Bouncing Back to Calibrated Growth

July 2025

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Message from ASSOCHAM

Manish Singhal

Secretary General
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India's Non-Banking Financial Companies (NBFC), along with the evolving domain of green financing has increasingly become a foundational element in the country's financial landscape. These sectors play a crucial role in addressing the expanding and varied credit needs of segments that have historically been underserved or excluded from the reach of formal financial systems.

As regulatory frameworks continue to evolve, they are redefining the role of NBFCs in supporting the nation's economic revival. To ensure consistent credit flow across various industries, it is essential to expand access to funding, enhance investor trust and implement policies that encourage scalable and sustainable growth models.

At the same time, rapid technological progress is also playing a transformative role in advancing financial inclusion. The rise of digital platforms is redefining how financial services are accessed and delivered, enabling NBFCs to reach underserved populations in even the most remote regions. Emerging innovations such as fintech-driven solutions, data-centric credit models and integrated financial technologies are helping bridge the accessibility gap, particularly in rural and semi-urban areas, fostering a more inclusive and digitally empowered financial ecosystem.

In line with India's environmental and developmental commitments, green financing for Micro, Small and Medium Enterprises (MSMEs) presents a growing opportunity. It not only supports the transition to a low-carbon economy but also empowers small enterprises to adopt more sustainable practices. To fully realize this potential, there is a need to create effective financial channels that deliver climate-conscious capital and encourage the development of an ecosystem built on environmentally responsible entrepreneurship.

To further support these advancements, ASSOCHAM, in collaboration with its Knowledge Partner CareEdge, is proud to release a detailed Knowledge Report that outlines the current landscape and future direction of India's NBFC and green financing sectors. This report brings together analytical insights, emerging trends and strategic recommendations, offering valuable guidance to regulators, policymakers, industry stakeholders and researchers alike.

We hope this publication will serve as a meaningful contribution to ongoing discussions around strengthening India's financial infrastructure. We sincerely thank our Knowledge Partner for their support and extend our best wishes to all participants for a fruitful and engaging experience.

Message from CareEdge Ratings

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India, the fastest-growing and fourth-largest economy globally, offers a favourable environment for credit market expansion. NBFCs have grown to hold over 20% of the credit market share, driven by retail loans and their focus on the credit-underserved market. Over the years, NBFCs have strengthened their balance sheets by reducing leverage and improving asset quality. The last-mile reach, understanding, and focus on niche micro-markets are expected to continue as their USP. As NBFCs continue to innovate and harness technology, their role in the financial ecosystem will become increasingly crucial, driving significant contributions to India's overall economic development. Meanwhile, India's MSME sector, which serves as the backbone of employment generation across over seven crore enterprises, presents a significant credit opportunity of over Rs 18 lakh crore. NBFCs are emerging as key players in MSME lending, outpacing the growth rates of banks, resulting in an increase in the share of MSME loans in NBFCs' loan portfolio from 5.9% in FY21 to over 9.0% in FY25.

Additionally, with support from the Government of India and regulatory bodies to enhance digital financial infrastructure, digital lending has emerged as a powerful driver of financial inclusion. It has particularly benefited borrowers who might otherwise be excluded from formal financial systems. Innovative lending platforms are transforming credit assessment and loan origination processes while also facilitating access to consumer credit from non-traditional sources of capital.

India's climate finance journey reflects its strong commitment to sustainable development and climate action. Despite requiring a massive funding requirement to reach net-zero by 2070, India has made notable progress through national policies, renewable energy investments, green bonds, and international cooperation. Support from global initiatives, such as the Green Climate Fund, has further accelerated efforts. However, to meet its climate goals and Paris Agreement commitments, India must significantly scale up green investments and adopt innovative financial strategies. The journey highlights the importance of ongoing collaboration and investment in achieving a greener, more resilient future.

Overview of the NBFC Sector

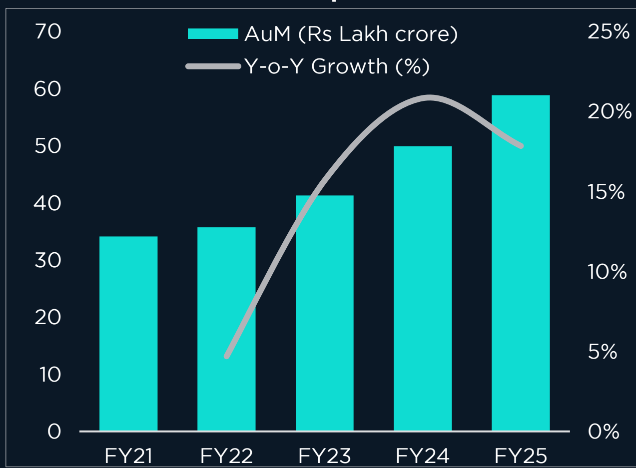
Overview

India, the fastest-growing and fourth-largest economy globally, offers a favourable environment for credit market expansion. The Non-Banking Financial Companies (NBFCs) maintain over 20% share in the credit market, which also includes banks and All India Financial Institutions (AIFIs). Over the years, NBFCs have strengthened their balance sheets through lower leverage and better asset quality. The growth of NBFCs is primarily driven by retail loans, with a high reliance on banks for funding, which has increased the extent of interconnectedness within the financial markets, posing regulatory concerns. A robust and proactive regulatory framework, coupled with swift interventions by the Reserve Bank of India, is crucial for balancing risk and growth. As competition intensifies, NBFCs' ability to mobilise resources, manage credit costs, and maintain Return on Equity (ROE) will be critical for sustaining their growth trajectory.

NBFCs Have Demonstrated Robust Growth

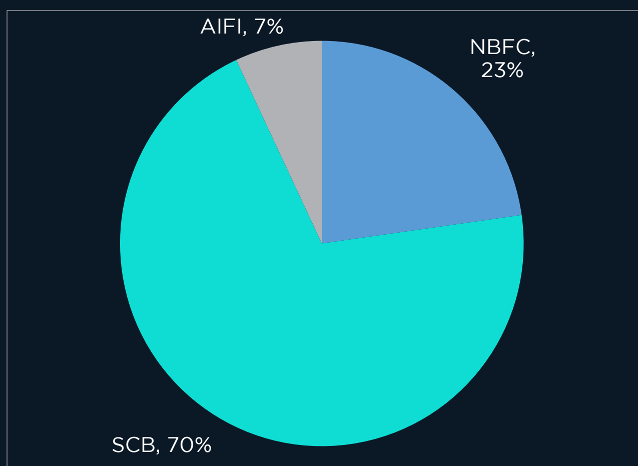
India's economy is on a strong growth trajectory, with healthy GDP growth rates despite geopolitical challenges and growth concerns around the globe. NBFCs, both government and non-government, engage in credit intermediation and facilitate last-mile credit delivery to the unbanked and underbanked sectors. They are also at the forefront of the digital transformation of the lending space, leveraging technology to offer tailor-made credit offerings to customers. The NBFC sector has demonstrated significant resilience, with credit growth accelerating in the post-pandemic period.

NBFC Growth has Picked Up Post-COVID



Source: RBI

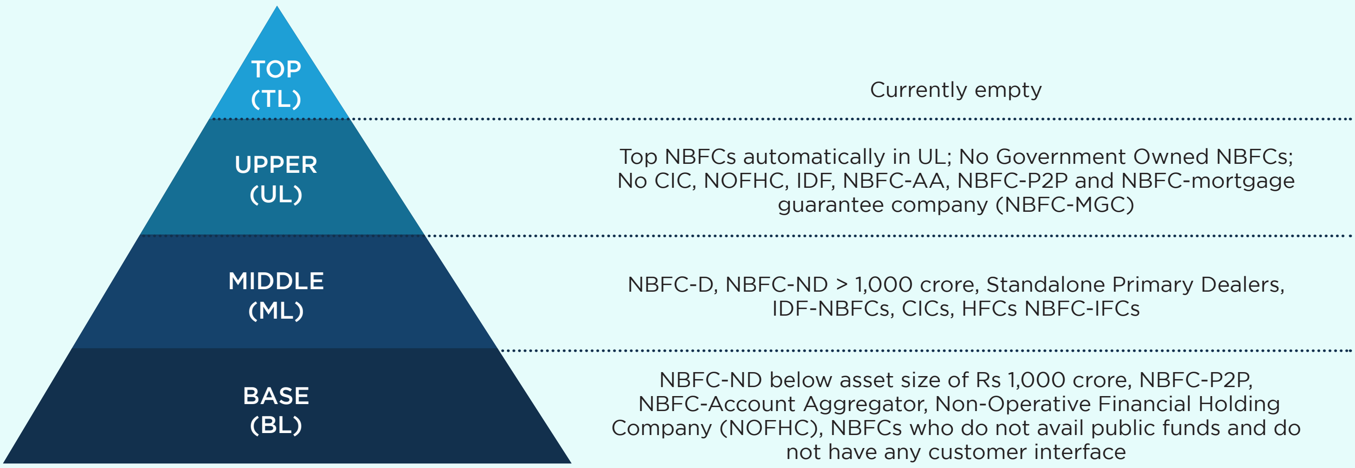
NBFCs Account for nearly a Fourth of the Overall Credit



Source: RBI, NHB, CareEdge Estimates

Amongst banks, NBFCs and AIFIs, NBFCs have maintained a 21-24% share of credit. The banks account for approximately 70% and AIFIs make up the remaining 5-7%. As India targets becoming a USD 5 trillion economy in the coming years, the demand for financing is set to increase, underscoring the vital role of NBFCs in supporting economic growth and development. The sector's ability to adapt and innovate will be crucial in addressing the evolving needs of the expanding economy.

NBFCs: Scale-Based Regulatory Framework



RBI's scale-based regulation (SBR) framework categorises NBFCs into top, upper, middle and base layers, based on their size, activity, and perceived riskiness. The SBR framework is progressive in that it is built on the principle of proportionality, with regulations commensurate with the size and interconnectedness of the NBFCs. Smaller and/or less complex NBFCs are subject to comparatively lighter regulations, while larger and more systemically important NBFCs are subjected to enhanced regulatory scrutiny.

