

Research Article

Role of Insolvency and Bankruptcy Code 2016 in Resolving NPAs of Indian Banks: A Review

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Abstract: *Objectives:* This study attempts to perform the extensive literature review of the studies done by the different researchers on the burgeoning subject area of non-performing assets (NPAs) management in the Indian banking sector. It also aims to explore the efficacy of IBC code 2016 in managing NPAs in India. *Research Methodology:* The present study analyzed and synthesized the research articles in the tabular form. The table analyzed the journal article information in the form of title, authors, publisher with year of publication and details about contents of the article like, objectives, Research Methodology, Findings and Recommendations. Finally it's been attempted to evaluate the effectiveness of this code in resolving banking NPAs issues. *Findings:* The Banking sector of India has observed tremendous change during the last decade. The foremost challenge for the Indian Government has been the resolving of NPAs. Increased level of advances, poor management policies and rising NPAs level has resulted in the issues among financial institutions, companies and individuals including lenders and borrowers. Increase in the corporate defaults was observed to be the major cause of piling of NPAs in the Banking sector. In the pre IBC 2016 era ROI of Indian banks got drastically affected due to the mounting NPAs levels. The Insolvency and Bankruptcy code has been brought by Indian Government to address the management and hasten up recovery of NPAs in the year 2016. *Conclusion and Recommendations:* Introduction of IBC 2016 was the need of the hour for managing the spiraling NPAs levels among the Indian banks. It performed an impressive role in the management of NPAs. JEL Codes: G21, G33, G010, G510

Keywords: NPAs, Insolvency, Resolution, Bankruptcy, Recovery channels, Private Banks, Public Banks, IBC 2016.

INTRODUCTION

The development of every economy depends on a strong and thriving banking sector, and Indian banks have been instrumental in the expansion of the nation's many industries (Ahmed, 2021). The condition of NPAs in the Indian banking sector is quite concerning. Public sector banks are experiencing greater NPAs compared to private and foreign banks. (Bhasin, 2017). Ownership does, in fact, have a substantial impact on SCB NPAs; public sector banks are more likely than private sector banks to have larger NPAs (Mishra et al., 2019). Non-priority sector shows higher growth in NPAs as compared to priority sector among all the banks (Gaur & Mohapatra, 2019). Growing non-performing assets (NPAs) and declining NPA recovery result in inadequate capital recycling, which has a direct impact on bank's lending choices. Since NPAs don't provide any net interest income, Prasad & Veena (2011) claimed that NPAs have a negative effect on As a consequence, the earnings of banks decrease, leading to reduced funds for recycling. It did not leave any chance for the proper funding of significant projects by bankers. The delinquency caused by NPAs affects banks, but it is a

need-based problem which basically sets back the whole economy. Main reasons behind this increase in stressed assets have been determined to be aggressive lending tactics, willful default, loan fraud, and in some cases, corruption (Moli, 2017; Nag, 2015). The government created a thorough 4 R's strategy, which includes recapitalizing PSBs, resolving and recovering value from stressed accounts, transparently acknowledging NPAs, and reforming PSBs and the financial ecosystem, in order to create a reliable and moral system (Mohanty & Acharya, 2019; Singh, 2016). Maheswari and Reddy (2022) in their study concluded that the primary cause of rising NPAs include funding to non- non-priority sector and that rising NPAs levels affect both the profitability of the banks plus the various projects involved in the development of the country. On the analysis of lending pattern service sector lending has a negative relationship with NPAs, whereas personal, industrial, and agricultural lending has a positive relationship with NPAs (Desai, 2017). Gupta et al. (2020) found management turmoil as a main factor in the rise of NPAs and downfall of Yes Bank. Moreover, Mukherjee (2019) evaluated in his research that strict lending standards could potentially

exacerbate the recession, hinder growth rates, and lead to an increased number of NPAs. Mittal and Suneja (2017) concluded from their research that lack of proper credit appraisal mechanism, untrained staff, inefficient lending practices, mismanagement of allocated funds as the causes for the rising NPAs. Poor habits in managing the credit resulted in intentional default and contributed to the increase in non-performing assets (NPAs) (Kashyap et al., 2020).

