IMC

Chamber of Commerce and Industry

Capital Markets Taskforce

A REPORT ON INDIA'S CORPORATE BOND MARKET

Building the Bond - Financing Viksit Bharat

Where the Market Is · Where It Must Go · How to Get There

Policy Recommendations | Measurable 2030 Targets | International Case Studies

Primary Markets | Secondary Liquidity | Infrastructure Bonds | Regulatory Architecture | Investor Base | Electronic Trading | Sustainable Finance | Municipal Bonds | Policy Roadmap | International Benchmarks | 2030 Scorecard

2026

First Edition

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BUILDING THE BOND: FINANCING VIKSIT BHARAT

A Comprehensive Report on India's Corporate Bond Market

PRESIDENT'S MESSAGE

IMC Chamber of Commerce and Industry

India's ambition to become a developed nation by 2047 — the Viksit Bharat vision — rests on a foundation that is at once financial and structural: the ability of its capital markets to channel the country's vast savings into the long-tenor, large-scale infrastructure and enterprise investment that development demands. The corporate bond market is the single most important unfulfilled instrument in that architecture. At 18 percent of GDP, chronically illiquid, institutionally concentrated, and effectively inaccessible to retail investors, it represents the most consequential gap between where India's financial system is and where it must be. This report — Building the Bond: Financing Viksit Bharat — is, to the best of the IMC's knowledge, the most comprehensive, rigorous, and actionable analysis of India's corporate bond market yet produced. Spanning eleven chapters, twenty-five specific policy recommendations, eight measurable 2030 targets, and five international case studies drawn from economies that have overcome precisely the barriers India faces today, it provides not merely a diagnosis of the market's failures but a detailed, costed, and sequenced prescription for building the bond market that the world's fifth-largest economy and the twenty-first century's most consequential growth story urgently requires.

The IMC Chamber of Commerce and Industry — established in 1907 and representing India's commercial and industrial community from Mumbai, the country's financial capital — commends this report to policymakers, regulators, institutional investors, market participants, and every citizen with a stake in how India finances its future. The report's central finding bears the weight of repetition: India does not lack the savings, the issuers, or the investors needed for a deep bond market. It lacks only the institutional architecture to connect them — and that architecture, as this report demonstrates, can be built through regulatory circulars, budget announcements, and inter-agency coordination that require no new legislation and no exceptional resources, only the clarity of purpose that this moment in India's economic history demands. The window for building this market is now, when India's growth momentum creates natural demand and the cost of delay rises with every year that the financing gap widens.

The IMC is proud to present this report and hopes that suggestions made therein find consideration.

Warm regards,
Sunita Ramnathkar
President, IMC Chamber of Commerce and Industry
IMC Building, 4th Floor, Churchgate, Mumbai 400 020
Mumbai, 2026

BUILDING THE BOND: FINANCING VIKSIT BHARAT

A Comprehensive Report on India's Corporate Bond Market

CHAIRMAN'S MESSAGE

Capital Markets Taskforce, IMC Chamber of Commerce and Industry

The Capital Markets Taskforce of the IMC Chamber was constituted with a clear mandate: to identify the structural impediments that prevent India's capital markets from functioning as efficiently and inclusively as the country's economic weight demands, and to propose remedies that are specific, evidence-based, and implementable within India's existing institutional and legal framework. **Building the Bond — Financing Viksit Bharat** is the most substantial deliverable in the Taskforce's current term, and it addresses what we regard as the single most consequential gap in India's capital market architecture. India's corporate bond market — at 18 percent of GDP, chronically illiquid, and effectively inaccessible to the retail investor — is not merely underperforming relative to peer economies. It is actively constraining India's infrastructure investment, raising the cost of capital for every corporate borrower, and denying India's middle-class households the fixed-income investment options that their savings deserve. The Taskforce is convinced, after extensive research and deliberation, that this is not a gap India can afford to carry into 2047.

What the Taskforce found most striking in the course of producing this report is not the scale of the problem — which has been documented before — but the **proximity of the solution.** The data that a functioning bond market needs is already flowing into the servers of BSE and NSE under SEBI's 2014 reporting mandate; it simply needs to be published. The institutional investors whose long liabilities cry out for long-tenor infrastructure bonds are already present — EPFO, LIC, the pension funds — waiting only for a regulatory notification that creates the allocation category. The digital infrastructure to give 800 million smartphone users access to bond investment already exists in UPI and Aadhaar. The report identifies 25 specific actions, sequenced across three-time horizons, that together constitute a complete programme for building the bond market India needs — most requiring no new legislation, no extraordinary budget, and no waiting. The Taskforce commends this report unreservedly to India's policymakers and regulators, in the firm belief that the analysis is sound, the recommendations are actionable, and the moment is right.

Warm regards,
Mrugank Paranjape
Chairman, Capital Markets Taskforce
IMC Chamber of Commerce and Industry
Mumbai, 2026

The IMC Capital Markets Taskforce brings together senior practitioners, policymakers, and academics engaged in the development of India's equity, debt, derivatives, currency and commodities markets. The Taskforce meets monthly to assess market conditions, identify reform priorities, and produce research that advances the cause of deeper, more efficient, and more inclusive capital markets in India.

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EXECUTIVE SUMMARY

Building the Bond: Financing Viksit Bharat

A Comprehensive Report on India's Corporate Bond Market — Where It Is, Where It Must Go, and How to Get There

Chapters 1–11 | Statistical Annexures | Glossary | Bibliography

THE DIAGNOSIS IN FIVE NUMBERS

18%	0.27×	80,000	4.2yr	1.3%
Corp Bond Market / GDP *vs 80–120% in Korea, Malaysia*	**Corp Bond Turnover Ratio** *G-sec market: 5.9× — a 22× gap*	**Retail Bond Investors** *vs 155 million equity investors*	**Average Bond Tenor** *Infrastructure needs 15–25 years*	**Share of Global Green Bonds** *India: 17% of world population*

1. What the Market Is: A Diagnostic Assessment

India's corporate bond market is the third-largest in Asia by nominal outstanding and chronically underperforming relative to the scale of the economy it serves. At 18% of GDP, it is one-fifth the depth of Malaysia's bond market, one-quarter of South Korea's, and below every G20 emerging market peer except Indonesia. The market finances primarily the financial sector — banks, NBFCs, and AAA-rated PSUs account for over 75% of issuance — through short-tenor private placements that bypass the exchange system, the retail investor, and the price transparency infrastructure that a functioning bond market requires.

The secondary market is the starkest failure. India's G-sec market — transparent, electronic, T+1 settled, with a turnover ratio of 5.9× — is a world-class fixed income market. The corporate bond market, trading alongside it in the same CCIL settlement infrastructure, achieves 0.27× turnover, is 82% voice-brokered OTC, has no public real-time price feed, and is inaccessible to any retail investor without specialist knowledge and ₹10 thousand of minimum capital. These are not natural market outcomes. They are the product of specific institutional and regulatory choices that can be reversed.

The investor base is concentrated and fragile. Mutual funds hold 37% of outstanding bonds; when credit events stress the mutual fund industry (as in 2018–19), the entire market feels it. Insurance companies and pension funds — with ₹90 lakh crore of long-dated liabilities — allocate less than 4% to infrastructure bonds, despite a theoretically perfect asset-liability match. Foreign Portfolio Investors utilise only 41% of their available limits, trapped by 3–4% annual hedging costs that make Indian corporate bonds uncompetitive on a fully hedged basis.

India's bond market is not underdeveloped because India is poor. It is underdeveloped because the institutional architecture to connect its savings to its investment needs has never been built.

2. Where the Market Is Going: The Viksit Bharat Imperative

India's Viksit Bharat 2047 vision — upper-middle-income status, zero poverty, world-class infrastructure, financial inclusion for every citizen — has a financing number attached to it. The National Infrastructure Pipeline targets ₹111 lakh crore of infrastructure investment by 2025, and the estimate for 2025–2035 exceeds ₹190–250 lakh crore. The banking system, constrained by maturity mismatch and capital adequacy limits, can finance at most 30–40% of this. The remainder must come from the bond market.

Simultaneously, three demographic and structural trends are accelerating the urgency of bond market development. India will add 300 million urban residents by 2047 — requiring ₹82 lakh crore of municipal infrastructure. Its energy transition (500 GW Non-fossil fuel-based energy by 2030, net-zero by 2070) requires USD 160 billion annually in clean energy investment. And its 300 million strong middle class — already investing ₹32000 crore monthly in equity SIPs — is hungry for fixed-income investment options that the bond market does not yet offer.

₹190L Cr	₹82L Cr	$160 bn	300M	₹77L Cr
Infra financing need 2025–2035 *Bond market must fund ~60%*	**Urban infrastructure by 2036** *Municipal bonds barely exist*	**Annual clean energy investment needed** *India's green bond share: 1.3%*	**New urban residents by 2047** *Municipal bond market: ₹2,100 Cr*	**Institutional savings with long liabilities** *Infra bond allocation: <2%*

The bond market is not the only instrument for financing Viksit Bharat. But it is the only instrument that can simultaneously provide the scale (trillions, not thousands of crores), the tenor (15–25 years, not 7–10), the distribution (retail as well as institutional), and the credibility (exchange-listed, price-transparent, credit-rated) that India's development goals require. Without a functioning bond market, Viksit Bharat's infrastructure targets will be missed. There is no alternative.

The bond market is not a luxury of developed economies. It is the infrastructure of economic ambition — as essential to Viksit Bharat as the highways, ports, and power grids it finances.

3. The 2030 Scorecard: Where India Must Get To

The report sets eight measurable 2030 targets — grounded in peer market benchmarks, cross-validated against institutional capacity, and designed to be tracked annually in a SEBI Bond Market Scorecard presented to Parliament.

Metric	TODAY (FY2024)		TARGET (2030)
Corporate Bond Market / GDP	18%	→	35%
Infrastructure Bond Share of Issuance	4.8%	→	18%
Retail Bond Investors (direct)	80,000	→	10 million
Average Corporate Bond Tenor	4.2 years	→	8.5 years
Electronic Trading % (Corp Bonds)	18%	→	65%
Green Bond Share of Issuance	2%	→	12%
FPI Utilisation Rate	34%	→	70%
Municipal Bond Outstanding	₹2,100 Cr	→	₹75,000 Cr

4. The Architecture of Reform: Four Simultaneous Programmes

This report's central finding is that India's bond market development requires four simultaneous reform programmes — regulatory, fiscal, monetary, and infrastructural — coordinated by a formal inter-agency mechanism. No single actor can build this market alone. No single reform is sufficient. The four programmes must move in concert.

REGULATORY REFORM

Lead: SEBI, IRDAI, PFRDA

India-TRACE (BSE/NSE publication mandate) · CBMM market-maker regime · ₹1,000 minimum lot · IRDAI/PFRDA infra bond allocation · Green Bond Gold Tier · Bond Market Development Council

FISCAL POLICY

Lead: Finance Ministry, Parliament

IIBGF (₹25,000–50,000 Cr guarantee corpus) · EPFO investment pattern amendment · Bharat Bond ETF II+III · Zero stamp duty on exchange-traded bonds · Section 54EC extension · NMFA establishment · Sovereign Green Bonds at scale

CENTRAL BANK MEASURES

Lead: Reserve Bank of India

CDS market development · Direct CCIL: share NDS-OM data with India-TRACE portal · Credit repo expansion · Onshore INR/USD 3–5yr swap market · T+1 bond settlement pilot · 30–40yr G-sec issuance for yield curve anchor · PD corporate bond quoting obligation

MARKET INFRASTRUCTURE

Lead: SEBI, NaBFID, BSE/NSE, AMFI

National Takeout Financing Protocol · Bharat Bond Direct app (UPI + Aadhaar) · India-TRACE BSE/NSE publication portal · Green Project Aggregation Facility · ULB creditworthiness programme · Corporate bond futures market

The coordinating mechanism for all four programmes is the proposed Bond Market Development Council (BMDC) — a formal sub-committee of the Financial Stability and Development Council, chaired by the Finance Secretary, with SEBI and RBI as co-chairs, meeting quarterly with mandatory deliverables. The BMDC is the institutional glue that converts parallel reform intentions into a coordinated market-building programme.

5. Strategic Recommendations: 12 Actions That Define the Agenda

From 25 specific actions in Chapter 10, 12 have been identified as the highest-leverage interventions — the ones that unlock the most reform for the least institutional effort, that unlock the most capital for the least public expenditure, and that address the most fundamental structural barriers rather than surface symptoms. They are sequenced in three waves.

WAVE 1 — IMMEDIATE ACTIONS (0–12 Months): Five Actions, One SEBI Circular Each

1 *SEBI*

India-TRACE: Mandate BSE and NSE to publish all OTC trade reports in real-time

BSE and NSE already receive every OTC corporate bond trade under SEBI's 2014 reporting mandate. A single SEBI circular directs them to publish this data — free, public, within 15 minutes — on an India-TRACE portal and API. RBI separately directs CCIL to share NDS-OM settlement data with the portal for complete coverage. Cost: ₹15–25 crore. Impact: eliminates the price opacity that is the primary barrier to retail participation, institutional TCA benchmarking, and CBMM market-making.

2 *SEBI*

CBMM Regime: 15 designated Corporate Bond Market Makers with mandatory 2-way quoting

SEBI notification designates 15 entities as CBMMs with mandatory bid-offer quotes on 200 benchmark ISINs during market hours. Maximum spreads: 25 bps (<5yr), 50 bps (5–10yr), 100 bps (>10yr). Incentives: RBI provides 50% lower risk weight on CBMM inventory; Finance Ministry provides stamp duty waiver on CBMM transactions; exchanges pay ₹500 per executed round-trip. Monthly public scorecard. This creates the secondary market that every other reform depends on.

3 *SEBI*

Reduce minimum corporate bond lot to ₹1,000 — the retail access threshold

Earlier ₹1 lakh minimum excludes 99% of India's potential retail bond investors. Recently approved ₹10,000 is right but not ambitious enough. ₹1,000 — matching the Bharat Bond ETF minimum — is the threshold at which retail bond investment becomes accessible to the same middle-class households investing ₹500/month in equity SIPs. Without this, Bharat Bond Direct and retail bond ETFs cannot reach the investor segments they are designed for.

4

Establish IIBGF in the 2025–26 Budget — the highest-leverage public capital deployment

Finance Ministry

A ₹25,000–50,000 crore India Infrastructure Bond Guarantee Facility — seeded by GoI (₹15,000 crore) with ADB/World Bank co-contribution — provides first-loss guarantees and partial credit guarantees that transform BBB+ greenfield infrastructure projects into AA-rated bondable instruments. Leverage ratio: 8–12×. A ₹50,000 crore corpus enables ₹4–6 lakh crore of infrastructure bonds over a decade. No other fiscal action has a higher multiplier for India's bond market.

5
RBI

Issue revised CDS guidelines — the central bank action with highest secondary market impact

India's CDS market has been non-functional since 2013 guidelines restricted eligible protection buyers and sellers. Without CDS, corporate bond market-making requires unhedged credit risk on every position — making the CBMM regime capital-intensive and fragile. Revised RBI guidelines allowing bank CDS hedging without mandatory physical bond holding and permitting NBFCs/insurance to sell CDS on investment-grade bonds, will reduce CBMM capital requirements by 30–40% and enable the liquid secondary market that every institutional investor requires.

WAVE 2 — NEAR-TERM ACTIONS (1–3 Years): Four Actions That Unlock Institutional Capital

6
IRDAI + PFRDA + Finance Min.

Joint notification: Infrastructure Bond allocation category for insurance and pension funds

A single joint notification creates a dedicated 'Infrastructure Bond' sub-category in IRDAI and PFRDA investment guidelines — allowing up to 10% of insurance AUM and 5% of EPFO/NPS corpus in NTFP-eligible, NaBFID-approved, minimum AA-rated infrastructure bonds. Expected institutional demand unlocked: ₹6.1 lakh crore. The IL&FS default was a governance failure in an opaque unrated holding company — architecturally incomparable to credit-enhanced, AA-rated, listed, India-TRACE-priced infrastructure bonds. Do not let one failure prevent a thousand successes.

7
Finance Ministry

Amend EPFO investment pattern — ₹66,000 crore of pension capital waiting to move

EPFO manages ₹22 lakh crore with effectively 20-year average liability duration — the perfect ALM match for 15-20 year infrastructure bonds. A Finance Ministry notification adding a 3–5% infrastructure bond category (restricted to NTFP bonds) unlocks ₹66,000–1,10,000 crore immediately. This is the largest single institutional demand unlock available without new legislation. South Korea's NPS infrastructure bond mandate (2009) — identical in design — was credited with growing Korean infrastructure bond issuance 4× within 5 years.

8
NaBFID + AMFI + SEBI

Launch Bharat Bond Direct — India's mobile-first retail bond platform

A UPI-native retail bond platform — ₹1,000 minimum, Aadhaar KYC, India-TRACE live prices, CBMM exit guarantee within 5 business days — deployed as an app and web portal by a SEBI-licensed public-private consortium. Pilot: 100,000 users Q3 FY2027; national rollout FY2027. Philippines Bonds.PH was oversubscribed 17× on debut with 10% of India's digital infrastructure depth. India's 800 million UPI users and 1.37 billion Aadhaar-enrolled citizens are the distribution system for a retail bond market that does not yet exist.

9 *Finance Ministry + RBI*

Develop onshore INR/USD swap market to unlock FPI corporate bond investment

FPIs holding Indian corporate bonds face 3–4% annual hedging costs — making 8% Indian AA bonds unattractive vs 5.8% US IG bonds on a fully hedged basis. RBI expanding onshore 3–5 year INR/USD swap facilities and Finance Ministry reducing VRR lock-in from 3 years to 18 months would reduce hedging costs by 100 bps — making Indian corporate bonds competitive for European pension fund mandates. Korea's equivalent reform (2003–2007) tripled FPI corporate bond holdings within 5 years.

WAVE 3 — STRUCTURAL REFORMS (3–5 Years): Three Reforms That Anchor the Market's Future

10 *Finance Ministry + RBI*

National Takeout Financing Protocol — recycling bank capital into greenfield lending

The NTFP — a standardised, SEBI/RBI-approved framework for converting construction-phase bank loans into listed infrastructure bonds at operational maturity — creates a structural mechanism for bank capital recycling. NaBFID as single-window nodal agency; 90-day processing target; standardised bond documentation. Each ₹1 of bank capital recycled through takeout enables ₹3–4 of new greenfield lending. At ₹50,000 crore annual takeout volume by FY2028, this implies ₹2.5 lakh crore of new greenfield project finance capacity — not from new public spending but from recycling existing institutional capital.

11 *Parliament + Finance Min.*

Bond Market Development Council (BMDC) — the coordination mechanism for everything else

The single most important institutional reform: a formal BMDC as a sub-committee of FSDC, chaired by Finance Secretary, with SEBI and RBI as co-chairs, mandatory quarterly meetings, and published annual targets. Without this, each of the preceding ten recommendations will be implemented at different speeds, in different directions, with different priorities — producing the fragmented ecosystem that characterises India's bond market today. Malaysia's SC-BNM joint Bond Market Masterplan (2001–2020) — the direct model for BMDC — is credited as the primary driver of Malaysia's bond market growth from 60% to 95% of GDP.

12 *SEBI + NSE + RBI*

Corporate Bond Futures Market — the risk management infrastructure market-makers need

Market-making in corporate bonds is capital-intensive and operationally risky without hedging tools. A standardised corporate bond futures contract on 10 benchmark ISINs — SEBI-approved, NSE-listed, with RBI bank participation for hedging purposes — gives CBMMs the duration management and credit hedging tools that make large two-way positions viable at tight spreads. South Korea's corporate bond futures market, established 2001 alongside its market-maker regime, was credited with improving secondary market turnover ratios by 40% within three years.

6. The International Proof: These Barriers Have Been Overcome Before

India is not pioneering an untested path. Every structural barrier this report identifies — bank dominance, price opacity, no market-makers, retail exclusion, illiquid secondary market, no long-tenor instruments — has been overcome in other emerging markets. The evidence is consistent and compelling.

Country / Model	The Barrier Faced	The Solution Deployed	The Outcome	India Application
US TRACE (2002)	No public bond prices; retail paid 1–2% excess over fair value	FINRA TRACE: every trade published within 15 min; free public access	30–50 bps reduction in bid-ask spreads; USD 30–50 bn annual investor saving	India-TRACE: BSE/NSE already hold the data; single SEBI circular needed
South Korea (1998–2010)	Bank-dominated system collapsed in 1997 crisis; bond market near-zero	KDB statutory market-maker + KCGF credit guarantee + KBPS bond pricing service	Bond market: 18% → 80% of GDP; infra bonds 22%; retail participation 22%	CBMMs + IIBGF + India-TRACE = Korea's KDB + KCGF + KBPS
Malaysia (2001–2020)	Bank dominance; no infra bonds; EPF in G-secs despite 25yr liabilities	SC-BNM Bond Market Masterplan + Danajamin guarantee institution + EPF mandate	Bond market: 60% → 95% of GDP; EPF infra allocation 2% → 12%	BMDC Masterplan + IIBGF + EPFO amendment = Malaysia's SC-BNM + Danajamin + EPF
Australia (2011–2022)	Super funds with 25yr liabilities; infra bonds 2% of issuance	APRA 5% infra bond mandate + AIF credit enhancement + 30yr tenor bonds	Infra bond share: 4% → 18%; super fund infra allocation 2% → 12%; tenor 8yr → 14yr	IRDAI/PFRDA mandate + IIBGF = Australia's APRA mandate + AIF
Philippines (2020)	Retail bond access: <50,000 investors; minimum size too high; no mobile access	Bonds.PH mobile app: ₱5,000 min; UPI-equivalent payment; DLT registry	RTB-24: 17× oversubscribed; 80% transactions <₱10,000; avg investor age 31	Bharat Bond Direct on UPI + Aadhaar — 10× Philippines' digital infrastructure depth

7. The Call to Action: The Window Is Now

India is in a growth phase that creates conditions uniquely favourable for bond market development. Corporate investment appetite is rising. Infrastructure spending is at record levels. FPI interest in India — catalysed by GBI-EM inclusion — is at a decade high. Retail investors, energised by the equity SIP experience, are open to capital market investing. The JAM + UPI digital stack is ready to distribute bonds to 800 million smartphone users. The SEBI regulatory architecture is functionally complete. And the 25 actions in this report can all be implemented within existing statutory authority — without new legislation, without a new budget, and without waiting for India to become richer before building the market it already needs.

The window is open. The case is made. The plan is written. India's bond market is waiting to be built.

The Five Asks — One Per Actor, Each Implementable Within 12 Months

Finance Ministry: Announce IIBGF (₹15,000 crore seed) in Budget 2025–26. Amend EPFO investment pattern to add 3–5% infrastructure bond category. Launch Bharat Bond ETF II (Infrastructure) and III (Green). These three actions — one budget, two notifications — unlock more for India's bond market than the previous decade of incremental reform.

SEBI: Issue three circulars within 90 days: India-TRACE (mandate BSE/NSE to publish OTC trade reports in real-time), CBMM (15 market-makers, 200 ISINs, mandatory quoting), and ₹1,000 minimum lot. These circulars require no legislation, no new data collection, and no new institutions. They require only the will to sign.

RBI: Issue revised CDS guidelines enabling bank CDS hedging of corporate bond portfolios. Direct CCIL to share NDS-OM settlement data with BSE/NSE India-TRACE portal. Expand credit repo eligibility to all AA-rated listed bonds at 5–8% haircut. The G-sec market you built is the envy of emerging markets. The corporate bond market deserves the same central bank commitment.

IRDAI and PFRDA: Issue one joint notification creating an Infrastructure Bond allocation category. ₹6.1 lakh crore of institutional demand for infrastructure bonds is waiting for this single notification. The IL&FS crisis was a governance failure. Do not let it become a permanent barrier to the ALM match that India's long-liability investors have always needed.

NaBFID: Seek GCF accreditation. Establish the Green Project Aggregation Facility. Push for the Parliamentary amendment granting statutory guarantee authority. Become the institution your Act mandates you to be — the development finance institution that builds India's infrastructure bond market from the inside.

What Success Looks Like in 2030

A schoolteacher in Jaipur invests ₹5,000 in a 10-year NHAI infrastructure bond via Bharat Bond Direct — live India-TRACE price checked, UPI payment made, demat credit received the next morning. A Rajasthan renewable company issues a 15-year green bond at 8.2% — IGBGF-guaranteed, ICMA Gold certified, subscribed by a European pension fund and 200,000 retail investors via Bharat Bond ETF III. The Municipal Corporation of Patna issues its first ₹300 crore bond through the Bihar State SPFDF — rated AA-, listed on BSE, oversubscribed 2.2 times, financing a sewage treatment plant.

These are not aspirations. They are the natural outcomes of implementing the 12 strategic recommendations in this summary.

BUILDING THE BOND: FINANCING VIKSIT BHARAT

Executive Summary | Full report in 11 chapters with Statistical Annexures, Glossary, and Bibliography

CHAPTER 1
The Imperative: Why India Needs a Deep Bond Market Now

Building the Bond: Architecting India's Deep and Liquid Debt Capital Markets for Viksit Bharat 2047

India stands at a **generational inflection point.** The ambition encoded in Viksit Bharat 2047 — to transform India into a fully developed economy by the centenary of its independence — is not simply a growth target. It is a civilisational project: one that demands modern infrastructure, industrialised manufacturing, a climate-resilient energy system, affordable housing for hundreds of millions, and world-class social services. The numbers behind this ambition are staggering. -And the question that this report is built around is deceptively simple:

The Central Question

India will need to invest an estimated **USD 4.5 trillion in infrastructure alone** over the next decade. Banks, constrained by asset-liability mismatches and capital norms, cannot finance this alone. The **bond market is not an option — it is a necessity.**

1.1 The Viksit Bharat Vision: Goals, Scale, and Ambition

Viksit Bharat 2047 is the Government of India's overarching national development framework, targeting India's transformation into a high-income, fully developed economy by the time the nation celebrates its 100th year of independence. Anchored in the government's economic strategy documents, the NITI Aayog's vision papers, and successive Union Budgets, the framework sets out five interlocking development pillars, each carrying immense financing implications.

The Five Pillars of Viksit Bharat 2047

Pillar	Stated Goal by 2047	Key Financing Implication
Economic Scale	USD 30–35 trillion GDP; Annual per-capita income of USD 18,000+	Sustained 8%+ annual growth rate requiring massive capital formation
Infrastructure	World-class physical and digital infrastructure across all tiers	USD 4.5 trillion+ infrastructure investment over 2024–2035
Industrialisation	Manufacturing at 25% of GDP; Global Value Chain integration	Long-tenor industrial bonds; SME debt capital access
Energy Transition	500 GW Non-fossil capacity; net-zero by 2070 pathway	Green bonds, sustainable finance, climate infrastructure debt
Social Infrastructure	Universal quality healthcare, education, housing, and urban services	Municipal bonds, social bonds, sub-sovereign debt markets

Achieving even the most conservative estimates of this vision demands a fundamental reconfiguration of how India mobilises and allocates long-term capital. The current architecture — where the banking system intermediates the overwhelming share of corporate and infrastructure finance — is simply not designed for this scale, this complexity, or these tenors.

1.2 The Financing Gap: Putting Numbers to the Ambition

The financing requirements of Viksit Bharat's multiple dimensions are individually large; collectively they are transformational. The table below synthesises estimates from the National Infrastructure Pipeline, NITI Aayog projections, sectoral ministry estimates, and independent research to provide a consolidated picture of India's debt financing requirements through 2035.

India's Estimated Debt Financing Requirements: 2024–2035

Sector / Theme	Estimated Debt Need (USD bn)	Ideal Instrument	Avg. Tenor Required
Transport Infrastructure (Roads, Railways, Ports, Airports)	800 – 950	Infra Bonds / InvIT Debt	15 – 25 years
Urban Infrastructure (Metro, Water, Sanitation, Smart Cities)	350 – 450	Municipal Bonds / Pooled Bonds	10 – 20 years
Energy Transition (Renewables, Grid, Storage, Green H2)	450 – 600	Green Bonds / Sustainability-Linked Bonds	12 – 20 years
Affordable Housing	200 – 280	NHB Bonds / RMBS / Social Bonds	10 – 15 years
Social Infrastructure (Healthcare, Education)	150 – 200	Social Bonds / Sub-sovereign Debt	7 – 15 years
Manufacturing & Industrial Corridors	250 – 350	Corporate Bonds / Project Finance Bonds	7 – 12 years
Digital Infrastructure (Data Centres, Broadband, Semiconductor)	100 – 150	Corporate Bonds / VC-linked Debt	5 – 10 years
TOTAL ESTIMATED DEBT REQUIREMENT	**USD 2.3 – 2.98 trillion**	**Predominantly Bond Market**	**Avg. 12 – 18 years**

What This Means in Practice

India needs to mobilise approximately USD 200–250 billion of long-term debt financing annually through 2035 to stay on a Viksit Bharat trajectory. This compares with total corporate bond issuance of approximately USD 101–103 billion (INR 8.57 lakh crore) in FY2024 — close to half of what is required.

The gap is not merely quantitative. The nature of the financing needed — long-tenor, patient, infrastructure-linked — is fundamentally different from what India's current bond market predominantly delivers: short-duration, AAA-rated, financial sector paper.

1.3 The Bank-Dominated Financing System: Why It Cannot Carry This Weight

India's financial system has historically been bank-centric. As of FY2024, scheduled commercial banks held assets of approximately INR 220 lakh crore (USD 2.65 trillion), making the banking system by far the largest pool of institutionalised capital. For decades, this served India adequately when the economy's financing needs were of shorter duration, smaller ticket size, and lower complexity. That era is ending.

The Structural Constraints of Bank Finance for Viksit Bharat

Why Banks Cannot Lead This Transition

Asset-Liability Mismatch: Bank deposits are predominantly short-term (< 3 years). Lending for 15–25 year infrastructure creates crippling ALM risk.

Capital Adequacy Constraints: Basel III norms require higher capital for long-tenor project finance, reducing the economic incentive for infrastructure lending.

Concentration Risk: RBI prudential norms limit single-borrower and sector exposure, capping total bank support for any major infrastructure programme.

NPA Legacy & Risk Aversion: Post the 2012–2018 NPA crisis, public sector bank risk appetite for greenfield projects has structurally reduced.

Price Discovery Opacity: Bilateral loan pricing lacks the transparency of a bond market, making it harder to efficiently price risk and attract a wider investor base.

What Bond Markets Offer Instead

Duration Matching: Long-term investors (insurance, pension, sovereign wealth) have matching long-dated liabilities and can absorb 15–30-year bonds naturally.

Scale Without Concentration: Bond markets distribute risk across thousands of investors, enabling ticket sizes that no single bank or consortium could comfortably hold.

Price Transparency: Listed bonds create observable yield curves, enabling better sector-wide pricing, benchmarking, and risk assessment.

Retail & Institutional Breadth: From retail investors to global pension funds, bond markets can tap a far wider and more diverse capital pool than bank balance sheets.

Takeout & Refinancing: Bond markets enable construction-phase bank loans to be refinanced into long-tenor bonds at operational maturity, recycling bank capital.

1.4 India's Bond Market Today: A Diagnostic Snapshot

To understand the distance India must travel, it is essential to assess the current state of its bond market with precision. The picture is one of a market that has grown significantly in absolute terms but remains shallow, narrow, and short-duration relative to both national need and international comparators.

International Comparison: Bond Market Depth as % of GDP (2023)

Country / Region	Total Bond Market (% GDP)	Corporate Bond Market (% GDP)	Avg. Corporate Bond Tenor
United States	~220%	~80%	8–12 years
South Korea	~180%	~80%	5–7 years
Malaysia	~150%	~55%	5–10 years
China	~130%	~35%	3–7 years
Thailand	~90%	~25%	5–8 years
India	**~55%**	**~18%**	**3–5 years**
Peer Aspiration (2035)	90–100%	35–40%	7–12 years

India's corporate bond market, at roughly 18% of GDP, lags significantly behind peer economies at comparable or earlier stages of development. The structural features of India's market compound this size disadvantage:

- Private placement dominance: As per SEBI data (2023-24), around 98% of corporate bond issuance is through private placement, limiting price discovery, retail access, and secondary market liquidity.
- Rating concentration: Approximately 70–75% of outstanding corporate bonds carry AAA or AA ratings. Below-investment-grade issuance is virtually non-existent.
- Issuer concentration: Financial sector entities (banks, HFCs, NBFCs) account for nearly 65% of corporate bond issuance. Non-financial corporates — the backbone of industrial India — are largely absent.
- Tenor compression: Average tenor of newly issued corporate bonds is 3–5 years. Bonds with tenors beyond 10 years represent less than 8% of total issuance by volume.
- Investor concentration: Mutual funds, insurance companies, and provident funds absorb the vast majority of corporate bond supply. Retail investor participation in direct bonds remains negligible.

Key Metrics: India's Corporate Bond Market FY2024

- Total Corporate Bond Issuance (FY2024): ~INR 8.57 lakh crore (USD 100-103 billion)
- Share of Private Placements: >95% of total issuance
- Share of Infrastructure/Project Bonds in Total Issuance: <5%
- Bonds with Tenor > 10 years: ~7–8% of total issuance
- Share of AAA/AA-rated paper: ~72% of outstanding bonds
- Retail Investor Share in Direct Bond Holdings: <1% of total

- Exchange-Traded Corporate Bond Volume (FY2024): ~INR 22,000–25,000 crore (secondary market)
- Corporate Bond Market Size as % of GDP: ~17–18%

Source: SEBI Annual Report 2023-24; RBI Bulletin; CCIL; BSE/NSE data

1.5 The Demand-Supply Mismatch: Where the Structural Failure Lives

The core structural failure of India's bond market is a simultaneous mismatch on both the demand and supply sides — and these mismatches reinforce each other in a self-perpetuating cycle of shallowness.

The Vicious Cycle of Market Shallowness

Supply Side Constraints: Why Issuers Avoid the Bond Market

- Long-tenor bonds are expensive to price without a liquid secondary market reference curve — so issuers prefer short tenors or bank loans.
- Disclosure and listing norms for public issuances are more burdensome than private placements — so 95%+ of issuance stays private.
- Infrastructure projects in construction phase cannot service market debt — and the credit enhancement ecosystem to bridge this gap is underdeveloped.
- Mid-market and below-investment-grade companies face prohibitively wide spreads — and are effectively shut out of the public bond market.
- State and local governments (municipal bodies) lack the financial management systems and creditworthiness to access bond markets.

Demand Side Constraints: Why Investors Hold Back

- The absence of reliable post-trade price transparency makes it impossible for investors — especially retail — to assess fair value in the secondary market.
- Insurance and pension funds face regulatory investment guidelines that restrict allocations to below-AA paper, limiting demand for infrastructure bonds.
- Foreign Portfolio Investors face currency risk and hedging costs that make Indian corporate bond yields unattractive on a hedged basis.
- Retail investors lack access to bonds in affordable denominations, with minimum lot sizes historically set at INR 10 lakh — well beyond most investors' reach.

- The secondary market is illiquid — particularly for anything beyond 5 years — making investors reluctant to lock up capital in long-tenor instruments.

These supply and demand constraints feed each other: issuers don't come because investors aren't there, and investors aren't there because issuers don't come. Breaking this cycle requires deliberate, coordinated intervention across regulation, infrastructure, and market design — which is precisely what this report addresses.

1.6 What a Deep Bond Market Would Mean for Viksit Bharat

The case for developing India's bond market is not merely financial. A deep, liquid, and accessible bond market is — like roads and power grids — an economic infrastructure. It changes the cost of capital, the allocation of savings, the resilience of the financial system, and ultimately the rate and quality of growth.

The Multiplier Effects of Bond Market Development

Benefit Channel	Mechanism	Viksit Bharat Impact
Lower Cost of Capital	Deeper secondary markets compress risk premia; transparent pricing disciplines spreads	Reduces infrastructure project costs by 50–100 bps; improves project viability
Longer Tenor Financing	Institutional investors with long liabilities match with long-tenor bonds	Enables genuine 15–25 year infrastructure finance; reduces refinancing risk
Financial System Resilience	Diversifies intermediation away from bank-only model	Reduces systemic risk; banks freed to focus on working capital and retail credit
Retail Wealth Creation	Households access fixed-income instruments beyond bank FDs	Democratises investment; improves household financial security
FDI & FPI Attraction	Transparent, liquid bond markets attract global capital pools	Reduces dependence on FDI in equity; diversifies capital account
Monetary Policy Transmission	Deep bond markets improve interest rate signal transmission	Strengthens RBI's policy effectiveness; reduces inflation volatility

The Efficiency Dividend

Research from the Bank for International Settlements and IMF indicates that economies where bond markets finance 35–40% of corporate investment (versus India's current ~12–15%) exhibit **0.5–0.8 percentage points higher total factor productivity growth**. For India, this translates to an efficiency dividend of roughly USD 20–30 billion in additional GDP per annum — compounding over the decade to 2035.

1.7 The Private Credit Story: Bridging Where Public Bonds Cannot Reach

Not all financing needs can or should be met by listed public bonds. A parallel and rapidly growing segment — private credit — is emerging globally as the preferred instrument for mid-market corporates, special situations, and growth-stage businesses that cannot access public bond markets but need more than bank loans.

India's private credit market remains nascent, estimated at USD 18 billion of AUM in FY2024 as per IBFF report (compared to USD 1.7 trillion globally). But its forecasted growth rate – approximately 25-30% per annum as per PwC report — signals the market's recognition of a structural gap. For Viksit Bharat, private credit can play a critical bridging role:

- Financing mid-market manufacturers and suppliers in sectors targeted by PLI schemes, where public bond markets are inaccessible.
- Providing construction-phase financing for infrastructure projects before they become bondable, enabling a staged capital structure from private credit to public bonds.
- Supporting distressed asset resolution by providing alternative capital to businesses in temporary financial difficulty.
- Financing new-age sectors — electric mobility, digital infrastructure, agri-tech — where traditional credit assessment models are inadequate.

The regulatory framework for private credit in India is evolving — SEBI's Alternative Investment Fund (AIF) Category II framework has been the primary vehicle. This report recommends specific enhancements to this framework in subsequent chapters.

1.8 SEBI's Evolving Role: From Regulator to Market Architect

SEBI has, over the last five years, significantly expanded its role in bond market development — moving from a narrow focus on disclosure and issuance norms toward a broader ambition of building market infrastructure, deepening investor access, and improving secondary market liquidity. This repositioning is welcome and necessary.

Key SEBI Initiatives in Bond Market Development (2019–2024)

SEBI Initiative	Year	Purpose & Impact
Mandatory RFQ platform for institutional bond trades	2020	Moved institutional trades to electronic platforms; improved price transparency
Reduction of minimum lot size to INR 1 lakh	2022	Expanded retail and HNI access to listed bonds; increased eligible investor universe
Framework for Social Bonds & Green Bonds	2021–23	Created regulatory infrastructure for ESG-labelled issuances

SEBI Initiative	Year	Purpose & Impact
Tightening of listed bond disclosure norms	2022–23	Improved information quality for investors; reduced information asymmetry
Odd-lot window on BSE/NSE for retail bond trading	2023	Created secondary market access for retail investors in smaller sizes
Electronic Book Provider (EBP) mechanism	2016	Improved price discovery in primary issuance via competitive bidding
SEBI LODR amendments for bond issuers	2023	Strengthened corporate governance for listed debt entities

Despite this regulatory activism, the gap between policy intent and market outcome remains wide. The chapters that follow dissect each dimension of this gap and propose a comprehensive architecture to close it — spanning primary market design, secondary market infrastructure, investor base development, credit enhancement, and digital distribution.

The Case in Five Propositions

#	Proposition	Evidence
1	Viksit Bharat requires USD 2.3–3.0 trillion in long-term debt financing over the next decade	NIP, NITI Aayog, sectoral ministry estimates
2	Banks cannot provide this financing due to ALM constraints, capital norms, and concentration limits	RBI data; Basel III framework; post-crisis NPA evidence
3	India's bond market, at 18% of GDP and 3–5 year average tenor, is structurally inadequate for this task	SEBI, CCIL, BIS comparative data
4	A deep bond market would reduce the cost of capital, lengthen financing tenors, and generate a measurable growth dividend	IMF/BIS research; international comparators
5	The time to act is now — India's growth momentum creates demand, and SEBI's regulatory evolution provides the foundation to build on	SEBI Annual Report 2023-24; market participant surveys

— End of Chapter 1 -

CHAPTER 2

Where We Stand: A Diagnostic of India's Primary Bond Market

A data-driven examination of issuance volumes, tenor structure, issuer concentration, pricing dynamics, and sectoral gaps — drawing on SEBI Annual Statistics, CCIL data, and FIMMDA records.

India's corporate bond market has grown. Total issuance crossed ₹8.7 lakh crore (approximately USD 104 billion) in FY2024, up from ₹6.1 lakh crore in FY2018. The number of issuers has risen. Electronic reporting has improved transparency. SEBI's regulatory architecture has been strengthened. And yet — measured against the financing demands of Viksit Bharat — this growth tells a story of a market that is expanding at the margins while remaining structurally unchanged at its core.

This chapter presents a rigorous, data-anchored diagnostic of where India's primary bond market stands today across five critical dimensions: issuance volumes and trends; tenor structure; issuer concentration; pricing dynamics; and sectoral and geographic distribution. Each dimension reveals a distinct structural gap — and together they define the reform agenda the report addresses in subsequent chapters.

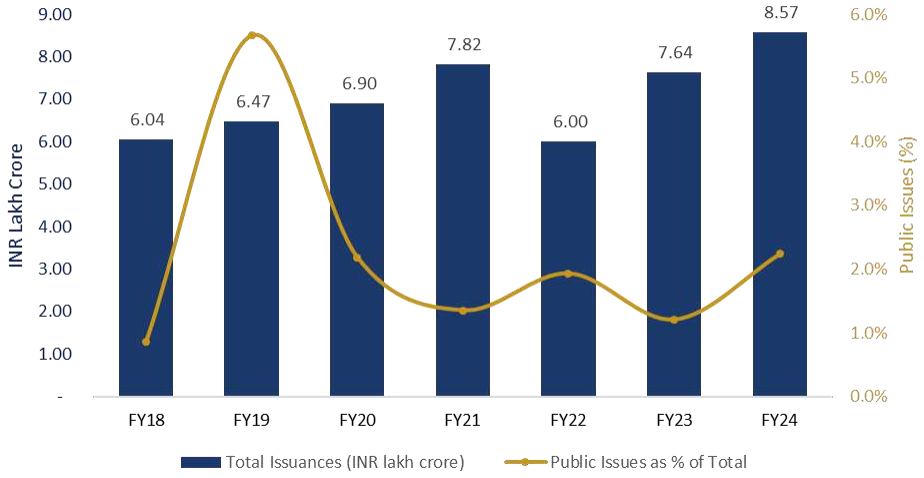
Data Note on Sources

All statistical data in this chapter is drawn from SEBI's Annual Reports (2018–19 through 2023–24), SEBI Bulletin monthly publications, CCIL (Clearing Corporation of India) trade data, FIMMDA (Fixed Income Money Market and Derivatives Association of India) publications, and NDS-OM platform records. Where precise breakdowns are unavailable from public sources, data is sourced from RBI Handbook of Statistics and supplemented with our estimates based on disclosed partial data — clearly indicated in footnotes.

2.1 Issuance Volumes and Trends: Growth with Structural Rigidity

India's corporate bond market has recorded consistent growth in aggregate issuance volumes over the seven-year period from FY2018 to FY2024. Total issuances — combining public issues and private placements — grew from approximately ₹6.12 lakh crore in FY2018 to ₹8.73 lakh crore in FY2024, representing a compound annual growth rate of approximately 6.1%. While this growth is encouraging in absolute terms, it masks three critical structural features that define the market's limitations.

Chart 2.1 – Total Corporate Bond Issuance: FY2018 to FY2024 (Private Placements vs. Public Issues)



Source: Sebi Annual Report 2023-24; SEBI-Bulletin, Note: Public Issues volumes are approximate; private placements dominates >95% of total

Chart 2.1: Total Corporate Bond Issuance FY2018–FY2024 with Public Issues % trend | Source: SEBI Annual Report 2023-24

Feature 1: The Private Placement Monoculture

The most structurally defining feature of India's primary bond market is the overwhelming dominance of private placements. As the chart below demonstrates, private placements have consistently accounted for between 95% and 97% of total corporate bond issuance by value throughout the FY2018–FY2024 period. This is not a marginal feature — it is the defining architecture of the market.