Classification of NBFCs by Activity Under the New Regulatory Framework

Type of NBFC	Activity	Layer
NBFC-Investment and Credit Company (NBFC-ICC)	Lending and investment.	Any layer, depending on the parameters of the scale-based regulatory framework.
NBFC-Infrastructure Finance Company (NBFC-IFC)	Financing of the infrastructure sector.	Middle layer or Upper layer.
Core Investment Company (CIC)	Investment in equity shares, preference shares, debt, or loans of group companies.	Middle layer or Upper layer.
NBFC-Infrastructure Debt Fund (NBFC-IDF)	Long-term debt is only applied to post-commencement operations in infrastructure projects which have completed at least one year of satisfactory performance.	Middle layer.
NBFC-Micro-Finance Institution (NBFC-MFI)	Providing collateral-free small-ticket loans to low-income households.	Any layer, depending on the parameters of the scale-based regulatory framework.
NBFC-Factors	Acquisition of receivables of an assignor or extending loans against the security interest of the receivables at a discount.	Any layer, depending on the parameters of the scale-based regulatory framework.
NBFC-Non-Operative Financial Holding Company (NBFC-NOFHC)	Facilitation of promoters/ promoter groups in setting up new banks.	Base layer

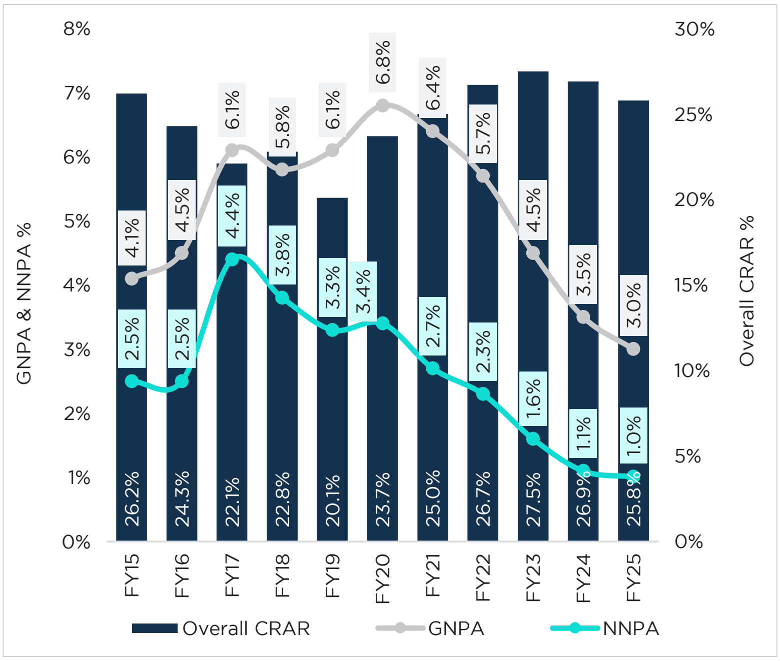
NBFC-Mortgage Guarantee Company (NBFC-MGC)	Undertaking of mortgage guarantee business.	Any layer, depending on the parameters of the scale-based regulatory framework.
NBFC-Account Aggregator (NBFC-AA)	Collecting and providing a customer's financial information in a consolidated, organised, and retrievable manner to the customer or others as specified by the customer.	Base layer
NBFC–Peer to Peer Lending Platform (NBFC-P2P)	Providing an online platform to bring lenders and borrowers together to help mobilise funds.	Base layer
Housing Finance Company (HFC)	Financing for the purchase/ construction/ reconstruction/ renovation/ repairs of residential dwelling units.	Middle layer or Upper layer.

Source: RBI

Asset Quality Improving Steadily

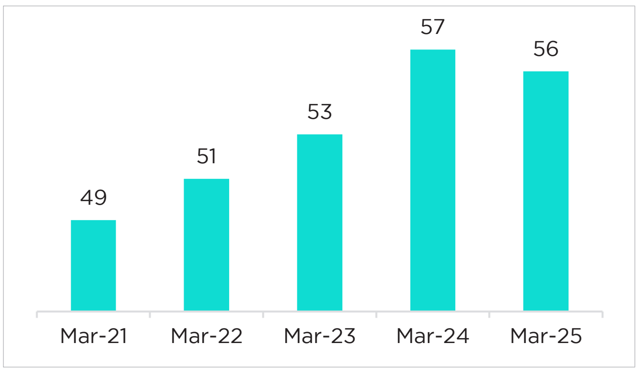
Asset quality of NBFCs has improved significantly, despite the stricter Income Recognition, Asset Classification, and Provisioning (IRAC) norms introduced in November 2021, as evidenced by the decline in both Gross and Net Non-Performing Assets (NPAs). Gross NPAs dropped from 6.8% in FY20 to 3.0% in FY25, while Net NPAs decreased from 3.4% to 1.0% over the same period, despite the challenges posed by the Covid-19 pandemic. In FY25, delinquency levels improved across both NBFC-UL and NBFC-ML segments. Among NBFC-MLs, government-owned entities, which accounted for 58.7% of total advances, saw their GNPA ratio improve to 1.4%, while privately owned NBFCs maintained a GNPA ratio of 5.2%, consistent with September 2024 levels. At the sectoral level, asset quality improved across the board, except for agriculture, which contributed 3.4% to the overall GNPA of NBFCs.

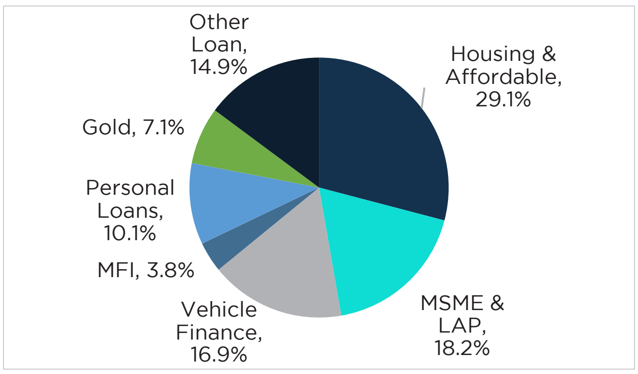
Movement in Asset Quality and Capital



Source: RBI Financial Stability Reports

Rising Share of Retail in the NBFC Loan Mix





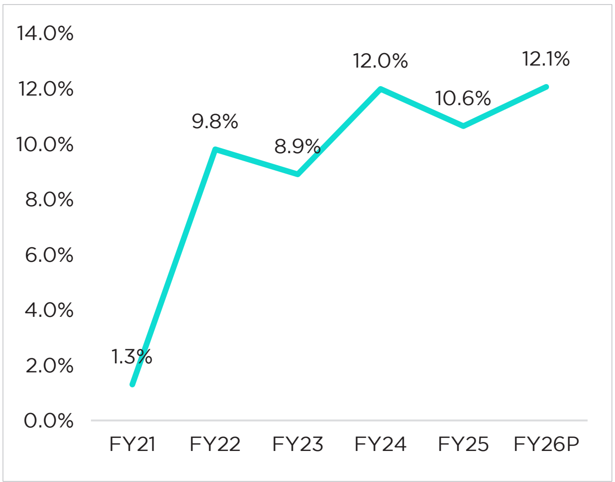
Source: RBI, NHB, CareEdge Ratings database

Source: RBI, CareEdge Ratings database

The portfolio mix of NBFCs has significantly evolved, reflecting a shift from wholesale lending to a focus on retail loans. Retail loans now drive NBFC growth, with housing loans leading the share, followed by MSME loans, Loan Against Property (LAP), and vehicle loans. This transition has resulted in a more diversified and resilient loan portfolio. This transition was supported by the emergence of new players like credit AIFs and the private credit market. The preference of lenders and equity investors to support retail-focused NBFCs also enabled this swift transition. The wholesale lending within the NBFC space is now predominantly handled by specialised entities registered as Infrastructure Finance Companies (IFCs) or Infrastructure Debt Funds (IDFs). These entities are largely mandated to cater to this space, and notable names include PFC, REC, IRFC, NaBFID, NIIF IDF, and Aseem Infra. Overall proportion of retail loans has gone up from 42% in FY18 to 56% in FY25.

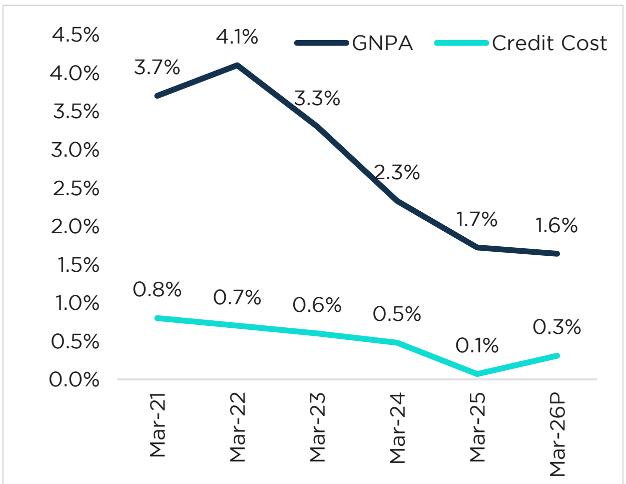
Home Loans Continue to Reflect Lower Credit Loss

AuM Growth for Prime HFCs



Source: RBI, NHB, CareEdge Ratings database

GNPA & Credit Cost

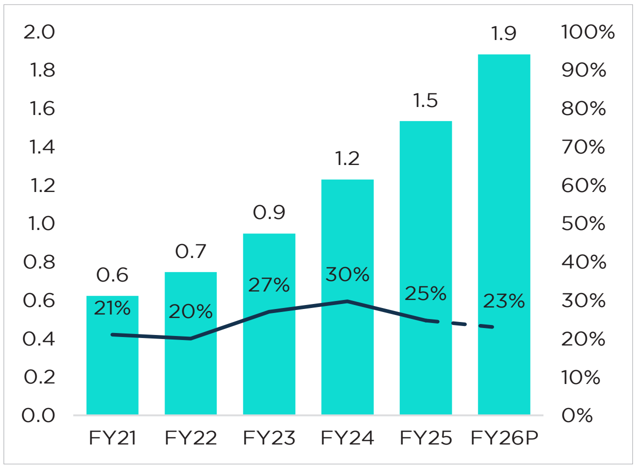


Source: RBI, CareEdge Ratings database

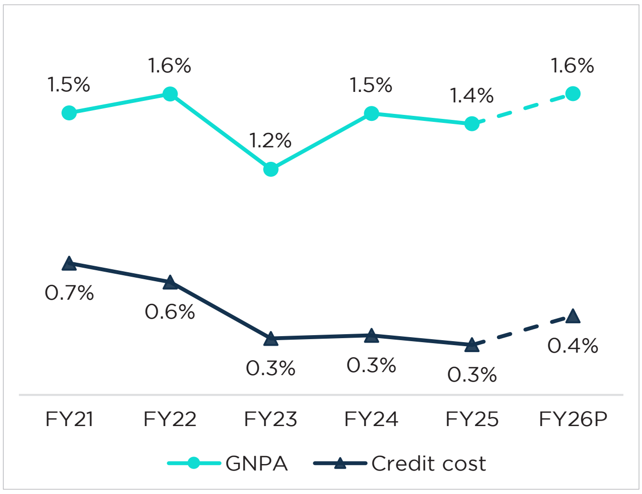
Housing loans AuM is expected to continue its growth momentum with a slight increase in credit costs in FY26. AuM is expected to grow at 12.1% for FY26, with mainline HFCs able to compete effectively in the market with high-quality offerings. GNPA for the sector is likely to reduce to 1.6% in FY26 from 4.1% in FY22. Credit costs would remain low at 0.3% for FY26. Incidentally, the NPA in this segment mostly represents high-yield wholesale loans for builders or commercial premises.