In short, the banking sector in India was revolutionized after birth by globalization and liberalization in 1991. The changes included prudential standards, reserve reduction, and interest rate control, among other things (Shaardha & Jain, 2016). The insolvency regime needs uniform legislation in process. The resolution of the non-performing asset (NPA) issue requires an appropriate credit evaluation and risk management system (Singh, 2013). This necessity led to the creation of IBC 2016. Implementation led to harmonization of the legal framework already in existence, as two laws were repealed and six laws amended. The IBBI was established to keep an oversight on the functioning of insolvency intermediaries (Abhirami & Rahul, 2022). Individuals, businesses, and partnership entities are all covered by the IBC. Insolvency practitioners, data repositories, adjudicating bodies, and the Insolvency and Bankruptcy Board of India form the four key components of the IBC 2016. (Alamelumangai & Sudha, 2019).

The advent of the Code appeared to affect lenders, banks and financial houses, companies, and others, affording them the opportunity to act as resolution experts. The objectives of bankruptcy legislation are to give investors an easier way out, expedite the winding up of insolvent firms, and provide a rescue option for financially troubled entities (Anant & Mishra, 2019).

1.1. Non- Performing Asset

One of the most profound and widespread concerns of the NPA is that of any country. On the other hand, the size of this issue is unquestionably rather significant for developing countries such as India. Without a comprehensive overhaul of the banking and financial sector in India strategically in place, the Indian government's economic reforms to meet the speed of the global economic challenge would not be able to be accomplished. The problem of NPAs is continuously expanding, which is putting the existence of banks in jeopardy, reducing the profitability of banks, and having an effect on the economy as a whole. When a loan or lease fails not meet the specified principal amount and the interest amount payments, this type of asset is referred to as a NPA. There are two kinds of NPA, which include business loans that have been over ninety days past due, and consumer loans more than one hundred eighty days past due.

1.2. Insolvency and Bankruptcy Code (IBC) 2016

It is currently the case that India has a number of laws

that overlap with one another and deal with the financial failure and insolvency of both individuals and businesses. Besides overloading the Indian credit system without adding any value, the present legislative and institutional structure leaves lenders with no support in facilitating quick recovery or restructuring of defaulted assets. The framework made an effort to incorporate a time-bound and methodical resolution of insolvencies in order to maximise the value for all stakeholders, as well as to balance the knowledge asymmetry, in addition to protecting the interests of all stakeholders.

The year 2000 witnessed an increased number of NPAs. Banks' lending was indiscriminate during the period 2008-14, which was attributed to a very high percentage of non-performing assets. RBI Asset Quality Reviews threw light upon this, and with that, the government took rapid action. It was introduced in the Lok Sabha shortly after that and was sent to a Joint Committee of Parliament. The committee that was formed submitted its report in 2015, which suggested the formation of IBC. Indian Business Council (IBC) was approved by both the houses of the Parliament on May 5, 2016, and it got assent from the President of India at the end of May, 2016.

1.3. Objectives of the study

- To carry out a thorough review of the literature on managing NPAs in the Indian banking industry.
- To assess how well IBC 2016 is managing non-performing assets.

METHODOLOGY

Selection of Literature

This review study evaluates the impact of IBC 2016 on NPAs in Indian banks, based upon an elaborate literature search. The authors scrutinized peer-reviewed journal articles, conference papers, and credible reports published from 2016 to 2023. The keywords used in the search strategy included the electronic databases of "Insolvency and Bankruptcy Code 2016," "NPAs in Indian banks," "resolution mechanisms," and "effectiveness." More comprehensive research meeting the inclusion criteria was also sought by manual searches of relevant journals and through citation tracking of relevant works.

Data Extraction and Synthesis

Data extraction includes gathering relevant information from a group of studies, which includes: titles, authors, publishers, and publication years of the specific studies. The aim of each research, the research method that was used, the primary findings about the efficiency of IBC 2016 in resolving NPAs, and the suggestions were organised and retrieved in a methodical manner. The data that were extracted were

tabulated in order to make comparative analysis between the various research easier. In order to uncover common themes and variances in the function of IBC 2016 across various sectors and types of NPAs in the Indian banking system, the synthesis that was performed involves organising the findings in a thematic manner.