Chart 2.2 – Private Placement vs. Public Issue: Share of Corporate Bond Issuance (FY2018-FY2024)

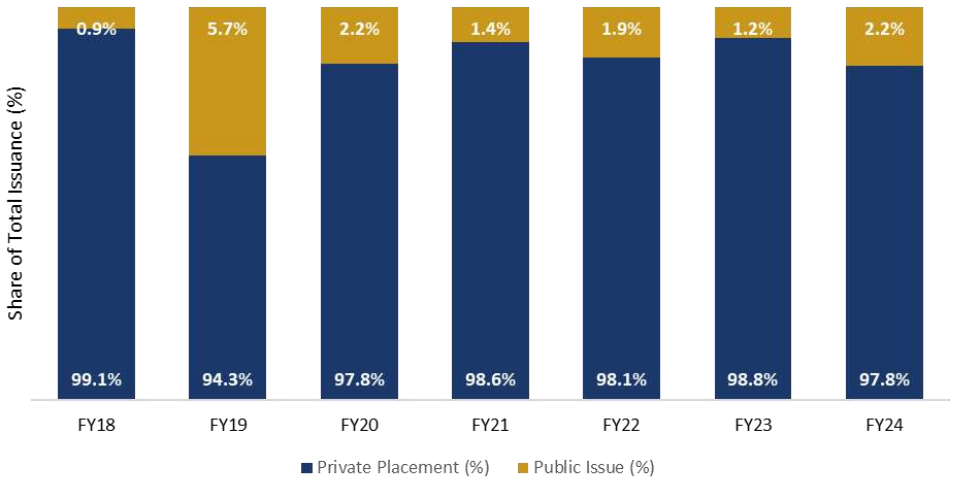


Chart 2.2: Private Placement vs. Public Issue — Share of Corporate Bond Issuance FY2018–FY2024 | Source: SEBI Annual Report 2023-24

Private placements are transactions between an issuer and a small set of identified institutional investors, exempted from the full rigour of public issue disclosure and listing requirements. They are faster, cheaper for the issuer, and sufficient for large institutional investors who can conduct their own due diligence.

But the dominance of private placement has profound consequences for the market's development trajectory:

- Price discovery is absent or opaque, since private placement pricing is bilateral and not subject to competitive bookbuilding.
- Retail and small investor access is structurally excluded — only Qualified Institutional Buyers (QIBs) can participate in most private placements.
- Secondary market liquidity suffers, since instruments placed privately with a handful of hold-to-maturity institutions rarely trade in the secondary market.
- Issuance standardisation is limited, making it difficult to build benchmark yield curves across tenors and credit ratings.
- The Electronic Book Provider (EBP) mechanism introduced by SEBI in 2016 has improved transparency for institutional private placements above ₹500 crore, but has not fundamentally changed status with respect to the exclusion of retail investors.

SEBI Data Point: Public Issuances of Corporate Bonds (FY2024)

Number of public issues of corporate bonds (FY2024): ~45 issues

Total amount raised via public issues: ₹19,167 crore (approx. 2.2% of total issuance)

Number of private placement issuances: ~1,347 tranches

Total amount raised via private placements: ₹8,37,757 crore+ (approx. 97.8% of total)

Source: SEBI Annual Report 2023-24, Chapter on Corporate Bonds

Feature 2: FY2021 Dip and Recovery — COVID's Mark on the Market

The COVID-19 pandemic year (FY2021) produced a visible dip in total issuance — from ₹7.83 lakh crore in FY2021to ₹5.99 lakh crore in FY2022 — reflecting both economic uncertainty and the withdrawal of mid-tier issuers from the market during the stress period. The recovery was strong, confirming the market's resilience. However, the post-COVID composition of issuers has remained similarly concentrated, suggesting the market recovered volume without recovering breadth.

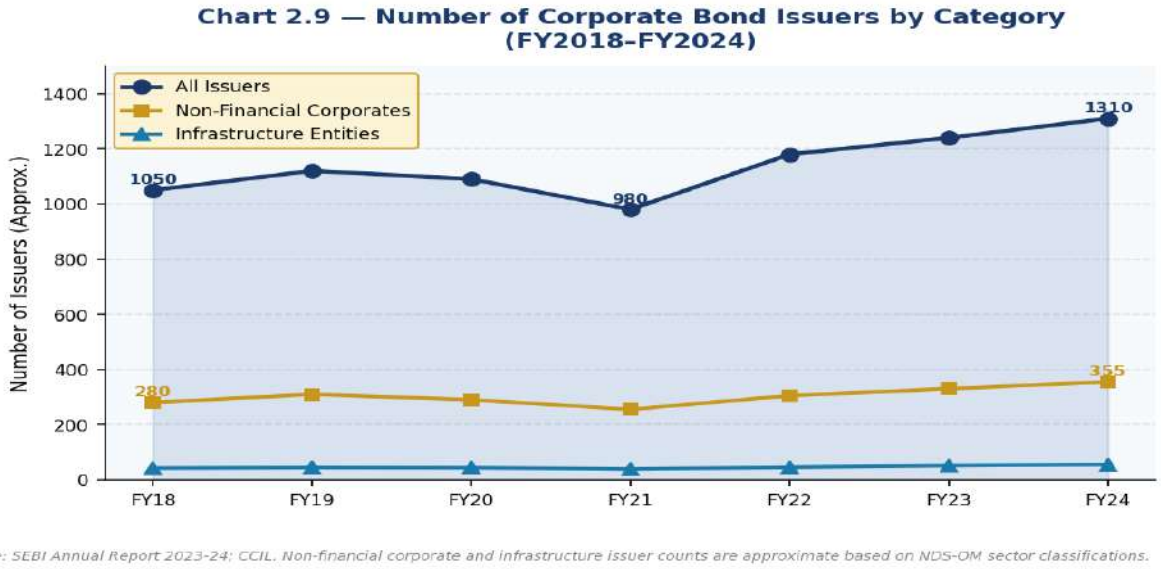


Chart 2.9: Number of Corporate Bond Issuers by Category FY2018–FY2024 | Source: SEBI Annual Report 2023-24; CCIL

As Chart 2.9 shows, the total number of issuers has grown modestly from approximately 1,050 in FY2018 to 1,310 in FY2024. But non-financial corporate issuers remain at 355 — less than 27% of total issuers — and infrastructure entities accessing the bond market directly number fewer than 60. The market is growing wider at the institutional financial sector end, but the mid-market and infrastructure segments remain as thin as they were six years ago.

2.2 Tenor Distribution: The Short-End Trap

If private placement dominance is the market's structural feature number one, the concentration of issuance in short-to-medium tenors is structural feature number two — and it directly determines the market's fitness for financing Viksit Bharat. Infrastructure projects, renewable energy assets, and social

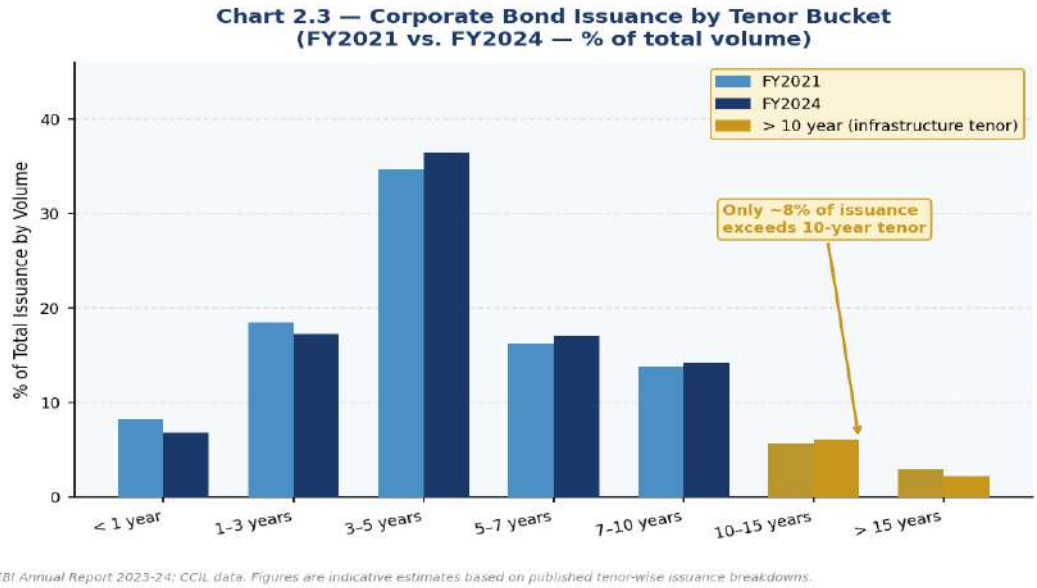


Chart 2.3: Corporate Bond Issuance by Tenor Bucket — FY2021 vs. FY2024 (% of total volume) | Source: SEBI Annual Report; CCIL; FIMMDA

infrastructure require financing of 15 to 30 years. India's corporate bond market overwhelmingly delivers financing of 3 to 5 years.

The data reveals a striking pattern of **tenor compression**. In FY2024, approximately **53% of all corporate bond issuance by value had a tenor of 5 years or less**. The 3–5-year bucket alone accounted for over 36% — the single largest tenor bucket by a significant margin. Bonds with tenors beyond 10 years constituted only **approximately 8.3% of total issuance** — barely changed from the 8.5% recorded in FY2021.

Why Tenors Are Compressed: The Investor-Issuer Feedback Loop

Tenor compression is not accidental — it reflects a set of structural incentives operating on both issuers and investors that push market activity toward short durations.

Actor	Why They Prefer Short Tenors	Consequence
Mutual Funds	Portfolio redemption needs require liquidity; long-dated bonds face mark-to-market NAV volatility	Dominant marginal buyer in corporate bonds anchors demand at 3–5 years
Insurance Companies	Despite long liabilities, investment guidelines and credit rating constraints limit long-bond allocation	Long-dated demand exists but is channelled into G-secs rather than corporate bonds
Corporate Issuers	Short tenors are cheaper to price and easier to roll — especially in uncertain rate environments	Preference for rolling shorter debt rather than locking into long-tenor markets
Banks (as issuers)	Tier-1 and Tier-2 bonds have regulatory-defined tenors (typically 5–10 years); shorter is cheaper	Largest issuer class concentrates in 5–7 year bucket
Rating Agencies	Long-tenor credit assessment methodology remains less developed; agencies conservative on long-horizon ratings	Reluctance to rate infra bonds beyond 10 years without credit enhancement

The Infrastructure Tenor Gap — Quantified

India's National Infrastructure Pipeline (NIP) projects require debt financing with average tenors of **18–22 years** for roads, **15–25 years** for renewable energy assets, and **20–30 years** for urban water and sanitation infrastructure. Against this, the corporate bond market currently delivers a weighted average tenor of approximately **4.2 years (FY2024)**. The tenor gap is not 2–3 years — it is a structural chasm of 14–18 years.

2.3 Issuer Concentration: A Market for the Few

A healthy bond market draws issuers from across the economy's spectrum — large and mid-market, financial and non-financial, PSU and private, investment-grade and high-yield. India's corporate bond market fails this test comprehensively. Issuance is concentrated among a small number of issuer types, ratings, and entities — creating a market that serves established financial sector borrowers efficiently while leaving the majority of India's corporate economy without access.

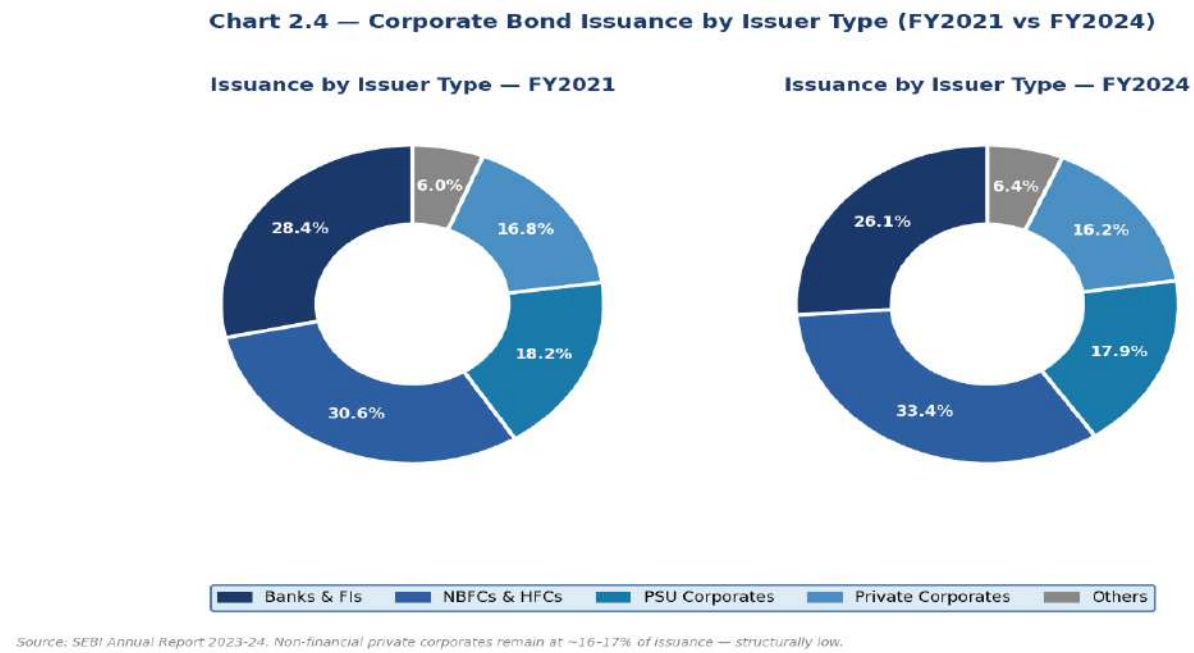


Chart 2.4: Corporate Bond Issuance by Issuer Type — FY2021 vs. FY2024 (% share) | Source: SEBI Annual Report 2023-24

Financial Sector Dominance: The 60% Problem

As Chart 2.4 shows, banking and financial institutions combined with NBFCs and HFCs account for approximately 60% of total corporate bond issuance in both FY2021 and FY2024. This dominance is structurally entrenched rather than cyclical — the same patterns appear across the full seven-year dataset.

The reasons are well understood: financial sector entities are natural bond issuers because they borrow long and lend short (or borrow and on-lend), making bond issuance a natural liability management tool. They also have the treasury infrastructure, legal capabilities, and institutional investor relationships to access bond markets efficiently. None of these advantages are available to most non-financial corporates.

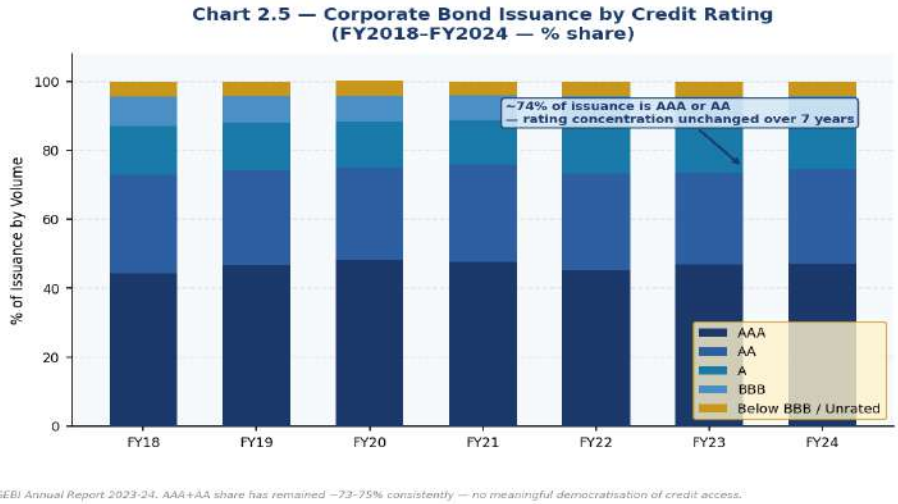


Chart 2.5: Corporate Bond Issuance by Credit Rating FY2018–FY2024 (% share) | Source: SEBI Annual Report 2023-24

Rating Concentration: The AAA Monoculture

Chart 2.5 demonstrates one of the most persistent structural features of India's bond market: the **AAA-AA duopoly**. Bonds rated AAA or AA have consistently accounted for approximately **73–75% of total corporate bond issuance by value** throughout FY2018–FY2024. This ratio has not meaningfully changed over seven years despite significant regulatory activity, suggesting it reflects deep structural preferences rather than a correctable market imperfection.

Rating Bucket	FY2018 Share (%)	FY2022 Share (%)	FY2024 Share (%)	Trend	Key Implication
AAA	44.2%	45.3%	47.2%	Marginally rising	Crowd-in of best credits; AAA issuers access market cheaply
AA	28.6%	27.9%	27.3%	Stable	AA remains accessible; spread premium manageable
A	14.3%	14.8%	13.8%	Stable	A-rated issuers face meaningful spread premium
BBB	8.4%	7.8%	7.5%	Slightly declining	BBB access narrowing; market indifferent to investment-grade lower end
Below BBB / Unrated	**4.5%**	**4.2%**	**4.2%**	**Flat/declining**	**Sub-investment grade has no functional public bond market**

The rating concentration data tells a consistent story: India's bond market is not meaningfully accessible to any issuer rated below AA in practical terms. For A-rated companies, spreads are high enough to make bonds uncompetitive with bank credit. For BBB and below, the market is functionally closed. This excludes the vast majority of India's 75,000+ registered companies from the bond market — including virtually all mid-market manufacturers that Viksit Bharat must mobilise.

The Missing Mid-Market: India's Invisible Bond Issuers

The 'missing middle' of India's bond market — mid-market companies with revenues of ₹500 crore to ₹5,000 crore, typically rated A to BBB, operating in manufacturing, logistics, healthcare, and technology — is the most consequential gap. These are precisely the companies that need to expand capacity, build supply chains, and fuel the industrial growth that Viksit Bharat requires. They are also precisely the companies that bank finance alone cannot serve at the tenors and scales required.

- Mid-market companies represent approximately 35–40% of India's organised sector GDP but less than 5% of corporate bond issuance.

- They face a financing trap: too large for microfinance, too risky for the bond market's conservative investor base, and increasingly constrained by bank exposure limits.
- The absence of a functioning high-yield bond market in India — common in the US and Europe — means there is no capital market alternative for sub-investment-grade issuers.
- The US high-yield bond market, by contrast, provides ~$1.5 trillion of financing to sub-investment-grade companies, enabling growth and investment that would be impossible through banks alone.

2.4 Pricing Inefficiency: The Hidden Cost of Market Opacity

A bond market's most fundamental function — beyond providing capital — is price discovery: establishing the fair cost of debt for different issuers, tenors, and risk profiles. This price signal, embedded in a corporate bond yield curve, enables efficient capital allocation across the economy. India's primary bond market performs this function poorly — and the consequences are felt throughout the financial system.

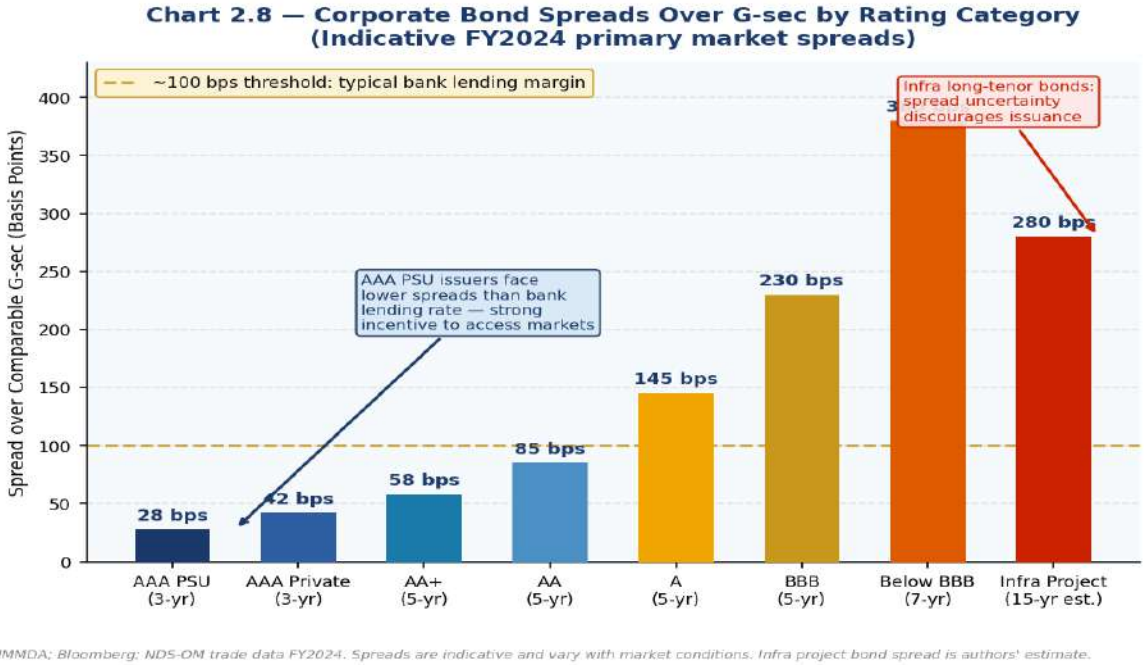


Chart 2.8: Corporate Bond Spreads Over G-sec by Rating Category (Indicative FY2024) | Source: FIMMDA; Bloomberg; NDS-OM trade data FY2024

The Adverse Selection Problem

The most damaging consequence of pricing opacity is adverse selection in the issuer base. Because bond market pricing is opaque and driven by bilateral negotiation rather than competitive bookbuilding, issuers face a binary choice: accept the market's opacity premium or use bank credit instead.

Issuer Profile	Bank Credit Rate (Indicative)	Bond Market Rate (Indicative)	Market Choice	Outcome
AAA PSU (3-year)	7.2–7.8%	6.9–7.3%	Bond market cheaper	Comes to bond market — but limits supply
AAA Private (3-year)	7.8–8.4%	7.4–7.9%	Bond competitive	Partial bond usage — supplements bank debt
AA (5-year)	8.5–9.2%	8.0–8.8%	Roughly equivalent	Market usage depends on non-price factors
A (5-year)	9.0–9.8%	9.4–10.2%	Bank credit cheaper	Most A-rated avoid bond market
Infrastructure (15-year)	**N/A (ALM constraint)**	**9.5–11%+ (illiquid)**	**Bond market prohibitive**	**Forced to bank/DFI — or project stalls**

The adverse selection dynamic is self-reinforcing: the issuers most capable of creating a liquid, well-priced bond market (AAA/AA corporates) use it sparingly because it offers only marginal advantages over bank credit for short tenors. The issuers who would most benefit from the bond market (mid-market corporates, infrastructure projects, green energy developers) find it inaccessible or prohibitively expensive. The result is a market that serves its best-positioned participants least efficiently and fails to reach those who need it most.

Benchmark Yield Curve: Present but Fragmented

India does have a government securities yield curve that is well-developed and actively traded. For corporate bonds, however, the absence of frequent, transparent issuance across multiple tenors and rating categories means that no reliable corporate benchmark yield curve exists beyond the 3–5 year AAA segment. This creates several downstream problems:

- Infrastructure project developers cannot price long-tenor bonds because there is no market reference for 15–25-year corporate spreads — pricing becomes a negotiated estimate, introducing risk premium for opacity.
- Mutual fund NAV calculations for long-dated bonds rely on theoretical models rather than observed market prices, reducing investor confidence in mark-to-market valuations.
- RBI's monetary policy transmission is impaired: changes in policy rates take longer to flow through to corporate borrowing costs when the benchmark curve is thin and illiquid.
- Foreign investors face additional uncertainty: without a transparent corporate yield curve, assessing relative value in Indian corporate bonds requires expensive proprietary research that smaller global investors cannot justify.

2.5 Sectoral and Geographic Concentration: Where the Market Is and Isn't

India's corporate bond market is not merely concentrated by issuer type and rating — it is also profoundly concentrated by sector and geography. Understanding where the market operates, and where it is conspicuously absent, defines the specific sectoral reform agenda for the chapters that follow.

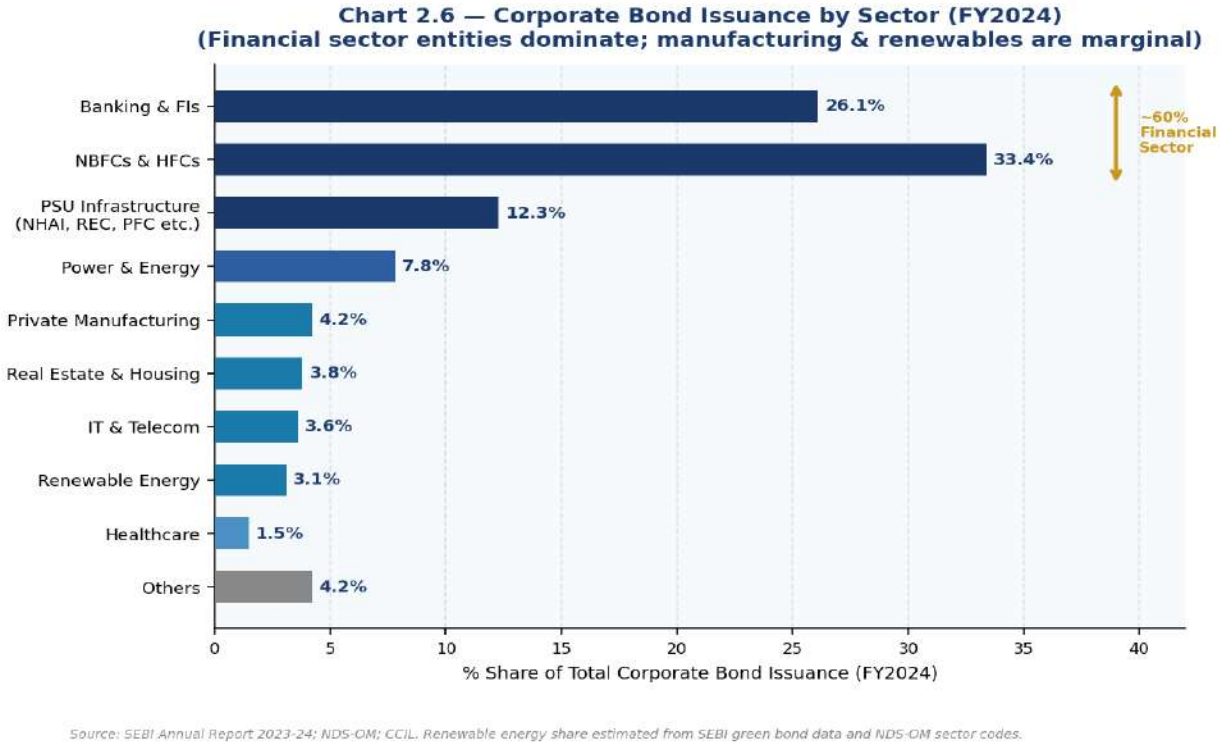


Chart 2.6: Corporate Bond Issuance by Sector FY2024 (% share) | Source: SEBI Annual Report 2023-24; NDS-OM sector codes; CCIL

The Financial Sector's 60% Share — And the Sectors That Are Missing

Chart 2.6 presents the starkest visualisation of India's bond market imbalance. The financial sector — comprising banking institutions, NBFCs, HFCs, and PSU finance entities — accounts for approximately 60% of all corporate bond issuance. The sectors most critical to Viksit Bharat's physical and social ambition are barely present:

Sector	Bond Issuance Share (FY2024)	Share of India's GDP (FY2024)	Gap Analysis
Financial Services (Banks, NBFCs, HFCs)	~60%	~7–8%	Massively over-represented — financial sector uses bonds as funding tool
PSU Infrastructure (NHAI, REC, PFC, IRFC)	~12%	~3%	Present but limited to AAA-rated entities; project-level bonds absent
Power & Energy (conventional)	~8%	~3%	PSU-dominated; private power issuer access is limited

Sector	Bond Issuance Share (FY2024)	Share of India's GDP (FY2024)	Gap Analysis
Private Manufacturing	~4%	~17%	Severely under-represented — core gap for industrial growth financing
Renewable Energy (Green Bonds)	**~3%**	**~2% (fast growing)**	**Critical gap — green finance remains nascent despite sector growth**
Healthcare	~1.5%	~5%	Virtually absent — major gap for social infrastructure financing
Affordable Housing (project-level)	~2%	~7% (real estate + construction)	RMBS and project bonds are absent; only HFC bond issuance present
Municipal / Sub-Sovereign	**<0.1%**	**~5% of investment**	**Essentially non-existent — critical gap for urban infrastructure**

Geographic Concentration: The Mumbai Monoculture

India's corporate bond market is geographically concentrated in a manner that mirrors its sectoral concentration. Virtually all corporate bond origination, distribution, and trading infrastructure is located in or managed from Mumbai — the home of India's financial sector, SEBI, BSE, NSE, RBI, CCIL, and FIMMDA.

Geographic Reality of India's Bond Market

- ~85–90% of corporate bond issuance by value is originated by entities headquartered in Mumbai, Delhi-NCR, or Ahmedabad — dominated by financial sector entities.
- State-level and regional corporate issuers — manufacturers in Tamil Nadu, logistics companies in Gujarat, IT companies in Bengaluru — overwhelmingly rely on bank credit rather than bond markets.
- Municipal bonds: Of India's 4,000+ urban local bodies, fewer than 15 have ever accessed the bond market. Mumbai, Pune, Ahmedabad, Hyderabad, Indore, and Bhopal account for virtually all municipal bond issuance.
- GIFT City (Gujarat International Finance Tech-City) offers potential as a platform for offshore bond issuance and international investor participation, but volumes remain very small relative to the domestic market.
- The absence of regional bond market infrastructure — regional investor conferences, local rating agency presence, regional bond underwriting desks — makes bond market access practically impossible for most of India's geographically dispersed corporate sector.

This geographic concentration is both a symptom and a cause of market shallowness. It is a symptom because only Mumbai-based financial entities have the institutional relationships and market knowledge to navigate bond issuance. It is a cause because the absence of regional market infrastructure ensures that

regional corporates never develop the capacity to access capital markets — perpetuating their dependence on local bank branches.

2.6 International Context: Where India Stands in the Global Benchmark Matrix

India's bond market gaps are most clearly understood in international comparison. The following matrix — visualised in Chart 2.7 — positions India alongside key comparator economies on two dimensions: corporate bond market depth (as % of GDP) and average corporate bond tenor.

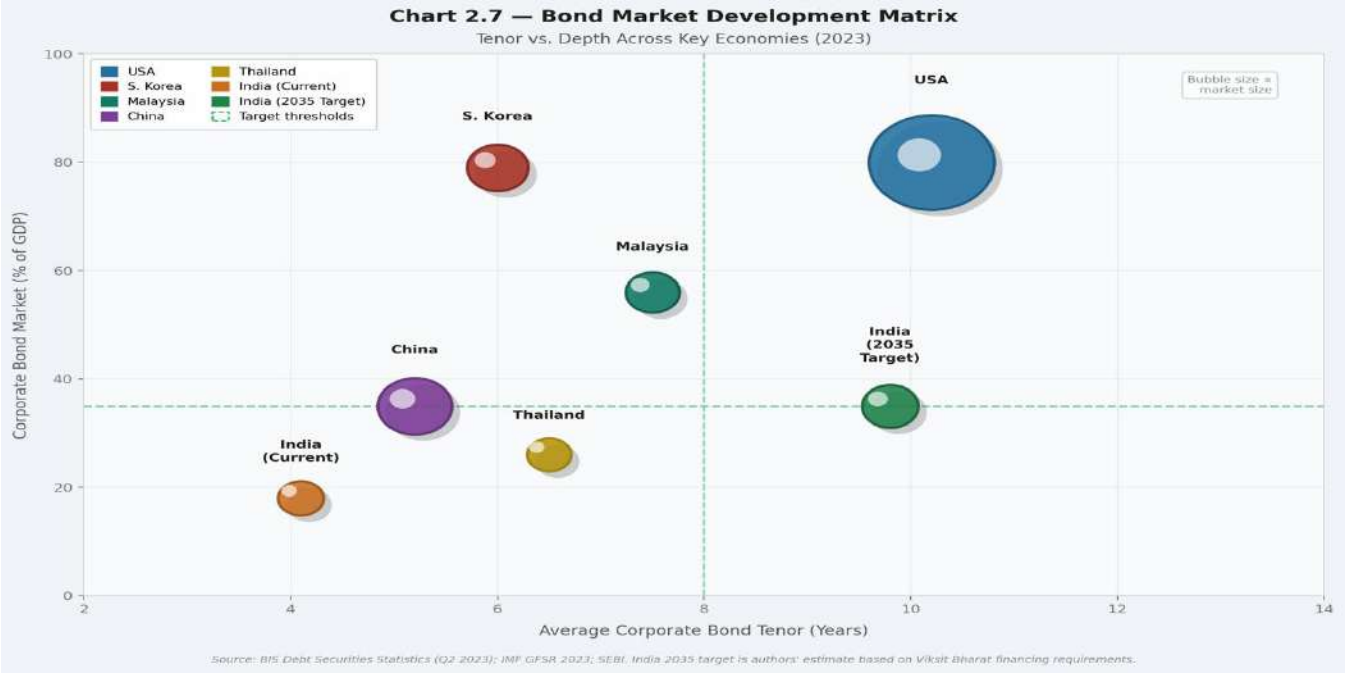


Chart 2.7: Bond Market Development Matrix — Tenor vs. Depth Across Key Economies (2023) | Source: BIS; IMF GFSR 2023; SEBI; Authors' estimates

The chart reveals India's position clearly: it sits in the lower-left quadrant — shallow market depth and short average tenor — while peer economies like Malaysia, South Korea, and China occupy positions of both greater depth and longer duration. The 'India 2035 Target' marker illustrates the distance the market must travel — from 18% of GDP and 4-year average tenor, to 38% of GDP and 10-year average tenor — within a decade.

Metric	India FY2024	Malaysia 2023	South Korea 2023	China 2023	India 2035 Target
Corporate Bond Mkt (% GDP)	~18%	~55%	~78%	~35%	38–40%
Avg. Corporate Bond Tenor	~4.2 years	~7.5 years	~6 years	~5 years	~10 years
Non-Financial Corp Share (%)	~16–17%	~40%	~45%	~55%	~35%
Retail Investor Share (%)	<1%	~12%	~18%	~8%	~10%

Metric	India FY2024	Malaysia 2023	South Korea 2023	China 2023	India 2035 Target
Below-AA Bond Share (%)	~12%	~30%	~35%	~28%	~25%
Infrastructure Bond Share (%)	**<5%**	**~18%**	**~22%**	**~15%**	**~18–20%**

Chapter 2: Summary — Five Structural Gaps, One Coherent Reform Agenda

The diagnostic presented in this chapter reveals not five separate problems but a single integrated structural failure operating across five dimensions simultaneously. Each gap reinforces the others, creating a self-perpetuating cycle of market shallowness that no single regulatory intervention can break in isolation.

Structural Gap	Key Data Point	Consequence for Viksit Bharat
Private Placement Dominance	>95% of issuance is private placement (SEBI FY2024)	Retail exclusion; opaque pricing; illiquid secondary market
Tenor Compression	~53% of issuance ≤5 years; >10 years = 8% (SEBI FY2024)	Cannot finance infrastructure, renewables, or housing at required scale
Issuer Concentration	Financial sector >60%; non-financial corporates <17% (SEBI FY2024)	Viksit Bharat's industrial and social economy has no bond market access
Pricing Inefficiency	AAA/AA = 74% of issuance; no functional A/BBB/HY market	Adverse selection; mid-market excluded; no benchmark curve beyond 5yr
Sectoral/Geographic Gaps	**Renewables <3%; municipal <0.1%; non-Mumbai <15% (estimated)**	**Green transition, urban infra, and regional growth cannot access capital markets**

The Central Finding

India's corporate bond market is not a market with room for improvement. It is a market with a structural design problem. It efficiently serves a narrow set of AAA/AA-rated financial sector entities for short-tenor borrowing — and fails virtually everyone else. This is not a criticism of SEBI's regulatory work, which has been substantial and directionally correct. It is a recognition that the market's architecture — built around private placements, institutional investors, and Mumbai-centric distribution — was designed for a different era and a different economy than the one Viksit Bharat requires.

The chapters that follow address each gap in turn — beginning with the secondary market (Chapter 3), which is both the consequence of primary market shallowness and the prerequisite for deepening it.

CHAPTER 3

The Secondary Market: Structure, Liquidity, and the Missing Retail Investor

FY2018–FY2024 | Drawing on SEBI Annual Statistics, CCIL data, FIMMDA records, ICMA studies, and global comparators

Secondary market liquidity is not a refinement of the bond market — it is its lifeblood. No institutional investor with a fiduciary duty will commit capital to a ten-year corporate bond if they cannot exit the position when portfolio conditions change. No retail investor will move savings from a bank fixed deposit into a bond they cannot sell. No new issuer will venture into the primary market if they know that their bonds will trade at distressed prices the moment they are listed. The secondary market is simultaneously the consequence of primary market depth and the prerequisite for achieving it.

This chapter provides a rigorous, data-anchored assessment of India's corporate bond secondary market across five dimensions: trading volumes and turnover ratios; market microstructure and the role of electronic platforms; the liquidity bifurcation problem; SEBI's electronification initiatives and their honest assessment; and the retail investor gap — the most consequential failure of the secondary market for Viksit Bharat's goal of broad-based, democratised capital formation.

Chapter Note: Consistent Comparison Period

All data in this chapter uses the FY2018–FY2024 comparison period consistent with Chapters 1 and 2. Where FY2025 provisional data is available from SEBI/CCIL publications, it is referenced in footnotes but not used in trend analysis to maintain comparability.

3.1 Trading Volumes and Turnover Ratios: The 20-Times Liquidity Gap

The contrast between India's government securities (G-sec) secondary market and its corporate bond secondary market is one of the starkest liquidity differentials anywhere in the world. Both markets share the same post-trade infrastructure (CCIL), the same settlement system, and largely the same institutional investor base. And yet they are separated by a chasm of liquidity that has persisted, and only marginally narrowed, over the FY2018–FY2024 period.

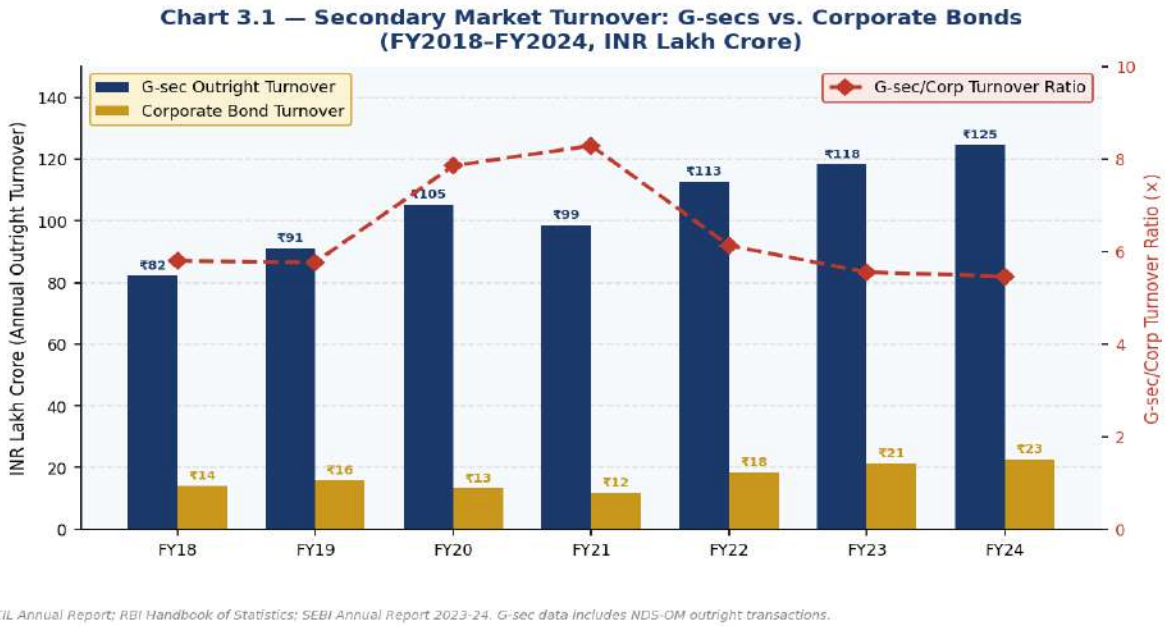


Chart 3.1 — Secondary Market Turnover: G-secs vs. Corporate Bonds FY2018–FY2024 | Source: CCIL Annual Report; RBI Handbook of Statistics; SEBI Annual Report 2023-24

The numbers are telling. In FY2024, the G-sec outright secondary market recorded approximately ₹124.6 lakh crore in annual turnover — nearly **5.5 times the outstanding G-sec stock.** Corporate bond secondary market turnover, by contrast, was approximately ₹22.8 lakh crore — just **0.27 times** the outstanding corporate bond stock. The G-sec market is approximately 5.5× the size of the corporate bond market by outstanding stock but generates nearly **6× more secondary market turnover.**

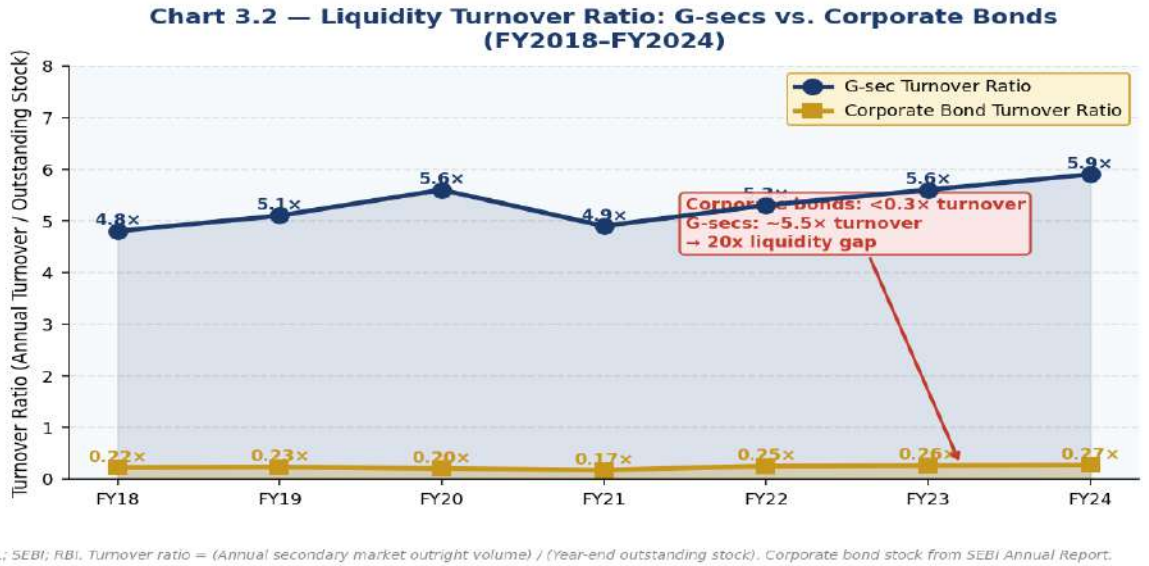


Chart 3.2 — Liquidity Turnover Ratio: G-secs vs. Corporate Bonds FY2018–FY2024 | Source: CCIL; SEBI; RBI. Turnover ratio = Annual outright volume / Year-end outstanding stock

Key Liquidity Metrics: FY2024 Comparison (SEBI/CCIL Data)

- G-sec Annual Outright Turnover: ₹124.6 lakh crore | Turnover Ratio: ~5.9×

- Corporate Bond Annual Secondary Turnover: ₹22.8 lakh crore | Turnover Ratio: ~0.27×
- Implied Liquidity Gap (turnover ratio): G-sec market is approximately 22× more liquid than corporate bonds
- Average daily G-sec turnover (FY2024): ₹49,800 crore | Average daily corp bond secondary: ₹9,120 crore
- Corp bond trades reported on exchanges (SEBI RFQ & listed): ₹4.1 lakh crore (~18% of total)
- Remaining OTC/voice corp bond turnover (not exchange reported): ₹18.7 lakh crore (~82% of total)
- Source: CCIL Annual Report 2023-24; SEBI Annual Report 2023-24; RBI Handbook of Statistics on the Indian Economy 2023-24

Why the G-sec Market Is Liquid — And What Corporate Bonds Are Missing

The G-sec market's liquidity advantage is structural, not accidental. It rests on four pillars that the corporate bond market lacks entirely or in part: a mandated market-maker system (Primary Dealers committed to two-way quoting); a single, standardised benchmark instrument (10-year G-sec) around which market consensus forms; fully electronic trading on NDS-OM with real-time price transparency; and a deep institutional investor base (banks holding G-secs as SLR assets with natural two-way trading needs). Corporate bonds have none of these in the same measure.

Feature	G-sec Market	Corporate Bond Market	Gap Assessment
Market-Maker Commitment	Primary Dealers: mandated two-way quoting	No market-maker obligation exists	Critical structural absence
Benchmark Instrument	10-yr G-sec: universally tracked	No single benchmark; fragmented ISINs	Hundreds of ISINs, each illiquid
Electronic Trading	NDS-OM: fully electronic, real-time	82% OTC/voice; 18% exchange-reported	Majority of market invisible
Price Transparency	100% real-time on NDS-OM + Bloomberg terminal	Indicative only; no live executable quotes	Retail/mid-size investor excluded
Settlement	T+1 on CCIL; efficient STP	T+2/T+3; partial STP; fails more common	Settlement uncertainty raises costs
Investor Base	**Banks (SLR), insurance, FPI: all active**	**Mutual funds (~40%), insurance (~30%): hold-to-maturity dominant**	**Hold-to-maturity kills secondary turnover**

3.2 Market Microstructure: The OTC Labyrinth

India's corporate bond secondary market remains overwhelmingly over-the-counter (OTC) in character — meaning that trades are negotiated bilaterally between counterparties rather than matched on a centralised electronic platform. This OTC structure is not a transitional feature awaiting reform; it is the

market's settled architecture, reflecting the preferences of institutional participants who handle large, bespoke transactions and the regulatory limitations on retail participation.