Affordable Housing Finance - Credit costs remain low

AuM Growth



GNPA & Credit Cost

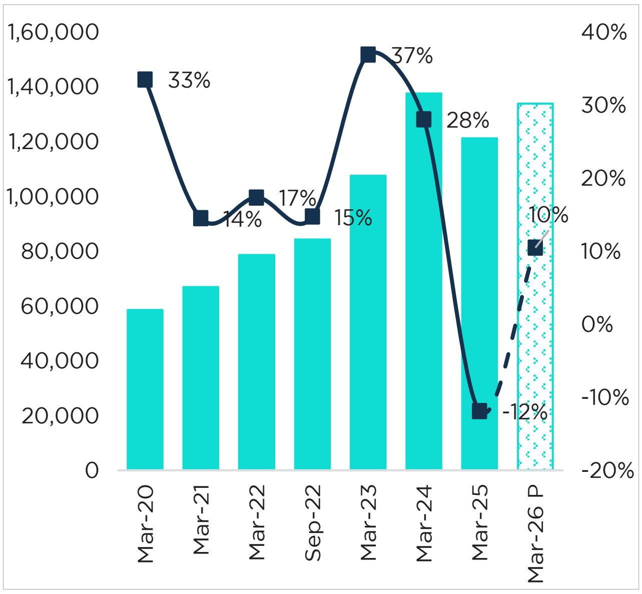


Source: Company Filings, CareEdge Estimates

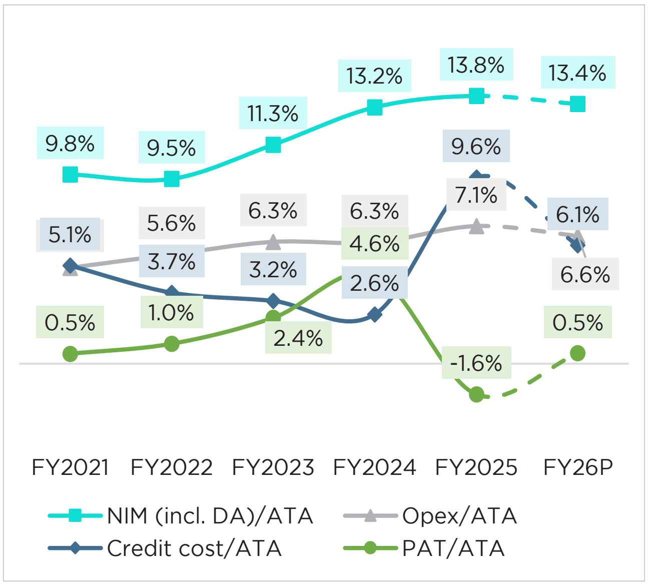
The AuM growth of affordable HFCs will likely remain robust yet marginally taper down to 23% in FY26 from 25% in FY25. Meanwhile, GNPA and credit costs are anticipated to increase to 1.6% and 0.4%, respectively, because of relatively weaker borrowers, especially the self-employed segment. Further, improvement in the seasoning of the loan book will lead to some natural elevation in delinquencies. Policy initiatives, such as interest subsidies, will provide a fillip for the sector. However, higher delinquencies are visible for HFCs with a higher composition of self-employed borrowers.

MFIs - Asset Quality Issues Persist, Leading to Degrowth

AuM Growth



GNPA & Credit Cost



Source: Company Filings, CareEdge Estimates

Given that the MFI sector is yet to recover fully from asset quality challenges, the industry is projected to witness a modest 10% growth in FY26. A significant concern is the sharp increase in credit costs, which is expected to severely affect profitability, potentially bringing the RoA down to an estimated 0.5%. The credit cost for FY26 is likely to be around 6.1% for the sector.

Banks Remain the Largest Source of Funds to NBFCs

NBFCs are net borrowers in the financial sector ecosystem, relying heavily on funding from banks, mutual funds, and capital markets. This structural dependence, combined with their high degree of interconnectedness with other financial institutions, amplifies the risk of contagion across the economic system. If asset-side risks (such as credit concentration or sectoral exposure) or liability-side vulnerabilities (like maturity mismatches or over-reliance on short-term funding) are not addressed with appropriate regulatory and risk management frameworks, NBFCs could become a source of systemic instability.

NBFCs' Sources of Funds (%)

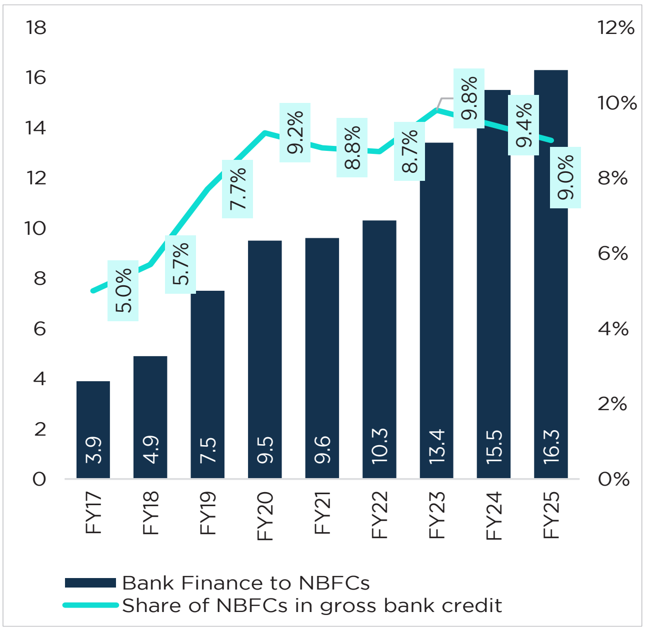
	NBFC -UL		NBFC-ML		NBFC (UL+ML)	
	Mar-24	**Mar-25**	**Mar-24**	**Mar-25**	**Mar-24**	**Mar-25**
1. Share Cap., Reserves & Surplus	**19.0**	**18.6**	**24.0**	**24.5**	**22.8**	**22.8**
2. Total Borrowings	**69.1**	**71.1**	**67.6**	**67.5**	**68.0**	**68.5**
Borrowing from banks	30.1	29.9	25.0	24.0	26.3	25.7
CPs by banks	0.8	0.8	0.2	0.2	0.3	0.4
Debentures by banks	3.5	3.2	2.1	2.1	2.4	2.4
Total from banks	**34.4**	**33.9**	**27.3**	**26.3**	**29.0**	**28.5**
CPs excl. banks	3.2	2.6	1.3	1.6	1.7	1.9
Debentures excl. banks	16.0	16.3	23.7	23.8	21.8	21.6
Other Borrowings	15.5	18.3	15.3	15.8	15.5	16.5
3. Public deposits	**7.2**	**6.0**	**0.5**	**0.5**	**2.1**	**2.1**
4. Others	**4.7**	**4.3**	**7.9**	**7.5**	**7.1**	**6.6**
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: RBI FSR June 2025

The reliance of NBFCs on bank funding decreased over the past year as the impact of higher risk weights on bank lending to NBFCs became apparent. The dependence of NBFC-UL on bank borrowings and public deposits was higher than that of NBFC-ML. Despite a decrease in bank lending to NBFCs, bank finance remains the dominant source of funding for NBFCs. NBFCs have increased their foreign currency borrowings to diversify funding sources and manage their costs.

Liabilities Interconnectedness: NBFCs and Banks

NBFC Share in Overall Bank Credit



Source: RBI, CareEdge Estimates

Meanwhile, the interconnectedness between banks and NBFCs has increased on the liabilities front, with bank finance to NBFCs increasing fourfold over the past seven years. Share of NBFCs in overall bank credit rose from 5% in FY17 to as high as 9.8% in FY23. In addition, banks also support NBFC through investment book (NCD, CP & PTCs) and buyouts (DA and CLM). Consequently, the RBI raised concerns about the growing interconnectedness and increased risk weights by 25 bps on lending to NBFCs in November 2023 to encourage NBFCs to diversify their funding sources. As a result, the share of NBFCs in banks' credit reduced to 9% in FY25, with NBFCs exploring domestic capital markets and overseas markets, including ECBs, for sourcing funds. While the increase in risk weights has been rolled back effective from April 1, 2025, by the RBI, the share of the NBFC sector is unlikely to touch previous highs with the gradual diversification of their liability franchise.

Regulatory Framework Balances Risk and Growth

The proactive regulatory framework, supported by swift penal actions, has been and will be instrumental in balancing risk and growth within the NBFC sector. A few notable regulations in recent history, including scale-based norms, alignment of IRAC norms of NBFCs to those of banks, capital treatment for exposure to Alternative Investment Funds (AIFs), etc., are contributing to a more robust sector. Additionally, the Reserve Bank of India (RBI) has taken decisive penal measures against several prominent NBFCs in recent years for regulatory violations and exploitation of regulatory gaps, reinforcing the importance of adherence to regulatory standards and maintaining sector stability.

Challenges

NBFCs constitute a vital component of India's financial architecture, serving as key providers of credit and financial services across diverse sectors, including those traditionally underserved by mainstream banking institutions. By offering specialised financial products such as equipment leasing, hire purchase, and infrastructure financing, NBFCs significantly advance financial inclusion and contribute to the broader economic development of the country. Nevertheless, the sector is confronted with a dynamic array of challenges that pose risks to its growth trajectory and long-term sustainability.

Dependence on Bank Funding: NBFCs continue to exhibit a substantial reliance on bank financing for their funding needs. While larger NBFCs have successfully diversified their funding sources, smaller entities remain significantly dependent on banks for liability management. This concentration risk limits financial flexibility and exposes these institutions to potential funding disruptions.

Liquidity Management: Inadequate liquidity management can severely impair an NBFC's ability to meet short-term financial obligations, potentially resulting in defaults and a loss of investor confidence. Such events may trigger a cascading effect, culminating in a financial crisis for the institution and adversely affecting the broader financial system. Maintaining adequate liquid assets—such as cash and high-quality short-term investments—is therefore essential. However, this approach entails an opportunity cost, as these assets typically yield lower returns compared to lending operations.

Asset Quality Concerns: NBFCs often serve borrower segments considered higher risk by conventional banks, including micro, small, and medium enterprises (MSMEs), smaller real estate developers, and individuals with limited or no formal credit history. These segments are more vulnerable to economic volatility and exhibit a higher likelihood of default. Deterioration in asset quality directly affects profitability and capital adequacy, as rising non-performing assets (NPAs) necessitate increased provisioning and constrain lending capacity. Persistent asset quality issues may lead to capital erosion and institutional failure. Ensuring sound asset quality requires rigorous credit evaluation, continuous portfolio monitoring, and proactive measures for early detection and resolution of potential defaults.

Regulatory Challenges: The increasing regulatory oversight, while essential for systemic stability, imposes higher compliance costs and operational complexity on NBFCs. Adherence to evolving regulatory standards may slow down loan approval and disbursement processes, thereby increasing the administrative burden and affecting operational efficiency.

Market Competition: NBFCs face intensifying competition from technologically advanced fintech firms that ofer innovative financial products, superior customer experiences, and agile service delivery. To maintain market relevance, traditional NBFCs must continuously innovate, enhance service offerings, and adopt digital solutions to remain competitive.

Technology and Fraud Risk: The growing reliance on digital platforms and processes exposes NBFCs to heightened risks of cyber threats and fraudulent activities. Safeguarding customer and institutional data necessitate the implementation of robust cybersecurity frameworks, continuous monitoring, and investment in advanced technological safeguards.