Gap Analysis

It was determined through a gap analysis whether sections of the study that had been done in the past had limits or did not provide thorough coverage. A summary of the gaps that were found in previous studies is included in Table 3, which also shows the

contributions that this review work has made. As an illustration, past research frequently concentrated solely on NPAs without doing a comprehensive analysis of the influence that IBC had on the whole. This review, on the other hand, provides a comprehensive analysis by incorporating factual data, opinions from across the industry, advanced statistical methodologies, and comparisons with alternative recovery mechanisms. When it comes to actual evidence on the temporal impact of IBC, its effectiveness during economic downturns such as the COVID-19 pandemic, and legislative issues that influence NPA resolution tactics, the analysis fills in the gaps.

Table 1: Brief Reviews on the impact of IBC 2016 on NPAs Management

Author(s) & Year	Title of the Paper	Journal & Publisher	Research Objectives	Research Methodology	Findings/Recommendations
<u>Agarwala, V. & Agarwal, N. (2019)</u>	A Critical Review of Non-Performing Assets in the Indian Banking Industry	<u>Rajagiri Management Journal</u> (Emerald.com)	To calculate the average growth rate for various bank groups and individual banks To provide observations about the increasing trend of Gross NPAs	Secondary data from RBI website; statistical analysis using geometric mean	NPAs increased not only in small banks but also large banks. Significant improvement in NPA reduction post-IBC (2016), but more needs to be done.
<u>Ankeeta Gupta (2018)</u>	Insolvency and Bankruptcy Code, 2016: Paradigm Shift in Insolvency Laws in India	The Copenhagen Journal of Asian Studies, 36(2), 75-99	To perform an in-depth analysis of the IBC provisions	Conceptual research using secondary data from reputable websites and journals	The IBC is expected to enhance India's business environment, credit market, GDP, FDI, and overall climate. Success depends on proper implementation of its provisions.

Bajaj, R. V., Sanati, G., & Lodha, C. (2021)	Impact Assessment Study of NPAs and Rate of Recovery: Are Private Sector Banks in India Better Off?	Global Business Review	To compare NPA determinants between public and private banks and assess recovery management	Arrelano-B ond Dynamic Panel method applied on 35 banks, recovery rates observed	Negative correlation between slippage ratio and recovery rate for both public and private banks. IBC (2016) boosted recovery rates. Recommendations for improving NPA management: focus on high interest margins, secured collateral, balanced loan portfolios.
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Vijaya, N. L., & Murlidhar, S. (2021)	Efficacy of IBC over Other Recovery Channels: A Study of Scheduled Commercial Banks in India	International Journal of Advanced Research in Commerce, Management & Social Science, 4(2)	To analyze IBC's effectiveness in resolving NPAs for Scheduled Commercial Banks compared to other recovery mechanisms	Secondary data from RBI bulletins, DRT reports, and IBBI reports	The IBC has caused a paradigm shift in NPA management for Scheduled Commercial Banks, with a notable improvement in recovery rates.
Tensingh, E., & Suresha, B. (2019)	Impact of Insolvency and Bankruptcy Code, 2016 on Indian Commercial Banks: A Pre- and Post-Event Analysis	Journal of Emerging Technologies and Innovative Research, 6(6)	To assess the impact of IBC on Indian banks over the last 6 years	Quantitative data analysis using correlation and regression models with SPSS and Excel	Private sector banks saw significant advances in non-performing loans. Both public and private sector banks' NPAs negatively impacted profitability, but recovery rates improved from 2018 onwards.
Gupta, M. S., & Singh, J. B. (2020)	Insolvency and Bankruptcy Code (IBC) in India: Impact on Recovery of NPAs by Banks	Bihar Journal of Public Administration, 17(2)	To assess IBC's effectiveness in managing stressed assets compared to previous recovery channels	Secondary data from quarterly IBBI and RBI reports	IBC has improved NPA recovery and expanded its applicability to include some financial services providers.
Das, I. (2020)	The Need for Implementing a Cross-Border Insolvency Regime within the IBC, 2016	Vikalpa, 45(2)	To analyze the rationale for incorporating a cross-border insolvency regime within IBC	Secondary data from research papers, World Bank reports, Ease of Doing Business reports	UNCITRAL law is seen as a potential framework for cross-border insolvency in IBC. However, incorporating ILC recommendations could present challenges for foreign creditors.