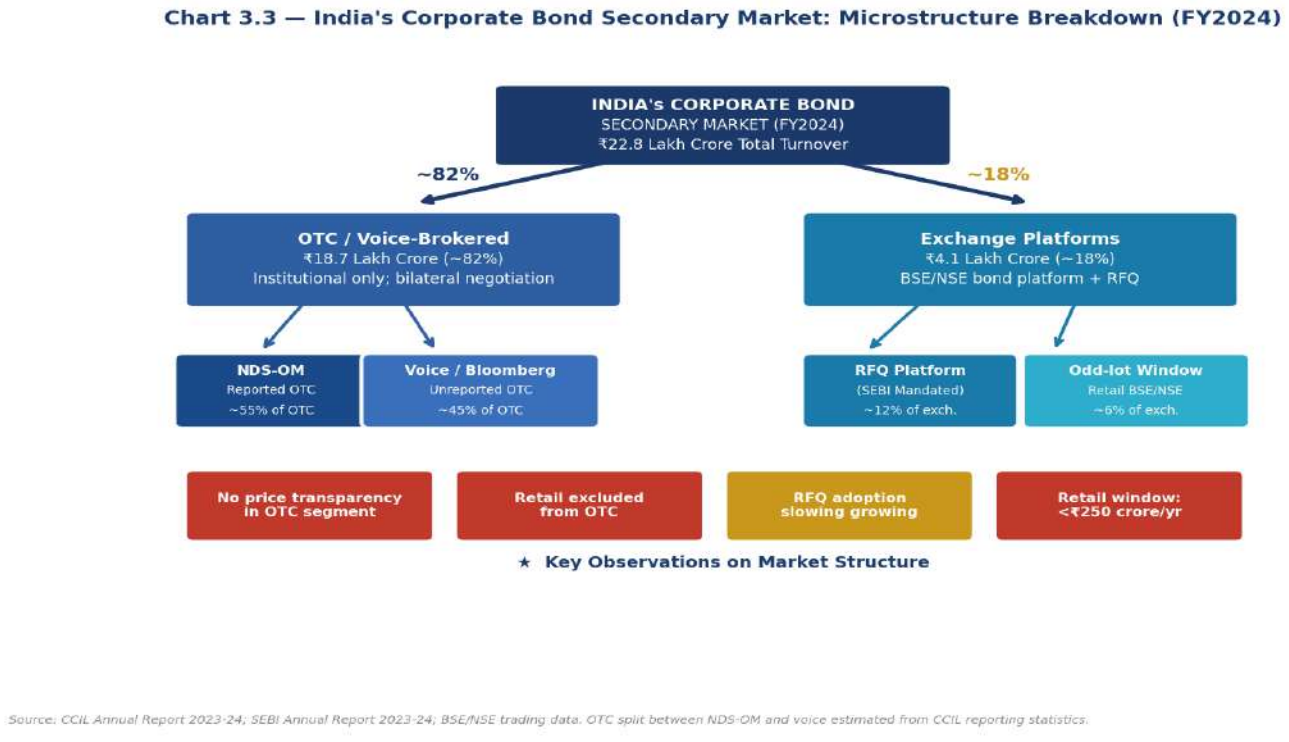


Chart 3.3 — India's Corporate Bond Secondary Market: Microstructure Breakdown FY2024 | Source: CCIL Annual Report 2023-24; SEBI Annual Report 2023-24; BSE/NSE bond platform data

The OTC-to-Exchange Ratio — And Why It Has Not Shifted

As Chart 3.3 illustrates, approximately 82% of corporate bond secondary market turnover in FY2024 remained in the OTC/voice-brokered segment, despite SEBI's RFQ platform mandate (implemented in July 2020) and successive reforms to improve exchange reporting. The 18% that flows through exchange platforms represents progress — from near-zero in FY2018 — but the OTC segment's absolute dominance has not fundamentally changed.

- The NDS-OM (Negotiated Dealing System — Order Matching) platform, operated by the RBI's CCIL subsidiary, handles the reporting of OTC corporate bond trades and the settlement of all trades. But NDS-OM is a reporting and settlement system, not a price discovery engine for corporate bonds, as it is for G-secs.
- Bloomberg terminals remain the primary communication medium between institutional counterparties for OTC corporate bond enquiries — voice calls supplemented by Bloomberg chat and message. This is analogous to the pre-electronic era of equity markets.
- Inter-dealer brokers (IDBs) — who play a critical liquidity-aggregating role in European and US bond markets — are less developed in India, with only a handful of registered entities providing meaningful bond intermediation.
- The RFQ (Request for Quote) model mandated by SEBI on exchange platforms works for standardised institutional tickets but is structurally unsuited to retail or sub-₹1 crore transaction, where the friction of the RFQ process outweighs the transparency benefit.

The Role of Primary Dealers: Present but Narrowly Focused

India's 21 Primary Dealers (PDs) — designated by RBI — play a critical role in the G-sec market, where they are obligated to support auctions and maintain two-way prices. Their role in the corporate bond secondary market is, by contrast, minimal. PDs are not obligated to quote corporate bond prices, and most focus their secondary market activity almost exclusively on G-secs and State Development Loans (SDLs). The absence of a corporate bond market-making obligation on PDs — or on any designated entity — is one of the most significant structural gaps in India's bond market architecture.

International Reference: Market-Making in Corporate Bonds

- In the US, primary dealers are expected to maintain liquidity across both Treasury and corporate bond markets. MarketAxess and Tradeweb — the leading US electronic corporate bond platforms — require registered market-makers to respond to RFQs within defined time limits, creating a functioning if imperfect liquidity provision mechanism.
- In Europe, MiFID II's Systematic Internaliser (SI) regime creates an obligation for large dealers to provide firm quotes for liquid bonds on request, bringing OTC corporate bond trading onto a 'lit' (transparent) platform. India has no equivalent regime for corporate bonds.
- South Korea's Bond Market Association maintains a registered market-maker system for corporate bonds, with designated dealers required to quote two-way prices for a defined set of benchmark corporate bonds daily.
- India's opportunity: Designating a subset of SEBI-registered market participants as 'Corporate Bond Market Makers' with SEBI-approved incentives (stamp duty exemptions, priority in SEBI-mandated transactions) could begin to replicate these functions.

3.3 The Liquidity Bifurcation Problem: A Market of Two Halves

The single most consequential structural feature of India's corporate bond secondary market is what this report terms 'liquidity bifurcation' — the phenomenon whereby the secondary market's modest liquidity is concentrated almost entirely in short-tenor, high-rated (AAA/AA) paper, leaving the rest of the market in varying states of illiquidity ranging from 'thin' to 'essentially absent'.

This is not a uniquely Indian phenomenon. The ICMA's 2020 study of European investment grade corporate bond secondary markets documented precisely the same pattern — what they called 'bifurcation between very small, odd-lot transaction sizes where liquidity is adequate, and larger block trades which have become far more challenging to execute.' India's bifurcation is more extreme on every dimension: the liquid zone is narrower, the illiquid zone is deeper, and the absence zone is absolute.

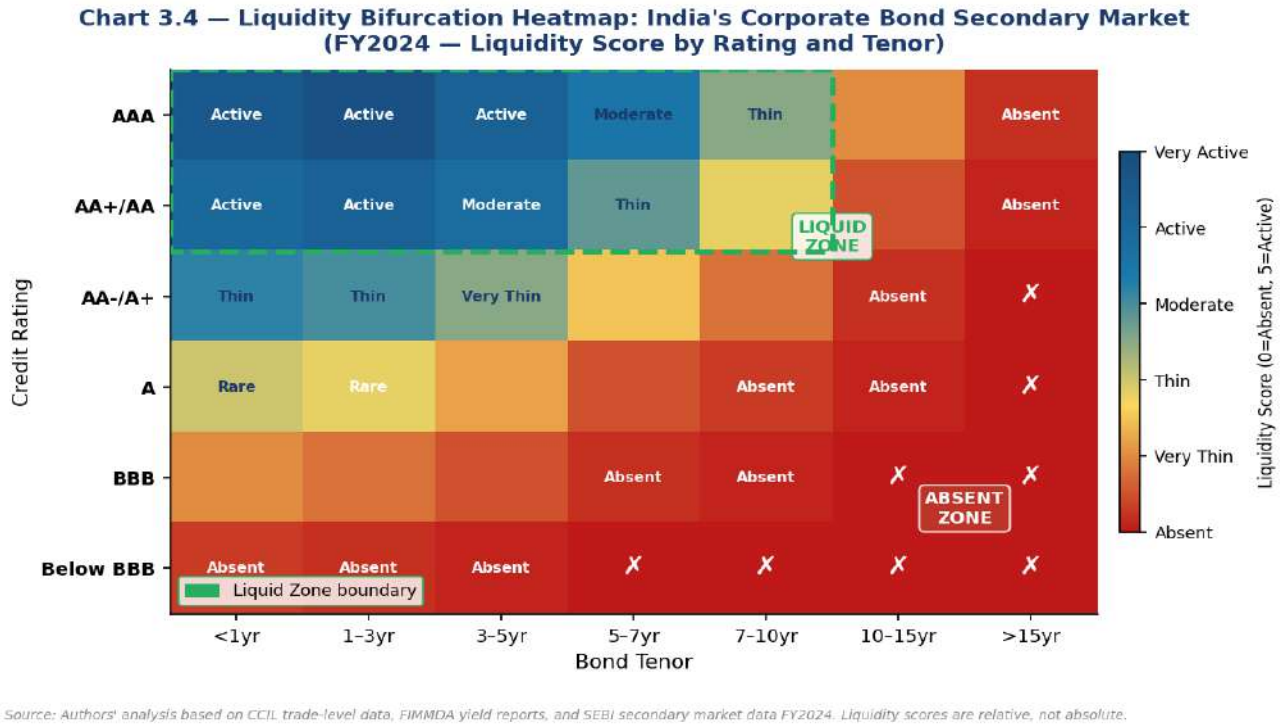


Chart 3.4 — Liquidity Bifurcation Heatmap: India's Corporate Bond Secondary Market FY2024 | Source: Authors' analysis; CCIL trade data; FIMMDA yield reports; SEBI secondary market data

Reading the Heatmap: What It Reveals About Market Structure

Chart 3.4 maps liquidity conditions across six rating categories and seven tenor buckets, assigning a liquidity score from 0 (absent) to 5 (active). The pattern that emerges is unambiguous:

- The Liquid Zone (green boundary): AAA and AA bonds with tenors up to 7 years. This is where genuine two-way markets exist, RFQ responses are received within minutes, and bid-ask spreads are manageable. This zone represents perhaps 30–35% of outstanding corporate bonds by number of ISINs but accounts for over 80% of secondary market turnover.
- The Thin Zone: AA-/A+ bonds across all tenors; AAA/AA bonds beyond 7 years. Transactions happen, but slowly, with significant information leakage risk and wide bid-ask spreads. Institutional investors can exit but at material price concession.
- The Illiquid Zone: A-rated and below bonds across most tenors; any paper beyond 10 years regardless of rating. Trades are event-driven rather than continuous. A fund manager needing to exit a 15-year A-rated infrastructure bond may require weeks of search for a willing counterparty.
- The Absent Zone: All paper rated BBB or below across medium and long tenors; virtually all bonds beyond 15 years. For practical purposes, no secondary market exists. Once placed, these bonds are held to maturity by whoever bought them.

Why Bifurcation Matters for Viksit Bharat

The liquidity bifurcation problem directly determines which bonds can be issued in the primary market. Investors will only buy instruments they believe they can exit if needed. If the secondary market for 15-year infrastructure bonds is absent, no institutional investor — no matter how long their stated investment horizon — will confidently buy such bonds at scale. This creates the fundamental linkage between secondary market liquidity and primary market breadth: you cannot build a deep primary

market for long-tenor infrastructure bonds without first building a secondary market that offers some exit option.

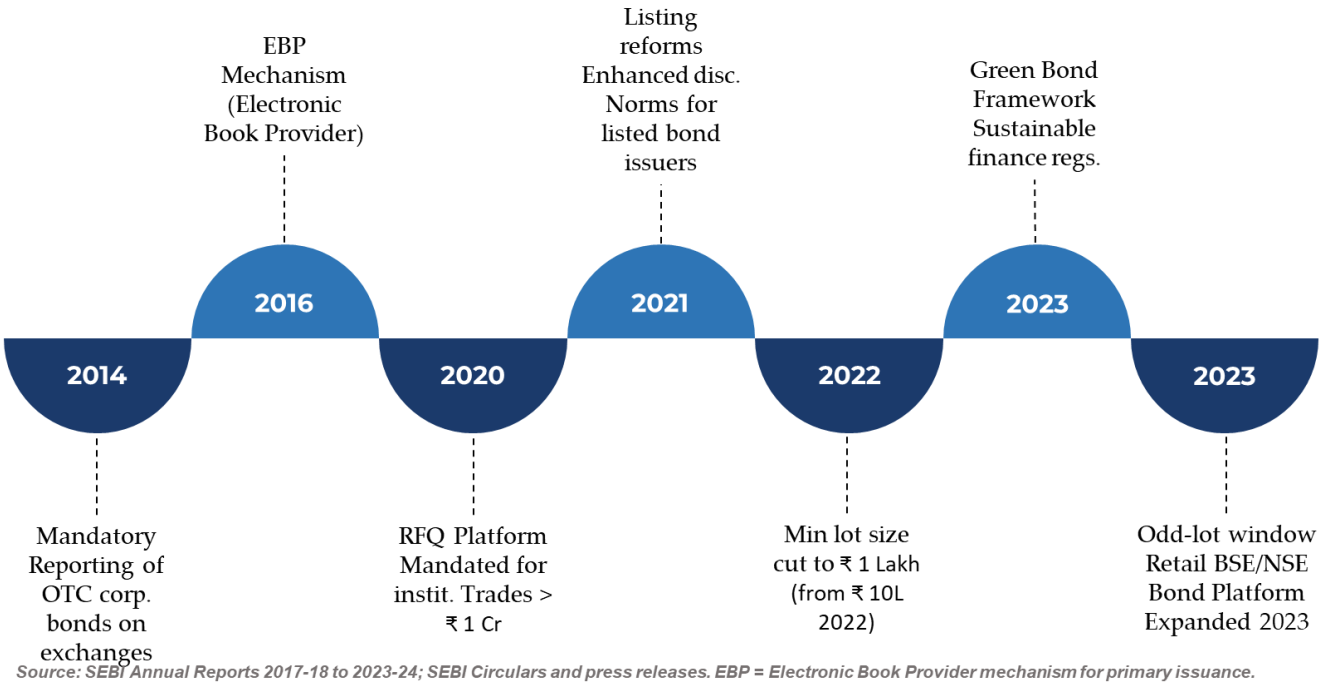
Bond Type Needed for Viksit Bharat	Typical Required Tenor	Current Secondary Liquidity	Consequence
National Highways / Road Bonds	15–25 years	Absent (score < 0.5)	Primary issuance effectively impossible without credit enhancement
Renewable Energy Project Bonds	12–20 years	Absent to Very Thin	Green bonds held to maturity by DFIs only; no market price discovery
Urban Infrastructure / Municipal	10–20 years	Absent	No secondary market = no institutional appetite for primary
Affordable Housing (RMBS-type)	10–15 years	Very Thin	Securitisation market underdeveloped; no real secondary market
Manufacturing (Mid-market, A/BBB)	5–10 years	Thin to Absent	Mid-market bond market functionally closed
PSU AAA 5-year Bonds	**3–7 years**	**Active to Moderate**	**Only segment with functional secondary market — the entire "liquid zone"**

The ICMA literature on European bond markets identified the **'axe-driven'** nature of illiquid bond secondary markets — where transactions only occur when a market-maker happens to hold an opposing position, rather than when investors want to trade. India's corporate bond market beyond the liquid zone is **entirely axe-driven** — making any price obtained for illiquid paper a function of the seller's desperation and the buyer's opportunism rather than genuine market price discovery.

3.4 SEBI's Electronification Initiatives: Necessary Steps, Insufficient Outcomes

SEBI has pursued a sustained programme of bond market modernisation over the FY2018–FY2024 period, with a particular focus on electronification of secondary market trading and reporting. This section documents each major initiative, assesses its implementation, and provides an honest evaluation of outcomes — acknowledging both genuine progress and the significant distance that remains.

Chart 3.5 – SEBI's Electronification Journey: Key Milestones in Bond Market Modernization (2017-2024)



Source: SEBI Annual Reports 2017-18 to 2023-24; SEBI Circulars and press releases. EBP = Electronic Book Provider mechanism for primary issuance.

Chart 3.5 — SEBI's Electronification Journey: Key Milestones in Bond Market Modernisation 2017–2024 | Source: SEBI Annual Reports 2017-18 to 2023-24; SEBI circulars

Initiative 1: Electronic Book Provider (EBP) Mechanism — April 2016

The EBP mechanism, mandated for primary issuances of listed debt securities above ₹200 crore, introduced competitive electronic bidding for institutional investors in the primary market. Before EBP, pricing in private placements was entirely bilateral and opaque. EBP brought a degree of price discovery through competitive bidding from QIBs.

Assessment: Positive but limited in scope. EBP has improved price discovery for large institutional primary placements and is now well-established. However, it is limited to primary-market institutional transactions and has no bearing on secondary-market liquidity or retail access. However, SEBI through a circular dated May,2026 had reduced the requirement of issuance threshold to ₹20 crore and above, thereby providing opportunity for long tail of smaller issuances where pricing is most opaque.

Initiative 2: Mandatory OTC Trade Reporting to Exchanges — 2014

SEBI required all OTC transactions in listed corporate bonds to be reported to stock exchanges within 15 minutes of execution. This created, for the first time, a post-trade transparency record of corporate bond transactions — analogous in intent to the US FINRA TRACE system introduced in 2002.

Assessment: Critical infrastructure step, but the data remains underutilised. The reporting system exists and is largely complied with by institutional participants. However, the reported data is not accessible to retail investors or smaller market participants in real time in a user-friendly format. Unlike US TRACE, where every trade is publicly visible within 15 minutes on FINRA's public website, India's equivalent system does not publish trade-by-trade data in an accessible consumer interface. The infrastructure exists; the transparency benefit is trapped in regulatory databases.

Initiative 3: RFQ Platform Mandate for Institutional Trades — July 2020

SEBI mandated that all regulated entities (mutual funds, insurance companies, pension funds, etc.) must execute at least a specified proportion of their secondary corporate bond transactions through the RFQ platform on stock exchanges. The intention was to move institutional block trading from opaque OTC onto transparent, reported exchange platforms.

Assessment: Mixed — adoption has grown but remains structurally limited. Chart 3.6 shows that exchange-platform volumes have grown from ₹2,100 crore in FY2018 to ₹24,800 crore in FY2024, and trade count has risen substantially. However, this represents only approximately 1.1% of total corporate bond secondary turnover — a marginal share despite the mandate.

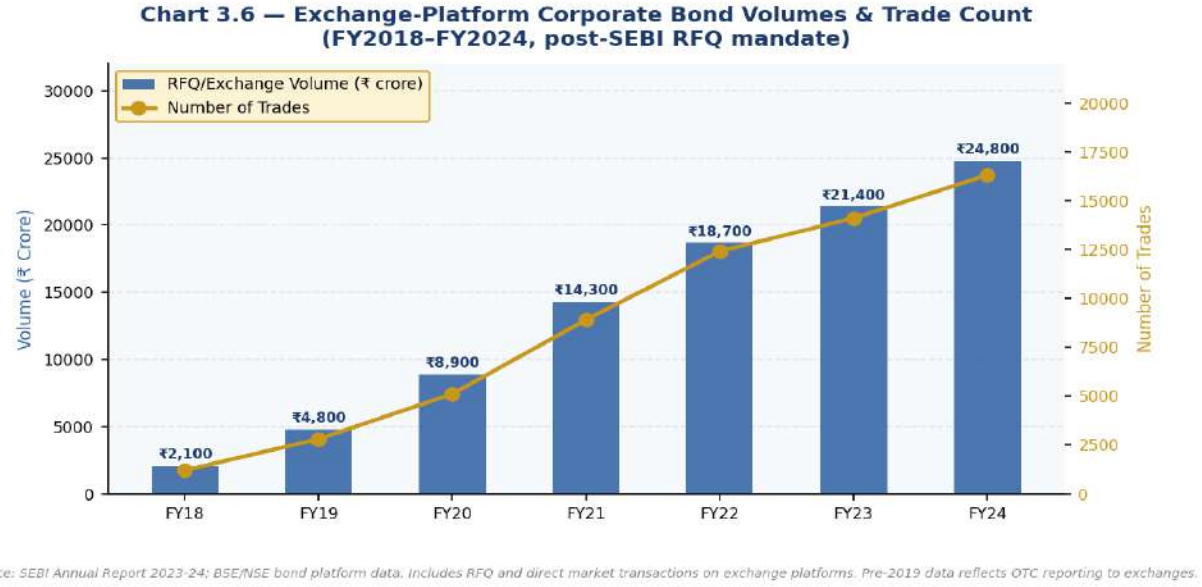


Chart 3.6 — Exchange-Platform Corporate Bond Volumes & Trade Count FY2018–FY2024 | Source: SEBI Annual Report 2023-24; BSE/NSE bond platform data

The RFQ platform's limitations reflect a fundamental tension: **institutional investors prefer OTC for block trades because information leakage on an exchange platform can adversely move the market against them** — particularly for less liquid bonds. This is precisely the dynamic that ICMA's European market studies identified as 'the downside to RFQs from a buy-side perspective' — that once information about a potential trade is discussed, it can be acted upon, creating market impact. India's institutional investors have not been persuaded that the RFQ platform's transparency benefits outweigh this information leakage risk for large transactions.

Initiative 4: Minimum Investment Size Reduction — 2024

SEBI reduced the minimum investment size for publicly listed corporate bonds from ₹1 lakh to ₹10000 per bond, effective from July 2024. This was a significant and long-overdue reform, directly addressing one of the most concrete barriers to retail participation.

Assessment: Positive direction; limited uptake to date. The reduction to ₹1 lakh is the right direction of travel, and SEBI has subsequently proposed a further reduction to ₹10,000 — which, if implemented, would be genuinely transformational for retail access. However, actual retail participation in the primary bond market has not materially increased following the ₹1 lakh reform because the other barriers to retail participation (complex documentation, limited distribution platforms, illiquid secondary market) remain fully intact. The minimum size was a necessary but not sufficient condition for retail access.

Initiative 5: Odd-Lot Window and Retail Bond Platforms — 2023

SEBI and the exchanges introduced designated odd-lot trading windows on BSE and NSE for retail investors to buy and sell listed corporate bonds in smaller denominations. This created, in principle, a secondary market access point for retail bond investors.

Assessment: Structurally correct but volumes are negligible. The odd-lot window exists and is technically functional, but annual retail bond trading volumes through this mechanism remain below ₹250 crore — a fraction of even a single large institutional trade. The platform's existence is meaningful as infrastructure, but the retail investor base to use it does not yet exist, and the supply of liquid bonds accessible through it is severely constrained by the illiquidity of the secondary market itself.

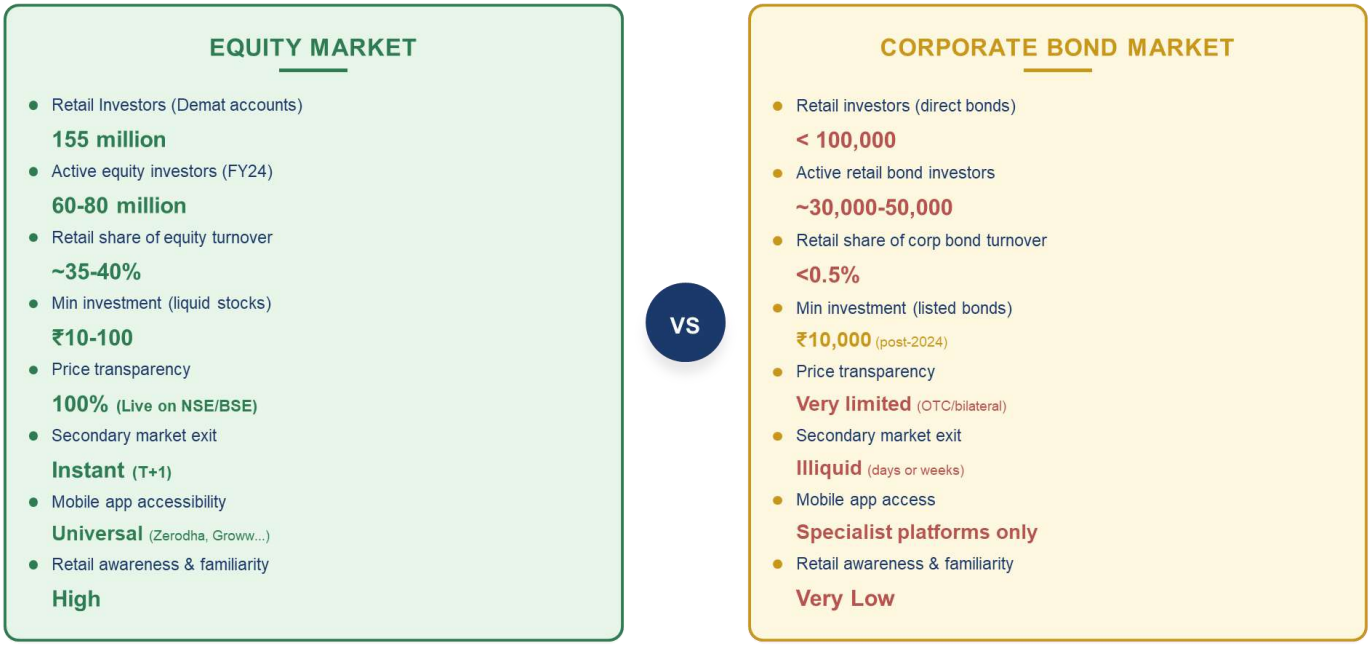
Honest Assessment: SEBI's Electronification Programme — What Has Worked and What Has Not

- WHAT HAS WORKED: EBP has improved primary market pricing transparency for institutional investors. OTC reporting has created a post-trade data record. Exchange platform infrastructure has been built and is functional. Minimum lot size has been reduced in the right direction. Green bond and social bond frameworks have been established.
- WHAT HAS NOT WORKED (YET): Secondary market liquidity has not materially improved despite RFQ mandates — the OTC share remains 82%. Retail participation remains below 0.5% of secondary market volume. The post-trade data collected under exchange reporting is not publicly accessible in TRACE-equivalent real-time format. No market-maker obligation for corporate bonds has been introduced. The bifurcation between liquid AAA short-tenor bonds and everything else has not narrowed.
- THE HONEST CONCLUSION: SEBI's electronification measures are directionally correct and represent genuine progress in market infrastructure. But they have treated symptoms rather than causes. The causes — absence of market-makers, hold-to-maturity investor dominance, lack of public post-trade data, retail distribution infrastructure — require more fundamental structural interventions that go beyond exchange-platform mandates.

3.5 The Retail Investor Gap: India's Most Consequential Market Failure

India has built one of the world's most remarkable retail equity investor bases. **Over 155 million demat accounts** have been opened as of FY2024. The **Systematic Investment Plan (SIP) ecosystem** has brought mutual fund equity investing to middle India. **Zerodha, Groww, and Upstox** have made equity trading accessible from a smartphone in seconds. Against this backdrop, India's retail corporate bond market is a **stunning failure of financial inclusion.**

Chart 3.7 — The Retail Investor Gap: India's Bond Market vs. Equity Market

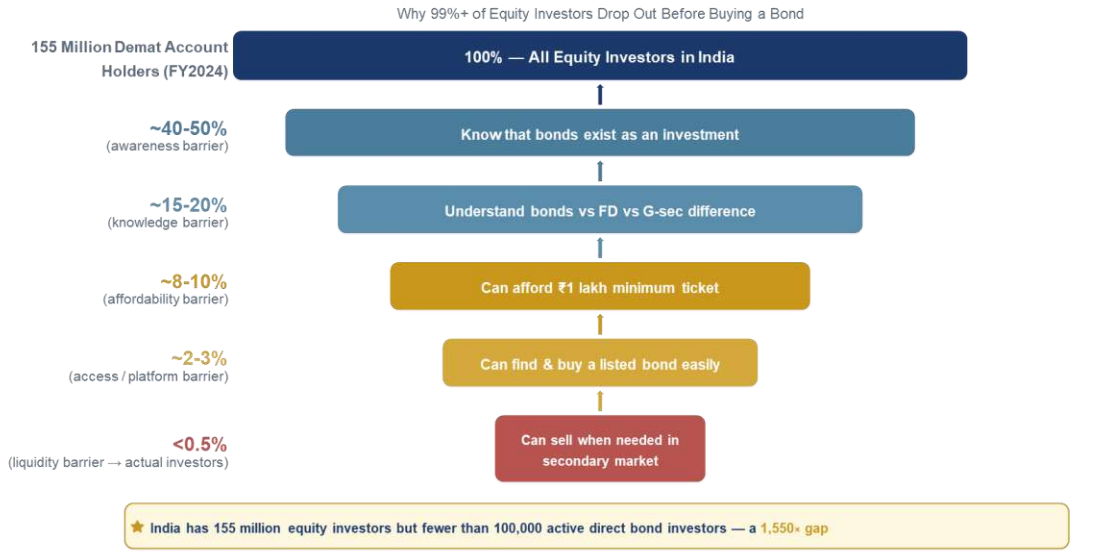


Source: SEBI Annual Report 2023-24; NSDL/CDSL Demat statistics; BSE/NSE odd-lot window data. Retail bond investor estimate is authors' approximation from SEBI public issue data and exchange odd-lot volumes.

Chart 3.7 — The Retail Investor Gap: Equity Market vs. Corporate Bond Market FY2024 | Source: SEBI Annual Report 2023-24; NSDL/CDSL Demat statistics; BSE/NSE odd-lot window data

The contrast in Chart 3.7 is not merely a matter of degree — it is a categorical difference. India's equity market has successfully democratised investment for over 100 million citizens. Its corporate bond market has not democratised investment for even 100,000 citizens. Understanding why requires tracing the specific barriers that cause retail investors to drop out at each stage of the journey from awareness to investment to exit.

Chart 3.8 — The Retail Bond Funnel



Source: Authors' analysis synthesising SEBI investor survey data, AMFI retail investor studies, and exchange odd-lot window participation data FY2024.

Chart 3.8 — The Retail Bond Funnel: Why 99%+ Drop Out Before Investing | Source: Authors' analysis; SEBI investor survey data; AMFI studies; exchange odd-lot window participation data FY2024

Barrier 1: Product Complexity and Financial Literacy

Corporate bonds are genuinely more complex than equity shares. A retail investor needs to understand credit ratings, yield-to-maturity, duration risk, call options, and the difference between coupon and yield. Equity investing, by contrast, requires understanding a price that goes up and down. SEBI's investor awareness programmes have focused primarily on mutual funds and equity markets, with bond market education receiving minimal attention in mainstream financial literacy campaigns.

- The NSE and BSE bond platforms do not have the same level of investor-facing education material, comparison tools, or guided investment experiences that equity platforms offer.
- Fixed deposits — the retail investor's default fixed income instrument — require zero product understanding. Competing with this familiarity requires active investor education that has not been prioritised.

Barrier 2: Minimum Ticket Sizes — A Legacy That Has Not Fully Changed

The reduction of minimum lot size from ₹10 lakh to ₹1 lakh in 2022, and the proposed further reduction to ₹10,000, are the right policy moves. But the transition has been slow and the current ₹1 lakh minimum still excludes the majority of India's 300 million middle-class households for whom ₹1 lakh represents a meaningful share of annual savings.

Consider the comparison: a mutual fund SIP can be started for **₹250 per month (Chhoti SIP).** A Sovereign Gold Bond can be purchased for the price of one gram of gold. A **₹1 lakh minimum bond investment** is structurally incompatible with the financial reality of most Indian households, even those with surplus savings. The proposed ₹10,000 minimum, if implemented for listed bonds, would be a genuine inflection point — but only if accompanied by the other structural changes needed for retail access.

Barrier 3: The Price Transparency Desert

Perhaps the most fundamental barrier for retail bond investors is the absence of reliable, accessible price information. When a retail equity investor wants to buy shares of Reliance Industries, they can see the live price on any smartphone in real time. When a retail bond investor wants to buy Reliance Industries' corporate bonds, they cannot see a live, executable price anywhere — because the secondary market for those bonds is OTC, opaque, and institutionally negotiated.

- SEBI's exchange reporting system collects post-trade data, but this data is available only on a delayed basis and in formats unsuitable for retail consumption.
- FIMMDA publishes indicative prices for some bonds, but these are modelled, not executable, and are available only on FIMMDA's institutional website.
- No Indian equivalent of the US TRACE system — which publishes every corporate bond trade within 15 minutes on a public, free website — exists. This is the single most important infrastructure gap for retail bond market development.
- Without live prices, retail investors cannot assess fair value, cannot compare competing bonds, and cannot verify whether they are getting a fair price on either side of a trade.

Barrier 4: The Secondary Market Exit Problem

The ultimate deterrent for retail bond investment is the impossibility of exit. A retail investor who buys a listed corporate bond through the odd-lot window on BSE cannot meaningfully sell it in the secondary

market — because there is no buyer. The odd-lot window exists as infrastructure but lacks the liquidity to give retail investors a genuine secondary market.

This creates an **asymmetric risk for retail investors** that does not exist in equity markets: **you can buy a bond, but you may not be able to sell it** for months or years. For a retail investor comparing a bank fixed deposit (guaranteed exit at known value) with a listed corporate bond (uncertain exit at uncertain price), the rational choice — in the absence of a liquid secondary market — is the fixed deposit. India's retail bond market will not grow without a functioning retail secondary market. And the retail secondary market will not function without either a designated market-maker for retail bond sizes or a bond ETF ecosystem that provides daily liquidity.

Barrier 5: Distribution Infrastructure — Where Are India's Bond Brokers?

India's equity market democratisation was enabled by a layered distribution ecosystem: discount brokers (Zerodha, Groww) for DIY investors, mutual fund distributors for SIP investors, and AMFI-registered advisors for more sophisticated retail clients. No equivalent ecosystem exists for corporate bonds.

- Most stock brokers do not actively distribute corporate bonds to retail clients — brokerage commissions on bond transactions are too low relative to equity commissions to incentivise active distribution.
- The few platforms that offer retail bond access (Bond Bazaar, GoldenPi, Wint Wealth, IndiaBonds) operate in a regulatory grey area between SEBI-registered entities and unregulated distribution platforms — creating investor protection uncertainty.
- AMFI-registered mutual fund distributors can distribute debt mutual funds but cannot distribute direct corporate bonds — a regulatory separation that channels retail fixed-income savings into the fund wrapper rather than the bond market.
- Bank branches — India's widest retail financial distribution network — offer bank FDs and some government savings schemes, but corporate bonds are functionally off their product menu.

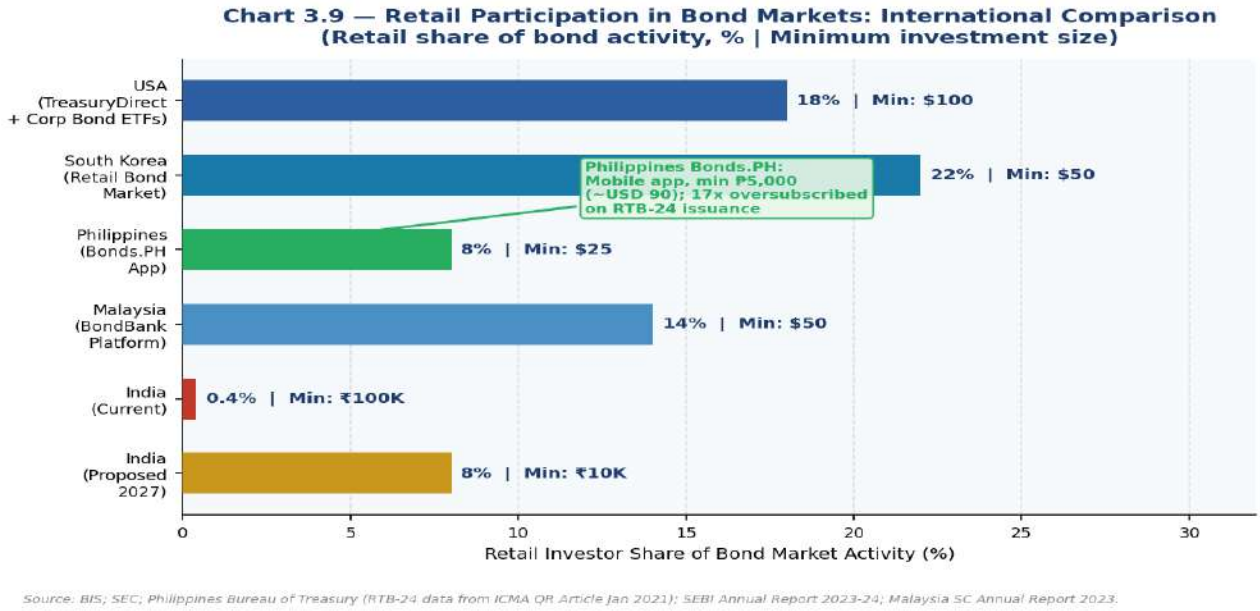


Chart 3.9 — Retail Participation in Bond Markets: International Comparison | Source: BIS; SEC; Philippines Bureau of Treasury; SEBI Annual Report 2023-24; Malaysia SC Annual Report 2023

The Philippines Model: Mobile-First Retail Bond Access

Chart 3.9 places India's retail bond market participation in international context — and the comparison is sobering. But it also points toward a solution. The Philippines' Bonds.PH experience demonstrates that with the right mobile-first design and a supportive regulatory framework, retail bond markets can be built quickly, even in emerging economies.

Case Study: Philippines Bonds.PH — A Model for India

The Initiative: In July 2020, the Philippines Bureau of the Treasury (BTr), in partnership with UnionBank and the Philippine Digital Asset Exchange (PDAX), launched Bonds.PH — a mobile app for retail investors to purchase Retail Treasury Bonds (RTBs) with minimum investments of ₱5,000 (approximately USD 90 / INR 7,500).

The Technology: The app uses a DLT-based registry to record transactions, runs on standard smartphone operating systems, verifies KYC through a Filipino national ID and selfie photo, and allows fund transfers via mobile wallets including GCash and Paymaya. Once purchased, bonds pay quarterly interest directly to the investor's Bonds.PH account.

The Outcome: The RTB-24 issuance raised ₱516.3 billion (€8.84 billion) in total — oversubscribed by more than 17 times the target. The Bonds.PH app raised ₱48 million (€0.82 million) directly in its debut, with approximately 80% of app transactions below ₱10,000 (€171). This demonstrated that very small retail investors — not just HNIs — can access government bonds through a mobile platform.

The India Lesson: India has superior mobile and digital infrastructure to the Philippines — UPI, Jan Dhan accounts, Aadhaar-based KYC, and a 750 million+ smartphone user base. If India builds a Bharat Bond equivalent mobile app with a ₹1,000–₹5,000 minimum, covers both government and corporate bonds, and integrates with UPI for investment, the retail bond market could be transformed within 2–3 years.

The Philippines example is not an outlier. South Korea's retail bond market (22% retail participation), the US Treasury Direct system (allowing direct retail G-sec purchases), and Malaysia's BondBank platform all demonstrate that retail bond participation is achievable — but only when minimum sizes are low, technology is accessible, price transparency exists, and secondary market exit is practical.

Retail Access Feature	Philippines (Bonds.PH)	South Korea	USA (TreasuryDirect)	India (Current)	India (Required)
Minimum Investment	₱5,000 (~₹7,500)	KRW 10,000 (~₹600)	USD 100 (~₹8,300)	₹1,00,000	₹1,000–₹10,000
Mobile App Access	Yes (iOS/Android)	Yes (major banks)	Web-based	Very Limited	Full mobile app needed
KYC Process	Digital (ID + selfie)	Bank-linked	SSN-based (instant)	Physical/CKYC	Aadhaar + UPI (ready)
Secondary Market Exit	Limited (primary only)	Active retail secondary	Treasury buyback	Illiquid	Guaranteed buyback window needed

Retail Access Feature	Philippines (Bonds.PH)	South Korea	USA (TreasuryDirect)	India (Current)	India (Required)
Price Transparency	**Live app prices**	**Real-time online**	**Live Treasury Direct**	**None for retail**	**TRACE-equivalent essential**
Retail Share of Market	~8% (and growing)	~22%	~18% (G-sec)	<0.5%	Target: 8–10% by 2030

Chapter 3 Summary: Five Findings, One Systemic Conclusion

This chapter has presented a comprehensive diagnostic of India's corporate bond secondary market. The five findings, taken together, describe not isolated market imperfections but a coherent systemic failure — one that requires equally coherent systemic solutions.

Finding	Key Evidence	Root Cause
The 20× Liquidity Gap	G-sec turnover ratio ~5.9×; corporate bond ~0.27× (CCIL FY2024)	No market-maker obligation; hold-to-maturity investor dominance; no public price data
OTC Labyrinth	~82% of turnover remains OTC/voice despite RFQ mandate (SEBI FY2024)	Information leakage risk drives institutional preference for OTC; retail excluded architecturally
Liquidity Bifurcation	~80% of turnover in AAA/AA bonds <7 years; entire long-tenor market absent	Structural absence of market-makers; hold-to-maturity demand dominance; no credit enhancement
SEBI Electronification: Necessary but Insufficient	RFQ volumes ₹24,800 crore vs total market ₹22.8L crore — 0.1% share	Mandate without market-maker incentives; retail infrastructure absent; no TRACE equivalent
Retail Gap: 100 million equity vs <100,000 bond investors	**Retail bond turnover <0.5% of market (SEBI/BSE FY2024)**	**Minimum size, price opacity, no exit, no distribution, no awareness**

The Core Systemic Conclusion

India's corporate bond secondary market is not a work in progress — it is a market that has not yet begun. The 22.8 lakh crore annual turnover figure sounds large but is generated almost entirely by a small number of institutional participants trading a small number of liquid AAA/AA bonds in a small number of short tenors. The secondary market that Viksit Bharat requires — one that prices 15-year infrastructure bonds, provides daily exit for retail investors, and generates the yield curve that enables efficient primary issuance — does not exist today.

Building it requires three simultaneous interventions that no single regulatory circular can deliver: **a designated market-maker system for corporate bonds; a TRACE-equivalent real-time public price reporting system; and a mobile-first retail distribution and access platform** that brings India's 300

million middle-class households into the bond market. Each of these is technically feasible, financially viable, and precedented internationally. The only variable is political and regulatory will.

CHAPTER 4

The Long-Tenor Problem: Infrastructure Bonds and the Asset-Liability Mismatch

Why the connection between India's long-dated institutional savings and its long-tenor infrastructure financing need is broken — and a framework for fixing it | FY2018–FY2024

India's infrastructure financing paradox is one of the most perplexing in emerging market finance. On one side of the table sit India's long-tenor institutional investors — the Life Insurance Corporation, the Employees' Provident Fund Organisation, the National Pension System corpus — holding a combined ₹77 lakh crore (USD 920 billion) of assets, with liability profiles stretching 15 to 25 years into the future. On the other side of the same table sit India's infrastructure developers — highways, ports, power plants, water systems, urban transit networks — desperate for 15 to 25-year financing that bank balance sheets cannot provide. And yet these two parties, whose needs are almost perfectly matched, are not transacting with each other through the bond market.

This chapter diagnoses why this connection is broken — examining both the demand side (why institutional investors do not allocate to infrastructure bonds) and the supply side (why infrastructure companies do not issue long-tenor bonds) — and then proposes a comprehensive architecture for fixing it: credit enhancement mechanisms, takeout financing frameworks, and greenfield bond structures that can make the connection work.

The Numbers Behind the Paradox

- Combined AUM of LIC, EPFO, NPS, and other insurance/pension entities: ~₹77 lakh crore (FY2024)
- Share of this AUM invested in infrastructure bonds (direct): <2% (~₹1.5 lakh crore)
- Share invested in G-sec and approved securities: ~65–70% (~₹50–54 lakh crore)
- India's estimated infrastructure debt financing need (2024–2035): ₹190–250 lakh crore
- Conclusion: India's institutional savings pools have the scale to finance Viksit Bharat's infrastructure — but regulatory, structural, and market design barriers prevent the capital from reaching the projects.

4.1 The Demand Side: Long Liabilities, Short Assets

The most counterintuitive feature of India's infrastructure financing gap is that the solution — in theory — already exists within India's own financial system. Life insurers have policy liabilities averaging 15–20 years. The EPFO services members who retire 20–30 years in the future. The NPS corpus grows against pension obligations that will be drawn over the next 25–35 years. All of these institutions need long-

duration, fixed-income assets to match their liabilities. Infrastructure bonds — with tenors of 15–25 years and predictable cash flows from operational projects — are the theoretically perfect asset for these investors.