To Overcome Challenges, NBFCs Could Undertake the Following Actions

Diversification of Funding Sources: To mitigate liquidity risks and ensure financial stability amid market fluctuations, NBFCS must avoid excessive reliance on a single funding channel. A well-diversified funding portfolio—comprising bank borrowings, bonds, external commercial borrowings (ECBs), and securitisation—enhances institutional resilience, reduces long-term funding costs, improves liquidity management, and facilitates sustainable growth through a more stable and predictable capital flow.

Strengthening Liquidity Management: Robust liquidity management frameworks are essential to ensure that NBFCs can meet their financial obligations during periods of stress. Effective liquidity oversight not only safeguards operational continuity but also reinforces the confidence of investors and lenders.

Enhancement of Credit Appraisal and Monitoring Mechanisms: Improved credit appraisal and monitoring processes contribute significantly to asset quality, thereby reducing non-performing assets (NPAs) and improving overall profitability. The adoption of comprehensive credit scoring systems, rigorous due diligence, structured risk assessment frameworks, and efficient collection mechanisms is critical to building a resilient and high-quality loan portfolio.

Investment in Regulatory Compliance: Adherence to the evolving regulatory landscape is fundamental to the long-term sustainability of NBFCs. Strategic investment in compliance infrastructure minimises the risk of regulatory sanctions and reputational harm, while simultaneously fostering stakeholder trust and institutional credibility.

Adoption of Digital Transformation: In the current financial ecosystem, digital transformation is not optional but a strategic imperative. Leveraging technology across operational domains enhances efficiency, broadens customer outreach, enables data-driven decision-making, strengthens risk management capabilities, and positions NBFCs to compete effectively with both traditional financial institutions and emerging fintech entities.

Reinforcement of Governance and Risk Management Frameworks: Sound governance and comprehensive risk management structures are foundational to the integrity, stability, and long-term success of NBFCs. These frameworks protect stakeholder interests, bolster investor confidence, and contribute to the overall robustness of the financial system.

Strategic Focus on Niche Markets and Portfolio Diversification: Targeting niche segments where NBFCs possess domain expertise allows for competitive differentiation and improved pricing power. Concurrently, portfolio diversification mitigates concentration risks, stabilises revenue streams, and enhances institutional resilience.

Explore Co-Lending Partnerships: Co-lending arrangements with banks and other financial institutions offer NBFCs an opportunity to reduce funding costs, expand market presence, share credit risk, and leverage the complementary strengths of partner entities. Such collaborations promote inclusive and sustainable growth.

By proactively addressing these challenges through well-defined action plans, NBFCs in India can strengthen their resilience, enhance their competitiveness, and continue to play a vital role in the country's growth and development. The focus should be on adapting to the evolving financial landscape, embracing technological advancements, and maintaining sound financial practices and governance standards.

Conclusion

The NBFC sector in India is well-positioned for continued growth and is bolstered by a thriving economy, robust balance sheets, and a good portfolio mix. The sector's resilience and adaptability provide a strong foundation for future success. The last mile of reach, understanding, and focus on niche micro markets is expected to continue as their USP. As NBFCs continue innovating and harnessing technology, their role in the financial ecosystem will become increasingly crucial, driving significant contributions to India's overall economic development.

MSME Financing

Synopsis

- India's MSME sector, comprising ~7.34 crore enterprises, presents a credit opportunity of more than Rs 18 lakh crore.
- NBFCs are emerging as key players in MSME lending, recording a 32% CAGR from FY21 to FY24, outpacing growth rates of private banks (20.9%) and public sector banks (10.4%).
- Share of MSME loans in NBFCs' loan portfolio increased from 5.9% in FY21 to over 9.0% in FY25
- In micro-LAP (<Rs 10 lakh ticket size), NBFCs continue to dominate with more than 45% market share, followed by private banks at 26% and PSU banks at 11%
- CareEdge-rated NBFCs in the micro-lap segment grew at 38.6% CAGR from FY20 to FY24. While growth remains healthy, profitability metrics are expected to slightly moderate due to compression in Net Interest Margins (NIMs) and an increase in credit costs.

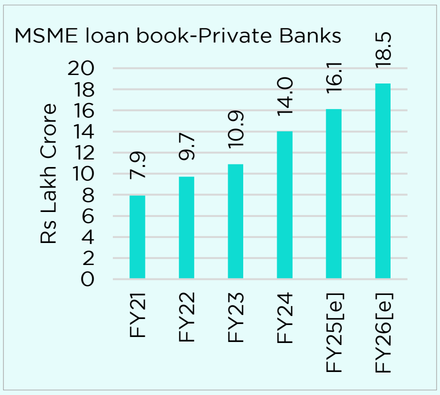
MSME Overview

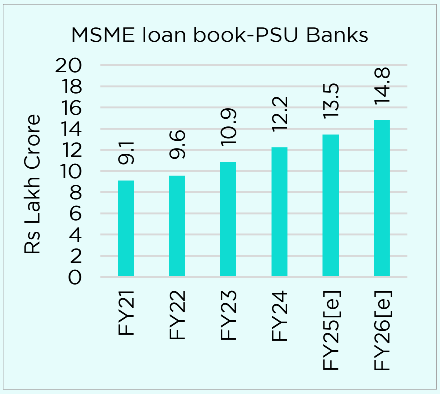
The MSME sector comprises an impressive 7.34 crore enterprises that contribute nearly 30.1% of India's GDP and employ around 28 crore people. Furthermore, MSMEs account for 35.4% of the manufacturing sector and 45.73% of the country's exports. The government has been actively working to bring MSMEs under the formal ambit, enabling them to avail of the benefits of sector-specific schemes and initiatives. As of March 2025, the Udyam and Udyam Assist portals had ~6.5 crore registered enterprises.

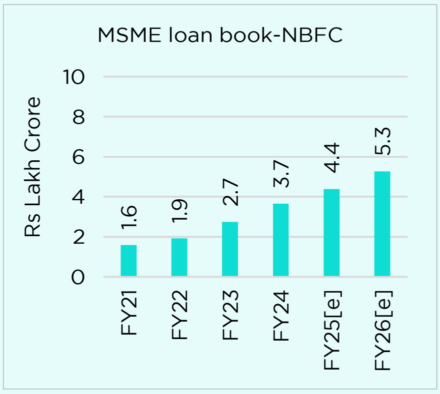
Although the MSME sector constitutes a cornerstone of India's economic framework, it continues to encounter considerable challenges in securing timely and adequate access to formal credit. Key impediments include information asymmetry, low levels of formalisation, insufficient financial documentation, weak or non-existent credit histories, and inadequate collateral. These structural barriers collectively contribute to a persistent and substantial credit gap within the sector. Addressing this gap necessitates a holistic and multi-pronged approach. This includes the adoption of alternative credit assessment methodologies, the expansion and strengthening of credit guarantee mechanisms, the promotion of greater formalisation among MSMEs, the enhancement of financial literacy, and the development of robust supply chain financing models. Effectively overcoming these challenges is essential to unlocking the full economic potential of the MSME sector and catalysing broader economic growth.

Overall MSME Credit

MSME lending has witnessed robust growth in recent years, with NBFCs emerging as the front-runners, outpacing the growth rates of both private and public sector banks. Between FY21 and FY24, NBFCs recorded a 32% CAGR in MSME lending, albeit on a smaller base, compared to 20.9% for private banks and 10.4% for public sector banks. The share of MSME credit in NBFCs' overall loan portfolio rose from 5.9% in FY21 to 9.1% in H1 FY25, an increase of over 50%. The banks, on the other hand, maintained relatively stable MSME exposure, ranging from 16.2% to 16.9% over the same period. The Private sector banks have been gradually gaining market share from public sector peers. Despite a broad deceleration in bank credit growth, the share of credit to the MSME sector in total non-food bank credit has been growing steadily, and its growth has outpaced that in other sectors during FY25. Within the MSME sector, however, credit to microenterprises, which accounted for 49.0% of the total credit to the MSME sector, experienced slower incremental growth in FY25 compared to small and medium enterprises. This expansion has been underpinned by a supportive ecosystem, including initiatives such as Udyam registration, GST Sahay, Trade Receivables e-Discounting System (TReDS), and the development of digital public infrastructure, alongside enabling policy measures and credit guarantee schemes. Looking ahead, this growth trajectory is expected to persist, with NBFCs projected to grow at 20%, private banks at 15%, and public sector banks at 10% during FY25 and FY26.







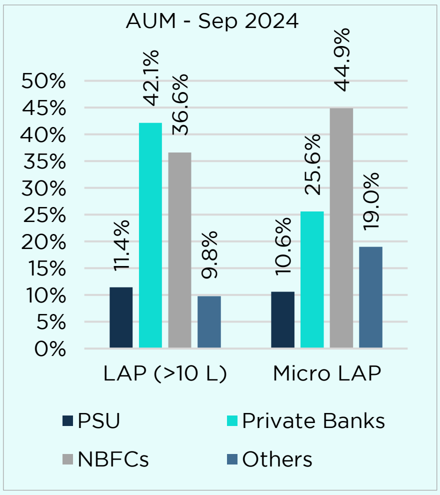
Source: RBI, CareEdge Estimates

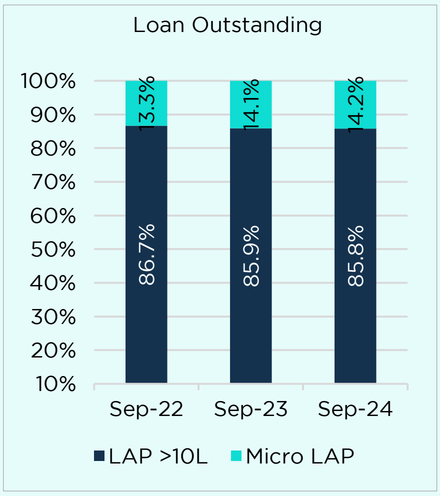
Asset Quality Improves amongst MSMEs

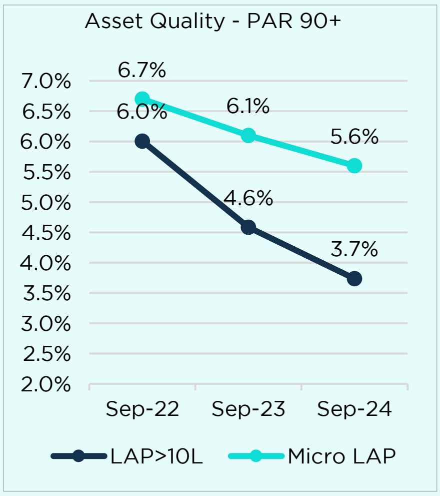
Asset quality has shown improvement, with the gross NPA ratio of the MSME portfolio of SCBs falling from 4.5% in March 2024 to 3.6% as of the end of March 2025. This is also reflected in the significant moderation in the SMA-2 ratio, an indicator of incipient stress. In terms of the amount outstanding, the share of sub-prime borrowers in the SCBs' MSME portfolio has decreased from 33.5% in June 2022 to 23.3% in March 2025. PSBs, however, had a higher share of sub-prime borrowers in their MSME portfolio compared to PVBs and NBFCs. The government's credit guarantee schemes have enhanced the flow of credit to the MSME sector, particularly for vulnerable enterprises, with approximately Rs 6.28 lakh crore guaranteed under two flagship schemes: the Credit Guarantee Fund for Micro and Small Enterprises (CGFMU) and the Emergency Credit Line Guarantee Scheme (ECLGS). The NPA ratio in both schemes remains manageable despite the inherent riskiness of the borrowers.

