity. The superior average performance of ARCs and the IBC suggests that mechanisms designed for larger exposures and structured resolution are better equipped to handle complex distress situations. This supports earlier empirical evidence that formal insolvency and asset reconstruction frameworks outperform informal or quasi-judicial channels in terms of recovery efficiency (Mohan & Das, 2021; Thorburn, 2000).

As discussed in the conceptual framework, Karl Pearson's Coefficient of Correlation was computed to examine the association between Debt Recovery Rates (DRRs) and three independent variables—NoC, AI, and APC—for each of the four Debt Recovery Channels (DRCs), namely Lok Adalats (LAs), Debt Recovery Tribunals (DRTs), Asset Reconstruction Companies (ARCs), and the Insolvency and Bankruptcy Code (IBC). The correlation analysis highlights a systematic association between recovery performance and case burden across channels (Table 3, Appendix 4). For LAs and DRTs, DRRs are negatively correlated with the NoC, AI, and APC indicating that rising caseloads and exposure sizes strain recovery capacity. This finding is consistent with prior evidence suggesting that congestion and procedural delays reduce recovery efficiency in tribunal-based mechanisms (Visaria, 2009; Unny, 2011).

ARCs exhibit a similar negative relationship, particularly with respect to case volume and total amount involved, suggesting that even market-based recovery channels face capacity constraints when stressed assets increase. In contrast, the IBC displays a positive correlation between DRR and number of cases, indicating resilience to rising caseloads. However, the strong negative correlation between DRR and amount per case under the IBC suggests that recovery becomes more challenging as case size increases. Given the shorter time series for IBC data, these results should be interpreted cautiously.

The regression analysis further examines the joint influence of case burden variables on recovery performance (Table 4). The overall regression models are statistically significant for all four channels, indicating that the three predictors jointly explain a meaningful share of variation in recovery rates. However, the importance of individual predictors differs across mechanisms. For Lok Adalats, none of the predictors is individually significant, suggesting that recovery outcomes in this channel are influenced more by institutional and procedural factors than by measurable case-burden indicators. For DRTs, all three variables—number of cases, amount involved, and amount per case—are statistically significant, confirming that rising caseloads and exposure levels materially reduce recovery efficiency.

In contrast, for ARCs and the IBC, individual coefficients are not statistically significant, despite strong overall model fit. This indicates that recovery outcomes under these mechanisms are not driven solely by case-burden variables, but also by channel-

specific features such as resolution strategy, creditor coordination, and market conditions. These findings underscore the heterogeneous nature of recovery dynamics across debt recovery channels.

CONCLUSIONS

The analysis indicates that the recovery rates of India's debt recovery channels vary, with ARCs and the IBC performing better than Lok Adalats and DRTs. However, a common pattern consistently emerges in most of the mechanisms: the recovery efficiency of these mechanisms decreases as the number of cases and the amount involved increase. This is notably apparent in Lok Adalats, DRTs, and ARCs. The IBC appears to be more resilient to increasing caseloads, although its results should be interpreted with caution due to the limited data and shortened operational period.

This decline in efficiency and the accompanying rise in case burden implies that these institutions may not be adequately suited to manage the increasing volume of cases and the complexity of disputes. As the financial interests increase, negotiations become a bit harder and resolution becomes challenging. It is therefore imperative to fortify institutional capacity and optimize case-handling processes in order to strengthen the overall effectiveness of the debt recovery framework.

POLICY IMPLICATION

The findings indicate that debt recovery channels (DRCs) in India require targeted policy interventions to improve their effectiveness. In order to mitigate the decline in debt recovery rates (DRRs) associated with excessive caseloads, policymakers should prioritize the enhancement of institutional capacities within the DRCs, including Lok Adalats, DRTs, and ARCs.

This involves the allocation of adequate physical, financial, and human resources to manage increased workloads and expedite the processing of cases.

LIMITATION AND FUTURE SCOPE OF STUDY

The study is predicated on annual aggregate data reported by the RBI, which restricts the number of observations that can be analyzed for statistical purposes. In light of this, the results should be regarded as indicative trends rather than causal estimates. Furthermore, the performance of recovery across channels may be influenced by factors such as lender characteristics and case-specific features, which were unable to be incorporated due to data constraints. Future research using firm- or case-level data can provide deeper insights into the determinants of recovery outcomes and allow for more robust modelling, including controls for borrower quality, collateral type and institutional factors.