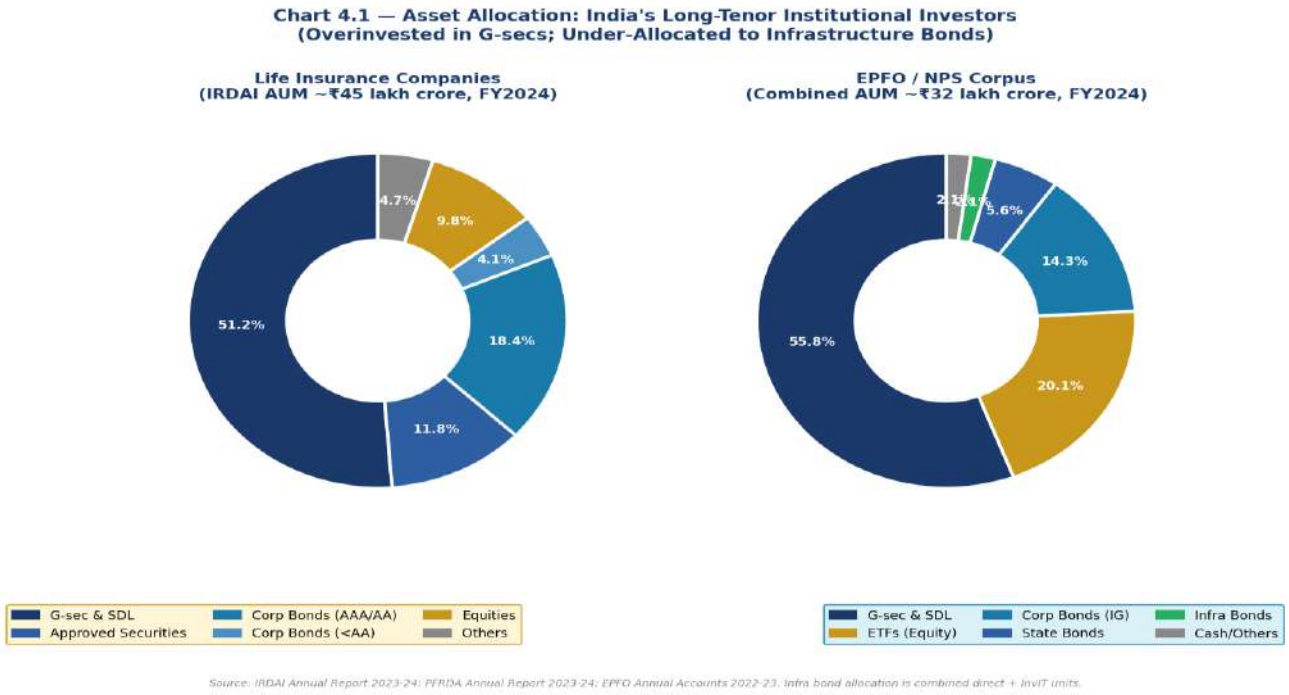


Chart 4.1 — Asset Allocation: India's Long-Tenor Institutional Investors (FY2024) | Source: IRDAI Annual Report 2023-24; PFRDA Annual Report 2023-24; EPFO Annual Accounts 2022-23

Chart 4.1 reveals the reality of asset allocation. Life insurance companies allocate over 50% of their assets to G-secs and SDL, with approximately 22% to corporate bonds — but the vast majority of that allocation is in AAA/AA financial-sector paper with tenors of 3–7 years. Pension and provident funds are even more G-sec heavy, with infrastructure bonds comprising just 2% of the EPFO/NPS combined corpus.

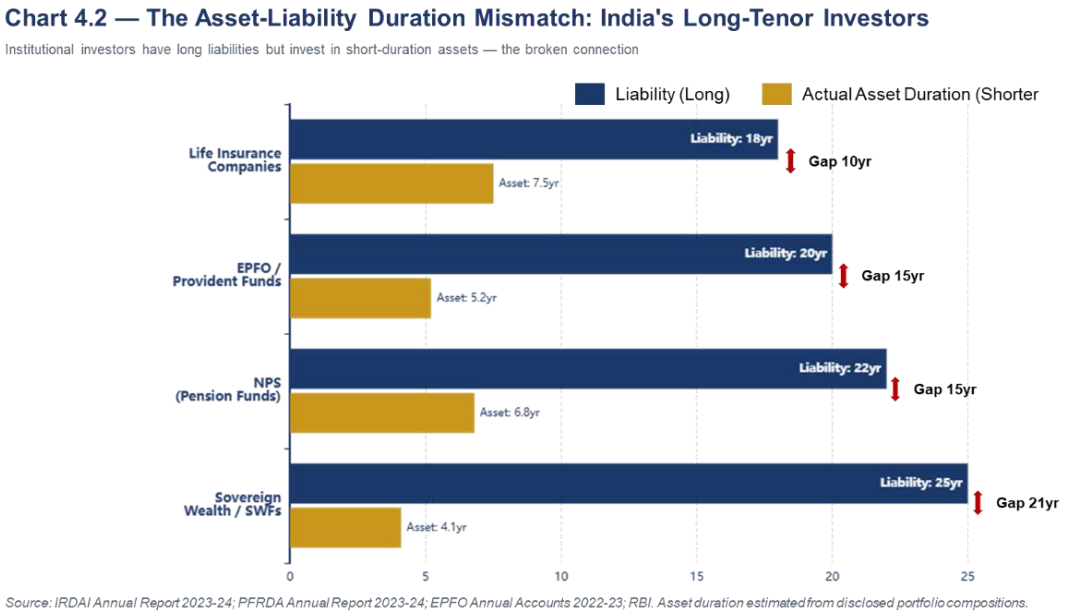


Chart 4.2 — The Asset-Liability Duration Mismatch: India's Long-Tenor Institutional Investors (FY2024) | Source: IRDAI; PFRDA; EPFO; RBI. Asset duration estimated from disclosed portfolio compositions

Why Do Long-Liability Institutions Hold Short-Duration Assets?

Chart 4.2 makes the mismatch visible: every major long-liability institutional investor in India holds assets with significantly shorter duration than their liabilities. Life insurers with an 18-year average liability duration hold assets with an average duration of 7.5 years. The EPFO, with effectively 20+ year obligations, averages an asset duration of 5.2 years. This mismatch is not irrational — it reflects a set of structural constraints that rational institutions operating within the given regulatory framework would reach:

Institution	Liability Duration (est.)	Avg Asset Duration (est.)	Duration Gap	Primary Constraint Preventing ALM Match
Life Insurance Companies (LIC + others)	~18 years	~7.5 years	10.5 years	IRDAI investment guidelines: min 50% in G-sec/approved securities; <30% in corporate bonds; infrastructure bonds need explicit IRDAI 'approved' classification
EPFO (Employees Provident Fund)	~20 years	~5.2 years	14.8 years	Investment pattern mandated by Finance Ministry; 85% in G-sec/SDL/ETFs; only 5% corporate bonds permitted; no infra bond allocation category exists
NPS (National Pension System)	~22 years	~6.8 years	15.2 years	PFRDA guidelines cap corporate bond exposure at 45% of Scheme G (Govt pattern); infrastructure bonds not separately classified; risk aversion post IL&FS

Institution	Liability Duration (est.)	Avg Asset Duration (est.)	Duration Gap	Primary Constraint Preventing ALM Match
Sovereign/Quasi-Sovereign Funds	**~25 years**	**~4.1 years**	**20.9 years**	**No specific framework for infrastructure bond allocation; general investment act constraints apply**

Three Barriers the Data Reveals

Barrier 1 — Regulatory Classification: IRDAI and PFRDA investment guidelines do not have a dedicated 'infrastructure bond' allocation category that allows institutions to count infrastructure bonds toward their mandated allocation to approved/safe securities. An infrastructure bond rated AA by a credit rating agency is treated the same as any other AA corporate bond — subject to the general corporate bond exposure limit. A specific infrastructure bond allocation category, with appropriate credit enhancement requirements, would immediately unlock a portion of the existing approval limits.

Barrier 2 — Risk Aversion Post-IL&FS: The IL&FS default of 2018 — which revealed that an AAA-rated infrastructure holding company could collapse with ₹91,000 crore of debt — scarred India's institutional investor community. EPFO and insurance companies that held IL&FS paper faced mark-to-market losses and board-level scrutiny. The lesson drawn — incorrectly, but understandably — was that infrastructure bonds are too risky for pension and insurance capital. A proper credit enhancement framework, had it existed in 2018, would have protected senior bondholders. The IL&FS lesson should be that credit enhancement is necessary, not that infrastructure bonds are inherently unsuitable for institutional portfolios.

Barrier 3 — Absence of Supply at Scale: Even if IRDAI and PFRDA amend their guidelines to allow larger infrastructure bond allocations, the supply of credit-enhanced, AA-rated, long-tenor infrastructure bonds is insufficient in volume for institutional-scale investment. This is the supply-demand circularity: institutions don't demand bonds that don't exist; bonds aren't created because institutions don't demand them. Breaking this circularity requires deliberate supply creation, which the credit enhancement architecture in Section 4.3 addresses.

4.2 The Supply Side: Why Infrastructure Companies Don't Issue Long-Tenor Bonds

Even if institutional investor demand for infrastructure bonds were fully unlocked, the supply side presents equally fundamental challenges. Infrastructure companies — the potential issuers of long-tenor bonds — face a set of structural and financial constraints that make bond issuance difficult or impossible at every stage of the project lifecycle, except in a narrow window during stable operations.

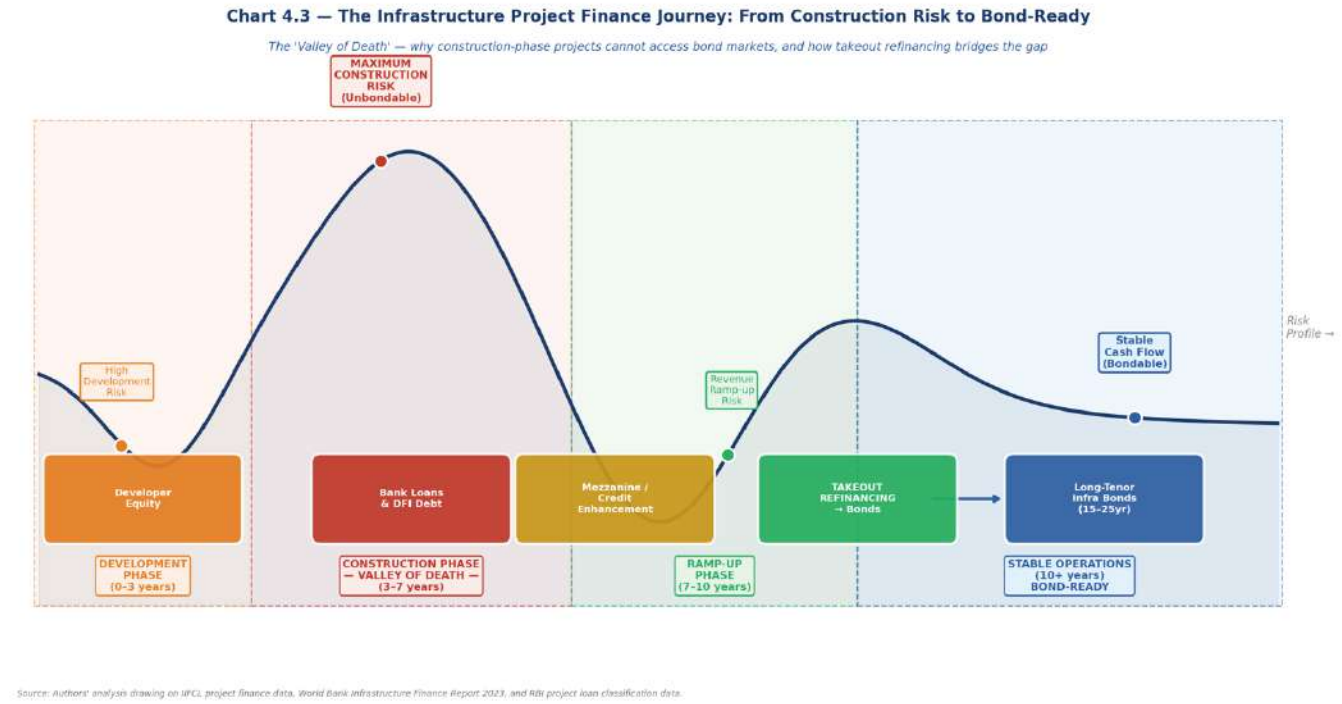


Chart 4.3 — The Infrastructure Project Finance Journey: The 'Valley of Death' | Source: Authors' analysis; IIFCL project finance data; World Bank Infrastructure Finance Report 2023; RBI project loan classification data

The Valley of Death: Construction-Phase Unbondability

Chart 4.3 illustrates the core supply-side problem: the 'Valley of Death' — the construction phase of an infrastructure project, typically lasting 3 to 7 years from financial close, during which the project generates zero revenue, carries maximum risk, and is completely unsuitable for the bond market. Understanding why this phase is unbondable is essential to designing the mechanisms that can bridge it.

- No revenue stream: Bond investors require interest payments (coupons) from project cash flows. A highway under construction has no toll revenue; a power plant has no offtake revenue. Bond issuance requires a revenue stream that does not exist during construction.
- Completion risk: There is a material probability that the project will not be completed on time, within budget, or to specification. Bond markets — unlike equity investors — have no risk appetite for this optionality; they need principal repayment certainty.
- Force majeure and regulatory risk: Land acquisition delays, environmental clearances, contractor defaults, and geological surprises are common in Indian infrastructure. These risks are properly absorbed by equity and construction-phase bank lending, not bond markets.
- No credit rating: Rating agencies will not assign an investment-grade rating to a project with no operational history, no demonstrated cash flows, and unresolved completion risks.

Greenfield vs. Brownfield: A Critical Distinction

The greenfield/brownfield distinction is fundamental to understanding where the supply-side gap is most severe. Brownfield infrastructure — existing, operational assets with established revenue streams — is fundable through the bond market and through InvIT structures. The problem is primarily

greenfield infrastructure: new projects that India needs to build, which require financing during construction before they become bondable.

BROWNFIELD Infrastructure (Existing Assets)	GREENFIELD Infrastructure (New Projects)
Bond-Ready: Operational revenue exists; credit ratings achievable **InvIT-Eligible:** Can be pooled into InvIT for equity-style investment Examples: NHAI's operational toll roads, NTPC operational plants, POWERGRID transmission assets Funding sources: InvIT units, NHAI Bonds, REC/PFC bonds (all AAA PSU) Problem: Limited in supply — only so many existing operational assets to securitise India's brownfield infra bond market works reasonably — it is the greenfield gap that is critical	**Unbondable During Construction:** Zero revenue; maximum risk **Bank-Dependent:** Construction loans from bank consortia; 7–10yr tenure Examples: New highway corridors, renewable energy parks, urban metro rail, water projects Post-construction: Potentially bondable — but bank loans must be refinanced out first **The Critical Gap:** ₹190–250 lakh crore of new greenfield infra need (2024–2035) — most unbondable without credit enhancement framework

InvITs and REITs: Partial Solution, Significant Residual Gap

India's InvIT and REIT markets have grown significantly — from negligible in FY2019 to combined AUM of approximately ₹8.66 lakh crore in FY2024 as per SEBI Annual Report 2024-25. This represents meaningful progress in creating infrastructure investment vehicles accessible to institutional and retail investors. But InvITs address a fundamentally different problem from infrastructure bonds, and the two should not be confused.

Chart 4.4 – InvIT & REIT (Remaining Infrastructure Debt Gap)
(InvITs & REITs: Partial Solution Analysis)

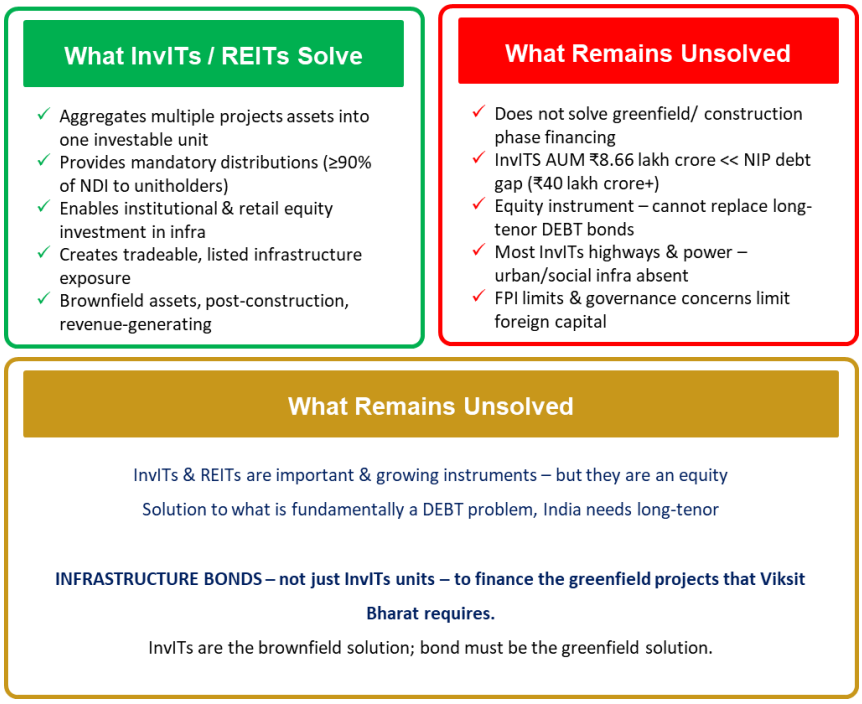


Chart 4.4 — InvIT & REIT Growth and the Remaining Infrastructure Debt Gap (FY2019–FY2024) | Source: SEBI InvIT/REIT data; IFSCA; NaBFID annual report

As Chart 4.4's right panel demonstrates, InvITs solve important problems but leave the greenfield debt gap entirely unaddressed. InvIT AUM of ₹92,400 crore represents approximately 0.5% of India's total NIP debt financing need for 2024–2035. Even with continued 25–30% annual growth, the InvIT market cannot substitute for a functioning long-tenor bond market for new project construction. The two instruments are complements, not substitutes.

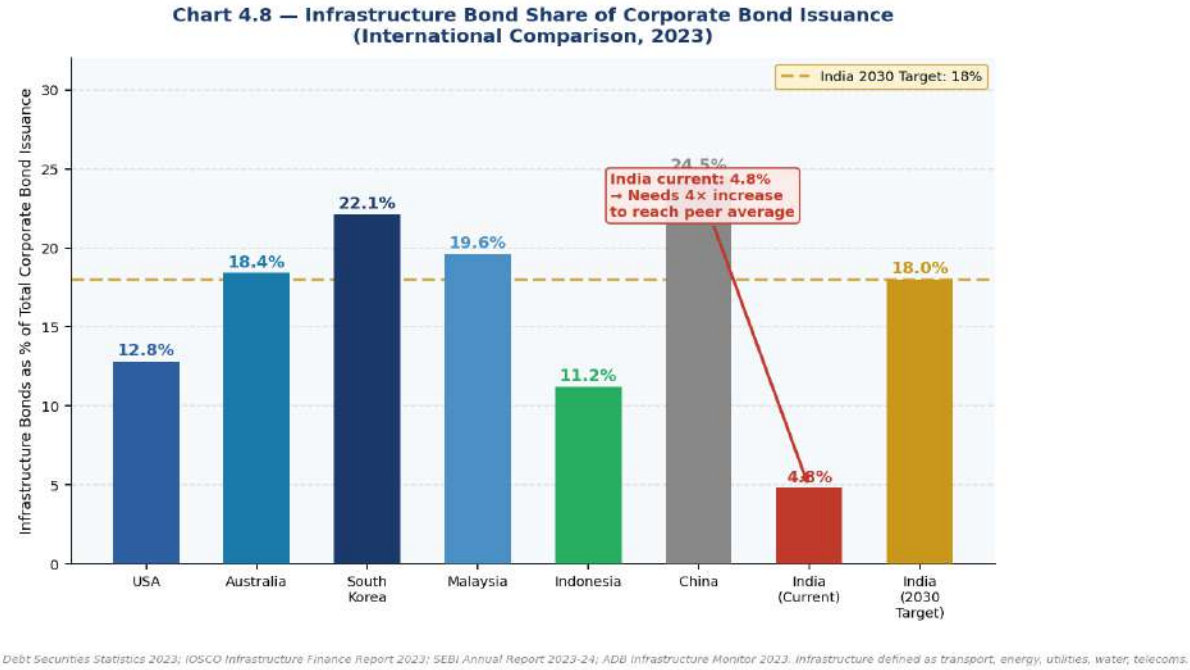


Chart 4.8 — Infrastructure Bond Share of Corporate Bond Issuance: International Comparison (2023) | Source: BIS; IOSCO Infrastructure Finance Report 2023; SEBI Annual Report 2023-24; ADB Infrastructure Monitor 2023

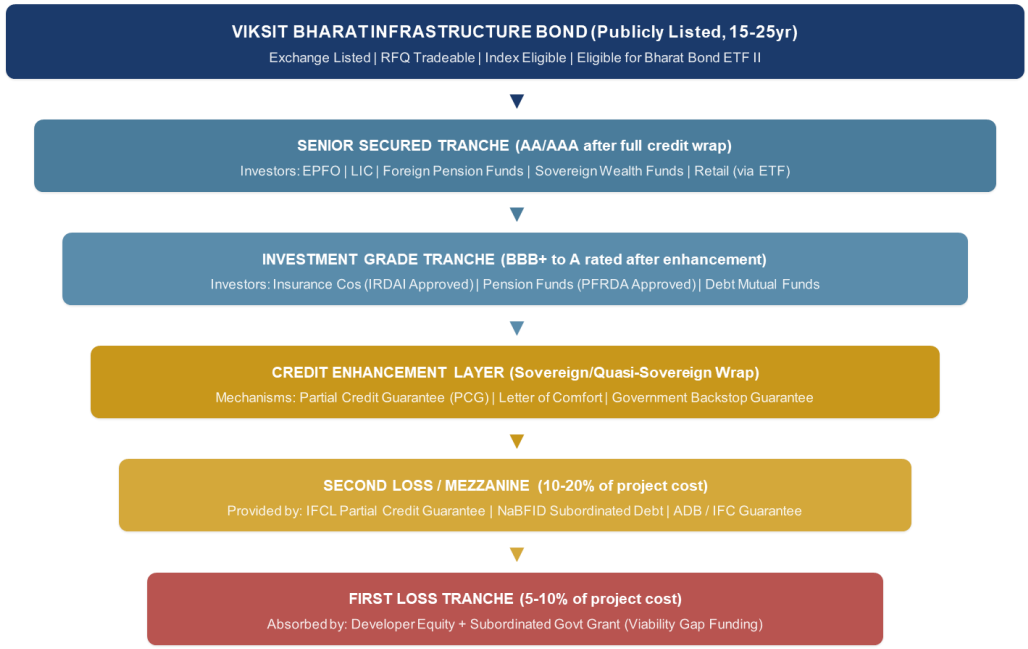
Chart 4.8 places India's infrastructure bond market in stark international relief. At 4.8% of total corporate bond issuance, India's infrastructure bond share is approximately one-fifth of China's (24.5%), less than one-quarter of South Korea's (22.1%), and less than one-third of Malaysia's (19.6%). Reaching the peer average of approximately 18% of corporate bond issuance would require India to increase annual infrastructure bond volumes from the current ₹30,000–40,000 crore to approximately ₹1.5 lakh crore — a 4× increase. This is achievable only through the credit enhancement architecture described in the next section.

4.3 Credit Enhancement Architecture: The Sovereign Bridge

Credit enhancement is the mechanism by which a project bond rated BBB or lower — reflecting genuine construction and operational risk — is transformed into a bond rated AA or AAA — making it eligible for institutional investors' portfolios. The key insight is that the government does not need to finance infrastructure directly. It needs to provide a carefully structured guarantee that transfers risk from private investors to a public entity, unlocking private institutional capital at scale.

Chart 4.5 — Credit Enhancement Architecture for India's Infrastructure Bonds

Multi-layered credit enhancement structure enabling infra bond issuance from sub-investment grade projects



Source: Authors' framework drawing on IFCL guidelines, World Bank PCG design; EIB project bond credit enhancement; ADB ASEAN Infrastructure Fund; NaBFID Act 2021.

Chart 4.5 — Credit Enhancement Architecture for India's Infrastructure Bonds | Source: Authors' framework; IIFCL guidelines; World Bank PCG design; EIB project bond enhancement; ADB ASEAN Infrastructure Fund; NaBFID Act 2021

Chart 4.5 presents the credit enhancement architecture as a layered structure — from first-loss developer equity at the bottom, through successive tiers of credit support, to the senior secured infrastructure bond at the top. Each layer absorbs risk before it reaches the senior bondholder, progressively transforming an unrated greenfield project into an investment-grade bond instrument.

The Four Components of an Effective Credit Enhancement Framework

Component 1: Viability Gap Funding (VGF) — First Loss Layer

- Mechanism: Government capital grant (typically 20–40% of project cost) to bridge the viability gap in projects with positive social returns but insufficient commercial returns to attract private capital.
- Current Status in India: MOCA's VGF scheme covers eligible public-private partnership projects; DPIIT's VGF for data centres and cold chains is a sector-specific variant.
- Gap: VGF disbursement processes are slow (average 18–24 months from award to first disbursement); eligible project categories are narrow; VGF is not systematically linked to bond issuance timelines.
- Recommended Enhancement: Streamline VGF disbursement to align with construction milestones; expand eligible categories to urban infrastructure, health, and education; make VGF explicitly a first-loss tranche in the bond structure.

Source: MOCA VGF Guidelines 2023; NITI Aayog PPP Cell data.

Component 2: Partial Credit Guarantee (PCG) — IIFCL and NaBFID

- Mechanism: Government or quasi-government entity guarantees a portion (typically 20–50%) of the bond's principal and/or interest, enabling the rating agency to 'lift' the bond's rating by 2–4 notches.
- Current IIFCL Status: IIFCL's PCG scheme has deployed approximately ₹8,200 crore in guarantees (FY2024) — supporting a small number of refinancing transactions. Scale is far below the market's need.
- NaBFID's Emerging Role: The National Bank for Financing Infrastructure and Development (NaBFID), established under the NaBFID Act 2021, has an explicit mandate to develop the infrastructure bond market, including through credit enhancement. Book target: ₹1.2 lakh crore loan sanction by FY2026.
- Critical Design Requirements: PCG must be callable within 30 days of trigger; pricing must be risk-based (currently too uniform); eligible project categories must include greenfield; KYC/due diligence processes must be faster.
- Recommended: NaBFID-led PCG facility targeting ₹1 lakh crore of guarantees by 2030, supported by ₹15,000 crore government capital contribution.

Source: IIFCL Annual Report 2023-24; NaBFID Act 2021; NaBFID Annual Report 2023-24.

Component 3: Proposed India Infrastructure Bond Guarantee Fund

- The most impactful credit enhancement mechanism this report recommends is the creation of a dedicated India Infrastructure Bond Guarantee Fund (IIBGF) — a sovereign-backed, ring-fenced guarantee corpus of ₹25,000–50,000 crore, seeded by the Government of India with contributions from multilateral development banks (ADB, World Bank, IFC).
- The Fund would provide: (a) First-loss guarantees of up to 15% of bond principal for greenfield infrastructure bonds rated BBB+ or better; (b) Partial credit guarantees of up to 30% for bonds rated A- or better targeting AA status; (c) Political risk guarantees covering regulatory and policy risk for private sector bonds.
- Modelled on: The European Investment Bank's Project Bond Credit Enhancement facility (which upgraded 15+ European infrastructure bonds by 2-4 notches and enabled EUR 40bn+ of private infrastructure investment) and the ASEAN Credit Guarantee and Investment Facility (CGIF), which has guaranteed USD 2.5bn+ of ASEAN infrastructure bonds since 2012.
- Expected leverage: Each ₹1 of IIBGF guarantee can support ₹8–12 of infrastructure bond issuance (based on EIB and CGIF experience). A ₹50,000 crore Fund could support ₹4–6 lakh crore of infrastructure bonds over a decade.

Component 4: Credit Rating Agency Methodology Reform

- Credit enhancement is ineffective unless rating agency methodologies explicitly recognise it. India's CRA methodology for infrastructure project bonds has historically been conservative: rating agencies have been reluctant to lift ratings by more than 2 notches based on government guarantees, citing sovereign credit risk linkage and callable guarantee uncertainty.

- SEBI should engage CRISIL, ICRA, CARE, and India Ratings to develop standardised infrastructure bond rating methodologies that: (a) Explicitly quantify the rating benefit of SEBI-approved credit enhancement structures; (b) Accept NaBFID and IIBGF guarantees at face value without haircuts not applied internationally; (c) Develop project-finance-specific rating criteria rather than applying corporate bond criteria to project bonds.

- International Reference: S&P and Moody's have dedicated project finance rating methodologies that explicitly incorporate credit enhancement structures. CRISIL's adoption of comparable methodology — with SEBI's encouragement — would be a significant market development step.

Chart 4.6 — Global Credit Enhancement Models: Lessons for India

Chart 4.6 — Global Credit Enhancement Models: Lessons for India | Source: US DOT TIFIA programme reports; EIB Project Bond Initiative 2023; ADB CGIF Annual Report 2023; IIFCL Annual Report 2023-24; NaBFID Annual Report 2023-24

International Models: What Works and Why

Programme	Country/Region	Mechanism	Scale Achieved	Key Lesson for India
TIFIA (Transport Infra Finance & Innovation Act)	USA	Federal govt provides low-rate loans + guarantees for transport projects; effectively subordinated to senior bonds	USD 25bn deployed; avg bond maturity 35yr; upgrades project by 3–4 notches	Dedicated statutory programme with ring-fenced funding; single window application; 35-year tenor possible
EIB Project Bond Credit Enhancement	European Union	EIB provides subordinated debt or guarantee (5–20% of bonds) alongside senior project bonds	EUR 40bn+ in bonds supported; avg upgrade 2–4 notches; enables pension fund investment	Subordinated tranche rather than guarantee: EIB takes first-loss position, making guarantee callable and clear
ASEAN Credit Guarantee & Investment Facility (CGIF)	ASEAN + ADB	ADB-administered guarantee fund; covers 75% of principal for investment-grade local currency bonds	USD 2.5bn guaranteed; 40+ bond issuances across 7 ASEAN countries	Multilateral backing (ADB) adds credibility; local currency focus removes FX risk; scalable
Korea Development Bank Guarantee	South Korea	KDB provides explicit guarantee backed by Korean govt; project bonds routinely achieve AAA	KRW 50tn+ in outstanding guaranteed bonds; Korean infra bond market is 22% of corp bond issuance	Permanent statutory mandate; KDB guarantee is unconditional and callable; builds market confidence
IIFCL PCG (India — Current)	**India**	**Partial credit guarantee for refinancing of infra bank loans into bonds; covers 40% of principal**	**₹8,200 Cr deployed (FY2024); <50 transactions total; no greenfield coverage**	**Right instrument, wrong scale. Needs: broader eligibility, faster processing, greenfield inclusion, NaBFID integration**

The comparison table above reveals a consistent pattern: effective credit enhancement programmes combine statutory certainty (the guarantee is legally enforceable and unconditional), institutional permanence (a dedicated agency with ring-fenced capital), and scale (enough guarantee capacity to create a market, not merely individual transactions). India's IIFCL has the right mandate but lacks scale. NaBFID has the mandate and a growing balance sheet but needs time to develop the technical capacity. The proposed IIBGF would provide the missing scale — and the combination of NaBFID execution capacity + IIBGF guarantee corpus + ADB/World Bank technical support creates the architecture needed.

4.4 Takeout Financing: The Capital Recycling Engine

Takeout financing is one of the most powerful — and underutilised — mechanisms available to India for solving the infrastructure debt gap. The concept is deceptively simple: infrastructure projects are financed by bank loans during construction; once the project becomes operational and demonstrates stable cash flows, these bank loans are 'taken out' — repaid using the proceeds of a long-tenor bond issuance. The bank gets its capital back for the next greenfield project; the bond investor holds a long-tenor, operational-stage infrastructure bond with predictable cash flows.

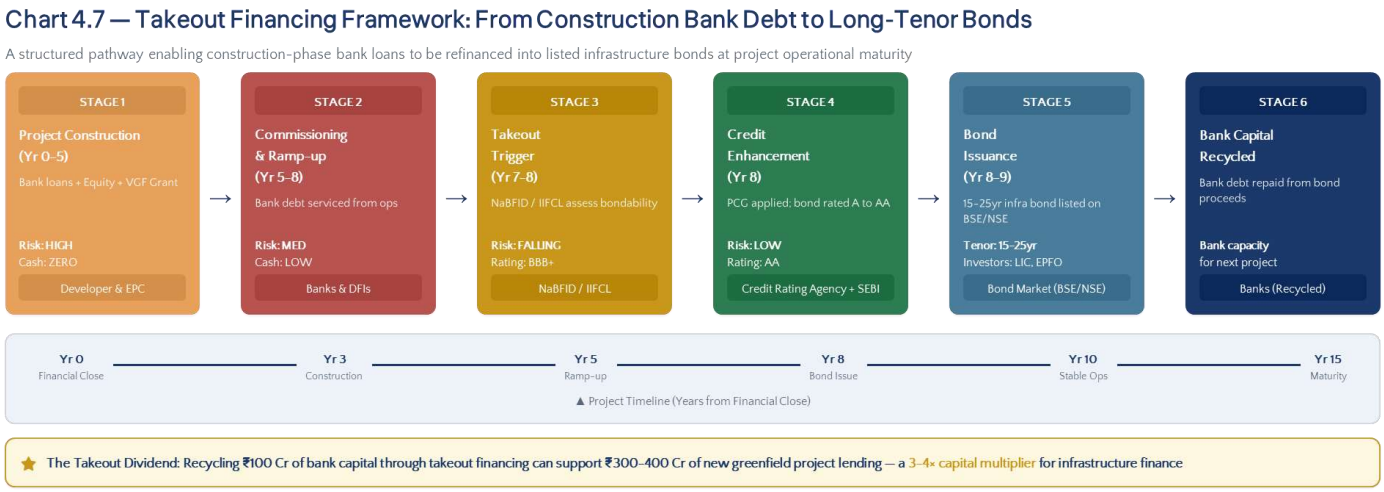


Chart 4.7 — Takeout Financing Framework: From Construction Bank Debt to Long-Tenor Bonds | Source: Authors' framework; IIFCL Takeout Finance Scheme guidelines; NaBFID Act 2021; World Bank Project Finance guidelines; NITI Aayog 3i Report 2023

The Mechanics: How Takeout Financing Works

Chart 4.7 presents the full six-stage lifecycle of a takeout-financed infrastructure bond. The key value creation happens at Stages 3–5 — the transition from construction bank debt through credit enhancement to listed long-tenor bond. Understanding the mechanics of each stage is essential to designing effective policy frameworks.

Stage	Phase	Financing Instrument	Key Risk	Policy Enabler Required
Stage 1	Construction (Yr 0–5)	Bank consortium loans + equity + VGF	Completion risk; cost overrun	VGF disbursement reform; bank exposure norms for infra
Stage 2	Ramp-up (Yr 5–8)	Bank debt service from operational revenues	Revenue risk; offtake uncertainty	Debt service reserve account; revenue escrow mechanism
Stage 3	Takeout Trigger (Yr 7–8)	NaBFID / IIFCL assess bondability	Rating assessment; documentation	NaBFID capacity; standardised project bond documentation
Stage 4	Credit Enhancement (Yr 8)	PCG applied; bond achieves A/AA rating	CRA methodology; guarantee structuring	IIBGF guarantee; CRA methodology reform (see Section 4.3)

Stage	Phase	Financing Instrument	Key Risk	Policy Enabler Required
Stage 5	Bond Issuance (Yr 8–9)	15–25yr infra bond; exchange-listed	Market depth; investor demand	IRDAI/PFRDA guideline reform; Bharat Bond ETF II eligibility
Stage 6	Capital Recycled (Yr 9)	Bank loans repaid; bank capacity freed for next greenfield	Contractual certainty of takeout	SEBI-standard takeout financing contracts; RBI supervisory framework

The Capital Multiplier Effect

The most compelling argument for takeout financing is its capital multiplier effect. When bank loans are refinanced out through bonds, the freed bank capital can be deployed into new greenfield projects. A bank that holds ₹500 crore of project loans for a highway that has now been operational for three years can — upon takeout — redeploy that ₹500 crore into a new renewable energy project, a new urban metro, or a new port. Without takeout financing, the bank holds seasoned infrastructure loans for 15–20 years, and its capacity for new greenfield lending steadily declines.

The Capital Multiplier — Quantified

If India deploys a systematic takeout financing programme targeting ₹50,000 crore annually in bank loan refinancing into bonds (from FY2026):

- ₹50,000 crore of bank capital is recycled annually for new greenfield project lending
- At a typical 5:1 bank lending leverage, this supports ₹2.5 lakh crore of new project finance annually
- Over 2026–2035, this implies ₹25 lakh crore of additional greenfield infrastructure finance capacity — funded not by new government spending but by recycling existing institutional capital
- The takeout mechanism thus acts as a 'financial perpetual motion machine' for infrastructure, where bonds replacing bank loans continuously replenish bank capacity for new construction

Source: Authors' estimates based on IIFCL Takeout Finance Scheme experience; World Bank Infrastructure Finance multiplier studies; NaBFID's projected balance sheet trajectory.

Why India's Existing Takeout Schemes Have Not Scaled

IIFCL launched a Takeout Finance Scheme in 2009 with explicit government support. Fifteen years later, the scheme has processed fewer than 100 transactions and deployed well under ₹50,000 crore in total. Understanding why is essential to designing a more effective framework.

- Documentation complexity: Standard project loan documentation is not designed for bond conversion. Lender consent requirements, security transfer mechanics, and the transition from bank-mandated covenants to bond trust-deed covenants require significant legal work for each transaction.
- Pricing mismatch: The effective all-in cost of a takeout bond (coupon + credit enhancement fee + issuance cost) has often been higher than the continuing cost of a bank loan with renegotiated

terms — particularly when bank base rates are low. Only a steep term structure or credit enhancement can reduce bond costs below bank-loan costs.

- IIFCL capacity constraints: With staff complement and systems designed for smaller transaction volumes, IIFCL's technical assessment of bondability has been slow. Average time from application to guarantee issuance has reportedly exceeded 18–24 months.
- Absence of a standardised project bond: Unlike in the US (where TIFIA has standardised project bond documentation) or Europe (where EIB and ISDA have developed standard templates), India lacks standardised infrastructure bond documentation — making each transaction a bespoke legal exercise.

Proposed: India's National Takeout Financing Protocol (NTFP)

This report recommends the creation of a National Takeout Financing Protocol — a standardised, SEBI-approved framework for the conversion of construction-phase bank loans into listed infrastructure bonds, with the following components:

1. Standardised Project Bond Documentation: SEBI, in consultation with RBI, IBA, and FIMMAl, should develop a standard project bond trust deed, security package, and covenant set — applicable to all NaBFID-eligible infrastructure projects.

2. NaBFID as Takeout Nodal Agency: NaBFID should be designated the single-window nodal agency for all takeout financing requests — including preliminary bondability assessment, credit enhancement eligibility, and coordination with rating agencies. Target processing time: 90 days from application to commitment.

3. Automatic Bharat Bond ETF II Eligibility: All bonds issued under the NTFP (post-credit enhancement to minimum A rating) should be automatically eligible for inclusion in a proposed Bharat Bond ETF II series — creating guaranteed institutional demand at issuance.

4. IRDAI and PFRDA Notification: A joint notification should classify NTFP bonds as a specific asset category eligible for insurance and pension fund allocation — unlocking the ALM-matched demand that currently sits idle in G-sec portfolios.

Source: Authors' recommendations drawing on IIFCL Scheme guidelines; US TIFIA programme; EIB PBCE framework; SEBI consultation papers 2023-24.

4.5 Global Experiences: What India Can Adapt

India is not reinventing the wheel. Every major economy that has successfully built a deep infrastructure bond market has done so through a combination of sovereign credit enhancement, institutional investor mandate reform, and takeout financing frameworks. The following synthesis draws on the most relevant international experiences.

Country	Challenge Faced	Solution Deployed	Outcome Achieved	India Adaptation
USA	Interstate highway financing beyond bank capacity in 1990s	TIFIA: Federal subordinated loans + guarantees; up to 33% of project cost; 35-yr maturity	USD 25bn+ deployed; avg rating uplift 3 notches; enables pension fund investment in transport bonds	Adapt as NaBFID Subordinated Loan Facility: NaBFID provides subordinated debt (not just guarantee) up to 25% of project cost at concessional rates
EU/EIB	Energy & transport bonds couldn't achieve investment grade without support	EIB PBCE: EIB provides subordinated tranche (5–20% of bonds); first loss absorbed by EIB	EUR 40bn+ in bonds supported; enables institutional investment at scale	IIBGF should adopt subordinated tranche model rather than pure guarantee — cleaner capital structure; callable guarantee clarity
Australia	Superannuation funds had 30-yr liabilities but no long infrastructure bonds	Australian Infrastructure Fund: Govt seeded fund; mandatory super allocation to infra bonds	Infrastructure bonds now 18% of Australian corp bond market; avg tenor 18yr	Adapt EPF's existing ETF structure: create a ring-fenced 'Infra Bond ETF' within EPFO's corpus with 2–5% mandatory allocation
South Korea	Chaebols dominated bond market; SME and infra issuers excluded	Korea Credit Guarantee Fund (KCGF) + KDB guarantee: statutory unlimited guarantee backing	Korean infra bonds 22% of corp market; consistently AAA-rated via KDB wrap	NaBFID should seek explicit Parliament-backed guarantee authority — not administrative approval — for its credit enhancement functions
Malaysia	Pension fund (EPF) ALM mismatch; long liabilities, short assets	Danajamin: national financial guarantee institution; guarantees up to RM 1bn per bond; co-insurance with private sector	EPF infrastructure bond allocation rose from 2% to 12% post-Danajamin; Malaysian infra bond share now 18%	Danajamin is the closest international model to India's proposed IIBGF. Create IIBGF under Finance Ministry; seed with ₹25,000 Cr; co-guarantee with Asian Infra Investment Bank (AIIB)
Philippines	**Municipal and sub-sovereign bonds illiquid; retail investors excluded**	**Bonds.PH mobile app + Bureau of Treasury guarantee + DLT registry**	**RTB-24: 17× oversubscribed; retail investors from smartphone; ₱516 bn raised**	**Direct model for retail infrastructure bond access in India: RBI Retail Direct equivalent for NTFP bonds**

Summary: Connecting the Dots — From Broken to Working

The long-tenor problem is the most complex challenge in India's bond market development — but it is not insolvable. This chapter has demonstrated that every component of the solution already exists in some form: institutional savings pools of the right scale and duration, a nascent credit enhancement infrastructure in IIFCL and NaBFID, a statutory framework in the NaBFID Act, and international models that have been proven at scale. What is missing is integration — the assembly of these components into a coherent, policy-backed system.

Problem Diagnosed	Root Cause	Proposed Solution	International Model	Scale of Opportunity
Long-liability institutions hold short-duration assets	IRDAI/PFRDA guidelines; IL&FS risk aversion; no infra bond supply	Create infra bond allocation category in IRDAI/PFRDA guidelines; contingent on credit enhancement	Australia Superannuation infra mandate; Malaysia EPF reform	₹15–20 lakh crore of institutional capital potentially unlockable
Greenfield projects unbondable during construction	Zero revenue; completion risk; no operational track record	VGF reform + construction-phase bank lending + takeout trigger at operational maturity	US TIFIA; EIB PBCE; Australian Infrastructure Fund	4× increase in bond-eligible project supply
No credit enhancement at scale	IIFCL too small; no sovereign guarantee fund; CRA methodology gaps	India Infrastructure Bond Guarantee Fund (₹25,000–50,000 Cr); NaBFID as nodal agency	Malaysia Danajamin; ASEAN CGIF; EIB	₹4–6 lakh crore of infra bonds supported per decade per ₹50,000 Cr corpus
Takeout financing too slow and complex	IIFCL processing delays; no standard documentation; pricing mismatch	National Takeout Financing Protocol; NaBFID single window; 90-day processing target	US TIFIA standardised docs; EIB standard trust deed	3–4× capital multiplier: ₹50,000 Cr annual bank recycling → ₹2.5L Cr new greenfield capacity
InvITs only solve brownfield; greenfield bond market absent	**InvIT equity structure not suitable for construction-phase debt**	**InvITs + NTFP bonds as complementary instruments; Bharat Bond ETF II as distribution vehicle**	**Korea infrastructure bond + InvIT equivalent (REITs) coexistence**	**Combined: infra bonds reach 18% of corp bond market by 2030**

The Core Message

The long-tenor problem is ultimately not a market failure — it is a policy design gap. The money exists (₹77 lakh crore in long-liability institutional pools). The need exists (₹190–250 lakh crore of infrastructure investment required by 2035). The legal frameworks exist (NaBFID Act, IRDAI Act, PFRDA Act). The international models exist (TIFIA, EIB PBCE, Danajamin, CGIF). What is missing is the political and administrative will to assemble these components into a working system — and the time to do it.

The next chapter addresses the regulatory architecture — what SEBI, IRDAI, PFRDA, and RBI must each do, in coordination, to make the credit enhancement and takeout financing framework described here operational.

— End of Chapter 4 —

CHAPTER 5

The Regulatory Architecture: SEBI's Evolving Role and the Road Ahead

A comprehensive assessment of India's bond market regulatory framework — current state, SEBI's reform record, global lessons, and the critical gaps that remain | FY2019–FY2025

Regulation is the invisible architecture of a bond market. It determines who can issue, who can invest, how trades are reported, what prices are disclosed, and on what terms retail investors can participate. When the regulatory architecture is well-designed, it creates the conditions for deep, liquid, and broad markets. When it is fragmented, inconsistent, or under-specified, even the best-intentioned market participants cannot build the market that the economy needs.

India's bond market regulatory architecture is the product of five decades of incremental legislative layering — the Securities Contracts (Regulation) Act, the SEBI Act, the RBI Act, the IRDAI Act, the PFRDA Act, and most recently the NaBFID Act — each designed for a different era with different market structures in mind. The result is a framework that is legally comprehensive but institutionally fragmented, technically capable but practically constrained, and reform-oriented at its senior levels but difficult to execute in the coordination gaps between agencies.