NBFCs Dominate the Micro-LAP Segment

The secured MSME loan segment, particularly Micro-LAP with high yield loans, presents significant growth opportunities to bridge the credit gap for underserved borrowers. Without access to SARFAESI, NBFCs encounter asset quality risks, while increasing competition and volatile cash flows exert further pressure on their margins. The MSME Loan Against Property (LAP) market has seen remarkable growth, expanding from Rs 7.5 lakh crore to Rs 11.3 lakh crore over the two years ending September 2024—a 50% increase. Within this market, the Micro LAP segment experienced even higher growth, rising by 60% from Rs 1 lakh crore to Rs 1.6 lakh crore during the same period.



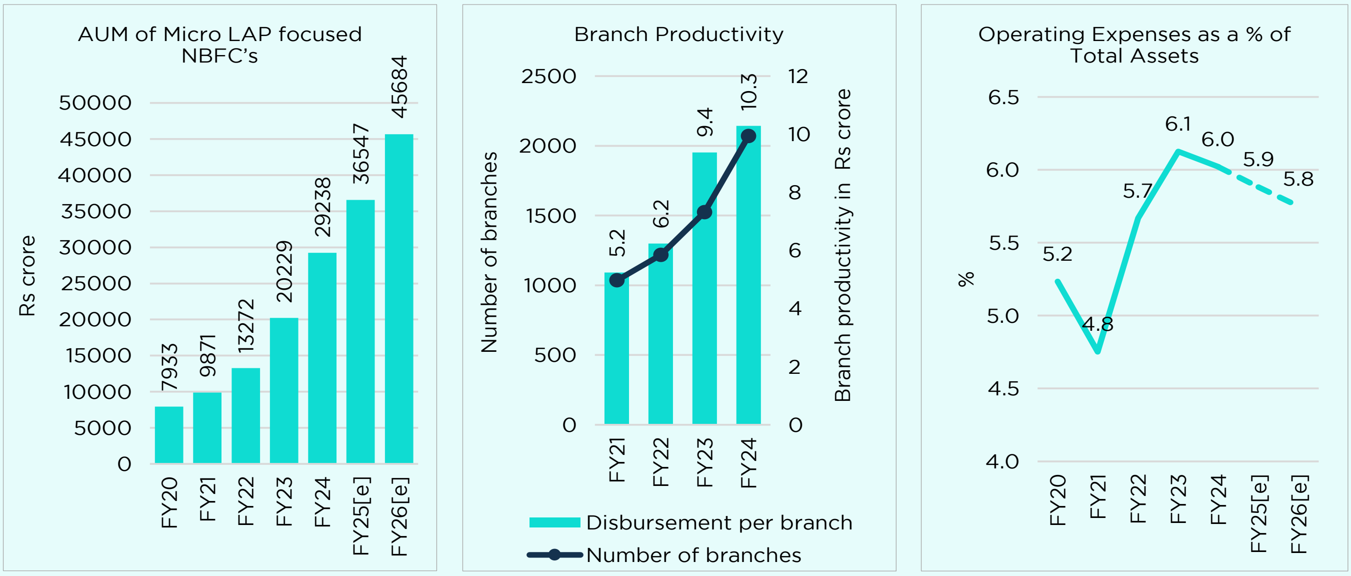




Source: CRIF Highmark

NBFCs dominate the Micro LAP (<10 lakh ticket size) segment with a 45% market share, well ahead of private banks at just over 25%. In contrast, private banks lead the Rs 10 lakh+ LAP segment with a 42% share, while NBFCs hold a 37% share. This reflects the strong role of NBFCs in the micro-LAP space and the competitive MSME LAP market. Asset quality data indicates higher PAR90+ levels in Micro LAP compared to LAP above Rs 10 lakh, although both have shown improvement. PAR90+ for loans above Rs 10 lakh decreased from 6.0% in September 2022 to 3.7% in September 2024, while that for Micro LAP dropped from 6.7% to 5.6% during the same period. Micro LAP tends to have higher delinquency rates due to several factors: a higher proportion of "new to credit" customers, reliance on credit evaluations based on assessed income, and borrowers' limited ability to manage cash flow mismatches.

CareEdge Rated MSME Micro LAP-focused NBFCs

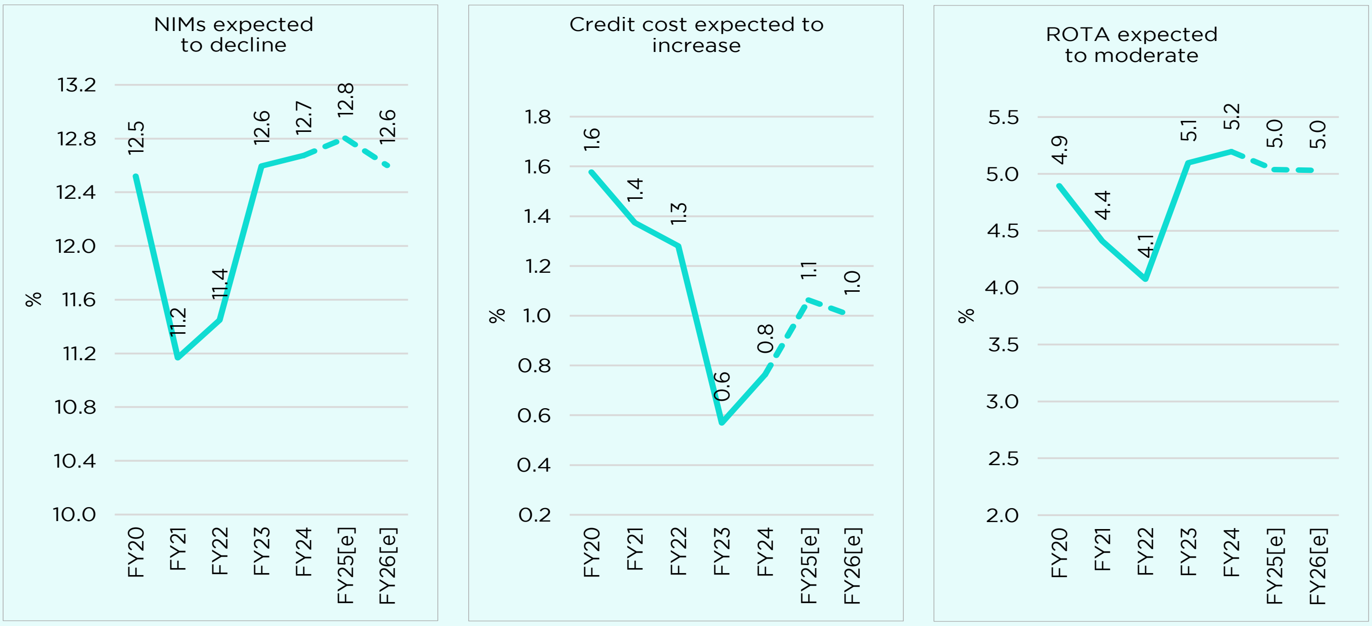


Source: CRIF Highmark

NBFCs specialising in MSME Micro LAP lending have experienced a 38.6% CAGR since FY20 till FY24, driven by their focus on underserved segments, government support, regulatory reforms, and technological advancements, such as Udyam registration. Their adoption of tech-based underwriting and data collection has enhanced outreach, while partnerships with traditional banks have further fuelled growth. By serving MSMEs that do not qualify for credit, these NBFCs address a crucial market gap. CareEdge projects that their AUM will grow by 25% in FY25 and FY26, highlighting their increasing role in MSME financing and financial inclusion. Care-rated Micro LAP-focused NBFCs have doubled their branches from approximately 1,000 in FY21 to over 2,000 in FY24, supported by improved productivity, with the average disbursement per branch increasing from Rs 5.2 crore to Rs 10.3 crore.

Expected Slight Moderation in Profitability Metrics

Going forward, rising competition and pricing pressures are expected to moderate Net Interest Margins (NIMs), while anticipated rate cuts may ease tight liquidity and reduce borrowing costs. Maturing AUM and an expanding micro-loan customer base are likely to increase credit costs, particularly amid stress in the microfinance sector, which could affect Micro LAP delinquency rates. Consequently, a slight decline in Return on Average Assets (ROTA) is projected for FY25 and FY26. Effective credit portfolio management and robust risk frameworks will be crucial, although improving liquidity may provide some relief. Most borrowers rely on a single income source, making them vulnerable to economic downturns. With an estimated 15–20% borrower overlap in the microfinance sector, close monitoring of borrower leverage is essential to mitigate default risk.



Source: CRIF Highmark

The MSME lending sector benefits from increased digitisation, particularly UPI, which has shifted cash-based transactions into formal banking, providing richer customer data. This shift has made previously underserved segments more lendable and is expected to sustain long-term growth despite occasional lending bubbles. However, MSMEs face challenges such as unpredictable cash flows, exacerbated by health issues, family emergencies, and economic slowdowns. Additionally, small businesses are increasingly facing competitive pressures due to changing consumer habits, with quick commerce companies redirecting traditional sales. Banks typically find MSME lending challenging, making specialised NBFCs necessary due to their expertise in managing these complexities. Furthermore, while loans in this sector often require collateral, these securities — usually self-occupied residential properties in rural areas — are difficult to liquidate, making enforcement of the security time-consuming and challenging, which in turn warrants higher lending rates in this segment.

Most micro-LAP customers often operate on a cash basis, remain below GST thresholds, are prone to erratic cash flow, and live “hand to mouth,” making their loan repayments challenging during difficult times. However, despite concerns that the stress in unsecured lending may impact secured micro-LAPS, recent trends indicate stability. Borrowers seem to distinguish between secured and unsecured loans, prioritising and maintaining repayment discipline for secured debt. While urban markets face stress from fintech-based unsecured loans leading to over-leveraging, rural markets remain relatively stable. Additionally, household spending patterns have shifted, with non-food expenses surpassing food costs, indicating a growing demand for credit. Banks are increasingly focusing on higher-ticket MSME loans (ranging from Rs 15-20 lakh), which are expected to face minimal challenges due to operational efficiency and strategic growth objectives.

Meanwhile, with better quality data from digital sources, banks will now be able to offer more competitive pricing to customers who fall into a lower risk profile. MSME and micro-LAP NBFC lenders, often serving new-to-credit customers, need to leverage data and analytics to better understand borrowers, price risk accurately, and detect early warning signals.

Large Opportunity for Lending Institutions

India’s MSME sector, comprising around 7.34 crore enterprises, presents a significant growth opportunity for formal lending. The total debt demand is estimated at Rs 95.6 lakh crore, of which Rs 50.7 lakh crore is deemed addressable through formal lending channels, particularly by banks and NBFCs. As of H1 FY25, the formal credit supply stood at only Rs 32.4 lakh crore, leaving a credit gap of Rs 18.3 lakh crore. With the ongoing formalisation of the economy and increasing digitalisation, a growing share of the current informal demand is expected to transition into the formal financial system.