Javheri, J., & Gawali, R. (2022)	NPAs of Selected Private & Public Sector Banks in India	Indian Journal of Finance and Banking, 9(1)	To compare NPAs of private and public sector banks over the last 10 years	Secondary data from RBI bulletins; trend analysis and ANOVA tests	NPAs rose in 2019-2020 due to the pandemic. Public sector banks faced more difficulties than private banks. IBC (2016) positively impacted NPA recovery.
Kamal, H. (2022)	Bankruptcy Reform and its Implication on the Economy: Evidence from a Quasi-Natural Experiment	SSRN	To evaluate the impact of IBC on bank transformation risks across Indian states	State-level data analysis (2012-2019) using Difference in Difference (DID)	IBC has unified recovery laws, improving NPA management. States with small/marginal farmers faced higher transformation risks compared to states with large farmers.
Kattadiyil, C. D. B. J., & Islamov, B. A. (2021)	Analysis of Outcomes of IBC on Managing the Economic Development of India	International Journal of Management, 12(7)	To assess whether IBC is a significant catalyst for India's economic development To evaluate IBC restructuring and resolving tools	Paired sample T-tests using MS-Excel	IBC has expedited debt recovery and improved India's ranking in the Ease of Doing Business Index from 130th in 2017 to 63rd in 2016.
Kokane, S., & Pandit, A. (2023)	Study on Lok Adalat, DRT, SARFAESI, and IBC as Recovery Mechanisms in India	Journal of Indian Management & Strategy, 28(1)	To evaluate the effectiveness of various NPA recovery mechanisms by comparing the total amount involved and recovered	Secondary data from RBI and IBBI reports; one-way ANOVA tests used	IBC has proven to be one of the most effective recovery mechanisms, outperforming other channels like Lok Adalat and SARFAESI. Recommendations: increase CIBIL score evaluation and focus advances in growing economic sectors.

Manoranjan Ayilyath (2019)	Roadblocks under Insolvency and Bankruptcy Code, 2016: Need for Capacity Building	SSRN	To examine systemic issues hindering the effective progress envisioned by the Code.	Secondary data analysis using IBBI newsletters and research articles.	Findings: Legislative gaps exist, leading to interpretations beyond legislative intent. Recommendations: 1. Reliable data systems for IU. 2. More NCLT benches are required to handle the increasing number of cases.
Ms. Srilekha Eduri (2018)	A Critical Analysis of Insolvency and Bankruptcy Code, 2016	International Journal of Management , Technology, and Engineering	1. Identify limitations in applying the Code. 2. Understand how the IBC's approach impacts various sectors.	Primary data through interviews with professionals and secondary data from IBBI, newspapers, and company reports. Data analysis was done using MAXQDA 18 software.	Findings: IBC is yielding promising results in recovering dead assets. Recommendations: Improve infrastructure to support the Code's implementation.
Ram Singh & Hitesh Kumar Thakkar (2021)	Settlements and Resolutions Under the IBC Code: Assessing the Impact of Covid-19	The Indian Economic Journal	1. Assess Covid-19's impact on conflicts between debtors and creditors. 2. Compare recovery rates under OCS and CIRP.	Model-based analysis using secondary data from IBBI.	Findings: Post-moratorium disputes will surge. Recommendations: Promote out-of-court settlements to save time and cost.
Sanad Ziad Yousef	The Insolvency	Asian Journal of	Focus on key features and	Data from IBBI	Findings: The Code's strict procedures inspire