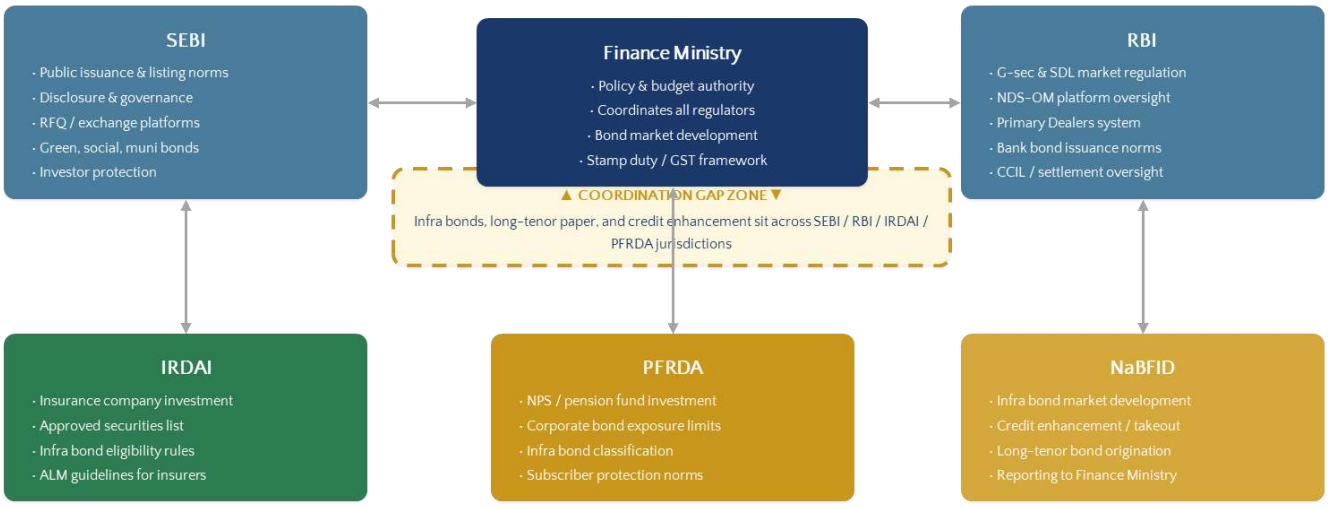
This chapter provides a comprehensive assessment of the regulatory framework across four dimensions: the current jurisdictional structure; SEBI's reform record since FY2019 and an honest scorecard of what has worked and what has not; the lessons India can draw from European and US regulatory experience; and the critical gaps that remain — the consolidated tape, market-making obligations, stamp duty harmonisation, and the multi-regulator coordination deficit.

5.1 The Current Framework: A Map of Overlapping Jurisdictions

India's bond market is regulated by five distinct authorities — SEBI, RBI, IRDAI, PFRDA, and the Finance Ministry — each with legitimate but partially overlapping jurisdiction. Understanding where each regulator's authority begins and ends is essential to identifying why coordination failures occur and where structural reforms must be targeted.

Chart 5.1 — India's Bond Market Regulatory Architecture

Overlapping jurisdictions create coordination challenges — the key structural gap in India's regulatory framework



Source: SEBI Act 1992; RBI Act 1934; IRDAI Act 1999; PFRDA Act 2013; NaBFID Act 2021. Regulatory perimeters are indicative.

Chart 5.1 — India's Bond Market Regulatory Architecture | Source: SEBI Act 1992; RBI Act 1934; IRDAI Act 1999; PFRDA Act 2013; NaBFID Act 2021

Who Regulates What: The Jurisdictional Matrix

Regulator	Primary Bond Market Jurisdiction	Secondary Market Role	Investor Regulation	Key Constraint
SEBI	Public issuances, listing norms, disclosure; EBP mechanism; exchange platforms	RFQ platform mandate; exchange reporting; investor protection	All categories of investors in listed bonds	No authority over bank-issued bonds (RBI); no control over insurance/pension allocation
RBI	G-sec and SDL primary market; bank bond issuance	NDS-OM platform; CCIL oversight; Primary Dealer system	Banks as bond investors; PD obligations	No jurisdiction over corporate bond secondary market or retail investor access
IRDAI	None (investor-side only)	None (investor-side only)	Insurance company investment guidelines; approved securities list	Slow amendment of investment guidelines; infra bond category absent
PFRDA	None (investor-side only)	None (investor-side only)	NPS and pension fund investment patterns	Corporate bond cap at 45%; no infra bond allocation category; risk-averse post IL&FS

Regulator	Primary Bond Market Jurisdiction	Secondary Market Role	Investor Regulation	Key Constraint
Finance Ministry	Stamp duty & GST policy; NaBFID governance; overall bond market development policy	No direct market role	Policy coordination across all regulators	Coordination mechanism not formally institutionalized; relies on ad hoc meetings

The Coordination Gap: Where the Architecture Fails

The most consequential gap in India's bond market regulatory architecture is not in any single regulator's mandate — it is in the space between mandates. Long-tenor infrastructure bonds that need credit enhancement sit at the intersection of SEBI (issuance), RBI (banking sector financing), IRDAI (insurance investor), and PFRDA (pension investor) jurisdiction. No single regulator has both the authority and the incentive to champion a product that requires all four to act in concert.

The Coordination Deficit — Three Specific Failure Points

Failure Point 1 — Infrastructure Bond Eligibility: SEBI can list an infrastructure bond; IRDAI must approve it for insurance investment; PFRDA must classify it for pension allocation. Without a joint notification, an infrastructure bond can be legally issued but practically unsellable to its natural buyer base. The IL&FS crisis revealed this fragmentation — SEBI had no authority to prevent insurance companies from over-investing in a structurally flawed holding company; IRDAI's post-crisis response was to restrict all infrastructure exposure.

Failure Point 2 — Retail Bond Distribution: SEBI regulates the bond issuance and exchange platforms; RBI regulates payment systems (UPI) needed for investment; AMFI (supervised by SEBI) regulates mutual fund distributors who cannot distribute direct bonds. A retail investor wanting to buy a corporate bond via UPI on a mobile app hits the regulatory boundary of all three without any single agency owning the end-to-end experience.

Failure Point 3 — NaBFID's Credit Enhancement: NaBFID's guarantee operations technically require SEBI's blessing for bond listing, RBI's comfort with bank loan refinancing, IRDAI/PFRDA approval for the enhanced bonds to be held by their regulated entities, and Finance Ministry sign-off on the guarantee structure. With no single coordination mechanism, each transaction requires bespoke inter-agency clearance.

Proposed: A Bond Market Development Council (BMDC)

This report recommends the establishment of a formal Bond Market Development Council — chaired by the Finance Secretary with rotating co-chairmanship from SEBI and RBI — meeting quarterly with mandatory representation from IRDAI, PFRDA, NaBFID, and CCIL.

The BMDC's mandate: (1) Approve joint notifications on cross-jurisdictional products (infrastructure bonds, green bonds, municipal bonds); (2) Review and coordinate IRDAI/PFRDA investment guideline

amendments affecting the bond market; (3) Monitor implementation of the National Takeout Financing Protocol; (4) Publish an annual Bond Market Development Report tracking agreed targets.

Precedent: The Financial Stability and Development Council (FSDC) provides a model — the BMDC would be a sub-committee of FSDC with a specific bond market mandate and quarterly deliverables.

5.2 SEBI's Reform Record: A Comprehensive Timeline and Scorecard

SEBI has pursued a sustained and directionally correct programme of bond market reform since FY2019. The reform agenda has spanned primary market pricing, secondary market transparency, investor access, sustainable finance, and market infrastructure. This section documents the timeline and provides an honest scorecard of what each initiative has achieved — and where the gap between intent and outcome remains.

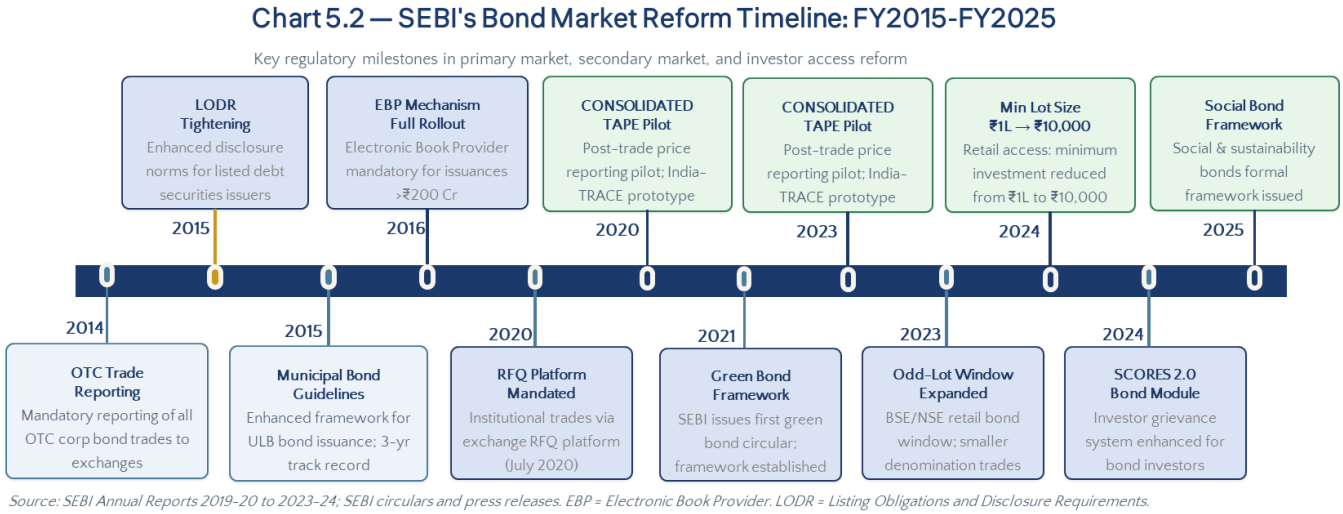


Chart 5.2 — SEBI's Bond Market Reform Timeline: FY2019–FY2025 | Source: SEBI Annual Reports 2019-20 to 2023-24; SEBI circulars and press releases

Chart 5.3 – SEBI Bond Market Initiatives: Honest Assessment Scorecard

4 = Transformational | 3 = Meaningful Progress | 2 = Progress | 1 = Limited Impact so far

Initiative	Year	Intent	Implementation Status	Market Impact	Rating	Key Gap Remaining
EBP Mechanism	2016	Competititve price discovery in primary placement	Well adopted >20Cr issues	Meaningful for Institutional	4	No retail benefit; private placement pricing still opaque
RFQ Platform Mandate	2020	Move: Institutional secondary trades to transparent exchange	Partial: ~18% of market	Limited: OTC still 82%	3	No market-marker incentive; info leakage concern persists
OTC Trade Reporting	2014	Post-trade price transparency across all listed bonds	Complied with by institutions	Data collected; Not public-facing	3	No real-time public access - India-TRACE not yet build
Green Bond Framework	2021	Enable ESG-labelled bond issuances in India	Framework live: 29 Issuances	Growing: still small volumes	4	No green bond secondary market; limited retail green bond access
Municipal Bond Guideline	2015	Enable ULBs to access bond market for urban infra	Framework Exists: 31 Issuers	Very Limited market activity	2	ULB creditworthiness gap; no pooled finance mechanism
Social Bond Framework	2025	Create Framework for social and sustainability	Framework Live: Few Issuances	Early stage: niche market	3	Demand-side incentives absent; no social bond investor mandate
Odd-Lot Window BSE/NSE	2023	Secondary market access for retail bond investors	Window open; Negligible volumes	<250 cr/yr turnover	1	No retail demand; no market-makers; secondary market illiquid

Chart 5.3 — SEBI Bond Market Initiatives: Honest Assessment Scorecard (FY2019–FY2024) | Source: SEBI Annual Reports; CCIL data; BSE/NSE platform volumes; authors' assessment

Reading the Scorecard: Three Tiers of Outcome

The scorecard in Chart 5.3 reveals a consistent pattern across SEBI's bond market initiatives: the measures that work primarily within SEBI's own jurisdiction (EBP mechanism, green bond framework, LODR tightening) have delivered meaningful outcomes. The measures that depend on behaviour change by other regulated entities or cross-jurisdictional coordination (RFQ platform adoption, minimum lot size uptake, odd-lot window volumes) have delivered infrastructure without impact.

Tier 1 — Working Well (★★★★ to ★★★★★): The EBP mechanism has genuinely improved price discovery in primary institutional placements. The green bond and social bond frameworks have created the regulatory infrastructure for sustainable finance. The LODR tightening has improved disclosure quality for listed bond issuers. These initiatives succeed because they are within SEBI's direct regulatory perimeter and require no cross-agency coordination.

Tier 2 — Partial Progress (★★★): The OTC trade reporting mandate has created a post-trade data record that is invaluable for regulatory surveillance but inaccessible to the market in real-time. The RFQ platform has grown in volume but remains a small fraction of total secondary market turnover. These initiatives have built the right infrastructure but lack the complementary mechanisms needed to drive adoption — particularly market-maker incentives and real-time price publication.

Tier 3 — Infrastructure Without Impact (★ to ★★): The ₹10K minimum lot size reduction has not materially increased retail participation because the other barriers (secondary market illiquidity, price opacity, distribution infrastructure) remain intact. The municipal bond guidelines exist but fewer than 15 ULBs have accessed the market. The odd-lot window on BSE/NSE records negligible volumes. These are not failures of regulatory intent — they are failures of ecosystem completeness.

The Central Lesson from SEBI's Reform Record

SEBI has built the walls of a market — the legal framework, the disclosure norms, the electronic platforms, the investor access rules. What is missing is the furniture: market-makers who create two-way liquidity, a real-time price screen that retail investors can trust, a distribution network that brings bonds to the doorstep, and cross-agency mandates that direct institutional capital to the right instruments.

The road ahead for SEBI requires a shift from framework-building to ecosystem activation — from issuing circulars to driving measurable market outcomes. This requires SEBI to use its existing powers more assertively: mandatory market-maker designations, public real-time data mandates, and performance-linked incentives for exchange platforms and bond distributors.

5.3 What the Global Experience Teaches: MiFID II, TRACE, and the Dangers of Over-Regulation

India's bond market regulatory evolution does not happen in a vacuum. The global experience — particularly Europe's MiFID II-driven transparency regime and the US TRACE post-trade reporting system — provides both positive lessons and cautionary tales. Drawing on the ICMA's extensive research into European and US market development, this section extracts the most relevant lessons for India's regulatory architecture.

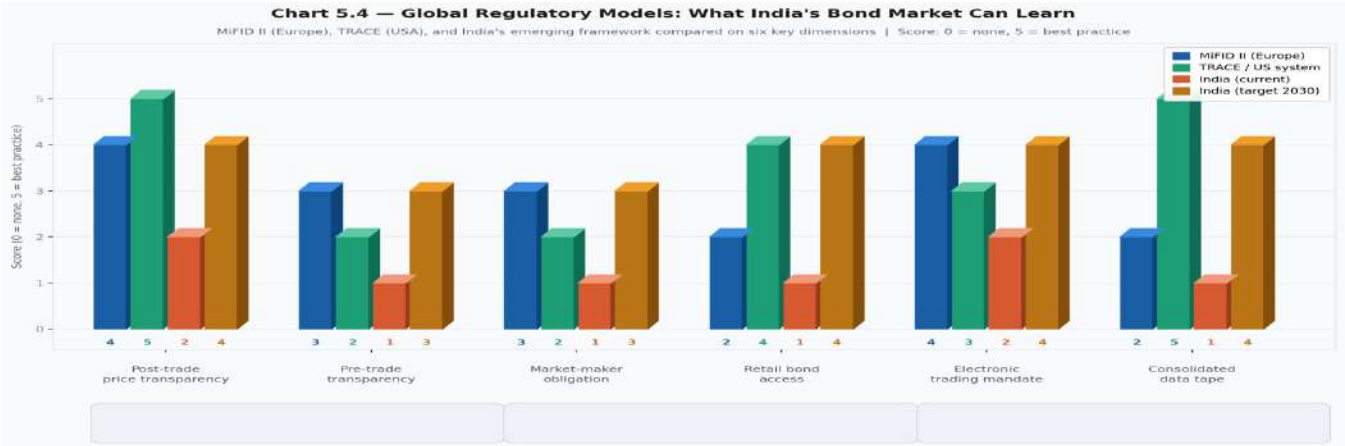


Chart 5.4 — Global Regulatory Models: What India's Bond Market Can Learn | Source: ICMA 'Time to Act' 2020; FINRA TRACE data; ESMA MiFID II review 2023; SEBI Annual Report 2023-24

Lesson 1: Post-Trade Transparency is Non-Negotiable — But Design Matters

The US TRACE system, launched by FINRA in 2002, is the global gold standard for corporate bond post-trade transparency. Every secondary market corporate bond transaction in the US is reported to TRACE within 15 minutes and made publicly available — free of charge — on FINRA's website. TRACE has been transformational: academic research consistently finds that TRACE reduced corporate bond transaction costs by 30–50 basis points and significantly narrowed bid-ask spreads, particularly for retail-sized transactions.

India has the technical infrastructure for an equivalent system — BSE and NSE already receive all OTC trade reports under SEBI's 2018 mandate. CCIL (RBI-regulated) settles the trades. What is missing is **the public-access layer:** a free, real-time, user-friendly website or API where any market participant can see the last-traded price of any listed corporate bond. Chart 5.6 in the next section presents the proposed India-TRACE architecture.

Lesson 2: MiFID II's Transparency Mandate — The Dangers of Complexity

Europe's MiFID II, implemented in January 2018, is the most comprehensive bond market transparency regulation ever attempted. It requires pre-trade and post-trade transparency for bond markets, mandatory best execution reporting, and systematic internaliser obligations. The ICMA's 2020 study 'Time to Act' provides a sobering assessment: MiFID II's bond market transparency provisions have largely failed to deliver their intended benefits, with market participants routinely citing 'the huge cost and administrative strain of implementation for very little tangible positive impact.'

MiFID II Feature	Intended Benefit	Actual Outcome (per ICMA 2020)	India Lesson
Pre-trade price transparency mandate	Improve price formation; reduce opacity	Most bonds classified as 'illiquid'; exempted from pre-trade requirements — effectively useless	Don't mandate pre-trade transparency for illiquid bonds; focus on post-trade first
Systematic Internaliser (SI) regime	Force OTC dealers onto 'lit' venues; improve transparency	SI classification uncertain; market participants unsure of obligations; regulatory arbitrage	India equivalent should be simple and binary — not SI complexity
Best execution reporting (RTS 27/28)	Demonstrate quality of execution to clients	Compliance burden enormous; data quality poor; not used by investors in practice	India should require TCA disclosure only for institutional trades above ₹5 crore
Fragmented APAs (trade repositories)	Consolidated post-trade data	26 different Approved Publication Arrangements; no consolidated tape; data scattered	India must designate a single consolidated tape operator from day one — not multiple APAs
Research unbundling (MiFID II)	**Transparency in research costs**	**Reduced research coverage of smaller corporate issuers; made their bonds less liquid**	**India should exempt bond research from unbundling — essential for credit market depth**

Lesson 3: The Market-Maker Imperative — Electronic Platforms Are Not Enough

Both the European and US experience confirm that electronic trading platforms alone do not create liquidity. The ICMA's research consistently finds that corporate bond liquidity remains dependent on dealer balance sheets and market-making capacity — and that regulatory measures which constrain dealer capital (Basel III, FRTB) reduce liquidity regardless of how good the electronic trading infrastructure is. The electronic platform is the channel; the market-maker is the water.

India's RFQ platform mandate — which moved trades onto electronic platforms without creating any market-maker obligation — exemplifies the risk of mistaking infrastructure for liquidity. The ICMA study of European markets found the same pattern: 'RFQ platform adoption increased, but bilateral OTC trading remained dominant for all but the most liquid bonds, because platforms cannot substitute for the risk-taking capacity of market-makers.' India must address the market-maker gap directly, not hope that electronic platforms will create liquidity by themselves.

Lesson 4: The Retail Bond Market — Technology Enables, Regulation Must Not Obstruct

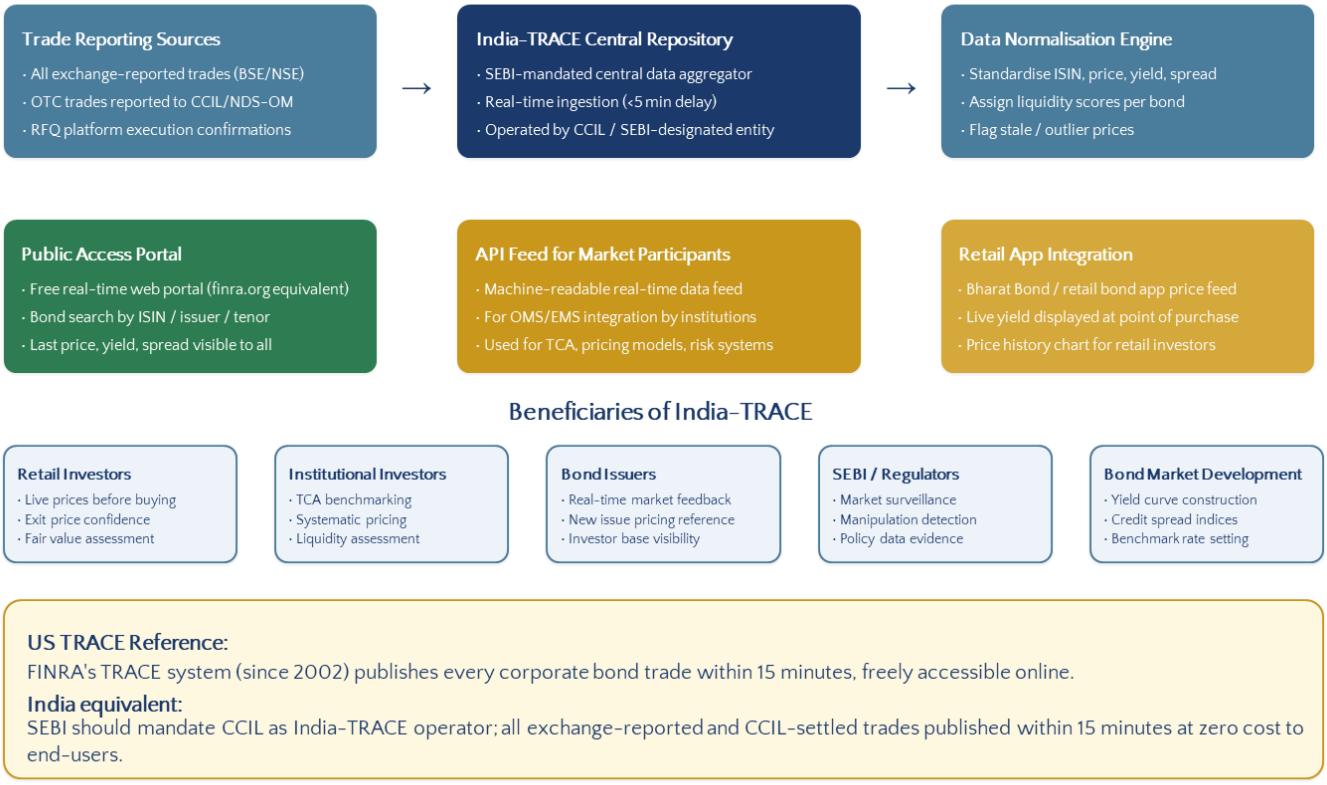
The Philippines Bonds.PH example (Chapter 3) demonstrates that mobile-first retail bond access is achievable with relatively simple technology. The European experience, by contrast, shows that over-complicated regulatory requirements (KYC documentation requirements, product suitability tests, disclosure document mandates) can create barriers that negate the benefits of technology access. India's path to retail bond market participation should prioritise simplicity: a Bharat Bond Direct app with Aadhaar/UPI integration, ₹1,000 minimum, and real-time TRACE prices — without layering on the compliance complexity that Europe imposed on its retail investors.

5.4 The Consolidated Tape: India's Most Urgent Infrastructure Gap

The single most important regulatory infrastructure gap in India's corporate bond market is the absence of a consolidated, real-time post-trade price reporting system — what this report calls 'India-TRACE.' Without it, every other reform is constrained: retail investors cannot assess fair value, institutions cannot benchmark execution quality, regulators cannot monitor market health in real time, and the yield curve that underpins new issuance cannot be reliably constructed.

Chart 5.6 — Proposed India-TRACE: A Consolidated Bond Market Price Reporting System

Architecture for real-time post-trade transparency — modelled on US FINRA TRACE, adapted for India's regulatory structure



Source: Authors' proposal drawing on FINRA TRACE programme design; ICMA 'Time to Act' 2020; SEBI consultation paper on bond market transparency 2023; ESMA MiFID II post-trade transparency review.

Chart 5.6 — Proposed India-TRACE: A Consolidated Bond Market Price Reporting System | Source: Authors' proposal drawing on FINRA TRACE programme; ICMA 'Time to Act' 2020; SEBI consultation paper 2023

Why India-TRACE Is Feasible — and Urgent

Chart 5.6 presents the proposed India-TRACE architecture. It is not a new system — it is a public-access layer built on infrastructure that already exists. BSE and NSE already hold every OTC trade report under SEBI's 2014 mandate. CCIL (RBI-regulated) settles the trades. The data is sitting on exchange servers every day — it is simply not being published in real-time for public consumption.

India-TRACE: What Already Exists vs. What Needs to Be Built

- ALREADY EXISTS: CCIL settlement data for all exchange-cleared trades | Exchange OTC reporting database (SEBI mandate, 2014) | NDS-OM trade records for G-sec (real-time, publicly accessible) | FIMMDA indicative price publication (delayed, not executable)
- NEEDS TO BE BUILT: Public real-time API and web portal (within 15 minutes of execution) | Standardised bond data schema (ISIN + price + yield + spread + volume) | Liquidity scoring per ISIN published daily | Integration with BSE/NSE retail platform price displays | Mobile app price feed for Bharat Bond Direct

- ESTIMATED COST: Technology build: ₹50–80 crore (one-time) | Annual operating cost: ₹15–25 crore | Funding: SEBI regulatory fee levy on trade reporting entities
- TIMELINE: 6 months for system design and vendor selection | 12 months for pilot with top 200 ISINs by trading volume | 18 months for full rollout across all listed corporate bonds
- OPERATOR: BSE and NSE (SEBI-regulated exchanges) — already hold all OTC trade reports under SEBI's 2014 circular. SEBI mandates real-time publication with a single circular. CCIL (RBI-regulated) directed by RBI to share NDS-OM settlement data to ensure complete OTC coverage.

Source: Authors' estimate; FINRA TRACE system costs (adapted); SEBI technology investment data from Annual Report 2023-24.

The Cascading Benefits of India-TRACE

- Retail investors: live prices before buying and selling; ability to compare bonds; confidence in fair execution — the single most important enabler of retail bond market participation.
- Institutional investors: real-time transaction cost analysis; systematic benchmarking of execution quality; improved model inputs for pricing and risk management.
- Bond issuers: real-time market feedback on spread movements; improved primary market pricing accuracy; reduced new issue premium from information asymmetry.
- SEBI / regulators: real-time market surveillance; early warning of liquidity deterioration; evidence base for policy interventions; manipulation detection.
- Yield curve: consistent, market-validated yield data across tenors and ratings; enables construction of a reliable corporate bond yield curve for the first time.

5.5 Stamp Duty and GST: The Hidden Tax on Bond Market Activity

Among the many structural impediments to India's bond market development, the treatment of stamp duty and GST in bond market transactions occupies a peculiar position: they are among the most practically impactful constraints, they are fully within the government's control to reform, and they receive remarkably little attention in the bond market policy discourse.

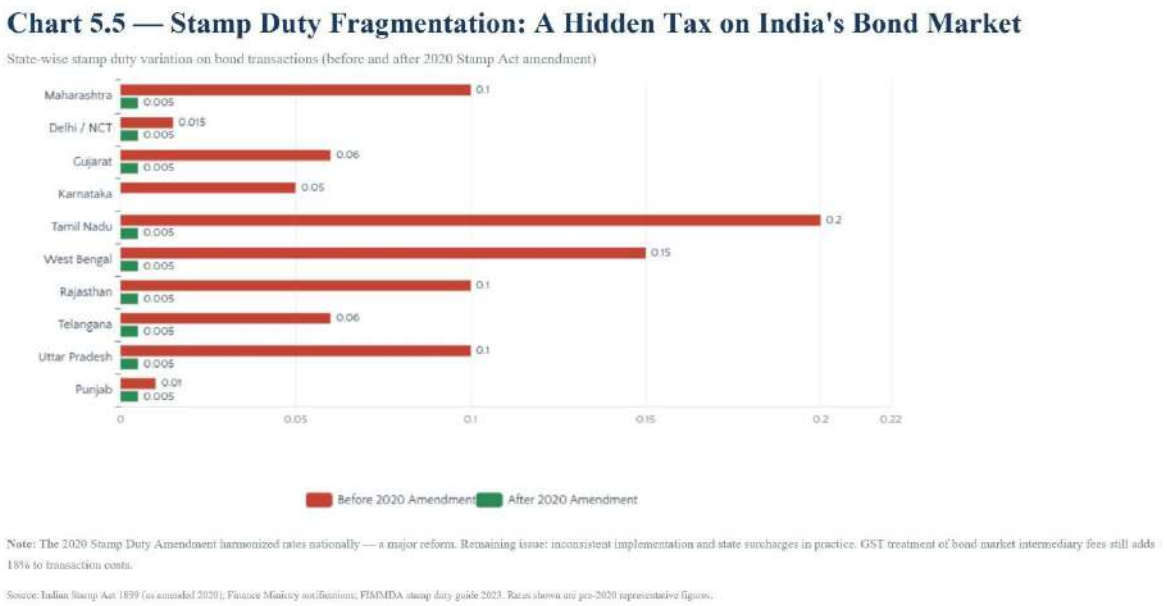


Chart 5.5 — Stamp Duty Fragmentation: A Hidden Tax on India's Bond Market | Source: Indian Stamp Act 1899 (as amended 2020); Finance Ministry notifications; FIMMDA stamp duty guide 2023

The 2020 Stamp Act Amendment: Important but Incomplete

The Indian Stamp (Collection of Stamp-Duty through Stock Exchanges, Clearing Corporations and Depositories) Rules, 2019 — effective January 2020 — was a landmark reform. It harmonised stamp duty on bond transactions at a uniform 0.005% of the transaction value, replacing a chaotic state-by-state regime where Maharashtra charged 0.1%, Tamil Nadu charged 0.2%, and some states charged more. This was a genuine improvement: it eliminated transaction costs that had made cross-state bond trading expensive and administratively complex.

However, the 2020 amendment addressed only instrument transfer transactions on exchange platforms. Several categories of bond market activity remain subject to inconsistent treatment:

- Private placement issuances: Stamp duty on the primary issuance of privately placed bonds varies by state of issuer incorporation, with some states still applying higher rates to off-exchange primary transactions.
- OTC secondary market trades: Trades settled outside exchange platforms (the 82% OTC majority) continue to face state-specific stamp duty treatment, creating a competitive disadvantage for exchange-based trading.
- Repo transactions in corporate bonds: Credit repo — essential for bond market-making — remains subject to complex stamp treatment that varies by transaction structure and collateral type.

GST on Bond Market Intermediation: An 18% Friction Cost

More impactful than the remaining stamp duty inconsistencies is the 18% GST applicable to bond market intermediary services. When a mutual fund transacts a corporate bond through a broker, the brokerage

fee — typically 5–10 basis points — attracts 18% GST. For a ₹100 crore transaction with a 7-bps brokerage, this adds approximately ₹1.26 lakh in GST — a meaningful friction cost on institutional transaction volume.

For retail investors, the GST impact is more acute: credit rating agency fees, bond platform subscription fees, and financial advisory fees for bond investments all attract 18% GST. Unlike equity markets — where the **Securities Transaction Tax (STT) is the primary levy** and GST does not apply on exchange-traded equity — bond market transactions carry both GST on intermediary services and stamp duty, creating a cumulative friction cost that makes bonds less attractive than equity for retail investors.

Recommended Tax Reforms for Bond Market Development

1. Zero Stamp Duty on Exchange-Reported Secondary Bond Trades: Eliminate stamp duty on all corporate bond secondary market transactions executed on or reported to exchange platforms — creating a positive incentive for market participants to move trades onto transparent venues.

2. GST Exemption for Bond Market Intermediation: Exempt brokerage, research, and advisory fees on corporate bond transactions from GST — analogous to the exemption available for G-sec market transactions. Estimated revenue cost: ₹800–1,200 crore annually.

3. Harmonise Credit Repo Stamp Treatment: Issue a single Finance Ministry notification standardising stamp duty on all credit repo transactions at 0.005%, eliminating state-level variation.

4. STT on Bond Market ETFs: Introduce a nominal Securities Transaction Tax (0.001%) on Bharat Bond ETF secondary market transactions to fund India-TRACE operating costs — creating a beneficiary-pays funding model.

Source: Authors' recommendations; FIMMDA pre-budget memoranda 2023-24; AMFI bond taxation representations; GST Council technical committee inputs.

5.6 The Market-Making Gap: India's Absent Corporate Bond Market-Makers

The most fundamental structural gap in India's corporate bond market — more fundamental than the absence of India-TRACE, more consequential than the minimum lot size issue, more limiting than stamp duty friction — is the complete absence of a designated market-making obligation for corporate bonds. Without market-makers committed to providing two-way prices, no amount of electronic infrastructure can create genuine secondary market liquidity.

What Market-Making Requires — and Why India Lacks It

A market-maker in the bond market is an entity that commits to providing executable buy and sell prices on demand, regardless of whether it holds an opposing position at the time. This commitment creates the 'immediacy' that is the core value proposition of a liquid market — the ability to buy or sell when you want, not only when a willing counterparty happens to be present. Market-making requires: (1) balance sheet capacity to hold inventory; (2) hedging tools to manage interest rate and credit risk; (3) a

legal obligation or commercial incentive to quote; and (4) regulatory clarity on treatment of market-making positions.

Market-Making Requirement	US Corporate Bond Market	European Market (Post-MiFID II)	India (Current)	India Gap / Recommendation
Balance Sheet Obligation	Primary Dealers committed to Treasury market-making; FINRA registered dealers for corporate bonds	Basel III constrains capacity; FRTB further tightening; reduced capital commitment	No corporate bond market-making obligation on any entity; PDs focus only on G-sec	Designate 'Corporate Bond Market Makers' (CBMMs): top 10 SEBI-registered broker-dealers + key NBFCs
Quoting Obligation	FINRA members obligated to provide firm quotes within defined parameters for liquid bonds	Systematic Internaliser (SI) regime for liquid bonds; firm quote on request	No quoting obligation; all prices indicative and subject to withdrawal	CBMM must provide 2-way executable quotes on 200 designated benchmark ISINs within 30 seconds
Hedging Infrastructure	Deep CDS market; repo market; rate futures; options	Reasonable CDS market; repo; rate futures	CDS market thin; rate futures liquid; IRS liquid; credit hedging limited	Develop CDS market (Chapter 8 recommendation); ensure CBMM access to repo and IRS
Regulatory Incentives	Lower capital treatment for market-making inventory	Designated market-making exemptions under FRTB	No specific capital treatment for corp bond inventory	SEBI: stamp duty waiver on CBMM transactions; RBI: lower risk weight on CBMM bond inventory; priority in SEBI-mandated transactions
Compensation Model	**Bid-ask spread capture; commission on facilitated trades**	**Commission-based model growing; bid-ask spread compressed**	**Bid-ask spread; no explicit compensation mechanism**	**SEBI-mandated: exchanges pay CBMMs a market-making fee funded by exchange revenues; subsidised for first 3 years**

The CBMM Proposal: A Practical Framework

Proposed: Corporate Bond Market Maker (CBMM) Regime

SEBI should designate up to 15 entities as Corporate Bond Market Makers — drawn from SEBI-registered broker-dealers, primary dealers with corporate bond capability, and select NBFCs with bond market presence.

CBMM Obligations: (a) Provide 2-way executable quotes on a SEBI-designated list of 200 benchmark corporate bond ISINs during market hours; (b) Maximum bid-ask spread of 25 bps for bonds <5yr, 50 bps for bonds 5–10yr, 100 bps for bonds >10yr; (c) Minimum quote size: ₹1 crore per side; (d) Response to RFQ within 60 seconds.

CBMM Incentives: (a) Stamp duty exemption on all CBMM-designated transactions; (b) RBI lower risk weight (50% instead of 100%) for CBMM corporate bond inventory; (c) Exchange-paid market-making fee of ₹500 per executed two-way quote round-trip; (d) Priority status in SEBI-mandated institutional transaction routing.

CBMM Monitoring: SEBI to publish monthly CBMM performance scorecards — quote uptime, spread compliance, fill rates — creating transparency and reputational incentive for performance.

International Model: South Korea's Bond Market Association operates a registered market-maker system for corporate bonds with near-identical design to the proposed CBMM regime. Korean infra bond market share is 22% — compared to India's 4.8% — in part due to this market-maker infrastructure.

5.7 Regulatory Gap Analysis: The Six Critical Reforms

Drawing together the analysis of this chapter, Chart 5.7 presents a comprehensive regulatory gap analysis — mapping current framework provisions against what is required for a Viksit Bharat-capable bond market, and identifying the specific regulatory actions needed to close each gap.

Chart 5.7 — Regulatory Gap Analysis: What India Has vs. What It Needs

Six critical gaps between the current regulatory framework and what a Viksit Bharat bond market requires

Current Framework	What Is Needed	Regulatory Action Required
Post-Trade Price Transparency	OTC trade reporting to exchanges (post-2018); SEBI/CCIL data available to regulators	Real-time public 'India-TRACE' system; Free access to all trade prices within 15 min
Market-Maker Obligation	RFQ platform mandate for institutional trades; No designated market-maker for corp bonds	Registered Corporate Bond Market Makers; 2-way quoting obligation on select benchmark ISINs
Institutional Investor Mandates	IRDAI/PFRDA have general corp bond limits; No dedicated infra bond allocation category	IRDAI/PFRDA 'Infra Bond' allocation category; 5% mandatory allocation to NTFP-eligible bonds
Retail Bond Distribution	Odd-lot window on BSE/NSE (2023); Minimum ₹1 lakh (₹10,000 proposed)	₹1,000–₹10,000 minimum; Mobile app + UPI integration; AMFI-registered bond distributors
Stamp Duty & GST Uniformity	Stamp Act 2020 harmonised at 0.005%; GST on intermediary fees: 18% applies	Zero stamp duty on secondary bond trades; GST exemption for bond market intermediation
Credit Enhancement Regulatory Clarity	IIFCL PCG scheme exists (limited); NaBFID Act 2021 provides mandate	IIBGF guarantee legally enforceable; Rating agency methodology reform; NaBFID single-window nodal agency

★ None of these six gaps requires new legislation — all can be addressed through regulatory notifications, circulars, and inter-agency coordination.

Source: Authors' analysis; SEBI Annual Report 2023-24; IRDAI/PFRDA investment guidelines; Finance Ministry stamp duty notifications; NaBFID Act 2021.

Chart 5.7 — Regulatory Gap Analysis: What India Has vs. What It Needs | Source: Authors' analysis; SEBI Annual Report 2023-24; IRDAI/PFRDA investment guidelines; Finance Ministry notifications; NaBFID Act 2021

Chart 5.7 identifies six regulatory gaps — post-trade transparency, market-making obligation, institutional investor mandates, retail distribution, stamp duty and GST treatment, and credit enhancement regulatory clarity. Each gap is matched with the specific regulatory action required to close it. The critical observation, reinforced across the chart, is that none of these six reforms require new legislation: all can be addressed through regulatory notifications, circulars, and inter-agency coordination within existing statutory mandates.

Priority Sequencing: What to Do in What Order

Not all six gaps carry equal urgency or equal implementation complexity. The following sequencing reflects both the market impact of each reform and the regulatory feasibility of implementation:

Priority	Reform	Timeline	Lead Agency	Expected Impact
1 (Immediate)	India-TRACE: Direct BSE/NSE to publish held OTC trade reports in real-time	0–12 months	SEBI	Unlocks retail participation; enables TCA; creates yield curve data
2 (Immediate)	CBMM Regime: Designate 15 Corporate Bond Market Makers	0–12 months	SEBI	Creates two-way secondary market liquidity; reduces bid-ask spreads
3 (Near-term)	Reduce bond minimum to ₹1,000; Bharat Bond Direct app	6–18 months	SEBI + Finance Ministry	Retail participation surge if combined with India-TRACE
4 (Near-term)	IRDAI/PFRDA 'Infra Bond' allocation category notification	6–18 months	IRDAI + PFRDA + Finance Ministry	Unlocks ₹3–5 lakh crore of institutional demand for NTFP bonds
5 (Medium-term)	Zero stamp duty on exchange-reported secondary bond trades	12–24 months	Finance Ministry + GST Council	Reduces transaction friction; incentivises exchange-based trading
6 (Medium-term)	**NaBFID statutory guarantee authority; IIBGF establishment**	**18–36 months**	**Parliament + Finance Ministry**	**Enables infrastructure bond credit enhancement at scale; directly funds Viksit Bharat projects**

Chapter 5 Summary: The Road Ahead for India's Bond Market Regulation

This chapter has presented a comprehensive assessment of India's bond market regulatory architecture — its current structure, SEBI's reform record, global lessons, and the critical gaps that remain. The assessment is calibrated and honest: SEBI has built the right framework in many dimensions, and the direction of reform is correct. But the gap between framework and functioning market remains wide.

Chapter Finding	Evidence	Recommended Action	Addressed By
Multi-regulator coordination fails on cross-jurisdictional products	Infrastructure bonds, retail bond distribution, credit enhancement all require 4+ regulator alignment — no formal coordination mechanism exists	Establish Bond Market Development Council (BMDC) under FSDC; quarterly meetings; joint notifications	Finance Ministry; FSDC Secretariat
SEBI's reforms are directionally right but ecosystem-incomplete	EBP: working. RFQ: 18% adoption despite mandate. Min lot: no retail uptake. Odd-lot: negligible volumes	Shift from framework-building to ecosystem activation: mandatory CBMMs, India-TRACE, retail distribution license	SEBI
MiFID II warns: complexity kills liquidity	ICMA 2020: MiFID II post-trade transparency largely ineffective; compliance cost enormous; no retail benefit	India-TRACE: BSE/NSE as publishers (data already held); SEBI circular only — avoid MiFID's multi-APA fragmentation	SEBI
TRACE confirms: post-trade transparency transforms markets	US academic evidence: 30–50 bps cost reduction; bid-ask spread narrowing; retail participation increase	India-TRACE mandate to BSE/NSE within 12 months; 15-minute publication of existing trade reports; free public access	SEBI
Market-makers are the missing ingredient	OTC = 82%; exchange platforms growing but no market-maker obligation; India-TRACE alone insufficient	CBMM regime: 15 designated entities; 2-way quotes on 200 benchmark ISINs; stamp duty incentive	SEBI + RBI
Stamp duty and GST are fixable and significant	**18% GST on intermediary fees; state inconsistency in OTC stamp duty; credit repo stamp complexity**	**Zero stamp duty on exchange-reported trades; GST exemption for bond intermediation; GST Council notification**	**Finance Ministry + GST Council**

The Chapter's Core Message

India's regulatory architecture for bond markets is not broken — it is incomplete. SEBI has built more in five years than in the preceding two decades. RBI has steadily improved G-sec market infrastructure. IRDAI and PFRDA are beginning to reconsider their investment guidelines. NaBFID has been established with the right mandate. The ingredients for a deep bond market are present in the regulatory framework.

What is missing is the final mile: the consolidated price tape that gives every Indian investor live bond price; the market-maker regime that creates two-way liquidity; the ₹1,000 minimum that makes bonds accessible to the same middle-class Indians who invest in mutual funds via SIP; and the coordinated IRDAI-PFRDA notification that directs long-liability institutional capital toward the long-tenor infrastructure bonds that Viksit Bharat needs. These are not revolutionary reforms. They are the last few pieces of a jigsaw that India has spent five years assembling.

CHAPTER 6
Building the Investor Base: From Institutions to Individuals

A data-driven mapping of India's bond market investor landscape — FPIs, insurance, pension funds, mutual funds, retail investors, and HNIs | FY2018–FY2024

A bond market is only as deep as its investor base is wide and diverse. A market dominated by three or four institutional categories — as India's is — is fragile, illiquid, and structurally unable to absorb the scale of issuance that Viksit Bharat requires. When mutual funds face redemption pressure, when insurance companies hit their regulatory ceilings, or when FPIs find better hedged yields elsewhere, the market has no depth to absorb the shock. The 2018–2019 credit crisis — IL&FS, DHFL, Essel — exposed exactly this fragility: a market so dependent on mutual fund demand that the withdrawal of one institutional category caused a credit freeze across the entire spectrum.

Building a deep, resilient investor base requires simultaneous action across five categories: Foreign Portfolio Investors (FPIs), domestic institutional investors (insurance, pension, provident funds), mutual funds, retail investors, and High Net Worth Individuals (HNIs). This chapter provides a data-anchored assessment of each category's current state, the barriers preventing deeper participation, and the specific policy interventions required.