MSMEs and India’s Green Transition

Climate change has become one of the most pressing global challenges, disproportionately affecting vulnerable populations. India ranks fourth among the countries most impacted by climate-related events. While climate change affects all sectors, MSMEs are particularly vulnerable. MSMEs typically rely on conventional technologies and processes, which are often operated by unskilled or semi-skilled labour. This results in higher resource consumption, increased waste generation, and elevated emissions. Technological adoption in these enterprises remains low, primarily due to constraints in financing and access to skilled manpower.

Transitioning MSMEs to green technologies and clean energy is essential for India's journey toward a net-zero economy. The sector holds immense potential not only to reduce its environmental footprint but also to drive innovation across industries. MSMEs are already making significant contributions to clean energy access, sustainable mobility, energy-efficient appliances, circular economy initiatives, and waste management solutions. Given their deep local integration, MSMEs are well-positioned to develop tailored and innovative solutions in the agriculture and livestock sectors. These include crop diversification, value chain enhancement, micro-irrigation, pest control, afforestation, clean drinking water, water harvesting, recycling, and municipal solid waste management.

Green technology schemes under RAMP: To address the issue of greenhouse gas emissions by MSMEs, the Government has introduced two sub-schemes under Raising and Accelerating MSME Productivity (RAMP) in December 2023. The aim is to help MSMEs access institutional finance at a concessional rate for adopting clean/green technologies and aid their transformation into sustainable green businesses:

- MSE Green Investment and Financing for Transformation Scheme (MSE-GIFT Scheme) has a total outlay of Rs 478 crore for FY2024-FY2026. The scheme intends to help MSEs adopt identified green technologies. It has three sub-components: Interest subvention, risk-sharing facility, and information, education and communication (IEC).
- MSE Scheme for Promotion and Investment in Circular Economy (MSE-SPICE) has a total outlay of Rs 472.5 crore for FY2024-FY2027. The scheme comprises two sub-components: Credit-Linked Capital Subsidy and Information, Education, and Communication (IEC).

CareEdge Ratings View

- The MSME book is projected to grow at approximately 14% in FY25 and FY26, while the Micro-LAP book is expected to grow more than 25% during the same period.
- There is an anticipated slight spillover of stress from the Microfinance Institution (MFI) sector and unsecured personal loan book to the micro-LAP segment. Consequently, credit costs are expected to rise marginally in FY25 before slightly reducing in FY26.
- Operating leverage is expected to come into play alongside a compression in NIMs and an increase in credit costs, leading to a slight moderation in profitability.
- For Micro-LAP-focused NBFCs, several opportunities are on the horizon. These include deeper branch penetration, digital transformation, co-lending initiatives, and continued access to equity funding, all of which are expected to drive growth in lending.
- The government's ongoing focus on employment generation is anticipated to support MSME lending. Additionally, this focus will enhance access to formal credit for New-to-Credit (NTC) customers, thereby facilitating the formalisation of the economy.

Digital Lending

Digital lending involves using digital platforms and technologies to originate, manage, and disburse loans. It covers the full lending process—from application and credit evaluation to disbursement and repayment—done via online or mobile channels. This approach has become increasingly popular recently, thanks to advances in financial technology, widespread smartphone use, and changing consumer demands. Both government-led initiatives and supportive regulatory frameworks within the financial sector regulators drive India's digital transformation.

Digital Lending

Banks/ NBFCs

- Direct Own websites/ Apps
- In Collaboration with LSPs/ FinTechs
  - Dedicated Loans Apps
  - EF on apps dedicated for other single non financial activity
  - Embedded Finance on Super Apps
  - Loan Marketplace/ Aggregator
- In collaboration with BigTech/ Embedded Finance
  - Pay Later options
  - Other credit schemes – no cost EMIS, credit cards
- Network/ Platform
  - RBIH PTPFC
  - OCEN enabled Apps
  - TReDS
  - Financial Services on ONDCs

Individuals/ Entities other than Banks/ NBFCs

- Through NBFC-P2P
- Entities registered under other Statutes

Key features of digital lending include:

- **Automated Loan Origination:** Digital platforms enable borrowers to apply for loans seamlessly through mobile apps or websites, reducing paperwork and manual intervention.
- **Alternative Credit Assessment:** Lenders utilise non-traditional data sources such as transaction history, utility payments, social media behaviour, and psychometric analysis to assess creditworthiness, especially for thin-file or unbanked customers.
- **Real-Time Decision Making:** AI and machine learning algorithms facilitate instant credit decisions, enhancing speed and efficiency.
- **Digital KYC and Onboarding:** e-KYC and Aadhaar-based verification streamline customer onboarding while ensuring regulatory compliance.
- **Integrated Repayment Mechanisms:** Digital lenders offer flexible repayment options through UPI, auto-debit, wallets, and other digital channels.

Data-Driven Risk Management: Advanced analytics and predictive modelling help in monitoring borrower behaviour and mitigating default risks.

Lending Models: Traditional vs. Digital

Aspect	Traditional Lending	Digital Lending
Application Process	Manual, paper-based applications submitted at physical branches	Online or mobile-based applications with minimal paperwork
Customer Onboarding	In-person verification and documentation	e-KYC, Aadhaar-based verification, and digital onboarding
Credit Assessment	Based primarily on formal credit history, income documents, and collateral	Uses alternative data (e.g., transaction history, utility bills, social data)
Loan Approval Time	Several days to weeks	Instant to a few hours, depending on the automation level
Disbursement	Manual disbursement through bank branches or cheques	Direct digital transfer to the borrower's account
Repayment Mechanism	Post-dated cheques, cash deposits, or bank transfers	Auto-debit, UPI, wallets, and other digital payment modes
Operational Efficiency	High operational costs due to manual processes	Lower costs due to automation and digital workflows
Customer Reach	Limited to the branch network and urban/semi-urban areas	Broader reach, including rural and remote areas via mobile connectivity
Risk Management	Traditional risk models, slower response to defaults	Real-time monitoring, predictive analytics, and early warning systems
Regulatory Oversight	Well-established and mature regulatory framework	Evolving regulatory landscape with increasing scrutiny from regulators
Fraud and Cybersecurity	Lower exposure to digital fraud, but risk of internal fraud	Higher exposure to cyber threats requires a robust cybersecurity infrastructure
Scalability	Limited by physical infrastructure and human resources	Highly scalable with minimal marginal cost

Banks, NBFCs, along with individuals and entities beyond these institutions, serve as lenders in India's digital lending ecosystem. They offer both secured and unsecured loans via platforms that are either publicly or privately operated. These platforms also incorporate loan origination and management services ecosystem.

Digital lending has experienced rapid growth, although from a smaller initial base. Most digital lenders mainly focus on unsecured, small-ticket, short-term loans within the consumer sector—including personal loans—and small business loan markets. The proportion of consumer loans has been gradually rising over the years.

The RBI report on Currency and Finance indicates that Fintech lending primarily serves semi-urban and rural areas. The main borrower groups are younger individuals, especially those under 25 and between 26-30 years. Delinquency rates are higher among these young borrowers and are fairly consistent across different regions. FinTech loan originations are mainly for personal loans, followed by business and consumer loans. In India, the personal loan sector is experiencing rapid growth, with FinTechs focusing mainly on small-value loans under Rs 10,000. The average personal loan amount issued by FinTechs is about Rs 11,000, often used to supplement income or manage expenses consumption.

The FinTech sector has steadily grown its market share in the retail lending ecosystem, a trend that is increasingly driven by FinTechs entering secured products. This change reflects a strategic effort by FinTechs to broaden their product range and serve a wider array of financial needs.

Challenges and Way Forward

Digital lending has rapidly evolved, bringing both significant opportunities and complex challenges. Key Challenges include:

Credit Risk & Limited Data Access: Many borrowers, especially in emerging markets, lack formal credit histories and hence significant reliance on traditional credit scores excludes large segments of the population.

Fraud & Identity Theft: Increased digital activity has led to more sophisticated fraud schemes, such as fake identities. Additionally, there has been a proliferation of fraudulent apps along with mis-selling through dark patterns.

Regulatory Uncertainty: Adherence to evolving digital lending guidelines issued by regulatory bodies such as the RBI is complex and expensive, yet essential as rapid fintech innovation often outpaces regulatory frameworks. Further, compliance with evolving data privacy and lending laws is complex.

Customer Trust & Transparency: Users may not fully understand loan terms or digital processes leading to customer misunderstanding. Further, hidden fees and aggressive recovery practices damage trust.

Technology & Infrastructure Gaps: Technology gaps include inconsistent internet access especially in the rural areas, while lack of digital literacy hinders adoption. Meanwhile, smaller lenders may lack the tech stack or the financing to scale securely. Meanwhile, the lack of data privacy, presence of data bias, along with vendor and third-party risks, and customer protection also hamper growth.

Cybersecurity Threats: Digital platforms are vulnerable to data breaches and ransomware attacks.

Solutions

AI-Driven Credit Scoring: Machine learning models improve risk prediction and inclusion. Additionally, the use of alternative data (e.g., mobile usage, social media, transaction history) to assess creditworthiness enables provision of loans to new to credit customers. However, reliance on alternative data must be balanced with sound underwriting practices to maintain asset quality.

eKYC & Biometric Verification: Digital identity verification using Aadhaar, facial recognition, or biometrics reduces fraud.

Embedded Finance & APIs: Seamless integration of lending into e-commerce and digital platforms via APIs enhances user experience.

Clear Regulatory Frameworks: Governments and central banks are introducing digital lending guidelines (e.g., RBI's digital lending norms).

Customer Education & Consent: Transparent loan terms, consent-based data sharing, and grievance redressal mechanisms build trust.

Blockchain for Transparency: Using blockchain technology ensures tamper-proof records and improves auditability in lending.

Cloud-Based Lending Platforms: Such platforms create scalable, secure, and cost-effective infrastructure for digital lenders.

Green Financing

India's Move to Net Zero

India is on the brink of a major green revolution, with ambitious renewable energy goals and a Net-Zero target set for 2070. The government plans to boost adoption through financial tools like Production Linked Incentives (PLIs), Viability Gap Funding (VGFs), loans, and grants. Additionally, India's Climate Panchamitra Goals outline a strategic path toward achieving sustainability and net zero. The road to net zero is intricate and varies widely among countries, each facing distinct challenges and opportunities influenced by its economic structure, energy resources, and technological capabilities.

Net zero refers to creating an equilibrium between the quantity of greenhouse gases emitted and the amount removed/abated from it. Achieving net zero means that any emissions produced are fully offset by actions that remove an equivalent amount of greenhouse gases, resulting in no net increase in atmospheric greenhouse gas levels.