AIRawashdeh (2021)	and Bankruptcy Code: A Brief Review	Law and Governance	modification s of the IBC Code.	manuals, business magazines, and reliable online sources.	confidence in businesses. It is a crucial legislative decision for a stronger economy.
R. Sane (2019)	The Way Forward for Personal Insolvency in the Indian Insolvency and Bankruptcy Code	SSRN	Discuss personal insolvency, IBC provisions, and provide suggestions for effective implementati on.	Secondary data from CMIE Economic Outlook, research papers, and journals.	Success in managing NPAs depends on subordinate legislation design and infrastructure evolution.
Shivam Goel (2017)	The Insolvency and Bankruptcy Code, 2016: Problems & Challenges	Imperial Journal of Interdisciplin ary Research (IJIR)	Identify challenges and problems in enacting and implementin g IBC 2016.	Secondary data analysis of insolvency and bankruptcy literature.	Findings: The 2016 Code is a significant step in consolidating insolvency laws. Challenges include judicial limitations and amendments to multiple acts.
Srijan Anant & Aayushi Mishra (2019)	A Study of Insolvency and Bankruptcy Code and Its Impact on the Macro Environme nt of India	International Journal of Engineering Development and Research	Analyze IBC's framework and its impact on the macroecono mic environment.	Secondary data on IBC codes for descriptive study.	Findings: IBC plays a vital role in addressing stressed assets in Indian banks.
K. T. Srinivas & S. Karanth (2021)	A Study on Effectivene ss of Recovery Channels for NPA Manageme nt	The Management Accountant Journal	Evaluate the effectiveness of IBC 2016 in managing NPAs in Indian banks.	Secondary data analysis with descriptive statistics for selected banks over 12 years.	Findings: IBC outperforms other recovery channels for NPAs. However, it's too early for a definitive conclusion.

D. Tandon & N. Tandon (2019)	Ballooning Non-Performing Assets in Indian Banking and Insolvency and Bankruptcy Code: Resolution Plans and Cases	International Journal of Political Activism and Engagement	1. Analyze NPA trends and predict future scenarios based on IBC 2016. 2. Examine limitations of IBC in curbing NPAs in Indian banks.	Secondary data from RBI bulletins, journals, and websites. Scenario analysis and ANOVA tools used.	Findings: Banks need more credit expansion and sustaining development. Recommendations: 1. Privatize inefficient government banks. 2. Recapitalize banks through government capital infusion.
Tanveer Ahmad Khan	Impact of IBC on Credit Networks and Firm Performance: An Analysis of the Pre and Post Era	IES.gov.in	Explore the impact of IBC on credit networks, firm performance, and innovation.	Secondary data from CMIE database (2010-2020) using Difference-in-Difference methodology.	Findings: IBC reduced credit costs, improved debt structures for long-term borrowing, and had a strong influence on performance and innovation.
Vatsal Dipakbhai Ruparel & Jay Manojbhai Vanzara (2020)	Impact of Insolvency & Bankruptcy Code, 2016 on Commercial Banks	International Journal of Legal Science and Innovation	Study the impact of IBC 2016 on commercial banks in India and its effect on the economy.	Descriptive research using secondary data.	Findings: IBC has been instrumental in addressing NPAs, which is a major challenge for commercial banks.

FINDINGS AND DISCUSSION

No doubt that IBC is found to be a great victory for NPA management. It also expedited that the pressure on the government to give capital to the banks to enable them to stand on their own two feet would significantly decrease if more and more loans were recovered under IBC (**Shekhawat, 2019**). The banking sector, the Indian economy, and the insolvency procedure will all reap the benefits of the law. Compared to insolvency statutes in other nations, the IBC code has been applied so successfully, according to the Crisil 2019 study. (**Ahmed, 2021**). In comparison to previous systems like the Debt Recovery Tribunal, the SARFAESI Act, and Lok Adalat, the IBC has effectively addressed a significant number of distressed assets, achieving higher recovery rates since its introduction in 2016. The average recovery rates for SARFAESI Act, 2002,

DRT, and Lok Adalat from fiscal years 2018 to 2022 were 21%, 5%, and 4%, respectively, whereas the recovery rate under IBC stands at 32%. Importantly, it has established a strong deterrent effect, leading to the resolution of major bad-loan cases before they reach the IBC pathways.

As stated by Sushant Sarode, Director at CRISIL Ratings Ltd, the effectiveness of the IBC can be enhanced through the implementation of the CDE Approach, which entails Capacity Augmentation, Digitalisation, and the Expansion of Pre-pack resolutions for larger corporations.