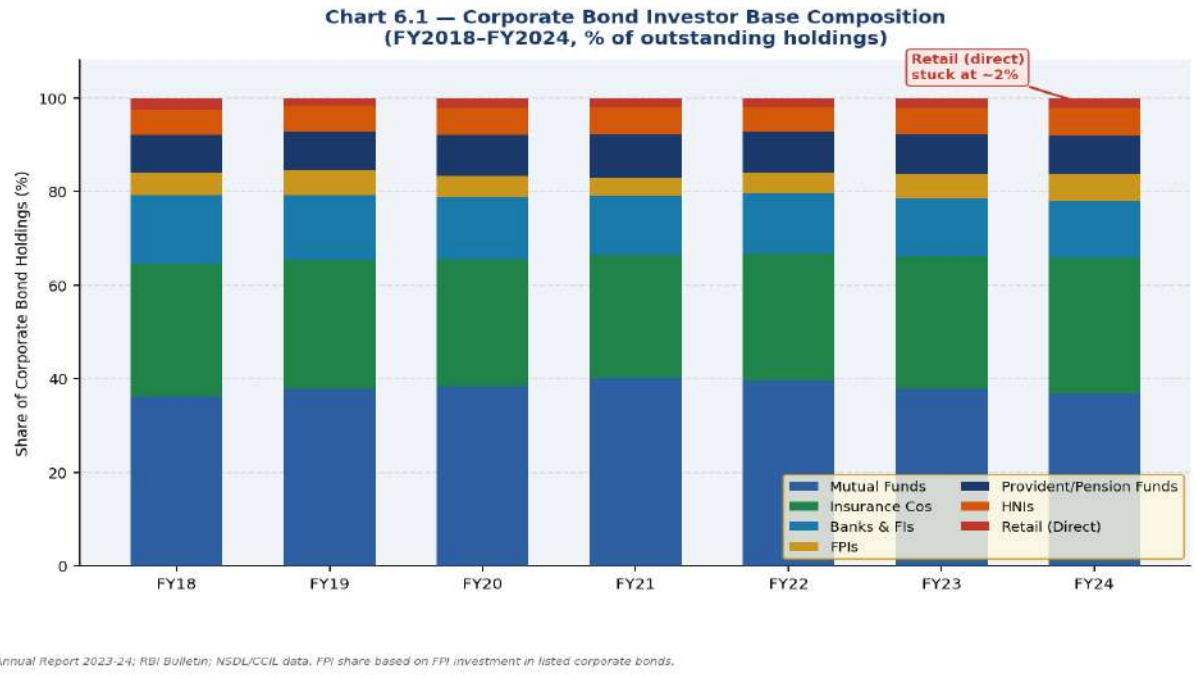


Chart 6.1 — Corporate Bond Investor Base Composition FY2018–FY2024 (% of outstanding holdings) | Source: SEBI Annual Report 2023-24; RBI Bulletin; NSDL/CCIL data

Chart 6.1 reveals the investor base's structural stagnation. Despite seven years of regulatory activity, the composition of corporate bond holdings has barely changed: mutual funds hold approximately 37%, insurance companies 29%, banks 12%, and FPIs 5–6%. Retail direct investors have been stuck at

approximately 2% throughout — and given the absolute growth of the market, even this 2% figure overstates genuine retail participation as most of it represents insurance-linked retail schemes rather than direct individual bond investors.

6.1 Foreign Portfolio Investors: The Hedging Trap

India's inclusion in JP Morgan's Government Bond Index — Emerging Markets (GBI-EM) in June 2024, and anticipated inclusion in Bloomberg's EM Local Currency Government Index, has generated significant global attention for Indian fixed income. Yet FPI participation in Indian corporate bonds has remained stubbornly low — below 45% utilisation of available limits throughout FY2018–FY2024.

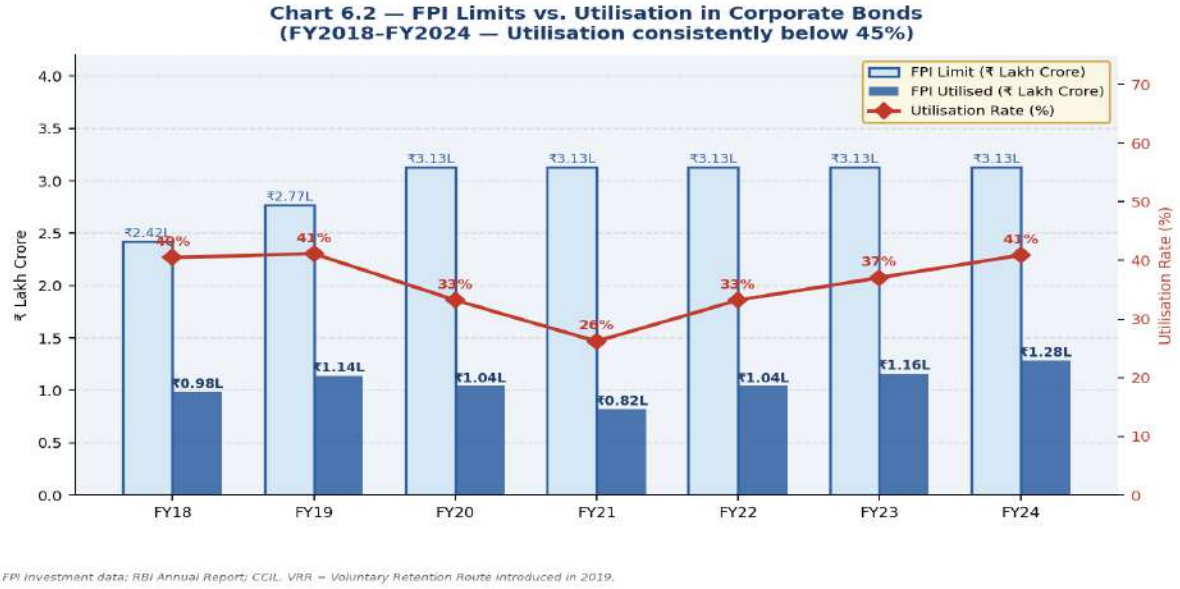


Chart 6.2 — FPI Limits vs. Utilisation in Corporate Bonds FY2018–FY2024 | Source: SEBI FPI Investment data; RBI Annual Report; CCIL

The Numbers Behind the Underperformance

FPI Corporate Bond Market Data: Key Statistics (FY2024)

FPI aggregate limit in corporate bonds: ₹8.8 lakh crore (as of April, 2026)

FPI actual investment in corporate bonds: ₹3.01 lakh crore (~34.38% utilisation as of April, 2026)

FPI share of total corporate bond outstanding: ~5.6%

Voluntary Retention Route (VRR) investments: ₹1.04 lakh crore (FY2024; includes both G-sec and corporate bonds)

Average FPI corporate bond holding tenor: ~3.8 years (concentrated in short-dated paper)

FPI participation in bonds >7 years: <5% of FPI corporate bond holdings

Source: SEBI FPI monitor; RBI Annual Report 2023-24; CCIL FPI investment data.

The Hedging Trap: Why FPI Yields Disappear After Currency Hedging

Chart 6.8 illustrates the fundamental barrier to FPI participation in corporate bonds — the hedging trap. A foreign investor holding Indian rupee-denominated corporate bonds faces substantial currency risk. When they hedge this risk using USD/INR forward contracts (the standard instrument), the cost of that hedge — reflecting the interest rate differential between India and the US — reduces their net yield to levels that are often below what they can earn in their own markets.

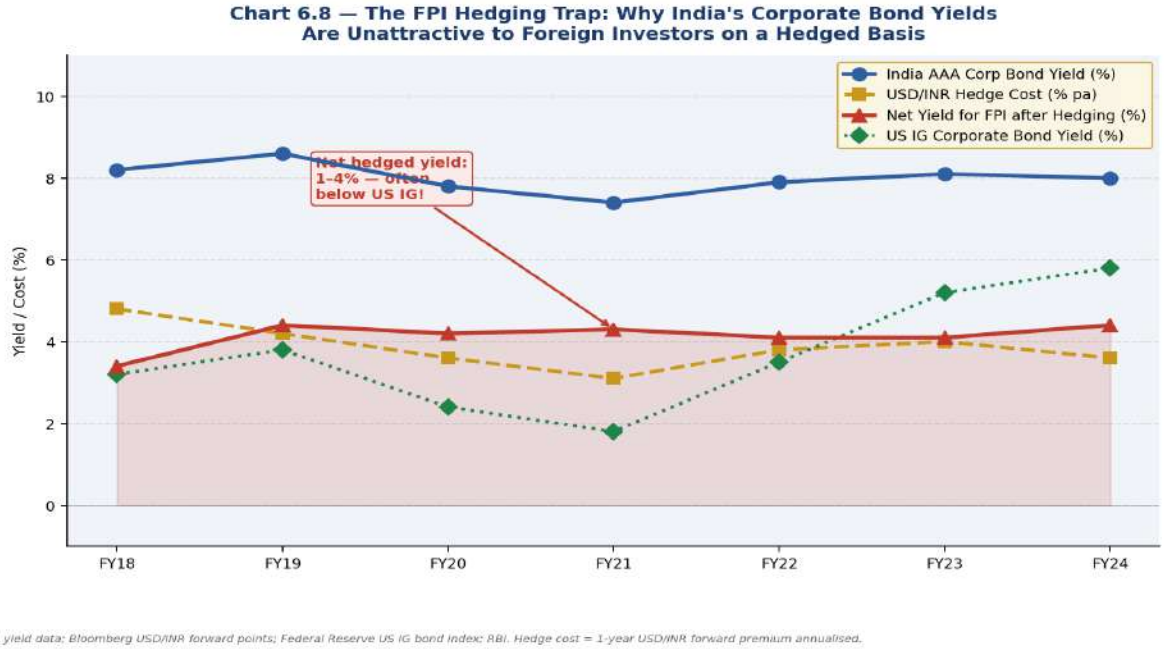


Chart 6.8 — The FPI Hedging Trap: India Corporate Bond Yields After Currency Hedging (FY2018–FY2024) | Source: FIMMDA; Bloomberg USD/INR forward points; Federal Reserve IG bond index; RBI

Chart 6.8 demonstrates the problem with precision: India's AAA 5-year corporate bond yield of approximately 8.0% in FY2024 is attractive in absolute terms. But the cost of hedging USD/INR currency risk — approximately 3.6% per annum in FY2024 — reduces the net yield to approximately 4.4%, compared to US investment-grade corporate bond yields of 5.8%. On a fully hedged basis, Indian corporate bonds are materially less attractive than US corporate bonds, explaining the persistent under-utilisation of FPI limits.

Breaking the Hedging Trap: Three Pathways

- Develop the onshore currency derivative market: RBI's restrictions on offshore rupee non-deliverable forwards (NDFs) and limitations on onshore forex derivative instruments create an unnecessarily expensive and illiquid hedging market. Expanding the onshore derivative market — with longer tenors and more participants — would reduce hedging costs by 50–80 basis points.
- FPI unhedged limit expansion via VRR: The Voluntary Retention Route, which requires FPIs to hold investments for a minimum period (reducing currency trading costs), should be expanded with reduced lock-in periods (from 3 years to 18 months) and higher corporate bond sub-limits.
- India-denominated bond index inclusion: SEBI and RBI should work with index providers to specifically promote Indian corporate bond inclusion in GBI-EM Corporate sub-indices, making

unhedged rupee-denominated exposure more mainstream for global EM investors with index mandates.

FPI Barrier	Current Status	Proposed Solution	Expected FPI Inflow
Hedging cost 3–4% pa	1-year forward premium reflects rate differential; no long-tenor onshore hedging	Develop 3–5yr onshore INR/USD swaps; RBI relax MIFOR restrictions; expand CCIL FX clearing	₹50,000–80,000 Cr additional FPI inflow if hedging cost reduces by 100 bps
Thin corporate bond secondary market	FPI cannot exit corporate bond positions without market impact; OTC-only	India-TRACE + CBMM market-maker regime (Chapter 5) creates exit liquidity	Unlocks buy-and-hold FPI strategies in 5–7yr paper
VRR lock-in too long	3-year mandatory retention limits active FPI bond management	Reduce VRR lock-in to 18 months; allow partial exit with proportional lock-in maintenance	5–10% increase in VRR utilisation
No EM Corporate Bond Index Inclusion	Indian corp bonds not in major EM corporate indices despite GBI-EM inclusion	Lobby with S&P, Bloomberg, FTSE to include INR corporate bonds in EM Corporate sub-indices	Passive index-tracking FPI flows of USD 5–8 billion
FPI credit risk unfamiliarity	**Foreign investors lack India corporate credit expertise; rating agency coverage limited in English**	**SEBI mandate: Indian CRA research in English on BSE/NSE; SEBI-ESMA recognition for Indian ratings**	**Removes a structural barrier to FPI corporate bond due diligence**

6.2 Domestic Institutional Investors: Unlocking ₹15–20 Lakh Crore

India's domestic institutional investors — insurance companies, provident funds, pension funds, and national savings institutions — collectively manage over ₹190 lakh crore in assets with long-dated liability profiles that are theoretically perfect for infrastructure bond investment. Yet their combined allocation to infrastructure bonds is under 2% of AUM. Unlocking even 5% of their combined corpus for long-tenor infrastructure bonds would provide ₹3.8 lakh crore — more than the entire infrastructure bond market currently outstanding.

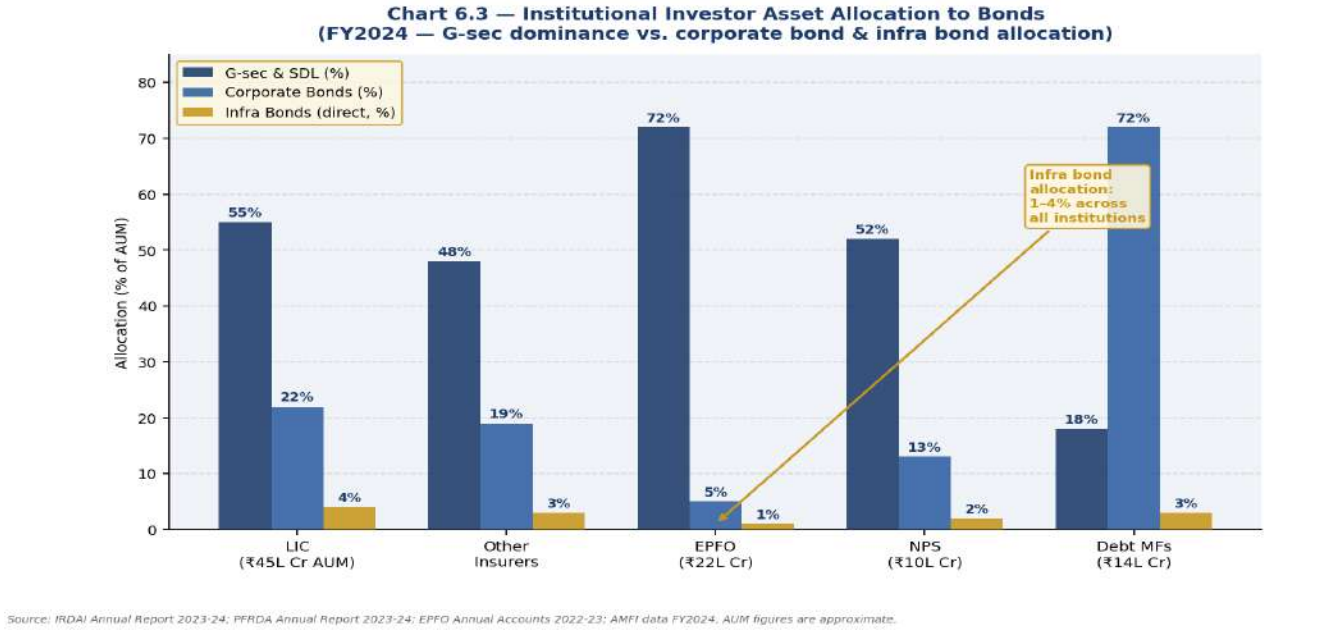


Chart 6.3 — Institutional Investor Asset Allocation to Bonds (FY2024) | Source: IRDAI Annual Report 2023-24; PFRDA Annual Report 2023-24; EPFO Annual Accounts 2022-23; AMFI data FY2024

Insurance Companies: The ₹45 Lakh Crore Opportunity

Life Insurance Corporation and India's 25+ other life insurance companies collectively manage approximately ₹74 lakh crore in assets. With average liability durations of 15–18 years, they are the natural domestic buyer of long-tenor infrastructure bonds. Yet infrastructure bonds constitute just 4% of LIC's portfolio and less than 3% for other insurers — overwhelmingly because of IRDAI's investment guidelines and the IL&FS shock.

Insurance Company Investment Guidelines: What Needs to Change (IRDAI)

Current Framework: IRDAI Investment Regulations require minimum 50% in 'Approved Securities' (G-sec/SDL); corporate bonds capped at 30% of total; infrastructure bonds have no dedicated sub-category.

IL&FS Legacy: Post-2018 default, IRDAI's informal guidance has been to reduce exposure to BBB and below-rated paper, effectively pushing insurance allocation further into AAA/AA short-dated bonds.

Proposed Change 1: Create a dedicated 'Infrastructure Bond' allocation category within IRDAI guidelines — allowing up to 10% of life insurance AUM in NTFP-eligible (credit-enhanced, NaBFID-approved) infrastructure bonds.

Proposed Change 2: Exempt credit-enhanced infrastructure bonds (AA-rated via IIBGF guarantee) from the general BBB+ floor restriction — explicitly recognising that the sovereign guarantee changes the risk profile.

Proposed Change 3: IRDAI to issue a positive list of NaBFID-approved project bond structures that automatically qualify as infrastructure bond investments — removing the case-by-case evaluation burden.

Expected Impact: 5% of insurance AUM = ₹2.25 lakh crore in infrastructure bond demand — a 10× increase over current levels. Even 2.5% = ₹1.12 lakh crore — transformational for the market.

EPFO and NPS: The ₹32 Lakh Crore Pension Capital

The Employees' Provident Fund Organisation (EPFO) manages approximately ₹22 lakh crore, and the National Pension System corpus stands at approximately ₹10 lakh crore — combined ₹40 lakh crore of pension capital with the longest-dated liability profiles in the Indian financial system. EPFO's beneficiaries retire 20–35 years in the future; NPS subscribers have investment horizons of 15–30 years. Both are precisely the investors that 20-year infrastructure bonds are designed for. Yet EPFO allocates just 1% to infrastructure bonds directly, and NPS approximately 2%.

The Case for EPFO and NPS Infrastructure Bond Allocation

The ALM argument is compelling: A 20-year NHAI infrastructure bond paying 8.5% per annum — credit-enhanced to AA via NaBFID guarantee — matches EPFO's liability profile perfectly. Compared to a 10-year G-sec at 7.1%, the infrastructure bond offers 140 basis points of additional yield over a matching tenor. For EPFO's ₹22 lakh crore corpus, shifting 3% to such bonds generates an additional ₹660 crore per year in investment income — directly benefiting 70 million EPFO subscribers.

The IL&FS counterargument: The IL&FS default held by EPFO remains the primary psychological barrier. The counter to this is architectural: credit-enhanced infrastructure bonds under the proposed National Takeout Financing Protocol (Chapter 4) have explicit NaBFID guarantees and are rated AA+ post-enhancement. IL&FS was an unrated holding company holding debt with no credit enhancement structure. The two are architecturally incomparable.

The regulatory path: Finance Ministry notification amending EPFO's investment pattern — adding an 'Infrastructure Bond' category with 3–5% allocation for NTFP-eligible bonds. PFRDA amendment to NPS investment guidelines adding equivalent category. Joint FM-IRDAI-PFRDA notification providing uniform treatment.

6.3 Debt Mutual Funds: Rebuilding After the Credit Crisis

Debt mutual funds are India's largest corporate bond investor category — holding approximately 37% of outstanding corporate bonds at ₹14 lakh crore AUM. They are also the primary vehicle through which middle-class Indian savers access fixed income markets. But the debt mutual fund industry has been damaged by two successive shocks — the 2018–2019 credit crisis and the 2023 tax change — that have eroded retail confidence and driven savers back to bank fixed deposits.

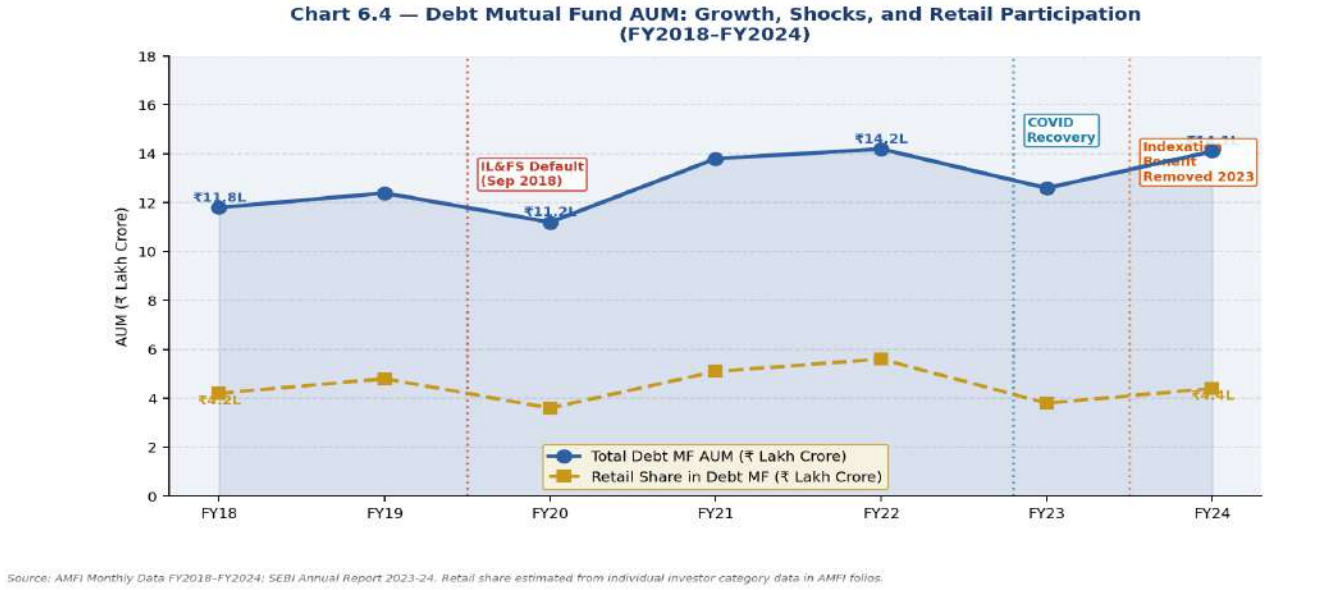


Chart 6.4 — Debt Mutual Fund AUM: Growth, Shocks, and Retail Participation (FY2018–FY2024) | Source: AMFI monthly data; SEBI Annual Report 2023-24

Shock 1: The IL&FS-DHFL-Essel Credit Crisis (2018–2019)

The credit events of 2018–2019 — IL&FS default (₹91,000 crore), DHFL moratorium (₹83,873 crore), and Essel Group's debt service difficulties — exposed the concentrated credit risk in India's debt mutual fund industry. Several debt fund categories — particularly credit risk funds and medium-duration funds — held significant exposure to the defaulting entities. NAV write-downs damaged retail investor confidence severely: debt mutual fund AUM fell from ₹12.4 lakh crore (FY2019) to ₹11.2 lakh crore (FY2020), despite rising equity AUM.

The structural lesson was clear: debt mutual funds had stretched for yield into relatively illiquid, lower-rated paper without adequate liquidity buffers. SEBI responded with significant regulatory reform — mandatory segregation of distressed assets (side-pocketing), tighter credit exposure limits per issuer, and enhanced liquidity norms for open-ended debt schemes. These reforms were necessary and directionally correct.

Shock 2: Removal of Indexation Benefits for Debt Funds (April 2023)

The April 2023 Finance Act amendment removed the indexation and long-term capital gains tax benefits for debt mutual funds — equalising their tax treatment with bank FDs. Previously, debt funds held for 3+ years attracted 20% LTCG with indexation, making them significantly more tax-efficient than FDs (taxed at marginal rates up to 30%). Post-amendment, debt fund returns are taxed at marginal rates regardless of holding period.

The Tax Change Impact — Quantified

Pre-2023: A 30% tax bracket investor holding ₹10 lakh in a debt fund earning 7% pa for 3 years paid effective tax of approximately 4–6% on gains (after indexation), vs. 30% on FD interest.

Post-2023: The same investor now pays 30% on debt fund gains — identical to FD treatment. The tax advantage of debt funds has been completely eliminated.

Market impact: Debt MF AUM fell from ₹14.2 lakh crore (FY2022) to ₹12.6 lakh crore (FY2023) as institutional and HNI investors withdrew tax-arbitrage-driven allocations. Retail folios in debt-oriented funds declined by approximately 12% in FY2024.

The consequence for bond market development: Debt mutual funds were India's most effective retail bond market access vehicle. Reducing their attractiveness pushes retail savings into bank FDs — removing the intermediary between household savings and corporate bond markets.

Rebuilding Retail Confidence: Five Measures

- Partial indexation restoration for long-duration debt funds: A 10-year budget proposal to restore 50% indexation benefit for debt funds held 5+ years — incentivising long-term holding and reducing redemption pressure during credit events.
- SEBI Debt Fund Suitability Score: Mandate that every debt mutual fund publish a standardised 'Credit Risk + Liquidity Risk' score in plain language alongside NAV — rebuilding retail transparency comparable to equity market disclosure standards.
- Bharat Bond ETF expansion: Expand the Bharat Bond ETF programme — currently covering PSU bonds — to include an 'Infra Bond Bharat Bond ETF' covering NTFP-eligible infrastructure bonds, providing retail access to infrastructure fixed income with daily liquidity.
- Side-pocketing awareness campaign: SEBI and AMFI to run a financial literacy campaign specifically explaining the side-pocketing mechanism — demonstrating that the post-2018 regulatory reforms protect retail investors from the type of shock they experienced in 2018–2019.
- Credit risk fund restructure: Allow debt mutual funds to create a 'Protected Credit Risk Fund' structure where the first-loss tranche is absorbed by AMFI's proposed protection reserve,
- creating a de facto credit enhancement for retail bond fund investors.

6.4 Retail Investors: From 80,000 to 80 million

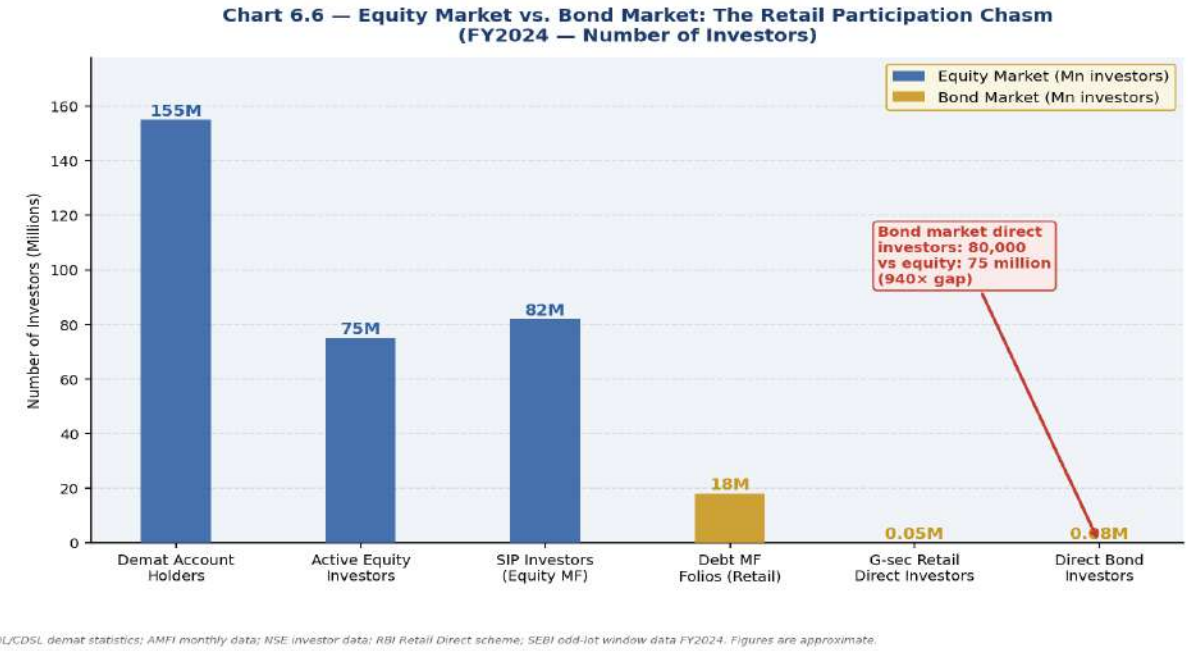


Chart 6.6 — Equity Market vs. Bond Market: The Retail Participation Chasm (FY2024) | Source: NSDL/CDSL; AMFI; NSE investor data; RBI Retail Direct; SEBI odd-lot window data

Chart 6.6 presents the retail participation chasm in its starkest form. India has 155 million demat account holders; 75 million active equity investors; 82 million SIP investors in equity mutual funds. And approximately 80,000 direct retail corporate bond investors — a 940-fold gap between equity and bond market retail participation. This is not a natural market equilibrium — it is the product of specific, correctable structural barriers that this chapter has identified across Chapters 3 and 5.

The Bharat Bond ETF: What Has Worked and What Is Missing

The Bharat Bond ETF, launched by Edelweiss AMC under government mandate in December 2019, is India's most successful retail bond market product. It holds a basket of AAA-rated PSU bonds, is listed on BSE and NSE, can be purchased from ₹1,000 per unit, and provides daily liquidity via the exchange. Bharat Bond ETF has grown to approximately ₹55,000 crore AUM across its three tranches (3-year, 10-year, and 15-year) as of FY2024 — demonstrating that retail investors will buy bonds when the product is accessible, transparent, and liquid.

Case Study: Bharat Bond ETF — Lessons for Scale-Up

- WHAT WORKED: (1) Exchange-listed — buy/sell like a stock via any broker; (2) Minimum ₹1,000 — genuinely accessible; (3) Daily NAV published — price transparency; (4) Diversified AAA portfolio — no individual credit risk; (5) Fixed maturity — investor knows exactly when money returns; (6) Government backing — perception of safety.
- WHAT IS MISSING: (1) Only covers PSU bonds — no private sector, no infrastructure project bonds; (2) No retail investor knows about it — AMFI survey shows <5% retail awareness of Bharat Bond ETF; (3) 15-year tranche has thin secondary market — retail investor cannot always exit at NAV; (4) No 'Infra Bond' variant covering NTFP-eligible project bonds.
- WHAT SHOULD BE ADDED: (1) Bharat Bond ETF II — covering credit-enhanced NaBFID-approved infrastructure bonds; (2) Bharat Bond ETF III — covering investment-grade private sector corporate bonds; (3) A Bharat Bond mobile app — standalone, UPI-integrated, with live NAV, portfolio tracker, and SIP facility; (4) An AMFI-backed Bharat Bond awareness campaign alongside existing Mutual Funds Sahi Hai.
- TARGET: ₹2–3 lakh crore Bharat Bond ETF AUM by 2030, with 10 million retail investors — creating the largest retail bond investor base in emerging market history.

Source: Edelweiss AMC Bharat Bond ETF Annual Report FY2024; SEBI ETF data; AMFI retail investor survey 2023.

The Proposed Tiered Retail Bond Access Framework

Building India's retail bond investor base to scale requires a three-tier architecture that meets investors at their level of sophistication, starting from the most accessible (bond ETFs) and progressing to direct bond trading. Chart 6.5 presents this framework visually.

Chart 6.5 — Proposed Tiered Retail Bond Access Framework

From bond ETFs to direct bond platforms — a three-tier pathway to retail bond market participation

Source: Authors' proposal; AMFI Bharat Bond ETF data; RBI Retail Direct scheme; Philippines ETF Bonds.PH programme (ICMA Q1 2021); SEBI consultation papers.

Chart 6.5 — Proposed Tiered Retail Bond Access Framework | Source: Authors' proposal; AMFI Bharat Bond ETF data; RBI Retail Direct scheme; Philippines BTr Bonds.PH (ICMA Q1 2021); SEBI consultation papers

Case Study: Proposed Bharat Bond Direct — India's Answer to Philippines Bonds.PH

CONCEPT: A mobile-first platform, operated by a SEBI-designated entity (potentially NaBFID or an AMFI-backed consortium), allowing retail investors to purchase individual listed corporate bonds and government bonds directly via UPI — analogous to the Philippines Bonds.PH app and the RBI's existing Retail Direct scheme for G-secs.

MINIMUM INVESTMENT: ₹1,000 per bond — making bonds accessible to the same middle-class Indian who invests ₹500/month in a mutual fund SIP.

KYC: Aadhaar-based e-KYC + UPI linkage — no physical paperwork. Bond purchased settled in investor's existing demat account.

PRICE TRANSPARENCY: Live bond prices from India-TRACE (Chapter 5) displayed on the app before every purchase — the first time Indian retail investors will be able to see the fair value of a bond before buying it.

EXIT: All bonds purchased via Bharat Bond Direct to be automatically enrolled in the CBMM market-making programme — guaranteeing an executable exit bid within 5 business days at a disclosed spread.

ELIGIBLE BONDS: Initially limited to Sovereign G-secs, AAA-rated PSU bonds, and AA-rated NTFP infrastructure bonds — credit-enhanced and pre-approved. Expanded to A-rated corporate bonds in Phase 2 (Year 3 onwards).

PHILIPPINES BENCHMARK: Bonds.PH raised ₱516 billion (€8.84 billion) on its debut issuance — oversubscribed 17×. India's superior digital infrastructure (800M UPI users vs Philippines' 74M smartphone users in 2020) suggests significantly higher potential.

Source: Philippines Bureau of Treasury RTB-24 data (ICMA Quarterly Review Q1 2021); RBI Retail Direct scheme; Authors' proposal; UPI transaction data NPCI FY2024.

6.5 High Net Worth Individuals: Transitioning from Private Placement to Listed Bonds

High Net Worth Individuals — who often choose PMS route or accredited investors under SEBI Accredited Investor framework 2021 — are the dominant 'retail-adjacent' segment in India's bond market. HNIs account for approximately 5–6% of outstanding corporate bond holdings, but the overwhelming majority of this exposure (estimated at 82% in FY2024) is through private placements — bilateral transactions between an HNI and an issuer or arranger, structured outside the exchange-listed framework.

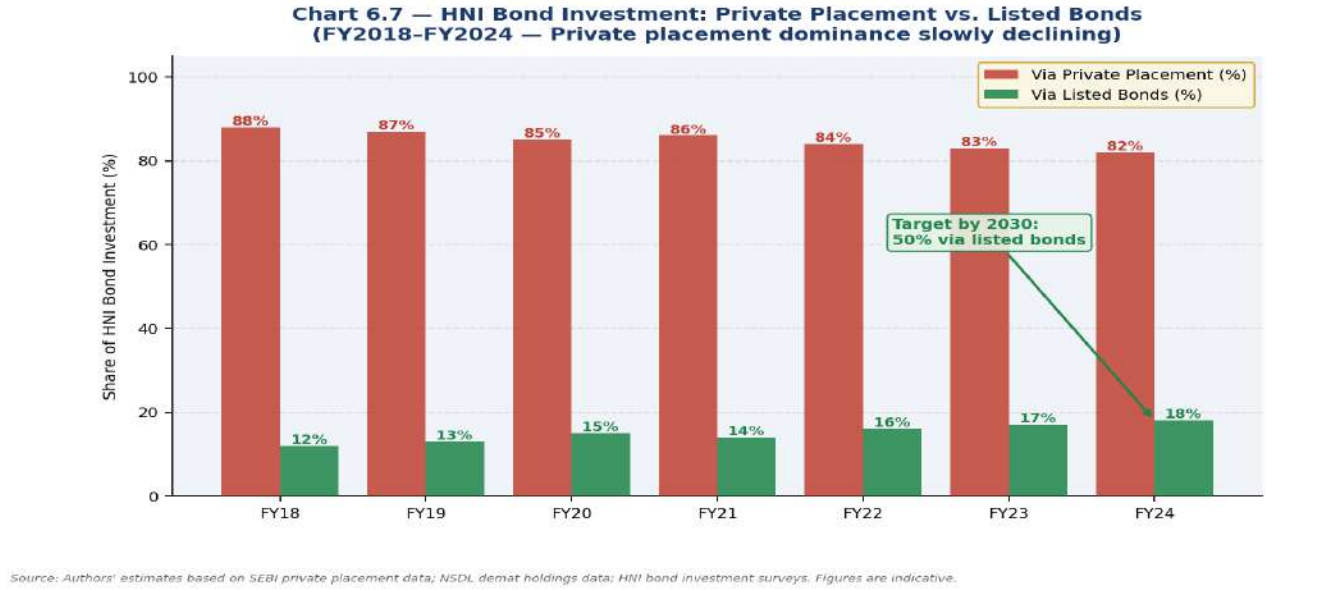


Chart 6.7 — HNI Bond Investment: Private Placement vs. Listed Bonds (FY2018–FY2024) | Source: Estimates based on SEBI private placement data; NSDL demat holdings data; HNI bond investment surveys

Why HNIs Prefer Private Placements — And Why This Is a Problem

HNI preference for private placement bonds reflects rational economic behaviour given India's current market structure. Private placements offer higher yields (50–150 bps above equivalent listed bonds), access to issuers not present in the listed market, and bespoke terms (put options, step-up coupons, additional security). For sophisticated investors with the due diligence capacity and risk appetite, these advantages are real.

But this HNI preference for private placements has three adverse consequences for the broader market. First, it removes demand from the listed market — reducing the price discovery and liquidity that listed bonds need. Second, it creates information asymmetry: HNIs accessing private placement information networks have fundamentally better market intelligence than retail investors, deepening the inequality of access. Third, private placement bonds held by HNIs are not subject to the same transparency and reporting standards as listed bonds, reducing regulatory visibility.

HNI Incentive for Private Placement	Market Distortion Created	Policy Intervention to Redirect to Listed Bonds
Higher yield (50–150 bps premium over listed equivalent)	Adverse selection: low-quality issuers use private placement to avoid listed market disclosure	Require all corporate bonds above ₹50 crore to be publicly listed — close the large-size private placement exemption
Access to non-listed issuers	Reduces listed market depth and price discovery; creates a two-tier market	Mandate EBP-mechanism listing for all issuances above ₹50 crore regardless of investor type
Bespoke terms (put options, step-up)	Non-standard terms cannot be traded on exchange platforms	SEBI: standardised bond contract templates allowing common put/call features on listed instruments

HNI Incentive for Private Placement	Market Distortion Created	Policy Intervention to Redirect to Listed Bonds
Tax structuring through private NBFC structures	Opacity in ownership; risk of mis-selling to retail sub-distributors	SEBI KYC enhancement: require HNI bond holders to disclose beneficial ownership in NSDL
Higher information access via arranger networks	**Fundamental inequality between HNI and retail bond market access**	**India-TRACE: publish all listed bond prices in real-time — narrows information gap; makes listed bonds relatively more attractive**

The 2030 Target: 50% of HNI Bond Investment via Listed Bonds

Chart 6.7 shows that HNI listed bond participation has been slowly increasing — from 12% in FY2018 to 18% in FY2024. This chapter proposes accelerating this transition to a target of 50% by 2030 through the combination of: mandatory listing requirements for larger issuances, CBMM market-making that creates secondary market exit for listed bonds, India-TRACE that narrows the information gap, and SEBI's proposed reduction of minimum lot size to ₹10,000 that makes listed bonds accessible at smaller sizes.

Chapter 6 Summary: An Investor Base Transformation Roadmap

The five investor categories analysed in this chapter each require different interventions — but they share a common thread: the barriers are regulatory, structural, and distributional rather than fundamental. There is no shortage of savings in India; there is a shortage of the right market architecture to connect those savings to the right instruments.

Investor Category	Current State	Binding Constraint	Priority Intervention	Potential Scale Unlock
FPIs	~34.28% utilisation of ₹8.8L Cr limit; concentrated in short paper	Hedging cost 3–4% pa makes net yield unattractive vs US IG	Develop onshore 3–5yr INR/USD swap market; expand VRR with shorter lock-in	₹50,000–1,00,000 Cr additional FPI corporate bond investment
Insurance Companies	4% infra-allocation; 65%+ in G-sec/SDL despite 18yr avg liability	IRDAI no infra bond category; IL&FS risk aversion	Joint IRDAI notification: 10% AUM in NTFP-eligible infra bonds	₹2.25 lakh crore of long-tenor infra bond demand
EPFO / NPS	1–2% infra bonds; 65–72% in G-sec despite 20–30yr obligation horizon	Finance Ministry investment pattern; no infra bond category	Finance Ministry amend EPFO pattern: 3–5% infra bond allocation	₹50,000–1,60,000 Cr additional pension demand for infra bonds
Debt Mutual Funds	₹14L Cr AUM; IL&FS shock + tax change reduced retail confidence	Indexation benefit removed; credit risk trust broken	Partial indexation restoration; Bharat Bond ETF II (infra) launch	₹3–5 lakh crore incremental retail fixed income savings via MF route
Retail Direct	~80,000 investors; <0.5% of market; massive equity-bond gap	Min size, price opacity, no exit, no distribution, no awareness	Bharat Bond Direct app + India-TRACE + ₹1,000 minimum	10 million retail bond investors by 2030 (from 80,000 today)
HNIs	**82% in private placement; slowly shifting to listed**	**Listed bonds less attractive: lower yield, less bespoke**	**Mandatory listing for >₹50 Cr issuances; CBMM secondary market; India-TRACE**	**50% of HNI bond investment via listed instruments by 2030**

The Message

The investor base transformation required for Viksit Bharat is achievable — but it requires action across all five categories simultaneously. No single category can substitute for another: FPI flows are volatile and currency-hedged; institutional investors are constrained by mandates; mutual funds are recovering from a crisis of confidence; retail investors are structurally excluded; HNIs are captured by private placement economics. Only a comprehensive, parallel programme of regulatory reform, product innovation, digital distribution, and investor education can transform India's bond market investor base from its current narrow, fragile form to the deep, diverse, and resilient investor ecosystem that Viksit Bharat demands.

— End of Chapter 6 —

CHAPTER 7

Electronic Trading and Market Infrastructure: The Technology Imperative

How digital infrastructure, automated trading, consolidated price reporting, and the JAM+UPI stack can leapfrog India's bond market into the 21st century | FY2018–FY2024

Market infrastructure is the plumbing of a bond market. When it works invisibly and reliably, participants focus on trading. When it fails — through opaque prices, manual settlement, fragmented reporting, or absent electronic platforms — it imposes costs on every transaction, every participant, and every investor. India's bond market infrastructure has improved significantly over the past decade, but it remains materially below the standard required to support the scale, breadth, and retail participation that Viksit Bharat demands.

This chapter examines five dimensions of market infrastructure: the current electronic trading ecosystem; the case for and design of a consolidated price reporting system (India-TRACE); algorithmic and automated trading; straight-through processing and T+1 settlement; and the digital distribution opportunity created by India's JAM trinity and UPI payments infrastructure. Each section combines diagnosis with a concrete, implementable proposal — grounded in global best practice but adapted to India's regulatory and technological context.

The Technology Gap — Five Numbers

18% — share of India's corporate bond secondary market executed on electronic platforms (vs global average 65%)

0 — number of real-time public bond price feeds accessible to retail investors in India (US TRACE publishes every trade within 15 minutes)

4% — share of India's bond market dealer RFQ responses that are automated (vs 58% in the US corporate bond market)

T+2 to T+3 — typical corporate bond OTC settlement cycle in India (vs T+1 for Indian equities since January 2023)

800 million — Indian smartphone users who could potentially access a mobile bond platform via UPI — the largest untapped retail bond distribution network in the world

7.1 Current Electronic Trading Infrastructure: An Honest Assessment

India's electronic bond trading infrastructure has been built in layers over fifteen years — NDS-OM for G-secs (RBI/CCIL, 2005), the exchange-based RFQ mandate for corporate bonds (SEBI, 2019), OTC trade reporting to exchanges (SEBI, 2014), and the odd-lot retail window on BSE/NSE (SEBI, 2023). Each layer was a genuine reform step. Taken together, they represent a market infrastructure that is functional but fragmented, and that lags the global standard by a wide margin on the dimension that matters most for market depth: price transparency.