Globally, GHG Emissions have risen significantly, and the increase in total greenhouse gas (GHG) emissions of 1.3% from 2022 is above the average rate in the decade preceding the COVID-19 pandemic (2010–2019), when GHG emissions growth averaged 0.8% annually. In 2023, the power sector remained the most significant global contributor to emissions, at 15.1 GtCO2e, followed by transport (8.4 GtCO2e), agriculture (6.5 GtCO2e), and industry (6.5 GtCO2e). Emissions from international aviation, which had dropped significantly during the COVID-19 pandemic, increased by 19.5% in 2023 compared to 2022 levels. Other sectors that experienced rapid growth in 2023 include fugitive emissions from fuel production, road transportation, and emissions from the energy-related industry. The rise in emissions has been across all sectors, except for land use, land-use change, and forestry.

Meanwhile, over 100 countries, accounting for approximately 82% of global greenhouse gas emissions, have committed to achieving net-zero emissions by 2050. This group comprises large emitters, including the United States, China, the United Kingdom, France, Germany, Japan, and India. Each country implements strategies and policies to reduce carbon footprints and transition to more sustainable practices. The uneven distribution of emissions makes the path to net zero a complex and multifaceted one. The top five emitter nations are significant, accounting for 57% of global emissions in 2023. This increase from 48% in 2003 underscores the urgency for these countries to adopt faster and more comprehensive decarbonisation strategies. These nations must lead by example, implementing policies and technologies that significantly reduce their carbon footprints. At the same time, international cooperation and support for developing countries are crucial to ensure a global transition to a sustainable future.

Despite having low per capita emissions, India is likely to witness an increase in emissions among the top 10 contributing countries, making it a key stakeholder in the global net-zero challenge. Due to India's emissions growth in 2023, its share in global emissions touched 7.8%. Despite significant strides in renewable energy, coal remains the dominant source of energy in India's energy mix, accounting for approximately 55% of primary energy in 2023.

While India's per capita emissions are rising, they remain significantly below the global average and that of other top-emitting countries. India's per capita greenhouse gas (GHG) emissions were relatively low at 2.9 tCO$_2$e/year in 2023, compared to the global average of 6.0-6.6 tCO$_2$e/year. However, absolute emissions are rising due to the country's growing population, urbanisation, and industrialisation.

Sectoral Contributions to Emissions

- **Power:** The power sector was the most significant contributor to India's emissions in 2023, accounting for approximately a third of the total. This is primarily due to reliance on coal. Transitioning from coal while ensuring energy security poses a significant challenge for India, particularly given its rapidly growing economy.
- **Transport:** Emissions from the transport sector, including road, rail, shipping, and aviation, have increased due to higher energy consumption and reliance on combustion-based processes.
- **Agriculture:** Agriculture contributed significantly to emissions from animal husbandry and crop production, primarily from methane and nitrous oxide.
- **Industrial:** The industrial sector also saw increased emissions, driven by increased manufacturing activities.

Given that Power and Transport account for a substantial part of the emissions, a granular view of these segments has been provided in the subsequent sections of this report. Although India has historically contributed minimally to global warming, it faces significant challenges due to its large population and pressing developmental needs.

Policy Measures

The central government has implemented various measures to support India's decarbonisation plan, addressing short-term, medium-term, and long-term goals. The National Action Plan on Climate Change (NAPCC), launched on June 30, 2008, outlines a comprehensive strategy to address climate change and promote sustainable development. The NAPCC aims to adapt to climate change, enhance the ecological sustainability of India's development path and maintain a high growth rate to improve living standards and reduce vulnerability to climate impacts. NAPCC comprises eight core "National Missions," which focus on different aspects of climate change:

- National Solar Mission to promote the development and use of solar energy.
- National Mission for Enhanced Energy Efficiency to encourage energy efficiency improvements.
- National Mission on Sustainable Habitat focuses on urban planning, waste management, and building energy efficiency.
- National Water Mission to conserve water, minimise wastage, and ensure equitable distribution.
- National Mission for Sustaining the Himalayan Ecosystem to protect and conserve the Himalayan ecosystem.
- National Mission for a Green India: Enhances ecosystem services, including carbon sinks.
- National Mission for Sustainable Agriculture: Promotes sustainable agricultural practices.
- National Mission on Strategic Knowledge for Climate Change: Enhances understanding of climate science and its impacts.

Proposals under the Union Budget 2025-26

Sector	Proposal	Impact
Auto and Auto Components	• Full exemption of customs duties on 35 capital goods/ machinery for use in manufacturing lithium-ion batteries for EVs. • Proposed PLI outlay of Rs 2,819 crore, PM e-Bus Sewa scheme of Rs 1,310 crore and PM e-DRIVE Scheme of Rs 4,000 crore. • Full exemption of cobalt powder and waste, as well as scrap of lithium-ion battery, Lead, Zinc, and 12 more critical minerals from customs duty.	• Likely to boost lithium-ion battery manufacturing in India, lowering costs and reducing EV prices. The PLI scheme will promote the growth of the automotive and auto components industries. In addition, the PM e-Bus Sewa scheme and the PM e-DRIVE Scheme are anticipated to accelerate the adoption of EVs.
	• National Manufacturing Mission to be set up to support clean tech manufacturing. • Additional borrowing of 0.5% of GSDP to states for undertaking power sector reforms and 50-year interest-free loans to states with an outlay of Rs 1.5 lakh crore.	• Initiative to aid backwards integration in the domestic manufacturing of solar power plants, wind turbines, high-voltage transmission equipment and grid-scale batteries. This auger helps create a secure alternate supply chain for domestic and global markets. • Interest-free loans and additional borrowings by states, subject to their implementation of power reforms, are likely

Sector	Proposal	Impact
	• NaBFID will set up a partial credit enhancement facility (PCE) for corporate bonds for infrastructure.	to attract investments in the distribution and transmission sector. • PCE by NaBFID for corporate bonds is likely to improve the accessibility of issuers to the bond market, thereby opening newer avenues for securing borrowings.

Challenges

Achieving net zero by 2070 is a complex and multifaceted challenge for India. Rapid urbanisation and industrial growth significantly increase energy demand and emissions. At the same time, EVs face supply chain challenges related to the availability of critical minerals, technological challenges, and challenges surrounding funding (availability and structures) and policy implementation. Some of these have been detailed below.

Technological Challenges:

- Energy Storage: Integrating intermittent renewable energy sources like solar and wind requires advanced energy storage solutions. Current technologies need significant improvements to ensure a stable and reliable energy supply.
- Carbon Capture and Storage (CCS): Developing efficient and cost-effective CCS technologies is crucial for reducing emissions from industrial processes and power generation.
- Grid Modernisation: Upgrading the existing power grid to handle the increased load from renewable sources and ensure efficient distribution is a major technological hurdle.

Supply-Chain Vulnerabilities:

- Limited Domestic Reserves: India has limited domestic reserves of critical minerals such as lithium, rare earth elements (REEs) and cobalt. This scarcity necessitates heavy reliance on imports, making the supply chain vulnerable to global market fluctuations and geopolitical tensions.
- Import Dependency: India imports a significant portion of its critical minerals and is highly dependent on countries like China for lithium, REEs and cobalt. This dependency poses risks related to supply disruptions and price volatility.
- Geopolitical Risks: The concentration of critical mineral production in a few countries increases geopolitical risks. Any political instability or trade restrictions in these regions can severely impact the supply chain.

Financial Challenges:

- Investment Requirements: Securing a high level of funding, especially from private investors, is a significant challenge.
- Innovative Financing: Exploring and implementing innovative financing mechanisms, such as green bonds, is essential to bridge the funding gap.
- Economic Transition: Ensuring a just transition for workers in fossil fuel industries, including reskilling and upskilling, requires substantial financial resources.

Policy Challenges:

The involvement of multiple stakeholders can lead to policy and coordination gaps.

- Fragmented Responsibilities: Different ministries and agencies often have overlapping or fragmented responsibilities, leading to inefficiencies and delays in decision-making.
- Policy Misalignment: Inconsistent policies and regulations across central and state governments can create confusion and hinder the implementation of decarbonisation initiatives.
- Communication Barriers: Lack of effective communication and collaboration between stakeholders can result in missed opportunities and duplicated efforts.

Social and Behavioural Challenges:

- Public Awareness and Participation: Engaging the public and ensuring widespread participation in sustainability initiatives is crucial. This includes promoting energy efficiency, reducing waste, and supporting green practices.
- Behavioural Change: Encouraging individuals and businesses to adopt sustainable practices and reduce their carbon footprint requires significant effort and education. Addressing these challenges will require coordinated efforts among the government, the private sector, and the international community.

Way Forward

India's approach to achieving net zero is multifaceted, striking a balance between economic growth, energy security, and environmental sustainability. With its commitment to achieving net-zero emissions by 2070, the country is taking significant steps to transition towards a low-carbon economy while ensuring inclusive development. Key Aspects include:

Renewable Energy Expansion: Focus on achieving 500 GW of non-fossil fuel capacity by 2030, significantly increasing solar, wind, hydro, and bioenergy contributions. Increase offshore wind and rooftop solar. Modernize and achieve a smart power grid. National Green Hydrogen Mission to support clean energy transition, reduce reliance on fossil fuels.

Energy Efficiency & Electrification: Initiatives like Perform, Achieve, and Trade (PAT) and Ujala LED Distribution to improve energy efficiency across industries and households. Reducing Emissions: Implement energy-efficient practices, transitioning to renewable energy sources and adopting cleaner technologies. Carbon Sequestration: Enhance natural processes that absorb CO2, such as reforestation and soil management. Carbon Capture and Storage (CCS): Use technology to capture and store CO2 emissions from industrial processes and power generation. The push for electric mobility, through incentives like the Faster Adoption and Manufacturing of Electric Vehicles (FAME) scheme, is crucial for reducing transport emissions. Electrification of Public Transport: Transitioning to electric buses and trains can significantly reduce emissions from the transportation sector. Electric buses, for example, are becoming a cornerstone of sustainable urban transport. Infrastructure Development: Developing the necessary infrastructure for electric vehicles, such as charging stations, to support clean public transport.

Carbon Markets & Green Financing: Strengthen the framework for carbon trading markets and the Carbon Credit Trading Scheme (CCTS) to incentivise emission reductions. Actively explore green bonds and international climate finance to support clean energy and infrastructure projects. Accelerate private sector participation in the energy transition segments.

International Collaboration: India co-leads initiatives like the International Solar Alliance (ISA) and Mission LiFE (Lifestyle for Environment) to promote global climate action. Partnerships with nations and organisations for technology transfer, R&D, and policy support are crucial to accelerating the transition.