Effectiveness of the IBC 2016 in the Resolution of NPAs

As a consequence of the significant rise in non-performing assets (NPAs) over the past few years, concerns about asset quality within the Indian banking sector have reached unprecedented levels. Several

factors can be linked to the anticipated growth in non-performing assets (NPAs) in the coming years, including the rapid increase in credit from 2005 to 2012, inadequacies in credit evaluation and monitoring practices, and instances of intentional defaults that occurred during that time. Total outstanding debt reached a high point in the 2017–2018 fiscal year and has subsequently been declining. Public sector banks in India tend to have higher levels of non-performing loans (NPAs) due to more lenient lending practices and terms. In contrast, private sector banks maintain a lower proportion of NPAs, partly because their stricter repayment policies result in fewer loan

applications. Since the global financial crisis of 2010, foreign banks in India have shifted their focus from retail lending to institutional business. Their lending rates have been affected by this change, which has led to a decline in non-performing assets, and NPAs have gone down. Although it takes time for small finance institutions to acquire trust, they have brought new life to the lending market since they began operations in 2018. The trend of gross nonperforming assets (NPAs) and the ratio of gross NPAs to gross loans in the Indian banking sector are shown in Table 2.

Table 2: The ratio of gross advances to gross non-performing assets in the Indian banking sector

Year	Gross NPA (in Rs. Billion)	Gross NPAs to Gross Advances Ratio (in %)				
		Scheduled Commercial Banks	Public Sector Banks	Private Sector Banks	Foreign Banks	Small Finance Banks
2012	869.00	3.7	3.5	4.2	5.6	-
2013	1,001.75	3.6	3.5	3.7	3.8	-
2014	1,451.05	4.1	4.4	3.3	4.0	-
2015	1,962.55	4.4	4.8	3.0	4.2	-
2016	2,655.64	5.0	5.6	3.0	5.1	-
2017	3,255.37	5.5	6.2	3.3	4.4	-
2018	6,141.49	8.7	10.5	4.0	5.4	-
2019	7,939.93	10.5	12.9	5.3	5.2	-
2020	10,418.81	12.4	15.8	5.8	5.0	3.7
2021	9,386.79	10.3	12.8	6.5	4.2	3.0
2022	9,020.05	9.4	11.5	6.7	3.5	3.1
2023	8,399.73	8.5	10.3	6.1	3.6	6.6

The table below presents the proportion of gross non-performing assets (NPAs) to gross loans in the Indian banking sector from 2012 to 2023. This data highlights key trends and fluctuations across different types of banks. Notably, after peaking at 12.4% in 2020, the gross NPA ratio improved, declining to 8.5% by 2023. From 2012 to 2020, gross non-performing assets increased from 869 billion to 10,418.81 billion, and then they decreased to 8,399.73 billion in 2023. It was SCBs and PSBs that faced the worst nonperforming asset crisis. The NPA ratios for PSBs climbed to 15.8% in 2020, highlighting their vulnerability to economic downturns and inadequate lending practices. In contrast, Private Sector Banks and Foreign Banks maintained considerably lower NPA ratios due to enhanced risk management strategies. Private Sector

Banks reached their peak of 6.7% in 2022, whereas Foreign Banks varied but stayed below 6% during the entire period. Starting from 2020, Small Finance Banks exhibited a rise in non-performing assets (NPAs), peaking at 6.6% in 2023, reflecting challenges in their growing operations. The overall trend indicates the severe strain faced by the banking sector between 2017 and 2020, followed by a recovery that began afterward. The implementation of the IBC 2016 is likely associated with this recovery. The law has greatly supported the treatment and resolution of NPAs and emphasizes continuing policy intervention, effective risk management, and good governance to attain and maintain financial stability.

Table 3: Gap Analysis of Prior Studies on the Function of IBC 2016 in Indian Bank NPA Resolution

Author	Year	Gap	Our Study's Contribution
Agarwala, V., & Agarwala, N.	2019	Concentrated on the average growth rate of non-performing assets (NPAs) without offering a thorough analysis of IBC's overall effects.	In addition to providing a thorough analysis of the literature, our study assesses how well the IBC manages non-performing assets.
Ankeeta Gupta	2018	Examined the IBC's provisions but lacked actual evidence regarding how they affected NPAs.	Multiple opinions and empirical facts regarding the impact of IBC on NPAs management are included in our study.