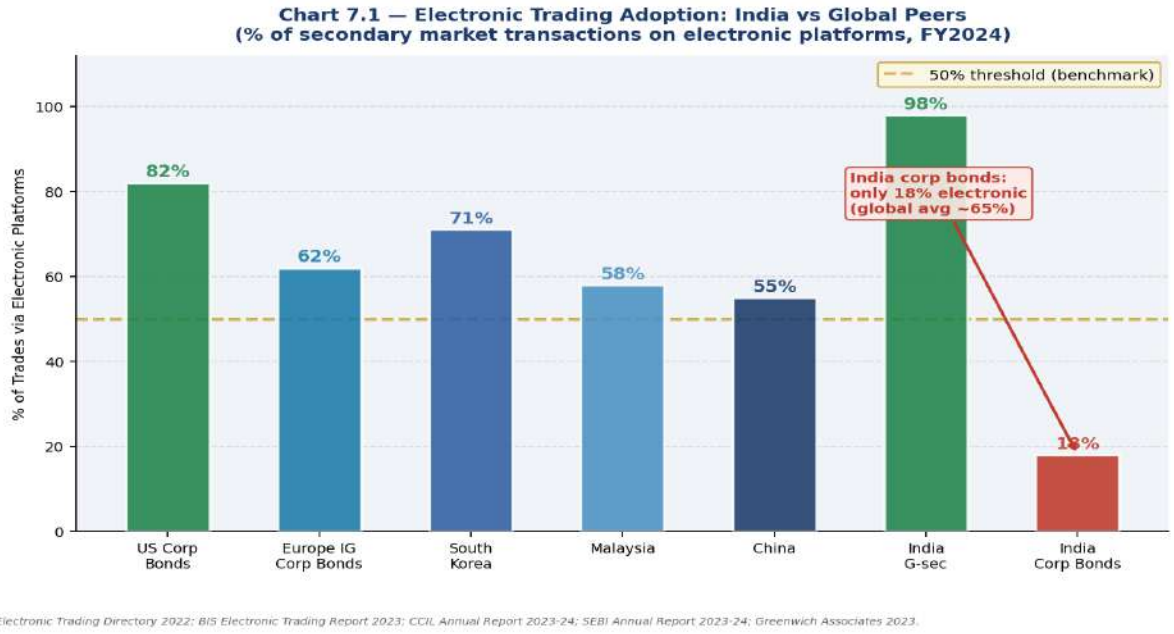
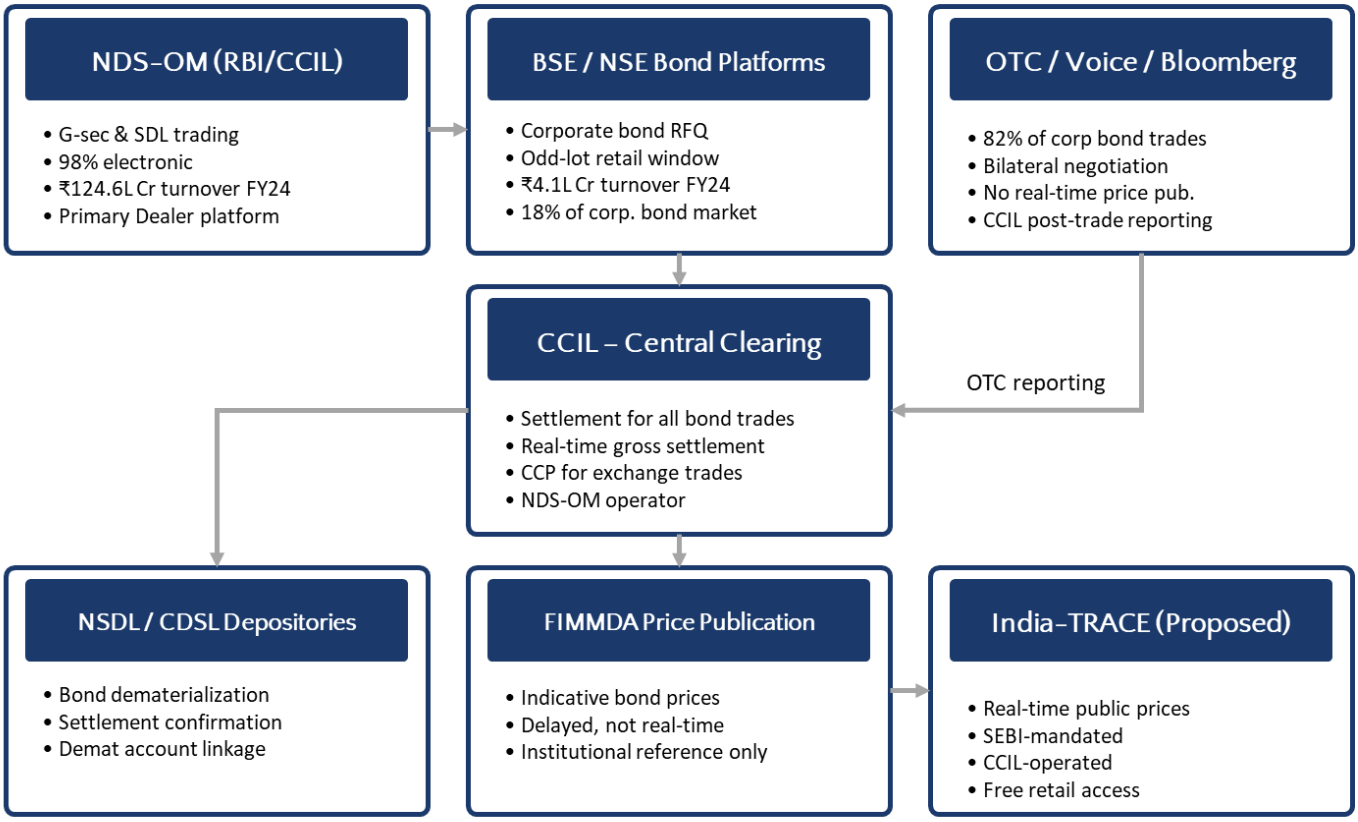


Chart 7.1 — Electronic Trading Adoption: India vs. Global Peers (FY2024) | Source: ICMA Electronic Trading Directory 2022; BIS Electronic Trading Report 2023; CCIL Annual Report 2023-24; SEBI Annual Report 2023-24

Chart 7.1 places India's 18% electronic trading adoption rate for corporate bonds in international context. The US corporate bond market — also OTC-dominant in institutional trading — has achieved 82% electronic execution through the combination of TRACE post-trade transparency and platforms like MarketAxess and Tradeweb. Europe has reached 62%. South Korea 71%. India's G-sec market, with NDS-OM's mandatory electronic matching, is at 98% — demonstrating that Indian market participants can operate electronic platforms effectively when they are well-designed and mandated. The corporate bond market's 18% reflects structural design gaps, not participant capability.

Chart 7.2 — India's Bond Market Electronic Trading Infrastructure Map (FY2024)

Platform ecosystem, volume flows, and the settlement / post-trade layer



Source: CCIL Annual Report 2023-24; SEBI Annual Report 2023-24; BSE/NSE bond platform data; FIMMDA; NDS-OM trade data.

Chart 7.2 — India's Bond Market Electronic Trading Infrastructure Map (FY2024) | Source: CCIL Annual Report 2023-24; SEBI Annual Report 2023-24; BSE/NSE bond platform data; FIMMDA

Platform-by-Platform Assessment

Platform	Operator	Asset Class	FY2024 Volume	Electronic %	Key Limitation
NDS-OM	RBI / CCIL	G-sec & SDL	₹124.6 lakh crore	~98%	No corporate bond coverage; institutional-only; not retail accessible
BSE Bond Platform	BSE	Listed corp bonds	₹2.1 lakh crore	100% (exchange)	18% of corp bond market; RFQ model; thin retail window; no auto-quoting
NSE Bond Platform	NSE	Listed corp bonds	₹2.0 lakh crore	100% (exchange)	Similar limitations to BSE; fragmented between two exchanges
OTC / Voice (reported)	CCIL (reporting)	All corp bonds	₹18.7 lakh crore	0% (voice)	Bilateral; no price transparency; CCIL receives post-trade reports only

Platform	Operator	Asset Class	FY2024 Volume	Electronic %	Key Limitation
FIMMDA Reference	FIMMDA	Corp bonds	N/A (prices only)	N/A	Indicative prices only; delayed; not executable; no retail access
India-TRACE (Proposed)	**BSE/NSE (SEBI-mandated)**	**All listed bonds**	**All reported trades**	**Real-time public**	**Does not yet exist — the critical missing infrastructure piece**

The Voluntary Retention Route (VRR) Electronic Platform

The RBI's Voluntary Retention Route for FPI investment in Indian bonds includes a separate electronic trading facility through CCIL's Triparty Repo platform, but its use for corporate bonds remains nascent. The broader point is that India has adequate post-trade settlement infrastructure (CCIL, NSDL, CDSL) — what is missing is the pre-trade and at-trade price transparency layer that would make the existing infrastructure functional for a broader range of participants.

The Core Infrastructure Gap: Three Absences

Absence 1 — No Public Price Feed: India has no mechanism by which a retail investor, a regional mutual fund, or a foreign investor can see the live price at which India's corporate bonds are trading. FIMMDA's indicative prices are modelled and delayed; exchange-reported OTC data is accessible only to registered entities with CCIL access.

Absence 2 — No Consolidated Reporting: OTC trades are reported to BSE and NSE separately; CCIL (RBI-regulated) settles separately; FIMMDA publishes indicative prices separately. The data exists but there is no single, consolidated, real-time public view of corporate bond market activity — making market surveillance, TCA benchmarking, and yield curve construction unreliable.

Absence 3 — No Retail-Accessible Platform: The BSE and NSE bond platforms are structurally designed for institutional RFQ trading, not retail browsing and purchasing. The 'odd-lot window' is an add-on to an institutional platform, not a purpose-built retail bond experience.

7.2 The Consolidated Price Reporting System: Detailed India-TRACE Proposal

The single technology investment with the highest impact-to-cost ratio in India's bond market development is the creation of a consolidated, real-time post-trade price reporting system — India-TRACE. This section provides a detailed implementation proposal, drawing on the architecture and lessons of the US FINRA TRACE system, adapted for India's regulatory and technological environment.

Case Study: US FINRA TRACE — The Model India Should Adapt

Background: FINRA's Trade Reporting and Compliance Engine (TRACE) was mandated by the US Securities and Exchange Commission in 2002, following Congressional concerns about lack of transparency in corporate bond markets. Before TRACE, US corporate bond investors had no way to see recent transaction prices.

How it works: All FINRA-member broker-dealers are required to report every secondary market corporate bond transaction to TRACE within 15 minutes of execution. TRACE then publishes the trade data — CUSIP (bond identifier), price, yield, volume, and time — on FINRA's public website, free of charge, accessible to anyone.

What it achieved: Academic research (Bessembinder et al. 2006; Edwards et al. 2007) found that TRACE reduced transaction costs in US corporate bonds by 30–50 basis points on average, with the largest benefits for retail-sized trades. Bid-ask spreads narrowed, particularly for the most traded bonds. Investor confidence increased.

What India must adapt: India's OTC corporate bond market has a lower trade frequency than the US, making the 'immediacy' of price transparency even more important — each trade carries more information. India should use TRACE as the model but add a liquidity scoring layer (flagging bonds that trade rarely), and integrate prices directly into the Bharat Bond Direct app for retail display.

Source: FINRA TRACE programme history; Bessembinder, Maxwell & Venkataraman (2006), 'Market Transparency, Liquidity Externalities, and Institutional Trading Costs in Corporate Bonds'; Edwards, Harris & Piwowar (2007), 'Corporate Bond Market Transaction Costs and Transparency'; FINRA Annual Report 2023.

India-TRACE: Technical Architecture and Implementation Roadmap

India-TRACE: Detailed Design Specification

OPERATOR: CCIL — leverages existing settlement infrastructure, regulatory relationship with SEBI and RBI, and real-time access to all exchange-reported and OTC-settled trades.

DATA SOURCES: (1) All BSE/NSE exchange-reported OTC corporate bond trades (already reported to CCIL); (2) All CCIL-settled exchange corporate bond trades; (3) All NDS-OM G-sec trades (already public in real-time — extend to corporate bond module); (4) RFQ platform execution confirmations from BSE/NSE.

PUBLICATION STANDARD: Every trade published within 15 minutes of execution. Data fields: ISIN, issuer name, coupon, maturity, trade date/time, price, yield, spread vs G-sec benchmark, face value traded, buyer/seller type (institutional/retail/FPI).

PUBLIC ACCESS: Free web portal at indiabondtrace.sebi.gov.in — searchable by ISIN, issuer, tenor, rating. No login required. Machine-readable API (JSON/XML) for institutional and fintech access.

LIQUIDITY SCORING: Each ISIN assigned a daily liquidity score (1–5) based on trade frequency, bid-ask spread, and days since last trade — published alongside prices to help investors assess exit risk.

INTEGRATION: India-TRACE price API to be mandatory integration for (a) Bharat Bond Direct app, (b) BSE/NSE retail bond portals, (c) AMFI's debt fund NAV calculation, (d) NaBFID credit assessment models.

IMPLEMENTATION COST: Technology build ₹60–80 crore (one-time); annual operating cost ₹18–25 crore. Funding via SEBI regulatory levy on trade reporting entities.

TIMELINE: Phase 1 (0–12 months): Top 200 ISINs by trading volume. Phase 2 (12–24 months): All listed corporate bonds. Phase 3 (24–36 months): All bonds including unlisted that are CCIL-cleared.

The India-TRACE proposal is not a technology novelty — it is the application of a 22-year-old, proven system to India's market. The question is not whether it is technically feasible (it manifestly is), nor whether it is affordable (the cost is trivial relative to market impact). The question is whether SEBI has the regulatory will to mandate it against the preferences of institutional participants who benefit from information opacity.

7.3 Algorithmic and Automated Trading: India's Readiness Gap

The global corporate bond market has undergone a quiet revolution in automated trading over the past decade. In the US, approximately 58% of institutional RFQ responses are now generated automatically by dealer systems — algorithmic models that price bonds in microseconds based on reference data, inventory positions, and market conditions. In Europe, auto-quoting covers approximately 42% of institutional RFQ responses. In India's corporate bond market, the equivalent figure is approximately 4%. This gap has profound implications for market liquidity, execution quality, and ultimately for India's ability to attract institutional investors who expect automated, efficient execution.

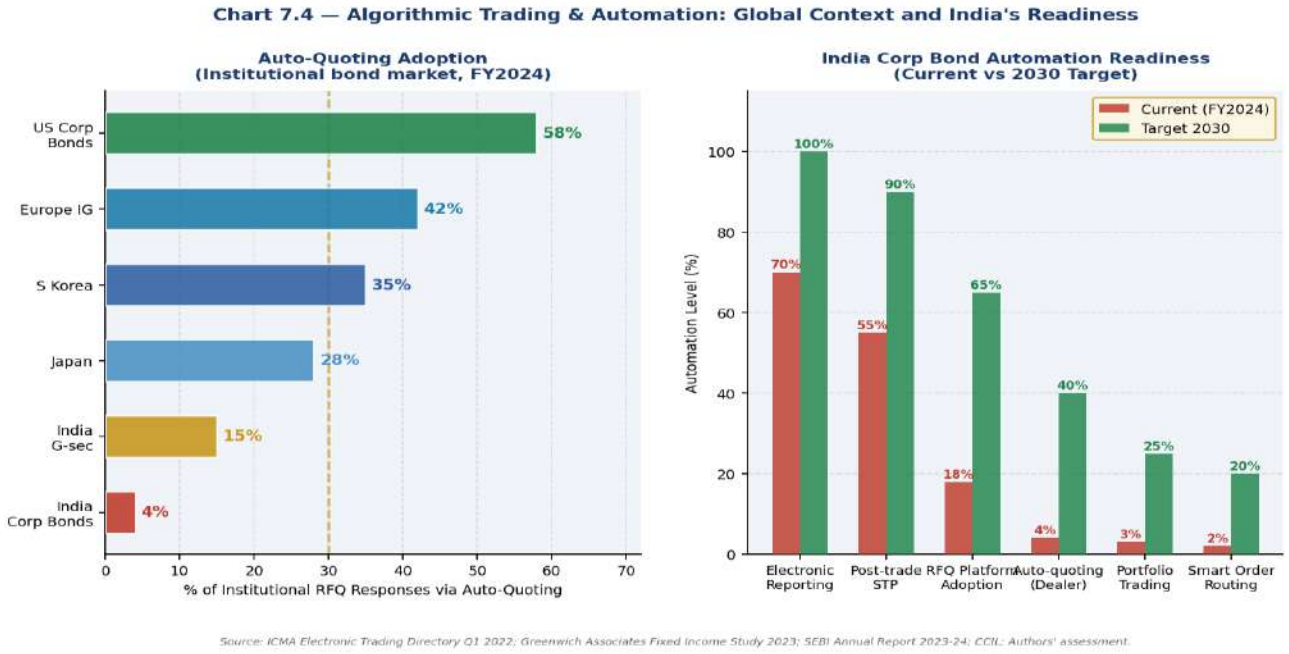


Chart 7.4 — Algorithmic Trading & Automation: Global Context and India's Readiness (FY2024) | Source: ICMA Electronic Trading Directory Q1 2022; Greenwich Associates Fixed Income Study 2023; SEBI Annual Report 2023-24; CCIL; Authors' assessment

The Three Waves of Bond Market Automation

- Wave 1 — Electronic RFQ platforms: Moving from voice to electronic request-for-quote platforms. India has achieved this partially — the BSE/NSE RFQ mandate covers exchange-reported trades — but Wave 1 adoption remains at only 18%.
- Wave 2 — Automated quote generation: Dealer systems that automatically respond to RFQs using algorithmic pricing models, without manual intervention. US and European markets are in

the midst of Wave 2. India is at approximately 4% penetration — limited to a handful of large dealer banks.

- Wave 3 — Portfolio trading and algorithmic execution: Institutional investors submitting portfolios of 50–200 bonds simultaneously for electronic execution, with dealers competing algorithmically for the entire package. This represents the frontier of bond market automation. India has essentially no Wave 3 capability.

What India Needs for Automation to Take Root

Automation Requirement	Current Status	Gap	Regulatory / Infrastructure Action
Real-time reference prices for auto-quoting models	FIMMDA indicative prices (delayed, modelled)	Dealer auto-quoting models require real-time executed prices as inputs	India-TRACE (Section 7.2) — real-time prices enable algorithmic pricing
Standardised ISIN data and bond analytics	Available via BSE/NSE; some gaps in structured data	Inconsistent data fields across platforms hinder system integration	SEBI mandate: uniform ISIN data standard across all platforms
Central limit order book (CLOB) for benchmark bonds	No CLOB for corporate bonds; RFQ-only	CLOB enables algo-driven market-making at tight spreads for liquid bonds	SEBI pilot: CLOB for top 50 corporate bond ISINs on BSE/NSE
FIX protocol integration across market participants	Partial — exchange platforms support FIX; OTC does not	Fragmented connectivity hinders STP and automated trade flow	SEBI mandate: FIX protocol standard for all SEBI-regulated bond market participants
Portfolio trading capability	**Not available**	**Large institutional investors cannot trade bond baskets efficiently**	**SEBI / exchanges develop standardised portfolio trade protocol by FY2027**

SEBI's Regulatory Sandbox: A Path to Innovation

SEBI's regulatory sandbox for capital market innovation — established in 2020 — has been underutilised for bond market technology development. SEBI should actively invite applications from fintech companies and market infrastructure institutions for sandbox testing of: (a) automated bond pricing and market-making algorithms; (b) DLT-based bond registry and settlement systems; (c) AI-driven retail bond recommendation and suitability assessment tools; and (d) blockchain-based fractional bond ownership platforms. India's domestic fintech sector — which has built world-class UPI, lending, and insurance technology — has the capability to transform bond market infrastructure if given the regulatory latitude to experiment.

7.4 Straight-Through Processing and T+1 Settlement: Completing the Circle

India's equity market achieved T+1 settlement in January 2023 — a genuine world-leading achievement that reduced counterparty risk, freed up capital, and improved market efficiency. The corporate bond market, by contrast, settles at T+2 for exchange-reported trades and T+2 to T+3 for OTC trades, with fail rates of 5–8% in the OTC segment. This asymmetry — where India's equity market is more efficient than its bond market in settlement — creates a perverse incentive structure where institutional investors face lower operational costs trading equities than bonds.

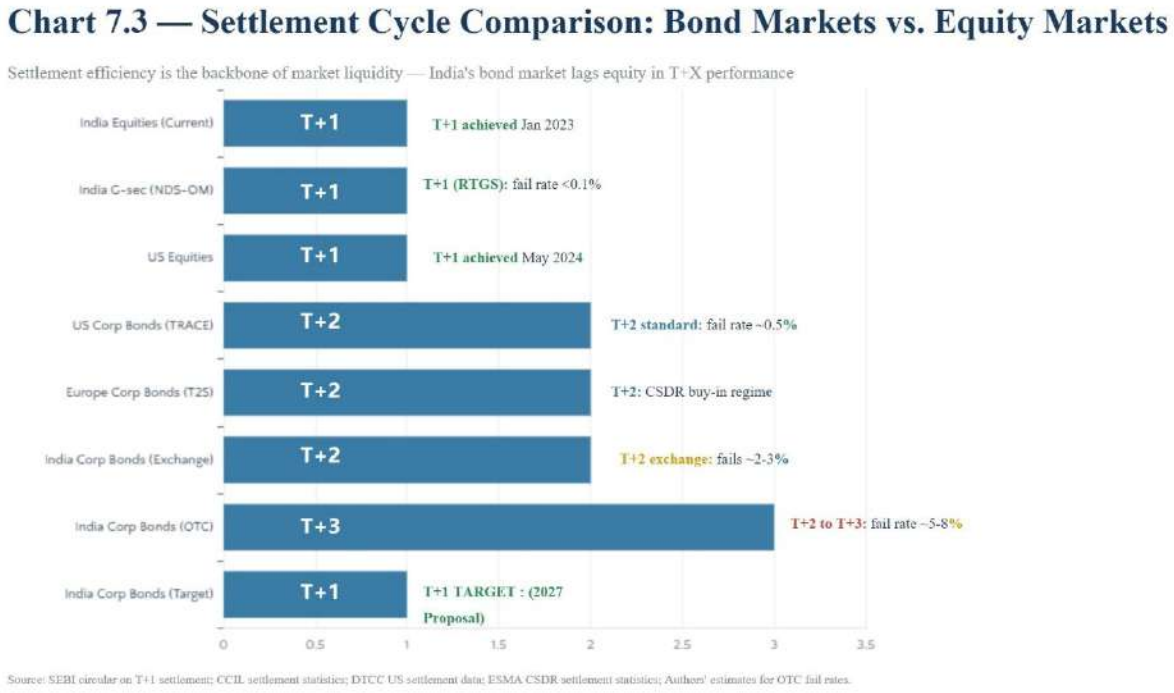


Chart 7.3 — Settlement Cycle Comparison: Bond Markets vs. Equity Markets | Source: SEBI circular on T+1; CCIL settlement statistics; DTCC US settlement data; ESMA CSDR statistics; Authors' estimates for OTC fail rates

The STP Maturity Gap: Six Lifecycle Steps

Chart 7.6 maps the current straight-through processing (STP) maturity across the six steps of the bond trade lifecycle — from execution through to custody reporting. India's bond market achieves reasonable STP for exchange-executed trades (where CCIL provides automated matching and settlement instruction), but falls sharply for OTC trades, which still require significant manual intervention at the matching, affirmation, and settlement instruction stages.

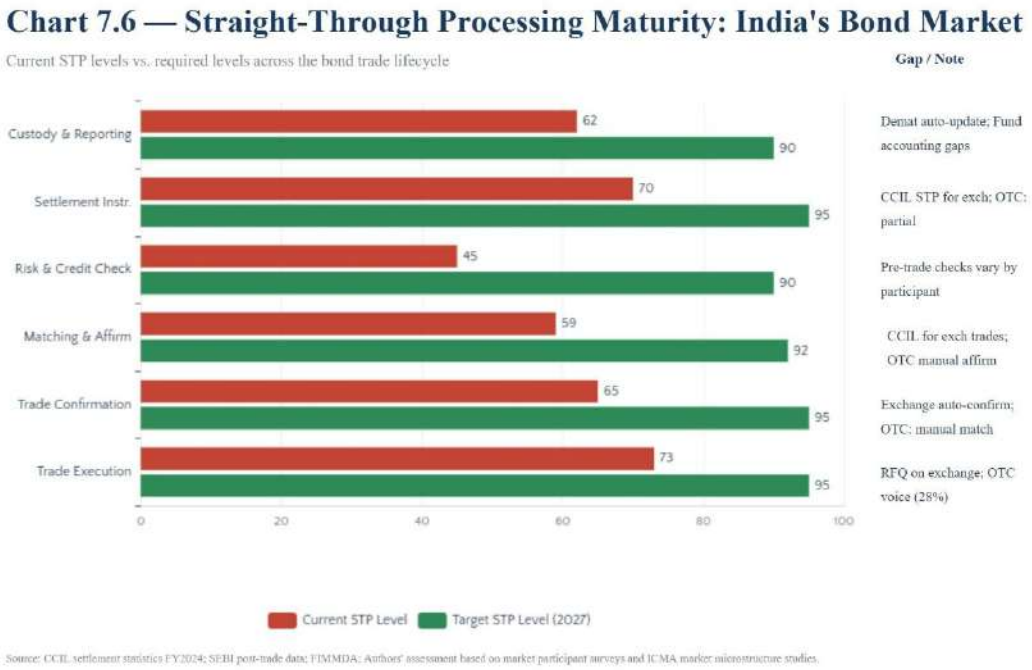


Chart 7.6 — Straight-Through Processing Maturity: India's Bond Market | Source: CCIL settlement statistics FY2024; SEBI post-trade data; FIMMDA; Authors' assessment based on ICMA market microstructure studies

The Case for Corporate Bond T+1 Settlement

The T+1 settlement target for corporate bonds by 2027 is achievable, based on three parallel improvements: (1) mandatory electronic trade confirmation within 30 minutes of execution for all SEBI-regulated participants; (2) automated matching of OTC trade confirmations via CCIL's existing infrastructure; and (3) expansion of the CCIL CCP (central counterparty) clearing to cover a larger share of OTC corporate bond trades — reducing counterparty risk and enabling automated settlement instruction.

Corporate Bond T+1: Benefits Quantified

Counterparty risk reduction: At T+2 vs T+1, there is an additional 24 hours of exposure between trade execution and final settlement. For a ₹500 crore institutional bond trade, this represents significant intraday credit exposure that T+1 eliminates.

Capital efficiency: T+1 settlement reduces the capital that dealers and investors must set aside against open settlement positions. For India's ₹22.8 lakh crore annual corporate bond turnover, moving from T+2 to T+1 could free ₹1,500–2,500 crore of dealer working capital daily.

Repo efficiency: Intraday repo financing of bond positions — essential for market-making — is only practical in a T+1 environment. T+2 settlement makes same-day repo lending against bond collateral operationally complex.

Retail confidence: Retail investors who buy a bond via Bharat Bond Direct should receive confirmation of ownership (demat credit) the next business day — not two or three days later. T+1 aligns the retail bond experience with the equity experience.

Fail rate reduction: Experience from India's equity T+1 transition (fail rate fell from ~2.5% to <0.3%) suggests corporate bond fails could similarly decline from 5–8% OTC to <1% — reducing settlement costs and counterparty risk significantly.

Source: SEBI T+1 equity settlement impact study; CCIL settlement statistics; BIS payment system statistics; Authors' estimate.

7.5 The Digital Distribution Opportunity: JAM + UPI as India's Leapfrog

India has built the world's most powerful digital financial infrastructure — and has not yet used it to democratise its bond market. The Jan Dhan-Aadhaar-Mobile (JAM) trinity and the Unified Payments Interface (UPI) have transformed payments, lending, insurance, and equity investing. They have not yet been applied to bond market distribution. This section proposes how to change that — presenting a framework for a mobile-first retail bond platform that uses India's existing digital infrastructure to leapfrog traditional bond distribution models entirely.

Chart 7.5 — India's Digital Distribution Stack for Retail Bond Access

The JAM trinity + UPI create infrastructure that leapfrogs traditional bond distribution models

Source: PMJDY progress report FY2024; UIDAI Aadhaar statistics; NPCI UPI data FY2024; TRAI telecom subscriber data.

Chart 7.5 — India's Digital Distribution Stack for Retail Bond Access | Source: PMJDY progress report FY2024; UIDAI Aadhaar statistics; NPCI UPI data FY2024; TRAI telecom subscriber data

The JAM Stack: What Each Layer Provides

Chart 7.5 presents the five-layer digital distribution stack for retail bond access. Each layer — Jan Dhan, Aadhaar, Mobile, UPI, and the proposed Bharat Bond Direct application — builds on the one below it, creating a system where any Indian with a smartphone and an Aadhaar number can invest in bonds in the same time it takes to transfer money via UPI.

JAM Layer	Current Scale (FY2024)	Bond Market Application	Barrier Removed
Jan Dhan Accounts	530 million+ accounts; 67% in rural areas; zero balance permitted	Coupon payments and principal repayment via Jan Dhan account — reaching rural and semi-urban Indians	'I need a bank account' barrier eliminated — already solved
Aadhaar e-KYC	1.37 billion enrolled; e-KYC API < 30 seconds	Bharat Bond Direct account opening via Aadhaar OTP — no physical paperwork, no in-person verification	'KYC is complicated and slow' barrier eliminated
Mobile Smartphones	800 million users; ₹1,500 average cost device	Bharat Bond Direct app on Android/iOS; push notifications for coupon payments; portfolio dashboard	'I need a computer or branch visit' barrier eliminated
UPI Payments	₹200+ lakh crore FY2024; 14 billion monthly txns; 750M+ registered users	Bond purchase: UPI payment of ₹1,000 → demat credit next day. Coupon: auto-credit to UPI-linked account	'Investing is complicated and slow' barrier eliminated
India-TRACE Prices	**Proposed (Chapter 5)**	**Live bond prices on app before every purchase — retail investor sees fair value for first time**	**'I don't know if I'm getting a fair price' barrier eliminated**

Bharat Bond Direct: The Proposed Mobile-First Bond Platform

Proposed: Bharat Bond Direct — A UPI-Native Retail Bond Platform

CONCEPT: A SEBI-licensed, AMFI-governed retail bond platform — operated by a public-private consortium (NaBFID + AMFI + one or two SEBI-registered bond platforms) — offering individual retail investors direct access to government securities and listed corporate bonds via a mobile app and web portal, with UPI as the sole payment method.

MINIMUM INVESTMENT: ₹1,000 per bond (sovereign), ₹5,000 per bond (AAA corporate), ₹10,000 per bond (AA corporate). No maximum limit. SIP facility: recurring monthly bond purchases from ₹500/month.

KYC: Aadhaar-based e-KYC (30 seconds). CKYC linkage for investors already KYC-compliant. No physical documents. Account credited to investor's existing demat account (NSDL/CDSL) or new demat opened in-app.

PRICE TRANSPARENCY: Live India-TRACE prices displayed for every bond before purchase. Yield, spread vs G-sec, and liquidity score shown. Historical price chart available. 'Fair value indicator' based on comparable bond yields.

BOND UNIVERSE: Phase 1: Central government G-secs and T-bills (via RBI Retail Direct API integration). Phase 2: AAA PSU bonds via Bharat Bond ETF mechanism. Phase 3: AA+ and AA corporate bonds with CBMM market-maker exit guarantee.

EXIT MECHANISM: All bonds purchased via Bharat Bond Direct enrolled in CBMM programme — market-maker commits to providing exit bid within 5 business days at India-TRACE reference price ± 100 bps. No retail investor is stranded in an illiquid bond.

PHILIPPINES COMPARISON: Philippines Bonds.PH launched July 2020; ₱5,000 minimum (~₹7,500); raised ₱516 billion on debut. India has 10× the digital infrastructure depth (UPI vs GCash), 12× the smartphone base, and a far larger middle class. India's bond platform could realistically reach 10–15 million users within 3 years of launch.

Source: RBI Retail Direct scheme; Philippines BTr Bonds.PH programme (ICMA Quarterly Review Q1 2021); NPCI UPI data; AMFI Bharat Bond ETF data; Authors' proposal.

The Revenue Model: Making Bharat Bond Direct Financially Sustainable

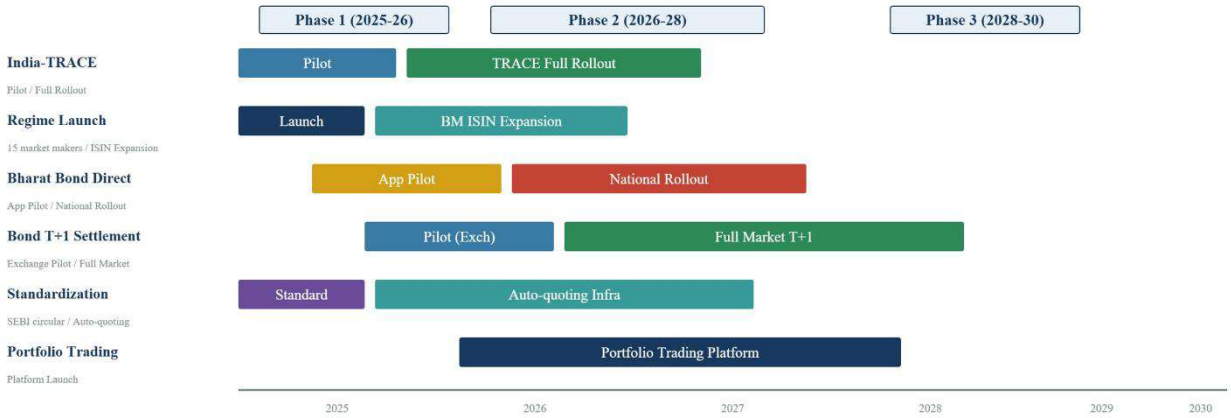
A key lesson from the Philippines Bonds.PH experience is that government-backed platforms need a clear revenue model to remain operationally viable without perpetual subsidy. Bharat Bond Direct's revenue model should be: (a) a 0.15% platform fee on bond purchases (lower than mutual fund expense ratios); (b) a technology licensing fee from CBMM market-makers who use the exit liquidity pipeline; and (c) a data subscription fee from institutional clients who use the India-TRACE API. This model makes the platform financially self-sustaining at approximately 2–3 million active users — achievable within 18 months of national launch.

7.6 The Technology Investment Roadmap: 2025–2030

Chart 7.7 presents the proposed technology investment roadmap for India's bond market infrastructure, sequenced across three phases from 2025 to 2030. The sequencing reflects both urgency (India-TRACE and CBMM are Phase 1 because everything else depends on them) and interdependency (T+1 settlement requires STP maturity improvements that take time to implement).

Chart 7.7 — India Bond Market Technology Roadmap: 2025-2030

Priority sequencing for technology and infrastructure investments



Source: Author's proposed roadmap; SEBI technology consultation papers 2023-24; CCIL technology investment plan; NabFID digital infrastructure mandate.

Chart 7.7 — India Bond Market Technology Roadmap 2025–2030 | Source: Authors' proposed roadmap; SEBI technology consultation papers 2023-24; CCIL technology investment plan; NaBFID digital infrastructure mandate

Phase 1 (2025–2026): Foundation — Transparency and Market-Making

- **India-TRACE Phase 1:** SEBI circular directs BSE and NSE to publish their held OTC trade report data in real-time for top 200 ISINs. BSE/NSE already have the data under SEBI's 2018 mandate — this is a publication layer only. Live Q4 2025.
- **CBMM Regime Launch:** 15 designated Corporate Bond Market Makers with 2-way quoting obligation on 200 benchmark ISINs. SEBI notification Q1 2025; operational Q3 2025.
- **RFQ Automation Standards:** SEBI circular mandating FIX protocol and minimum auto-response capability for CBMM entities. Enables Wave 2 automation adoption.

Phase 2 (2026–2028): Scale — Retail Access and Settlement Efficiency

- **Bharat Bond Direct App:** Pilot with 100,000 users Q2 2026; national rollout Q4 2026. UPI integration, ₹1,000 minimum, India-TRACE live prices.
- **India-TRACE Full Rollout:** All listed corporate bonds covered; free public API; integrated with Bharat Bond Direct and BSE/NSE retail portals.
- **Bond T+1 Pilot:** Exchange-traded corporate bonds move to T+1 settlement. CCIL infrastructure upgrade required. Target Q1 2027.
- **Auto-quoting Infrastructure:** Dealer system upgrades for automated RFQ response. Supported by India-TRACE real-time prices.

Phase 3 (2028–2030): Frontier — Portfolio Trading and T+1 Universal

- **Bond T+1 Full Market:** OTC corporate bond trades move to T+1 via CCIL mandatory CCP clearing. Target Q4 2028.
- **Portfolio Trading Platform:** SEBI-standardised electronic portfolio trade protocol. Enables institutional block trading efficiency comparable to US MarketAxess/Tradeweb.
- **Smart Order Routing:** Automated routing of institutional bond orders to best execution venue (CLOB vs RFQ vs OTC) based on real-time India-TRACE liquidity data.

Initiative	Phase	Lead Agency	Cost Estimate	Key Dependency	Expected Market Impact
India-TRACE (Top 200 ISINs)	1 (2025)	SEBI	₹15–25 Cr	Single SEBI circular to BSE/NSE; data already held	30–50 bps TCA reduction; retail price transparency
CBMM Regime	1 (2025)	SEBI	Minimal (regulatory)	SEBI notification; incentive structure	Two-way liquidity for 200 benchmark bonds
Bharat Bond Direct App	2 (2026)	NaBFID + AMFI + SEBI	₹80–120 Cr	India-TRACE; CBMM exit liquidity	10M retail bond investors by 2030
Bond T+1 Settlement	2–3 (2027–28)	SEBI + RBI + CCIL	₹200–350 Cr (CCIL infra)	STP maturity improvements; CCP expansion	Counterparty risk reduction; dealer capital freed
Portfolio Trading Platform	3 (2028–29)	SEBI + Exchanges	₹100–150 Cr	Auto-quoting Wave 2 complete	Institutional execution efficiency; lower impact costs
Smart Order Routing	**3 (2029–30)**	**SEBI + Exchanges + Dealers**	**₹50–80 Cr**	**India-TRACE live prices; CLOB for top bonds**	**Best-execution standard comparable to US/Europe**

Chapter 7 Summary: Technology as Enabler, Not Substitute

The technology investments proposed in this chapter — India-TRACE, the CBMM regime, Bharat Bond Direct, T+1 settlement, automated trading infrastructure — are not optional enhancements to a functioning market. They are the foundational infrastructure without which the regulatory and product reforms proposed in Chapters 4, 5, and 6 cannot deliver their intended outcomes. Credit enhancement for infrastructure bonds is irrelevant if institutional investors cannot benchmark the enhanced bond's yield in real time. The CBMM regime cannot work if market-makers have no reliable price data for their algorithmic systems. Bharat Bond Direct cannot attract retail investors if they cannot see live prices before buying.

The Chapter's Core Message

India has a unique technology advantage that no other emerging market bond market possesses: 800 million smartphone users, 1.37 billion Aadhaar-enrolled citizens, 750 million UPI users, and a domestic fintech industry of global calibre. This advantage can be deployed to build a retail bond distribution system that leapfrogs the traditional broker-dealer-advisor chain that Western bond markets took 50 years to build.

The cost of the entire technology investment roadmap outlined in this chapter — India-TRACE, Bharat Bond Direct, T+1 infrastructure, and automation platforms — is approximately ₹600–900 crore over five years. India spent more than that on a single motorway interchange. The return — deeper bond markets, lower cost of infrastructure financing, 10 million retail bond investors, and a functioning secondary market — is among the highest-return public investments available to the Indian financial system.

— End of Chapter 7 —

CHAPTER 8

Green Bonds, Social Bonds, and Sustainable Finance — A Market Within a Market

How India's climate ambitions and social imperatives can be financed through the bond market — and why the world is watching | 2018–2024

$2.5 Trillion

India's estimated green and social infrastructure financing need by 2030 — the bond market's largest single opportunity

At 11:58pm on the climate clock, India stands at the most consequential intersection of ambition and finance in its post-independence history. The targets are breathtaking in their scale: 500 gigawatts of non-fossil fuel-based energy by 2030. Net-zero carbon by 2070. Green hydrogen production of 5 million metric tonnes annually by 2030. Social housing for every Indian family. Clean water for every village. These are not aspirations — they are commitments, enshrined in India's Nationally Determined Contributions and its Viksit Bharat vision. And they share one common characteristic: they cannot be financed through the banking system or government budgets alone.

The global sustainable bond market — green bonds, social bonds, sustainability bonds, sustainability-linked bonds — has grown from $247 billion in 2018 to over $1 trillion annually by 2024. It represents the fastest-growing segment of the global fixed income universe. India's share of this market? Approximately 1.3%. A country that represents 17% of the world's population, produces 7% of global carbon emissions, and has the world's largest renewable energy programme in absolute megawatt terms — commands barely a rounding error in the global sustainable bond market.

This chapter argues that India's green and social bond market is not simply an opportunity — it is an imperative. It examines the scale of what must be financed, assesses India's current sustainable finance framework, maps the emerging investor demand, and proposes a credit enhancement architecture that can unlock the scale of financing that India's climate and social goals require.

The Climate-Finance Nexus

Climate change is not an environmental problem with financial dimensions. It is a financial problem with environmental dimensions. The transition to a low-carbon economy requires the largest reallocation of capital in human history. Bond markets — with their scale, their institutional investor base, and their capacity for standardised, transparent financing — are the only instrument large enough to do it.

8.1 The Scale of the Opportunity: Ambition Meets Finance

India has made commitments at COP26 and COP28 that are genuinely historic in their ambition. The NDC targets — 500 GW non-fossil fuel-based energy by 2030, 45% reduction in emissions intensity vs. 2005 levels by 2030, net-zero by 2070 — require financing that cannot come from a single source. The International Energy Agency estimates that India needs to invest approximately $160 billion annually in clean energy alone through 2030. Add green transport, sustainable agriculture, green buildings, clean water, and social housing — and the total sustainable financing need dwarfs any single capital market.

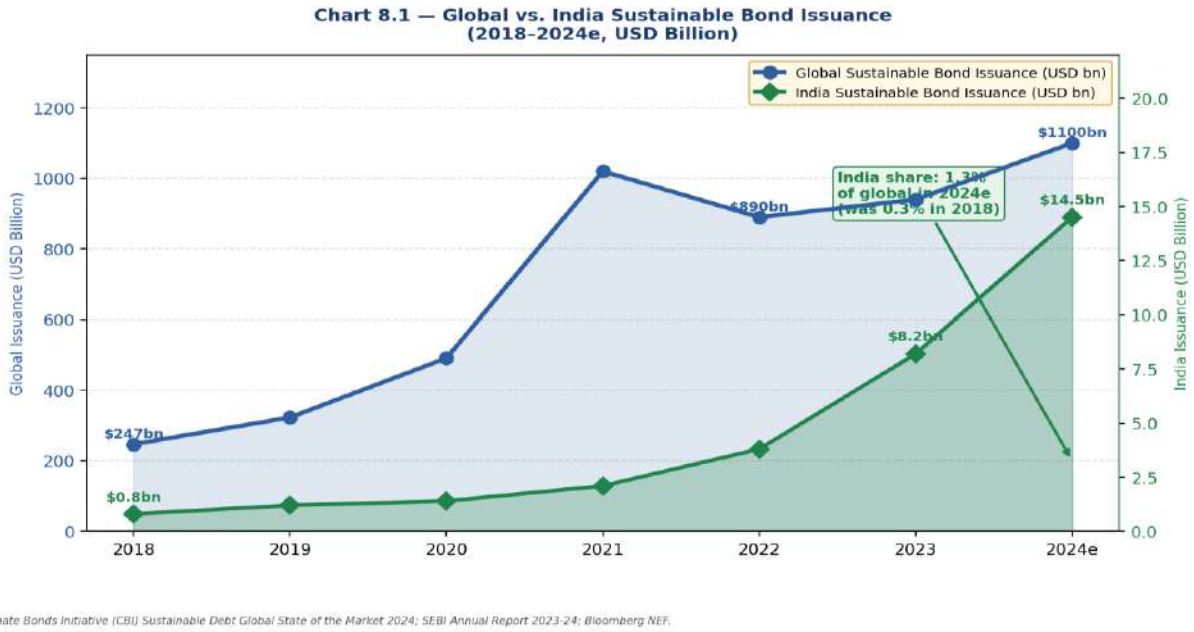


Chart 8.1 — Global vs. India Sustainable Bond Issuance (2018–2024e) | Source: Climate Bonds Initiative; SEBI Annual Report 2023-24; Bloomberg NEF

Chart 8.1 tells a story of profound underperformance. The global sustainable bond market grew from $247 billion in 2018 to over $1 trillion in 2024 — a four-fold increase that reflects genuine capital market transformation across Europe, Asia, and the Americas. India grew from $0.8 billion to an estimated $14.5 billion over the same period — a remarkable 18× increase in absolute terms, but one that leaves India's share of the global market at just 1.3%. For a country of India's economic weight, climate ambition, and financing need, this is a market that is dramatically underdeveloped.