Significant Investments Needed to Achieve Net Zero

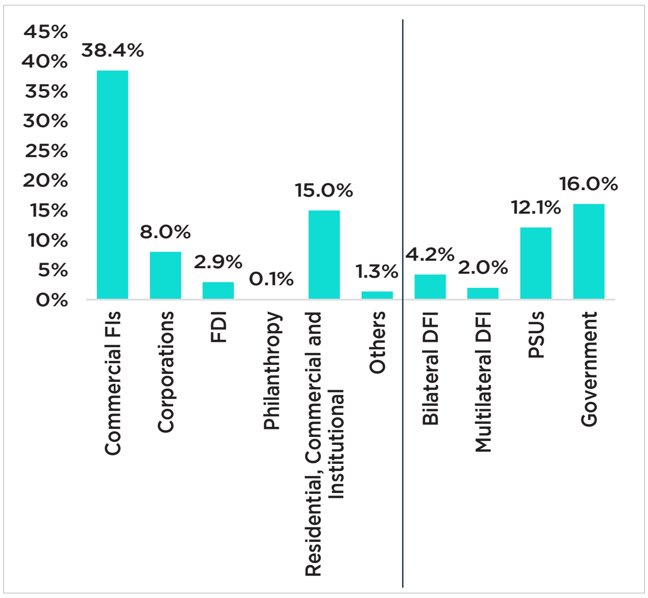
India is poised for a sustained increase in energy demand as both its population and economy expand and is on track to become the world's third-largest economy. Simultaneously, the United Nations projects that India will continue to remain the most populous nation globally. Concomitant with this anticipated growth, India has also set an ambitious target to achieve net-zero emissions by 2070. This would involve striking a balance between economic expansion and urgent climate action, necessitating substantial investments across multiple sectors to support the transition to a low-carbon economy. Key priorities include scaling up renewable energy infrastructure, improving energy efficiency, and developing sustainable transportation systems.

Globally, trillions of dollars are required to meet climate goals, and India's share is expected to be substantial. According to India's initial Nationally Determined Contributions (NDCs), an estimated $2.5 trillion is required for climate mitigation efforts between 2015 and 2030. According to an estimate by the Department of Economic Affairs (DEA), Ministry of Finance, the cumulative investment needs for adaptation alone between 2015 and 2030 amount to Rs 85.6 trillion. Meanwhile, according to the Council on Energy, Environment and Water (CEEW), India would need cumulative investments totalling $10.1 trillion to achieve net-zero emissions by 2070.

India's Climate Finance Landscape

According to the Climate Finance Institute, the figures below provide a breakdown of the sources, instruments, and sectors in the climate finance landscape.

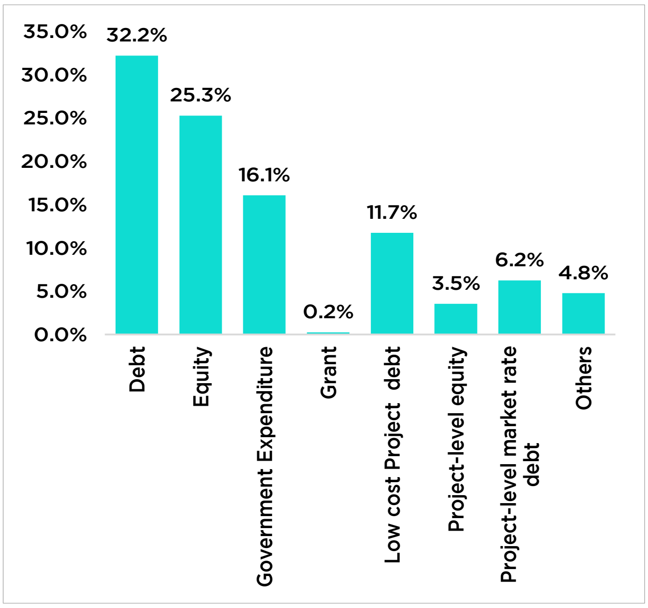
Sources of Funds (in %)



Source: CPI 2024. Landscape of Green Finance in India

According to the Climate Finance Institute, domestic sources accounted for approximately 83% of green finance for mitigation, with the private sector accounting for a 66% share and the remaining 34% from public sources.

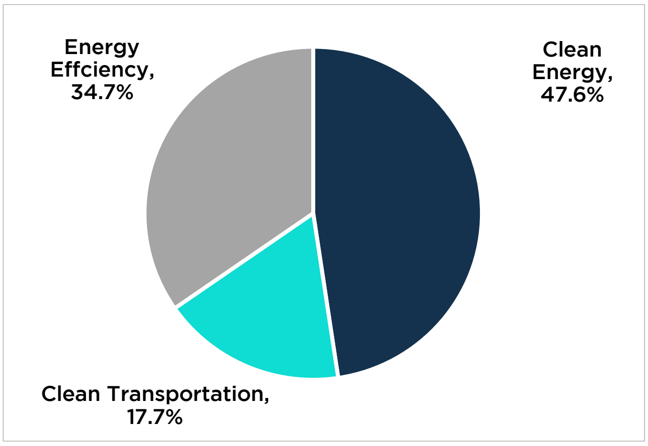
Share of Instruments Used (%)



Source: CPI 2024. Landscape of Green Finance in India

Debt funding dominates the financing landscape, followed by equity and government expenditure.

Share of Sectors (In %)



Source: CPI 2024. Landscape of Green Finance in India

Clean Energy at 47.6% accounted for the bulk of the finance, followed by Energy efficiency at 24.7% and Clean Transportation at 17.7%.

- Within Clean Energy, Solar PV accounted for the largest share, followed by onshore wind and other segments

- Energy-efficient appliances accounted for the lion's share of the funding within energy efficiency. Other segments include green buildings and energy conservation

- Mass Rapid Transit Systems (MRTS) accounted for a 78% share within clean transportation, followed by electric vehicles and dedicated freight corridors.

India faces several barriers to sustainable finance:

- High Initial Costs: The transition involves high upfront costs, which can strain public finances and require significant private sector participation.

- Higher risk perception of such projects, along with technology risks

- Limited Access to Data: Reliable and high-quality ESG data is often scarce, making it challenging to evaluate the sustainability of investment

- Infrastructure Development: Developing the necessary infrastructure for renewable energy is a major challenge that requires coordinated efforts and substantial investments.

- Funding Gaps: There is a substantial investment gap that needs to be bridged through innovative financing mechanisms and international support.

Financing India's transition to net-zero emissions by 2070 is a monumental task that necessitates a multifaceted approach. Key strategies to enhance financing include:

Mobilising Domestic Capital

Green Bonds & Sustainable Finance:

- Green Bonds: Issue green bonds to finance environmentally friendly projects. These bonds have favourable terms and are popular among institutional investors. India has issued sovereign green bonds to fund renewable energy, electric mobility, and climate resilience projects.

- Green Loans: Banks, including international ones, offer green loans with favourable terms for businesses investing in sustainable projects. Expanding corporate and municipal green bond markets to attract private investments.

- Pension Funds and Insurers: Attract domestic financing from pension funds and insurers through long-term AAA-rated bonds that meet investor risk-return expectations. Increased ESG Integration and investments in the circular economy.

- Corporate Financing: Large corporations can access long-term financing at lower costs by refinancing existing projects and investing in new low-carbon solutions. Equity Investments: Venture capital firms and private equity investors are funding start-ups and early-stage companies focusing on sustainability.

Regulatory & Policy Support:

RBI has included renewable energy projects under priority sector lending, improving credit access. Incentives such as tax benefits, accelerated depreciation, and production-linked incentives (PLI) for solar and battery manufacturing. Ongoing efforts to establish a climate finance taxonomy, which will classify economic activities in alignment with India's climate goals, supporting climate finance and mitigating greenwashing. It is expected to guide investments towards sustainable growth and enhance transparency and investor confidence.

Public-Private Partnerships (PPP):
Leverage government funds to de-risk private investments in clean energy projects. Hybrid models where public funds provide first-loss guarantees to attract institutional investors.

Boosting International Climate Finance

Foreign Direct Investment (FDI) & Development Assistance:
Encourage 100% FDI in solar, wind, hydrogen, and battery storage sectors through easier regulations. Strengthen collaboration with global financial institutions, such as the World Bank, ADB, and the Green Climate Fund (GCF).

Carbon Markets & Trading:
India's Carbon Credit Trading Scheme (CCTS) enables industries to trade emission reduction credits, monetising green initiatives. Developing domestic carbon markets will generate and sell carbon credits in both domestic and international voluntary markets, providing a new revenue stream to support project financing. Expanding participation in global carbon markets will unlock additional funding.

Bilateral & Multilateral Partnerships:
Engaging with international financial institutions and development banks for concessional loans and grants. Strengthening climate-focused agreements with countries like the US, EU, and Japan to access grants, technology transfers, and concessional loans.

Innovative Financial Instruments

Blended Finance Models:
Combining public funds, grants, and private capital to reduce project risks and make investments attractive. E.g., India's Solar Risk Mitigation Initiative with the World Bank. Promote green mutual funds and green ETFs. Work on creating a green securitisation framework and structure.

Green Banks & Credit Enhancement Mechanisms:
Establishing a National Green Bank to provide low-interest loans for renewable projects. Credit guarantees for small-scale renewable projects and startups.

Decentralised Energy Financing:
Expanding microfinance & peer-to-peer lending for rooftop solar and rural electrification projects. Encouraging community-led investment models for clean energy projects.

India's journey to net zero is complex but achievable with the right mix of domestic and international financing, policy support, and innovative solutions. By leveraging these strategies, India can pave the way for a sustainable and prosperous future.

About ASSOCHAM

The Associated Chambers of Commerce & Industry of India (ASSOCHAM) is the country's apex national chamber since 1920. It advocates actionable policy suggestions to strengthen the Indian economy by leveraging its extensive membership reach of over 450,000 companies, comprising of large corporates and SMEs. With over 70 Sector and State Councils, ASSOCHAM effectively represents diverse segments of Indian industry and focusses on aligning industry priorities with the nation's growth aspirations.

As an agile and forward-looking institution, the Chamber spearheads various initiatives aimed at enhancing the global competitiveness of Indian industry while reinforcing the domestic business environment. These initiatives seek to align Indian Industry with the vision of building a New India/ Viksit Bharat.

ASSOCHAM is currently driving four strategic priorities: Sustainability, Globalization, Startups & Innovation, and the Digital Economy. The Chamber believes that focused efforts in these areas are key to fostering inclusive and sustainable socio-economic development.

In collaboration with the government, regulators, and national and international think tanks, ASSOCHAM contributes to policy formulation and provides critical feedback on the implementation of high-impact decisions. Staying future-ready, the Chamber is also cultivating a robust network of knowledge architects to help shape India's transition into a technology-driven, knowledge-based economy. ASSOCHAM aims to empower stakeholders by promoting knowledge as the catalyst for growth in a dynamic global environment.

Beyond industry engagement, ASSOCHAM actively supports civil society through initiatives focused on inclusive development. Its member network leads efforts across a wide range of sectors including empowerment, healthcare, education and skill development, hygiene, affirmative action, road safety, livelihoods, life skills, and sustainability.

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About CareEdge Ratings

CareEdge is a knowledge-based analytical group offering services in Credit Ratings, Analytics, Consulting and Sustainability. Established in 1993, the parent company CARE Ratings Ltd (CareEdge Ratings) is India's second-largest rating agency, with a credible track record of rating companies across diverse sectors. CareEdge Ratings provides ratings for a variety of industries, such as manufacturing, infrastructure, and the financial sector, which includes banking, and non-financial services and holds leadership positions in high-growth sectors such as BFSI and Infra The company has played a pivotal role in the development of bank debt and capital market instruments, such as commercial papers, corporate bonds and debentures, and structured credit. With over three decades of experience in the analytics business and a deep understanding of the operations of various industries and sectors, the company is in a sound position to offer itself as a knowledge hub and publishes insightful reports on the Indian and global economy, and industry research papers regularly.

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