Bajaj, R. V., Sanati, G., & Lodha, C.	2021	Compared NPA factors without going into great detail about how IBC affected NPA over time.	By providing a thorough temporal examination of IBC's involvement in NPA management, our work closes this gap.
Bose, U., Filomeni, S., & Mallick, S.	2021	Narrowly focused on financing options for struggling businesses, with no wider ramifications for the financial industry.	Our research offers an expanded perspective on how IBC affects the NPA management of the banking industry as a whole.
Chandran, S.R., & Alamelu, K	2019	Examined lenders' opinions without going into great depth to	To supplement the qualitative insights from bankers, our study

		examine how IBC affected NPAs quantitatively.	also incorporates quantitative data analysis.
Bagga, S. C., Sahni, D., & Thapliyal, B. L.	2020	Limited to a single bank's NPA decrease before and after IBC; no larger industry-wide analysis was included.	Our research expands the analysis to include more banks, giving an industry-wide viewpoint on the effects of IBC.
Ahmed, F.	2021	Evaluated IBC's performance but did not conduct a thorough comparison with alternative recovery channels.	To present a comprehensive picture of IBC's efficacy, our study contrasts it with alternative rehabilitation strategies.
Vijaya, N.L., & Murlidhar, S.	2021	Without providing a thorough comparison between pre- and post-IBC situations, the focus was on scheduled commercial banks.	A thorough pre- and post-IBC analysis is included in our study to show how NPA management techniques have changed.
Tensingh, E., & Suresha, B.	2019	Did not examine the effects of IBC using sophisticated statistical techniques.	Our study analyses the influence of IBC using sophisticated statistical methods such as regression models and correlation.
Gupta, M. S., & Singh, J. B.	2020	Restricted to IBC's function in stressed asset management; it does not address the issue's larger economic ramifications.	The wider economic effects of IBC, such as its impact on GDP and the business environment, are included in our study.
Das, I.	2020	Concentrated on the international bankruptcy code (IBC) and did not fully address domestic non-performing assets (NPAs).	Our research focuses on domestic non-performing assets (NPAs) and how well IBC handles them generally.
Javheri, J., & Gawali, R.	2022	Did not examine how IBC affected NPAs in various	We also analyse the effects of IBC in several economic scenarios,

		economic scenarios, such as the pandemic.	such as the COVID-19 pandemic, in our paper.
Kamal, H.	2022	Restricted to analysis at the state level and lacked a national viewpoint on the efficacy of IBC.	Our analysis offers a nationwide viewpoint, encompassing several states and the banking industry.
Kattadiyil, C. D. B. J., & Islamov, B. A.	2021	Concentrated on economic growth without conducting a thorough evaluation of IBC's operational efficacy.	Our analysis assesses the economic ramifications of IBC's operational efficacy in resolving non-performing assets (NPAs).
Kokane, S., & Pandit, A.	2023	Examined different rehabilitation strategies, but neglected to consider IBC's long-term effects.	An investigation of the long-term effects of IBC on NPA management is included in our work.
Ayilyath, M.	2019	Found systemic problems but failed to offer helpful suggestions for enhancing IBC implementation.	Our analysis offers useful suggestions for improving the efficacy and deployment of IBC.
Eduri, S.	2018	Examined real-world constraints without conducting a thorough data analysis of IBC's performance.	In-depth data analysis and insights regarding IBC's NPA management performance are provided by our study.
Singh, R., & Thakkar, H. K.	2021	Concentrated on the COVID-19 effect without contrasting IBC with alternative pandemic recovery strategies.	Our work provides a comparative analysis by comparing the efficiency of IBC with other strategies during the epidemic.
Yousef, S. Z. A.	2021	Gave a succinct overview of IBC without delving further into the data.	An extensive empirical investigation of IBC's function in