Table 1: Descriptive Statistics: DRRs across Different DRCs

Statistics	LA	DRT	ARC	IBC
Mean	0.0479357	0.1109214	0.2514857	0.3613714
Standard Error	0.0067903	0.0178546	0.0217107	0.0449778
Median	0.0421	0.0974	0.25625	0.39
Mode	#N/A	#N/A	#N/A	#N/A
Standard Deviation	0.0254070	0.0668059	0.0812341	0.1190000
Sample Variance	0.0006455	0.0044630	0.0065990	0.0141610
Kurtosis	3.6595113	1.5197415	-0.4567620	-2.0729552
Skewness	1.5314259	1.1511697	0.5571861	-0.2758754
Range	0.0996	0.2406	0.2597	0.2943
Minimum	0.018	0.036	0.1504	0.2018
Maximum	0.1176	0.2766	0.4101	0.4961
Sum	0.6711	1.5529	3.5208	2.5296
Count	14	14	14	7
Confidence Level (95.0%)	0.0146696	0.0385726	0.0469032	0.1100566

Note-
DRR = Debt Recovery Rate ; DRC = Debt Recovery Channels
Source: Authors' calculations from RBI data.

Table 2: Single Factor ANOVA Statistics of the DRRs of different DRCs

SUMMARY						
Groups	*Count*	*Sum*	*Average*	*Variance*		
LA	14	0.6711	0.0479357	0.0006455		
DRT	14	1.5529	0.1109214	0.0044630		
ARC	14	3.5208	0.2514857	0.0065990		
IBC	7	2.5296	0.3613714	0.0141610		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.6067165	3	0.2022388	38.373260	0.000000	2.811543
Within Groups	0.2371638	45	0.0052703			
Total	0.8438803	48				

Source: Statistical Tables Relating to Banks in India

Table 3: Karl Pearson's Coefficient of Correlation between Debt Recovery Rate (DRR) and Other Independent Variables

Variable	LA	DRT	ARC	IBC
Number of Cases	-0.6140505	-0.5139867	-0.6017573	0.5021428
Amount Involved	-0.6341864	-0.5487498	-0.7334239	-0.3415590
Amount Per Case	-0.7244195	-0.6894377	-0.2491922	-0.9139425

Source : Authors' calculation from RBI data

Table 4: Summary Output of Regression Analysis between DRR and NoC, AI and APC of different DRCs

Variable	Metric	LA	DRT	ARC	IBC
Intercept	*Coeff.*	0.10772	0.33432	0.43016	0.40221
	S.E	0.02296	0.06468	0.12102	0.14185
	t-stat	4.69165	5.16890	3.55449	2.83552
	p-value	0.00085	0.00042	0.00523	0.06589
No. of Cases (NoC)	*Coeff.*	0.00000	-0.00001	0.00000	0.00016
	S.E	0.00000	0.00000	0.00000	0.00018
	t-stat	-0.32190	-2.26343	-0.74110	0.88930
	p-value	0.75416	0.04709	0.47568	0.43935
Amount Involved (AI)	*Coeff.*	0.00000	0.00000	0.00000	0.00000
	S.E	0.00000	0.00000	0.00000	0.00000
	t-stat	0.14471	2.36597	-0.83797	-0.53804
	p-value	0.88782	0.03955	0.42162	0.62790
Amount per Case (APC)	*Coeff.*	-4.24680	-0.05262	-0.00773	-0.00070
	S.E	1.96446	0.01594	0.11818	0.00106
	t-stat	-2.16182	-3.30068	-0.06541	-0.65779
	p-value	0.05594	0.00800	0.94914	0.55764
R-square		0.60414	0.66708	0.64733	0.91008
Adjusted R-square		0.48538	0.56720	0.54153	0.82015
Std. Error of Regression		0.01823	0.04395	0.05500	0.05047
F-statistic		5.08707	6.67897	6.11847	10.12064
Prob. (F-statistic)		0.02152	0.00941	0.01240	0.04452
Observations		14	14	14	7

Notes:
1. Coeff. = Coefficient; SE = Standard Error; t-stat = t-Statistic; p-value = Probability value.
2. Dependent Variable: Debt Recovery Rate (DRR).
3. Independent Variables: Number of Cases (NoC), Amount Involved (AI), Amount per Case (APC).
4. Source: Authors' calculations using annual data published by the Reserve Bank of India (RBI)

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Appendix 1

Advances and NPAs of SCBs in India (Rs. in Crore)

Year (End March)	Gross Non-Performing Assets	Gross Advances	Gross NPAs to Gross Advances Ratio (%)
1998-99	58,722	3,99,436	14.7
1999-00	60,841	4,75,758	12.8
2000-01	63,963	5,58,679	11.4
2001-02	70,954	6,80,869	10.4
2002-03	70,314	7,76,508	9.1
2003-04	64,897	9,02,026	7.2
2004-05	57,396	11,67,684	4.9
2005-06	51,753	15,45,730	3.3
2006-07	50,517	20,07,413	2.5
2007-08	56,606	25,03,431	2.3
2008-09	69,954	30,24,652	2.3
2009-10	81,718	32,62,079	2.5
2010-11	93,997	39,95,982	2.4
2011-12	1,36,968	46,48,808	2.9
2012-13	1,92,769	59,71,820	3.2
2013-14	2,63,015	68,75,748	3.8
2014-15	3,22,916	75,60,666	4.3
2015-16	6,11,607	81,71,114	7.5
2016-17	7,90,268	84,76,705	9.3
2017-18	10,35,294	92,30,894	11.2
2018-19	9,32,596	1,02,31,689	9.1
2019-20	8,94,373	1,08,27,409	8.3
2020-21	8,29,081	1,08,67,402	7.6
2021-22	7,42,397	1,27,50,006	5.8
2022-23	5,71,850	1,47,61,838	3.8
2023-24	4,80,701	1,75,08,590	2.7

Source: Statistical Tables Relating to Banks in India

Appendix 2:

NPA Recovery rate through various channels

Year	Debt Recovery Rate (as percentage of amount involved)				Overall Debt Recovery Rate
	LAs	DRTs	ARCs	IBC	
2003-04	13.5	30.9	8.9	-	20.9
2004-05	14.1	18.8	18.1	-	18.3
2005-06	20.3	76.9	34.8	-	49.0
2006-07	14.0	37.8	41.4	-	38.6
2007-08	8.2	51.9	61.0	-	50.1
2008-09	2.4	81.1	33.0	-	36.7
2009-10	1.5	32.0	30.0	-	24.0
2010-11	3.7	27.6	37.9	-	31.4
2011-12	11.8	17.0	28.6	-	23.6
2012-13	6.1	14.2	27.2	-	22.0
2013-14	6.0	9.6	26.5	-	18.4
2014-15	3.2	7.0	16.3	-	12.4
2015-16	4.4	9.2	16.5	-	10.3
2016-17	6.4	10.2	18.3	-	13.8
2017-18	4.0	5.4	32.2	49.6	14.9
2018-19	5.1	3.9	15.0	45.7	16.3
2019-20	6.2	4.9	17.4	46.3	22.0
2020-21	4.0	3.6	41.0	20.2	14.0
2021-22	2.3	17.5	22.5	23.8	17.6
2022-23	2.0	9.9	27.8	39.0	15.3
2023-24	1.8	15.2	24.7	28.3	16.5

Source: RBI website :

1. Statistical Tables Relating to Banks in India.
2. Report on Trend and Progress of Banking in India.

Appendix 3

(a) Debt Recovery through Lok Adalats (LAs)

Number of Cases	Amount Involved (Rs in Crores)	Amount Per Case (Rs)	Amount Recovered (Rs in Crores)	Recovery Rate
616018	5300	86036	200	3.77%
476073	1700	35709	200	11.76%
840691	6600	78507	400	6.06%
1636957	23200	141726	1400	6.03%
2958313	31000	104790	1000	3.23%
4456634	72000	161557	3200	4.44%
3555678	36100	101528	2300	6.37%
3317897	45728	137822	1811	3.96%
4087555	53484	130846	2750	5.14%
5986790	67801	113251	4211	6.21%
1949249	28084	144076	1119	3.98%
8506741	119006	139896	2778	2.33%
13772958	188135	136597	3774	2.03%
12684815	189694	149544	3322	1.80%

(b) Debt Recovery through Debt Recovery Tribunals (DRTs)

Number of Cases	Amount Involved (Rs in Crores)	Amount Per Case (Rs)	Amount Recovered (Rs in Crores	Recovery Rate
12872	14100	10954009	3900	27.66%
13365	24100	18032174	4100	17.01%
13408	31000	23120525	4400	14.19%
28258	55300	19569679	5300	9.58%
22004	60400	27449555	4200	6.95%
24537	69300	28243061	6400	9.24%
32418	100800	31093837	10300	10.22%
29345	133095	45355256	7235	5.44%
51679	268413	51938505	10552	3.93%
33139	205032	61870304	9986	4.87%
28182	225361	79966291	8113	3.60%
30651	68956	22497145	12035	17.50%
56198	402753	71666785	39785	9.90%
31414	106887	34025275	16202	15.20%

(c) Debt Recovery through Assets Reconstruction Companies (ARCs)