			resolving NPAs is provided by our work.
Sane, R.	2019	Talked about personal bankruptcy but didn't go into great detail about business NPAs.	Our research focuses on corporate non-performing assets (NPAs) and the wider effects of IBC on the banking industry.
Goel, S.	2017	Identified difficulties with implementing IBC without doing a thorough impact analysis after adoption.	A thorough post-implementation impact analysis of IBC on NPAs is included in our research.
Anant, S., & Mishra, A.	2019	Concentrated on macroeconomic effects rather than doing a thorough sector-by-sector examination.	Our research offers macroeconomic effects of IBC together with sector-specific analysis.
Srinivas, K. T., & Karanth, S.	2021	Assessed recovery pathways without doing a thorough analysis of IBC's performance at different banks.	Our analysis provides a thorough analysis of IBC's performance in relation to different banks and recovery avenues.
Tandon, D., & Tandon, N.	2019	Discussed scenarios and trends without delving deeply into the legislative provisions of the IBC.	We have analysed the legislative features of the IBC and how they affect NPA management in our study.
Khan, T. A.	2021	Examined company performance but failed to offer a comprehensive analysis of IBC's effect on banks non-performing assets.	Our research offers a comprehensive understanding of how IBC affects credit networks and company performance in addition to banking NPAs.
Ruparel, V. D., & Vanzara, J. M.	2020	Concentrated on commercial banks without contrasting the influence of IBC with that of other industries.	We do a comparative analysis between the effects of IBC on commercial banks and other sectors.

Table 3 indicates the shortcomings identified in the previous literature and the ways our study has filled in or addressed such gaps. For example, Agarwala and Agarwala (2019) reported average growth rate of NPAs without undertaking an in-depth examination of the impact of IBC on the economy at large. On the other hand, our study presents a comprehensive literature review and tests the effectiveness of IBC in the management of NPAs. Similar studies published by Gupta (2018) and Bajaj et al. (2021) had the same shortfall in lacking empirical data, and they also did not have any scope for temporal analysis. Our study counters that shortfall since it covers empirical data with an in-depth temporal analysis. Our research has expanded the scope of this investigation further by considering sector-wide viewpoints, more elaborate statistical methodologies, comparisons to other forms of recovery processes, and the reflection of the impact that would emanate from differing economic situations, such as the COVID-19 pandemic. Besides being an all-inclusive approach, this helps bypass the shortcomings of previous research. It provides for a comprehensive perspective on the impact IBC has had on the management of non-performing assets in the Indian banking sector.

CONCLUSION

The tables indicate a number of gaps in the prior research on the influence that IBC has on NPAs. These gaps range from the absence of complete evaluations to the absence of empirical data and sector-wide analysis. Our research fills in these gaps by first giving a comprehensive literature review, then doing an empirical data analysis, and finally offering sector-specific insights regarding the efficiency of IBC.

To be more specific, our findings show the fact that non-performing assets (NPAs) reached their highest point in the year 2020, reaching a total of 10,418.81 billion rupees and a Gross NPAs to Gross Advances Ratio of 12.4%. However, by the year 2023, they had decreased to 8,399.73 billion rupees and increased by 8.5%. The fact that this drop occurred shows that the introduction of IBC has played a significant role in managing and mitigating non-performing assets (NPAs), notably for Public Sector Banks (PSBs), who were confronted with the highest ratios during the crisis era. In addition, Figure 1 highlights the association between non-performing assets (NPAs), credit growth, and GDP growth, drawing attention to the negative impact that NPAs have on economic indices. In the future, the implementation of blockchain technology might potentially improve NPA administration, as Deka (2021) suggests, by guaranteeing that transaction records are both visible and safe. Nevertheless, additional efforts are required from the government of India in order to completely incorporate blockchain technology into banking business practices. Furthermore, as Sharma et al. (2019) have emphasised, it is essential for Indian banks to prioritise rigorous credit assessment and borrower credibility in order to achieve lasting improvement in asset quality. Financial stability and the banking sector's resilience against future economic problems require ongoing monitoring and policy adjustments, even though IBC has shown some success in combating non-performing assets (NPAs).

For the purpose of determining the long-term effects of the IBC 2016 on Non-Performing Assets (NPAs)

across economic cycles, additional research should concentrate on performing longitudinal studies. It is vital to conduct comparative evaluations between the various banking sectors, investigate the success of recent legislative reforms, and investigate the possibility of integrating blockchain technology for the management of nonperforming assets. For the purpose of enhancing understanding and informing policy in order to strengthen India's banking sector resilience and financial stability, sector-specific studies, examinations of credit assessment practices, international comparisons of insolvency frameworks, and evaluations of the broader economic implications of reduced non-performing assets are critically important.

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