Number of Cases	Amount Involved (Rs in Crores)	Amount Per Case (Rs)	Amount Recovered (Rs in Crores	ARCRecovery Rate
118642	30600	2579188	11600	37.91%
140991	35300	2503706	10100	28.61%
190537	68100	3574109	18500	27.17%
194707	95300	4894534	25300	26.55%
175355	156800	8941861	25600	16.33%
173582	80100	4614534	13200	16.48%
199352	141400	7092981	25900	18.32%
91330	81879	8965181	26380	32.22%
235437	258642	10985614	38905	15.04%
105523	196582	18629304	34283	17.44%
57331	67510	11775479	27686	41.01%
249645	121718	4875643	27349	22.50%
187340	111359	5944219	30957	27.80%
231407	123363	5330996	30460	24.70%

(d) Debt Recovery through Insolvency and Bankruptcy Code (IBC)

Number of Cases	Amount Involved (Rs in Crores)	Amount Per Case (Rs)	Amount Recovered (Rs in Crores)	IBC Recovery Rate
704	9929	141036931	4926	49.61%
1152	145457	1262647569	66440	45.68%
1986	224935	1132603223	104117	46.29%
536	135319	2534608209	27311	20.18%
891	197959	2221762065	47409	23.90%
1262	138715	1062093577	54161	39.00%
1004	163943	1632898406	46340	28.30%

(e) Debt Recovery through All Channels (ACs)

Number of Cases	Amount Involved (Rs in Crores)	Amount Per Case (Rs)	Amount Recovered (Rs in Crores	Recovery Rate
7,47,532	50,000	6,68,868	15,700	31.40%
6,30,429	61,100	9,69,181	14,400	23.57%
10,44,636	1,05,700	10,11,836	23,300	22.04%
18,59,922	1,73,800	9,34,448	32,000	18.41%
31,55,672	2,48,200	7,86,520	30,800	12.41%
46,54,753	2,21,400	4,75,643	22,800	10.30%
37,87,485	2,78,300	7,34,788	38,500	13.83%
34,39,276	2,70,631	7,86,884	40,352	14.91%
43,75,823	7,25,996	16,59,107	1,18,647	16.34%
61,27,438	6,94,350	11,33,182	1,52,597	21.98%
20,35,298	4,56,274	22,41,804	64,229	14.08%
87,87,928	5,07,639	5,77,654	89,571	17.64%
1,40,17,758	8,40,962	5,99,926	1,28,676	15.30%
1,29,48,640	5,83,887	4,50,925	96,325	16.50%

Appendix 4

Karl Pearson's Coefficient of Correlation

(a) Coefficient of Correlation Matrix for Lok Adalats

	Number of Cases	*Amount Involved (Rs in Crores)*	*Amount Per Case (Rs)*	*Debt Recovery Rate*	
Number of Cases	1				
Amount Involved	0.9928116	1			
Amount Per Case	0.5163888	0.5623037	1		
Debt Recovery Rate	-0.6140505	-0.6341864	-0.7244195	1	

(b) Coefficient of Correlation Matrix for Debt Recovery Tribunals (DRT)

	Number of Cases	*Amount Involved (Rs in Crores)*	*Amount Per Case (Rs)*	*Debt Recovery Rate*	
Number of Cases	1				
Amount Involved	0.8891254	1			
Amount Per Case	0.6661037	0.8915647	1		
Debt Recovery Rate	-0.5139867	-0.5487498	-0.6894377	1	

(c) Coefficient of Correlation Matrix for Assets Reconstruction Companies (ARC)

	Number of Cases	*Amount Involved (Rs in Crores)*	*Amount Per Case (Rs)*	*Debt Recovery Rate*	
Number of Cases	1				
Amount Involved	0.4092336	1			
Amount Per Case	-0.37284	0.6505196	1		
Debt Recovery Rate	-0.6017573	-0.7334239	-0.2491922	1	

(d) Coefficient of Correlation Matrix for Insolvency and Bankruptcy Code (IBC)

	Number of Cases	*Amount Involved (Rs in Crores)*	*Amount Per Case (Rs)*	*Debt Recovery Rate*	
Number of Cases	1				
Amount Involved	0.599665	1			
Amount Per Case	-0.279293	0.5758883	1		
Debt Recovery Rate	0.5021428	-0.3415590	-0.9139425	1	

(e) Coefficient of Correlation Matrix forAll Channels (AC)

	Number of Cases	*Amount Involved (Rs in Crores)*	*Amount Per Case (Rs)*	*Debt Recovery Rate*	
Number of Cases	1				
Amount Involved	0.7744562	1			
Amount Per Case	-0.3937476	0.1793241	1		
Debt Recovery Rate	-0.3180948	-0.3189798	-0.0344203	1