₹190 Lakh Crore

India's estimated green and social infrastructure financing need by 2035 — renewable energy, green transport, water, housing, and climate adaptation

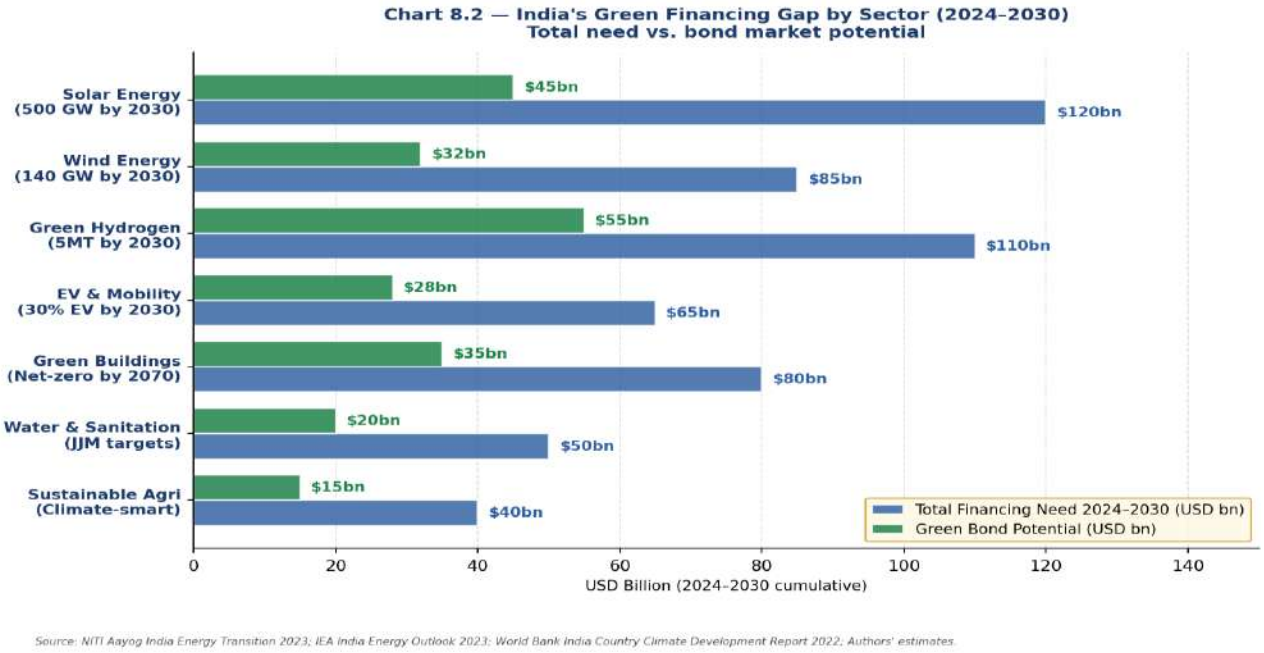


Chart 8.2 — India's Green Financing Gap by Sector (2024–2030) | Source: NITI Aayog; IEA India Energy Outlook 2023; World Bank India Country Climate Development Report 2022; Authors' estimates

Chart 8.2 maps the green financing gap by sector. The numbers are striking in two ways: the sheer scale of need (over $550 billion across seven sectors through 2030), and the proportion that the bond market could realistically supply (approximately $230 billion — over 40% — if the structural barriers identified in this report are addressed). Solar and wind energy represent the largest immediate opportunity; green hydrogen, though smaller today, has the highest long-term growth trajectory.

The Green Hydrogen Opportunity

India's National Green Hydrogen Mission targets 5 MT of green hydrogen production annually by 2030 — requiring approximately USD 100–110 billion of electrolyser, storage, and offtake infrastructure investment. Green hydrogen projects have long payback periods (15–25 years) and predictable cash flows once operational — making them structurally ideal for long-tenor green bond financing. Yet not a single green hydrogen project bond has been issued in India to date.

The Numbers That Define India's Green Finance Gap

₹15 lakh crore: Estimated annual clean energy investment needed in India through 2030 (IEA)

< ₹40,000 crore: Actual green bond issuance in India in FY2024 (SEBI) — just 1% of the need

$1 trillion+: Global sustainable bond market annual issuance (CBI 2024)

1.3%: India's share of global sustainable bond issuance — vs. 7% of global GDP

29: Number of green bond issuances in India since 2015 — vs. 4,000+ globally

₹1,000 crore: Average green bond issuance size in India — vs. USD 500M+ internationally

Source: Climate Bonds Initiative Market Data 2024; SEBI Annual Report 2023-24; IEA World Energy Outlook 2023.

8.2 SEBI's Sustainable Finance Framework: Progress and Gaps

SEBI has built India's sustainable bond framework through a series of circulars and frameworks since 2017. The most significant development was the comprehensive Green Bond circular of 2023, which aligned India's framework more closely with international standards and expanded the scope of eligible green categories. Alongside, SEBI has issued frameworks for social bonds, sustainability bonds, and sustainability-linked bonds — creating a reasonably comprehensive regulatory architecture for labelled debt issuance.

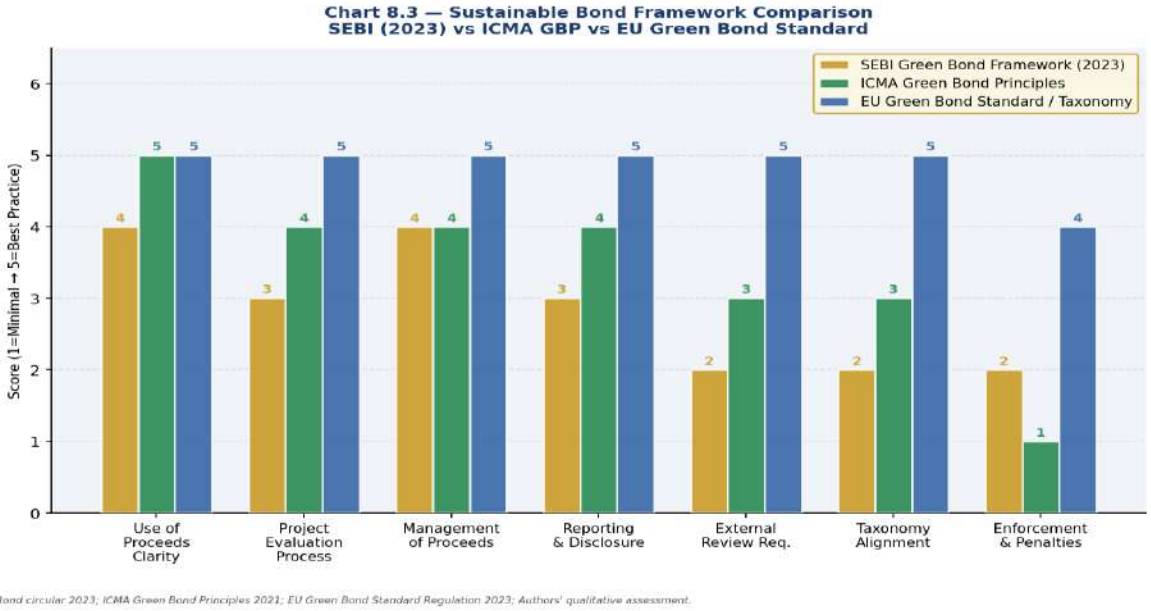


Chart 8.3 — Sustainable Bond Framework Comparison: SEBI vs. ICMA GBP vs. EU Standard | Source: SEBI Green Bond circular 2023; ICMA GBP 2021; EU Green Bond Standard Regulation 2023; Authors' assessment

SEBI's Green Bond Framework (2023): What It Covers

SEBI's 2023 green bond framework — issued via circular SEBI/HO/DDHS/DDHS-PoD-2/P/CIR/2023/116 — represents a significant step forward from the 2017 circular. Key provisions include:

- Expanded eligible use-of-proceeds categories: Renewable energy, clean transportation, sustainable water and wastewater, energy efficiency, pollution prevention and control, sustainable land use, terrestrial and aquatic biodiversity, clean buildings, and sustainable agriculture.
- BRSR-linked reporting: Green bond issuers must disclose green impact metrics aligned with the Business Responsibility and Sustainability Reporting (BRSR) framework, creating a common disclosure language.

- Second Party Opinion (SPO): Mandatory for issuers claiming alignment with ICMA Green Bond Principles, though the SPO requirement is disclosure-based rather than a pre-issuance gate.
- Transition finance recognition: SEBI's framework includes a category for transition-related activities — an important feature as India's energy transition involves both new renewables and the managed retirement of coal assets.

Where SEBI's Framework Falls Short — A Frank Assessment

Three Critical Gaps in SEBI's Sustainable Finance Framework

Gap 1 — No Taxonomy Alignment: India lacks a sovereign green taxonomy — a legally binding classification of what constitutes a 'green' or 'sustainable' economic activity. Without this, SEBI's framework relies on issuer self-declaration of use-of-proceeds, creating greenwashing risk. The EU's Green Taxonomy has been transformational in Europe — India needs an equivalent, tailored to its development context.

Gap 2 — Weak Enforcement of Use-of-Proceeds: SEBI's framework requires annual reporting on proceeds deployment but provides no mechanism for enforcement if proceeds are not deployed as stated. There have been no cases of green bond label withdrawal in India despite known instances of delayed or partially misallocated proceeds. Credibility requires consequence.

Gap 3 — No Dedicated Green Bond Secondary Market Liquidity: Green bonds are listed on BSE's GSSS segment, but secondary market liquidity is essentially absent. There is no green bond index, no green bond ETF beyond Bharat Bond (which covers PSU bonds, not dedicated green bonds), and no CBMM obligation for green bond market-making. A green bond that cannot be traded is just an illiquid bond with a label.

Comparison: SEBI Framework vs. ICMA GBP vs. EU Green Bond Standard

ICMA Green Bond Principles (GBP): The voluntary global standard — four core components (Use of Proceeds, Process for Project Evaluation & Selection, Management of Proceeds, Reporting). ICMA GBP is principles-based and flexible; credibility relies on external review. India's SEBI framework is broadly GBP-aligned on use-of-proceeds and reporting, but lags on project evaluation process transparency and external review requirements.

EU Green Bond Standard (EUGBS): The most rigorous international standard, legally binding for bonds marketed as EU Green Bonds from December 2024. Requires 85% alignment with the EU Taxonomy, independent external reviewer registration with ESMA, and mandatory allocation and impact reporting. India's framework is materially less rigorous — by design, given India's development context — but the credibility gap with EUGBS reduces India's attractiveness to the most ESG-stringent European institutional investors.

India's Opportunity: Rather than trying to match EUGBS rigour (which would be impractical for India's current market), SEBI should develop a standalone 'India Green Bond Principles' — a tiered standard with Bronze (GBP-aligned), Silver (India Taxonomy-aligned, once developed), and Gold (EUGBS-equivalent, for bonds targeting European ESG investors) classifications. This tiered approach allows India's domestic market to develop while creating a premium tier that accesses global ESG capital.

Source: SEBI Green Bond circular 2023; ICMA GBP June 2021; EU Green Bond Standard Regulation (EU) 2023/2631; Authors' comparative analysis.

The Sovereign Green Bond Precedent

India issued its first Sovereign Green Bond in January 2023 — ₹8,000 crore in the first tranche, followed by ₹8,000 crore in the second tranche. Both were oversubscribed. The sovereign green bond establishes a reference yield for India's green bond market — exactly analogous to how G-sec yields anchor the corporate bond curve. Building on this precedent with annual sovereign green bond issuances of ₹25,000–50,000 crore would create the yield benchmark that corporate green bond issuers have lacked.

8.3 Demand for ESG-Labelled Bonds: Who Is Buying and Who Should Be

The demand side of India's green bond market is a story of enormous latent appetite and frustrated access. Global ESG-mandated assets under management stood at approximately $22 trillion in 2024 — growing at 15% annually. The major sustainability bond indices (Bloomberg GSSS, ICE BofA Green Bond, MSCI ESG Leaders) are increasingly tracked by institutional investors with explicit ESG mandates. India's green bonds, to access this capital, must meet the standards that these indices require — standards that India's current framework partly but not fully meets.

Investor Category	Current India Green Bond Exposure	Binding Constraint	Proposed Action to Unlock Demand
ESG-Mandated FPIs (European pension / sovereign funds)	Minimal — <5% of FPI corp bond investment	India framework not EUGBS equivalent; FPI hedging cost (Chapter 6)	India Tiered GBP: 'Gold' tier with EUGBS alignment; onshore hedging development
Multilateral DFIs (ADB, IFC, World Bank)	ADB ~USD 2bn; IFC ~USD 1.5bn; WB ~USD 1bn in India green finance	Not a constraint — DFIs actively want to scale	Use DFI anchor investment in green bonds to crowd in private institutional capital
IRDAI-regulated Insurers	< 0.5% of AUM in green bonds	No dedicated green bond category in IRDAI guidelines	IRDAI notification: 2% of AUM in 'India Gold Green Bonds'; count toward infra-allocation
PFRDA-regulated Pension Funds	Negligible	No ESG mandate; no green bond classification	PFRDA: ESG screening criteria for NPS equity + green bond sub-category for NPS G scheme
Domestic Retail (via Green Bond ETF)	~₹2,000 crore (Bharat Bond ESG tranche)	No dedicated retail green bond product	Bharat Bond ETF III: dedicated green bond basket; ₹1,000 minimum; India-TRACE priced
Indian HNIs	**Growing — private placement green bonds**	**Private placement; no secondary market exit**	**Mandatory listing for green bonds >₹50 crore; CBMM green bond market-making**

The Role of Development Finance Institutions as Anchor Investors

One of the most powerful mechanisms available for scaling India's green bond market is the use of multilateral Development Finance Institutions (DFIs) as anchor investors in green bond issuances. ADB, IFC, and the World Bank have explicit mandates and capital to co-invest in emerging market green bonds

— both as direct investors in bonds and as providers of credit enhancement (first-loss guarantees, subordinated loans) that unlocks private institutional capital.

The DFI Anchor Model — How It Works in Practice

ADB's ASEAN Catalyst Fund model: ADB takes 25–40% of a green bond issuance as anchor investor at below-market yield (e.g., 50 bps below coupon), with an explicit 'first-out' exit arrangement that allows ADB to sell its position at market price 2 years after issuance — once the bond has established secondary market price history.

IFC's Green Bond Program: IFC provides first-loss guarantee covering 20% of principal, enabling a project rated BBB+ to achieve AA rating in the enhanced structure. IFC's balance sheet cost is offset by concessional funding from the Climate Investment Funds (CIF).

India application: NaBFID should establish a formal co-investment agreement with ADB, IFC, and the World Bank under which each DFI commits to anchor-investing in a minimum of 3–5 India green bond issuances annually — providing price discovery, credibility, and secondary market depth that private investors will follow.

Target: ₹25,000–30,000 crore annually of DFI-anchored green bond issuance by 2028, catalysing ₹1–1.5 lakh crore of total green bond market activity.

Source: ADB ASEAN Catalyst for Green Finance initiative; IFC Green Bond Program annual report 2023; CIF Climate Investment Funds design; Authors' proposal.

The ESG Premium: India's FPI Opportunity

European institutional investors with ESG mandates face a structural problem: their ESG bond portfolios are concentrated in Europe and the US, creating both regional concentration risk and limited impact in the markets that need green finance most. Indian green bonds — properly structured to ICMA GBP Gold standard, with DFI anchor investment, and with India-TRACE secondary market pricing — offer European ESG investors genuine diversification, genuine impact, and (on an unhedged basis or with extended VRR) attractive absolute yields. The opportunity exists. The structure is the barrier.

8.4 Credit Enhancement for Green Projects: The IGBGF Proposal

Green projects face the same fundamental credit challenge as all infrastructure projects: construction-phase risk makes them unbondable, and the absence of a secondary bond market makes them unattractive to institutional investors with liquidity needs. But green projects have an additional challenge: many of the highest-impact green investments — distributed solar, rural water systems, community-scale biogas, sustainable forestry — are intrinsically fragmented, small-ticket, and unsuited to standard project finance structures. A credit enhancement framework for green bonds must address not just large-scale renewable energy projects but the full spectrum of India's green investment landscape.

Chart 8.4 — Green Bond Credit Enhancement Architecture for India

Layered blended finance structure — from first loss to senior green bond — drawing on CIF and GCF models

Source: Authors' framework; CIF Climate Investment Funds design; GCF Green Climate Fund blended finance guidelines; NaBFID Act 2021; SEBI Green Bond circular 2023.

Chart 8.4 — Green Bond Credit Enhancement Architecture for India | Source: Authors' framework; CIF Climate Investment Funds; GCF Green Climate Fund; NaBFID Act 2021; SEBI Green Bond circular 2023

The Layered Blended Finance Structure — Explained

Chart 8.4 presents the green bond credit enhancement architecture as a layered 'blended finance' structure — where different categories of capital absorb different levels of risk, enabling each successive layer to achieve a credit rating that matches its investors' requirements. The principle is not new — it is the same structure used by the European Investment Bank's Project Bond Credit Enhancement and the ASEAN Credit Guarantee and Investment Facility. What is new is the proposal to apply it specifically to India's green bond market, with Indian institutional characteristics in mind.

The Four Blended Finance Layers — Mechanics and Providers

LAYER 1 — First Loss (5–10% of project cost): Government VGF grant + Developer equity + Green Climate Fund concessional loan. This layer absorbs the first losses from project failure, cost overruns, or revenue shortfall. Its presence transforms an 'uninsurable' risk into a manageable one.

LAYER 2 — Concessional Debt (10–20%): ADB / IFC / World Bank below-market loans + NaBFID subordinated green debt. Priced 200–300 bps below market; subordinated to senior bonds; provides cushion that protects senior investors from moderate project underperformance.

LAYER 3 — Green Credit Guarantee (Sovereign/quasi-sovereign wrap): The proposed India Green Bond Guarantee Facility (IGBGF) provides a guarantee covering 30–40% of senior bond principal — enabling a project

rated BBB to achieve AA in the enhanced structure. The IGBGF is seeded by the Government of India (₹15,000–20,000 crore) with co-contributions from ADB and World Bank.

LAYER 4 — Investment Grade Green Tranche (A to AA rated): The credit-enhanced tranche, eligible for insurance company and pension fund investment under IRDAI/PFRDA green bond guidelines. Fixed coupon at market rate; 15–25 year tenor; annual SEBI-compliant green impact report.

LAYER 5 — Senior Secured Green Bond (AA to AAA rated): The listed, publicly traded instrument. Exchange-listed on BSE GSSS segment; India-TRACE priced; eligible for Bharat Bond ETF III; eligible for Bloomberg GSSS Bond Index (enabling ESG FPI flows).

The India Green Bond Guarantee Facility (IGBGF): Design Proposal

Proposed: India Green Bond Guarantee Facility (IGBGF)

Structure: A dedicated guarantee corpus of ₹20,000–25,000 crore, established as a special purpose vehicle under the Finance Ministry, with contributions from: Government of India (₹10,000 crore — seed capital), ADB (USD 500 million / ₹4,200 crore), World Bank / IFC (USD 500 million), and Green Climate Fund (USD 300 million).

Guarantee Products: (1) Partial Credit Guarantee: covers 30–40% of principal for bonds rated A- or better, enabling upgrade to AA+/AAA; (2) First-Loss Guarantee: covers first 10% of losses for bonds rated BBB+, enabling upgrade to A+; (3) Political Risk Guarantee: covers regulatory and policy risk for bonds financing sensitive green infrastructure.

Eligible Projects: Renewable energy (solar, wind, small hydro), green hydrogen, EV charging infrastructure, green buildings, sustainable water infrastructure, clean mass transit, waste-to-energy, and sustainable agriculture. Explicitly NOT eligible: fossil fuel 'transition' projects, nuclear energy, or large hydroelectric projects above 25MW (to maintain international green credibility).

Expected Leverage: Based on CIF and GCF experience, each ₹1 of IGBGF guarantee capital supports ₹8–12 of green bond issuance. A ₹25,000 crore IGBGF corpus would support ₹2–3 lakh crore of green bond issuance over a decade — transforming India's annual green bond market from ~₹40,000 crore to ₹25,000–30,000 crore per year.

Source: Authors' proposal; Climate Investment Funds (CIF) design; Green Climate Fund (GCF) blended finance guidelines; ADB ASEAN Credit Guarantee and Investment Facility design; EIB Project Bond Credit Enhancement.

International Reference: The Climate Investment Funds (CIF) Model

What is CIF: The Climate Investment Funds (CIF) is a multilateral concessional finance mechanism seeded by major economies (US, UK, Japan, Germany, etc.) that provides first-loss capital, concessional loans, and guarantees to enable private investment in climate projects in developing countries. CIF has deployed approximately USD 11 billion in 72 countries since 2008.

How it works for bonds: CIF's Private Sector Set-Aside provides first-loss guarantees specifically to enable private bond issuance for climate projects. In the Philippines, CIF's guarantee enabled the Philippine Geothermal Bond — the first geothermal project bond in Southeast Asia — to achieve investment-grade rating despite the inherent geological risks of geothermal exploration.

India and CIF: India has received approximately USD 2.3 billion in CIF financing through its Clean Technology Fund (CTF) and Scaling Up Renewable Energy Program (SREP) programmes. The proposed IGBGF should formally integrate with the CIF Private Sector Set-Aside — allowing IGBGF to co-guarantee green bonds with CIF, effectively doubling the guarantee capacity without additional Government of India outlay.

The Green Climate Fund: The GCF — the world's largest dedicated climate fund with over USD 13 billion in pledges — has a specific Private Sector Facility that provides first-loss guarantees, subordinated loans, and equity to enable private climate investment in developing countries. NaBFID should become an Accredited Entity under the GCF — enabling Indian green bond issuers to access GCF credit enhancement directly.

Source: CIF Annual Report 2023; GCF Private Sector Facility guidelines; Philippine Geothermal Bond case study (ADB); GCF Accredited Entity roster 2024.

The Aggregation Solution for Small Green Projects

The most innovative challenge in India's green bond market is how to finance distributed, small-ticket green infrastructure — rooftop solar, rural biogas, community water systems, sustainable agri-input supply chains. Individual projects are too small for bond markets. The solution is aggregation: bundling 100–500 small green projects into a single special purpose vehicle that issues a pooled green bond. Models in operation include Climate Bonds Initiative's 'Pooled Bond' structure (used in the US for small solar farms) and the ADB's 'Green Bond Aggregation Facility' (used in Southeast Asia for distributed solar). India's NaBFID should establish a Green Project Aggregation Facility by FY2026.

8.5 Social Bonds and Sustainability Bonds: The Underexplored Opportunity

Green bonds receive the lion's share of attention in India's sustainable finance discussion, but social bonds — designed to finance projects with direct positive social outcomes such as affordable housing, healthcare, education, food security, and economic inclusion — may represent an equally large financing opportunity for Viksit Bharat. SEBI's social bond framework, issued in 2025, has generated fewer than 10 issuances to date.

What Social Bonds Can Finance in India

- **Affordable Housing (PMAY-Gramin):** India's Pradhan Mantri Awas Yojana targets 29.5 million houses for the rural poor. Housing bonds backed by a government guarantee and RERA-registered projects are natural social bond candidates.
- **Healthcare Infrastructure:** Post-pandemic, India needs ₹6–8 lakh crore in hospital, PHC, and health logistics infrastructure. Healthcare bonds with social outcome covenants can access ESG-mandated capital.
- **Education:** School infrastructure, skill development centres, and vocational training facilities — especially in Tier 2/3 cities — can be financed through social bonds with enrolment and completion outcome metrics.

- **Financial Inclusion Infrastructure:** Micro-ATM networks, Business Correspondent infrastructure, and rural payment connectivity — all have measurable social outcomes and predictable cash flows from transaction fees.
- **Women-led MSME Finance:** Social bonds specifically targeting women-led micro-enterprise lending, issued by MFIs and SFBs, are an established international social bond category that India has barely touched.

SEBI's Social Bond Framework: What Is Missing

Current framework requires: Use-of-proceeds for defined social categories, target population identification, social impact reporting. These are the right elements.

What is missing: (1) A definition of 'eligible social outcomes' with measurable KPIs — without this, social bonds are disclosure documents, not outcome contracts; (2) A social taxonomy analogous to a green taxonomy — defining which activities qualify and at what minimum social threshold; (3) Social bond-specific credit enhancement — social projects (affordable housing, healthcare) face the same credit barriers as green projects but have no equivalent of the IGBGF.

Proposal: SEBI, in coordination with the Ministry of Social Justice and the Ministry of Housing, should develop an 'India Social Bond Standard' with: mandatory social KPIs (lives impacted, income uplift, access metrics), a social bond guarantee fund seeded by Finance Ministry and ADB Social Development Fund, and PFRDA mandate for NPS Tier II to hold 1% in India Social Bonds.

₹25,000 Cr

India's affordable housing finance gap annually — the single largest social bond opportunity in the emerging market world

8.6 The Greenwashing Risk: Credibility as India's Scarcest Resource

India's most valuable asset in building its sustainable bond market is not its renewable energy pipeline, its investor base, or its regulatory framework. It is its **credibility.** In a world where ESG-washing has become a systemic concern — where European regulators have launched enforcement actions against asset managers for greenwashing claims, and where the SEC has fined major banks for ESG misrepresentation — the issuer that can demonstrate genuine, verified, measurable green or social outcomes will command a premium. The issuer that cannot will face an increasingly hostile market and regulatory environment.

India has two dimensions of greenwashing risk that are specific to its context. The first is transition-related: India's coal economy will not disappear overnight, and some 'green' bond-financed projects will exist alongside continued coal use. This is not dishonest — it is the reality of a just energy transition —

but it requires careful framing and disclosure. The second risk is more serious: the absence of verified impact reporting means that green bond proceeds can be misallocated without consequence. SEBI has the framework; what is missing is enforcement.

Three Greenwashing Risks India Must Address

Risk 1 — Proceeds Misallocation: Green bond proceeds in India are reported annually but rarely verified by independent auditors. Several FY2022 and FY2023 green bond annual reports show >30% of proceeds 'allocated' to projects that had already been completed before bond issuance — a practice that ICMA GBP explicitly prohibits. SEBI must require pre-issuance project pipeline disclosure and post-issuance proceeds deployment verification by a SEBI-registered independent reviewer.

Risk 2 — Greenwashing by Label Transfer: The RBI's priority sector lending (PSL) classification and SEBI's green bond label are not aligned. Some bonds labelled 'green' by issuers are financing projects that would not qualify under ICMA GBP (e.g., large hydro above 25MW, biomass combustion without efficiency thresholds). SEBI and RBI must harmonise their definitions.

Risk 3 — Social Washing in Social Bonds: India's social bond issuances have, with some exceptions, been vague about target populations, social baselines, and outcome measurement. A social bond that finances 'affordable housing' without specifying the income profile of beneficiaries, the rent-to-income ratio, or the location relative to employment centres is a conventional bond in social clothing. SEBI must mandate social KPI disclosure with third-party verification.

The Integrity Premium

The global evidence is clear: green bonds that demonstrate robust use-of-proceeds tracking, independent external review, and verified impact reporting trade at a 'greenium' of 5–20 basis points below equivalent conventional bonds — a real financing cost saving for issuers who invest in credibility. India's green bond issuers who establish the highest standards of transparency will be rewarded with lower borrowing costs, broader investor access, and Bloomberg GSSS Index inclusion that brings passive ESG capital automatically.

Chapter 8 Summary: Making India a Global Leader in Sustainable Finance

India stands at a pivotal moment in its sustainable finance journey. The ambition is there — at COP28, India reaffirmed commitments that place it among the most climate-ambitious major economies. The capital demand is there — $2.5 trillion of green and social infrastructure financing need by 2030. The investor appetite is growing — global ESG-mandated AUM of $22 trillion seeks exactly the assets that India's green bond market can offer. What India needs now is the architecture to connect ambition to capital.

Priority Action	Lead	Timeline	Expected Impact
Establish India Green Bond Guarantee Facility (IGBGF): ₹25,000 Cr corpus with ADB/WB co-contribution	Finance Ministry + NaBFID	FY2025–26	Enables ₹2–3 lakh crore green bond issuance over decade; 8–12× leverage on public capital
Develop India Tiered Green Bond Principles (Bronze/Silver/Gold) with EU-compatible Gold tier	SEBI + Finance Ministry	FY2025	Enables ESG-mandated FPI access; Bloomberg GSSS Index inclusion; greenium for best-in-class issuers
Launch Bharat Bond ETF III: dedicated green bond basket; ₹1,000 minimum; retail accessible	AMFI + Edelweiss AMC + SEBI	FY2026	Creates retail demand for green bonds; 10 million potential retail green bond investors via SIP mechanism
NaBFID GCF Accreditation: direct access to Green Climate Fund credit enhancement	NaBFID + Finance Ministry	FY2025–26	USD 200–500M of GCF credit enhancement available for India green bonds; doubles guarantee capacity
IRDAI Green Bond Mandate: 2% of AUM in India Gold Green Bonds	IRDAI + Finance Ministry	FY2026	₹90,000 crore of insurance company demand for top-tier India green bonds
Sovereign Green Bond Scale-Up: ₹25,000–50,000 Cr annually (from ₹16,000 Cr in FY2023)	**Finance Ministry + RBI**	**FY2025 onwards**	**Establishes green yield curve; anchor for corporate green bond pricing; signals policy commitment**

Key Message

India does not need to invent sustainable finance — it needs to deploy it at Indian scale. The instruments exist (green bonds, blended finance, DFI anchoring). The frameworks exist (SEBI GBP, IFC standards, CIF, GCF). The investors exist (ESG-mandated FPIs, domestic institutional pools, retail via ETF). What India needs is the institutional plumbing — the IGBGF guarantee corpus, the India Tiered Green Bond Standard, the DFI co-investment agreements, the Bharat Bond ETF III, and the NaBFID Green Project Aggregation Facility — to connect these pieces into a functioning market.

The prize is not small. If India becomes a credible, scaled, liquid green bond market by 2030, it will attract not just capital for its own transition — it will become the reference market for sustainable finance across the Global South. India can be to green bonds what it has already become to digital payments: the country that showed the world how to do it at scale, at speed, and with genuine inclusion.

CHAPTER 9

Municipal Bonds and Sub-Sovereign Financing: Funding Urban India's Viksit Bharat Transformation

300 million new urban residents by 2047 | ₹82 lakh crore of urban infrastructure need | A market that barely exists — and must be built urgently

300 million

New urban residents India will add by 2047 — the largest urban expansion in human history. Cities will need hospitals, schools, water systems, transit networks, and housing that only a functioning municipal bond market can finance at scale.

Imagine a city of three hundred million people. That is not a metaphor. By 2047, India will have added to its urban population a number of people equivalent to the entire current population of the United States — or four Britains. They will need water systems that work, sewage that flows, roads that are drivable, transit that moves, schools that stand, hospitals that operate. And they will largely be living in cities and towns whose governments are underfunded, under-credited, and unequipped to access the capital markets that exist specifically for this purpose.

Municipal bonds — debt instruments issued by Urban Local Bodies (ULBs) to finance urban infrastructure — are among the most elegant instruments in public finance. They connect the future tax revenues and user charges of a city to the long-term infrastructure that generates those revenues. They allow cities to borrow today against the value they will create tomorrow. Used at scale, they are the financial engine of urban transformation.

India has used them barely at all. A dozen issuances by the largest, most creditworthy ULBs, totalling approximately ₹2,100 crore over a decade — less than what a single mid-sized Indian corporate raise in a single bond issuance. Viksit Bharat cannot be built without fixing this. This chapter explains why the market has not scaled, what the barriers are, and how — with the right institutional architecture, regulatory framework, and fiscal reform — India can build a municipal bond market worthy of its urban ambitions.

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The Viksit Bharat Urban Imperative

By 2047, India's urban population will be approximately 900 million — larger than any country in the world today except China and India combined. The World Bank estimates that India's cities need ₹70

lakh crore of urban infrastructure investment by 2036. Central grants and state transfers can fund at most 30–40% of this. The rest must come from capital markets — and the instrument designed for exactly this purpose is the municipal bond.

9.1 The Urbanisation Challenge: Numbers That Demand Action

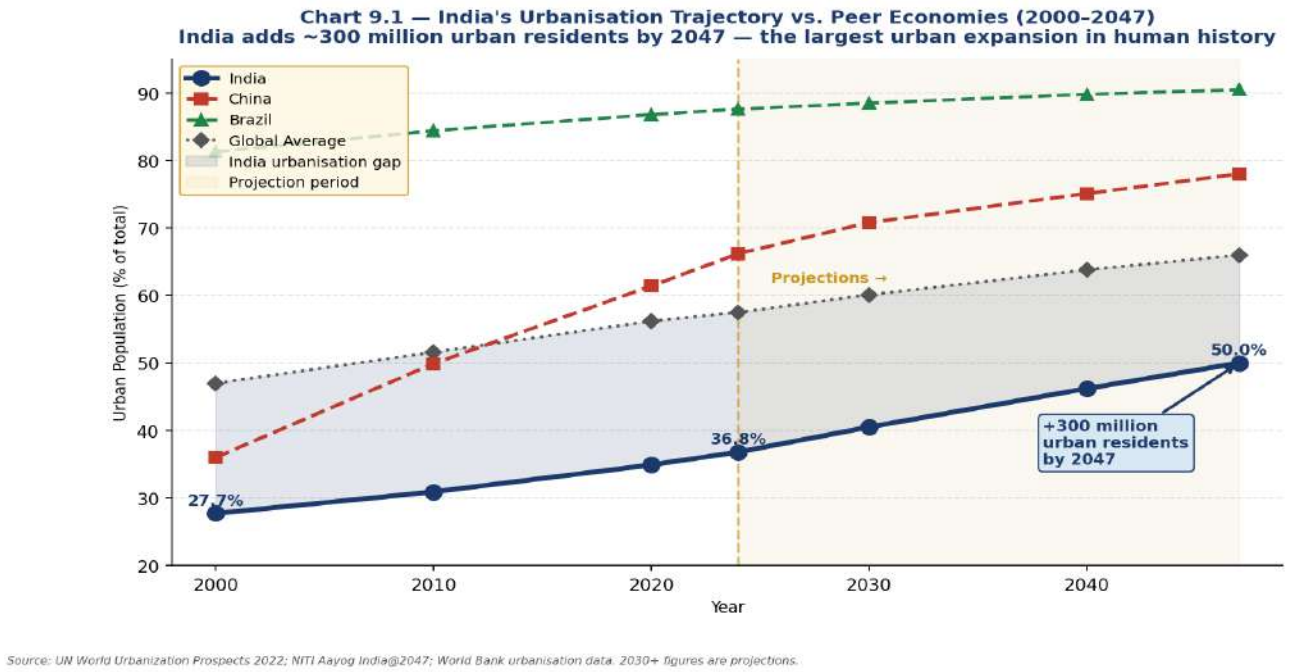


Chart 9.1 — India's Urbanisation Trajectory vs. Peer Economies (2000–2047) | Source: UN World Urbanization Prospects 2022; NITI Aayog India@2047; World Bank

Chart 9.1 reveals a trajectory that is both inspiring and sobering. India's urban population share — at approximately 37% today — is strikingly low for an economy of its size and ambition. China urbanised from 36% in 2000 to 66% today, building the infrastructure of a modern economy in the process. Brazil is at 88%. India's urbanisation curve is steep and accelerating — and the distance between where India is and where it needs to be by 2047 represents the largest urban infrastructure financing challenge in human history.

The Scale of Urban India's Infrastructure Need (2024–2036)

Total urban infrastructure investment need: ₹70 lakh crore by 2036 (15th Finance Commission estimate)

Central government urban grants and schemes: ~₹15–18 lakh crore over the period (~20% of total need)

State government urban transfers: ~₹12–15 lakh crore (~17% of total need)

Gap to be financed from markets / ULB own resources: ₹49–55 lakh crore (~63% of total need)

Current ULB debt market (all instruments): < ₹5,000 crore outstanding municipal bonds

Required scale-up in ULB bond financing: 100× increase over current levels by 2036

Source: 15th Finance Commission Report; NITI Aayog Urbanisation Commission 2023; MoHUA Smart Cities Mission; World Bank India Urban Flagship Report 2023.

The International Comparison: What Urban Finance Looks Like Elsewhere

India's municipal bond market is not simply underdeveloped relative to advanced economies — it is underdeveloped relative to comparable emerging market peers. The United States municipal bond market — the world's largest — has approximately USD 4 trillion outstanding, financing everything from local school districts to metropolitan water systems. But more relevant are the comparisons closer to home.

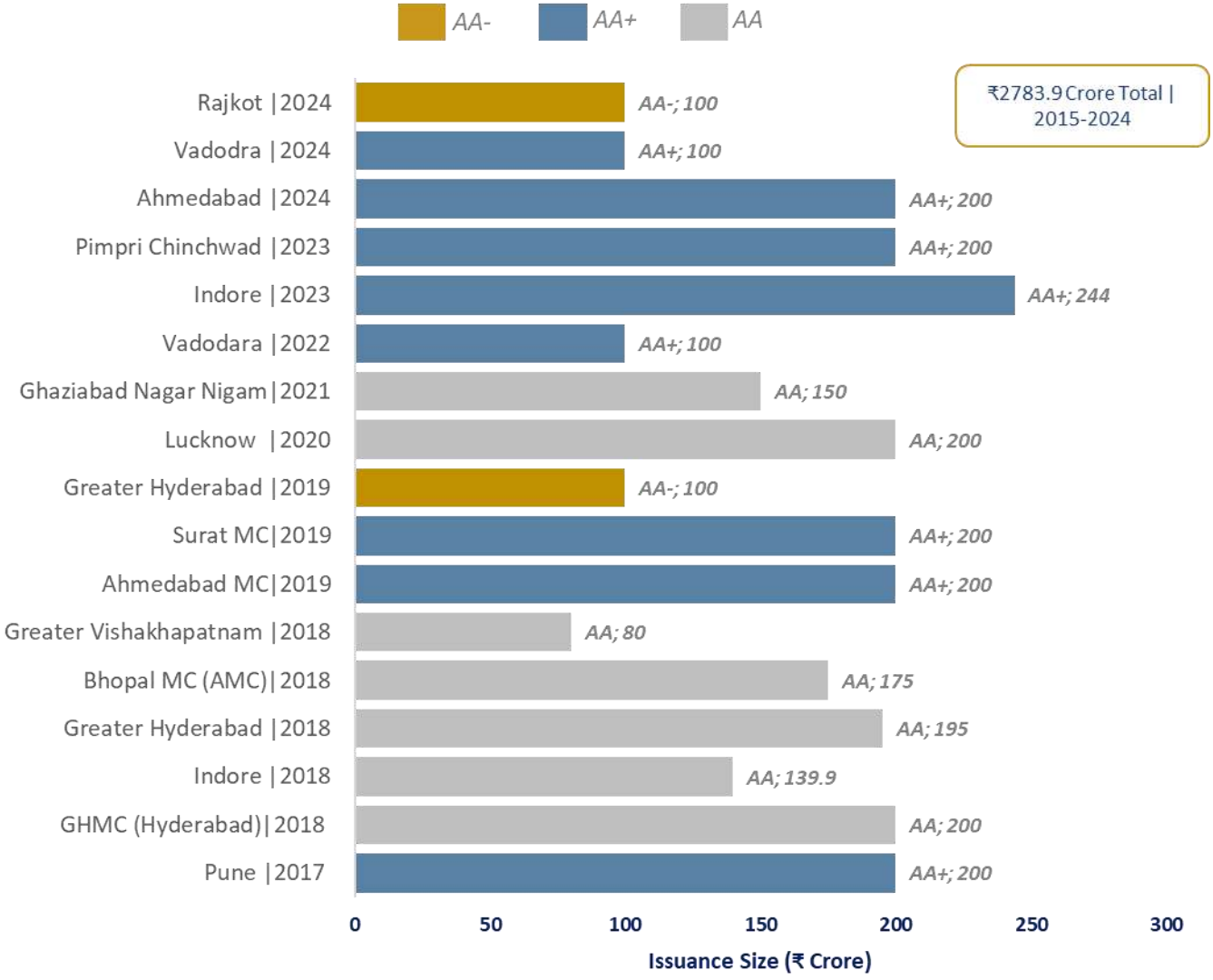
Country	Muni Bond Market Size	% Of GDP	Key Enabler	India Parallel Needed
USA	USD 4 trillion	~16% GDP	Property tax base; tax exemption for muni bond interest; AAA-rated bond insurance	Property tax reform + tax incentive for muni bond investors
China	USD 6 trillion (local govt bonds)	~35% GDP	Implicit central govt guarantee; provincial government backing; LGFV structures	State government guarantee backstop for pooled finance
South Africa	ZAR 400 bn (~USD 22 bn)	~7% GDP	National Treasury municipal finance framework; INCA (Infrastructure Finance Corp)	National Municipal Finance Authority (NMFA) equivalent
Brazil	BRL 2 trillion (state + muni)	~18% GDP	FGR (municipal bond guarantee fund); BNDES sub-sovereign lending	NaBFID sub-sovereign lending window + NMFA guarantee
India (Current)	**₹~2,100 Cr (~USD 250M)**	**~0.01% GDP**	**SEBI framework exists; 31 issuances since 2015**	**All of the above — a comprehensive programme**

9.2 Current State: A Market in Name Only

India's municipal bond market has the regulatory architecture of a functioning market — SEBI's 2015 framework (amended 2023) provides a clear pathway for ULB bond issuance, including listing requirements, disclosure norms, and investor eligibility. What it lacks is the economic and institutional conditions to make that framework operational for more than a handful of India's best-managed cities.

Chart 9.2 — India's Municipal Bond Issuances (2015-2024)

All exchange –listed bond issuances by Indian Urban Local Bodies under SEBI's framework



Source SEBI Municipal Bond Issuances Data

Chart 9.2 — India's Municipal Bond Issuances (2015–2024) | Source: SEBI municipal bond data; individual ULB annual reports; MoHUA

Chart 9.2 documents India's entire history of municipal bond issuances: twelve transactions, ₹2,086 crore in total, spanning nine years. Pune, Ahmedabad, Hyderabad, Indore, and a handful of others. The issuances that have occurred share several characteristics: they are all from large, relatively well-managed cities with above-average revenue collection; they are all rated AA- or A+, reflecting only the most creditworthy end of the ULB spectrum; and they are all small by any international standard — the average issuance of approximately ₹174 crore would not constitute a minimum viable deal size in most bond markets.

Why Has the Market Not Scaled? Five Structural Barriers

The Five Barriers to India's Municipal Bond Market

Barrier 1 — Creditworthiness: Of India's 4,500+ Urban Local Bodies, fewer than 50 have the financial management systems, revenue visibility, and governance structures that bond investors require. Most ULBs have unaudited accounts, no accrual accounting system, and no independent credit rating. You cannot issue a bond if you cannot be rated.

Barrier 2 — Revenue Dependence on Transfers: Indian ULBs derive 60–75% of their revenues from central and state government grants and transfers — revenues that are discretionary, variable, and not directly pledgeable to bond investors. Without ring-fenced, predictable own-source revenues (property tax, water/sewage user charges, toll revenues), ULB bonds cannot be structured with adequate debt service coverage.

Barrier 3 — Small Deal Size: The average ULB bond issuance of ₹174 crore is below the ₹200–500 crore threshold that creates institutional investor interest and adequate secondary market liquidity. Below this size, the transaction costs of issuance (legal, rating, listing, underwriting) consume 3–5% of proceeds — making bonds economically inferior to state government loans.

Barrier 4 — Political Economy of User Charges: Property tax reform and water pricing at full cost-recovery create political resistance. Most ULBs operate water systems at 30–40% cost recovery — meaning bond investors cannot be assured of adequate revenue streams from these systems. Pricing reform is a political decision that financial engineering cannot substitute for.

Barrier 5 — Absence of a Development Finance Backstop: India has no equivalent of the US bond insurance industry (which historically guaranteed 50%+ of US muni bond issuances) or South Africa's INCA (Infrastructure Finance Corporation). Without a dedicated sub-sovereign credit enhancement institution, each ULB bond must stand on its own creditworthiness — accessible only to the top tier.

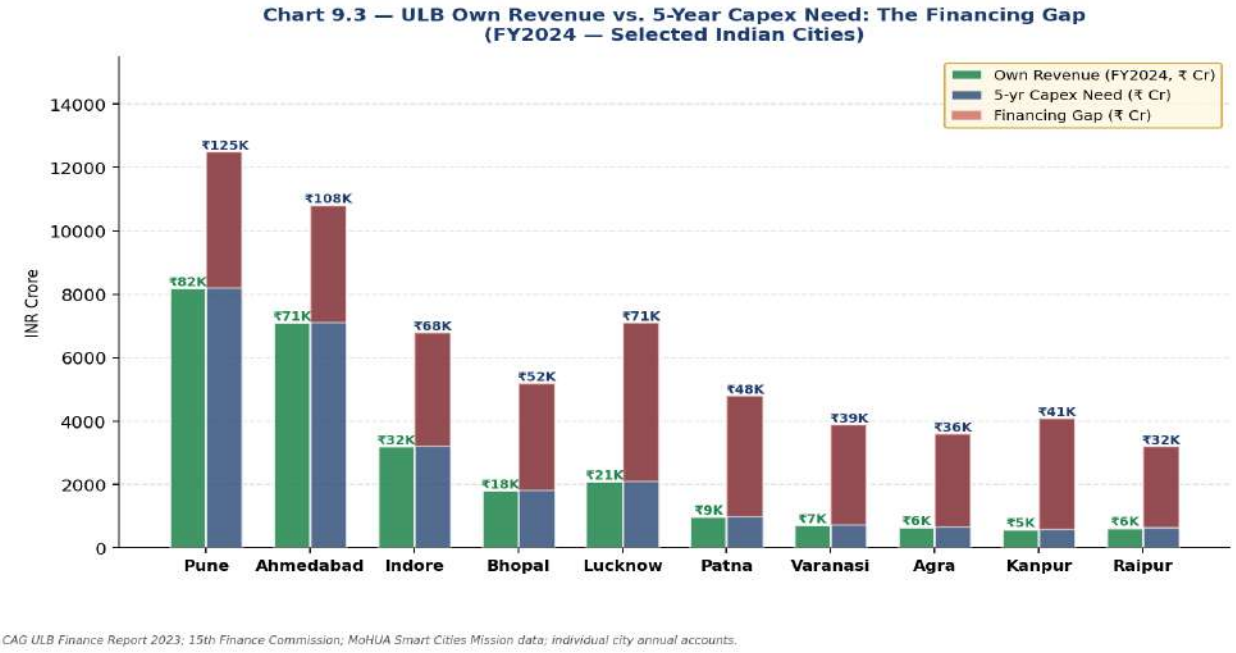


Chart 9.3 — ULB Own Revenue vs. 5-Year Capex Need: The Financing Gap (FY2024) | Source: CAG ULB Finance Report 2023; 15th Finance Commission; MoHUA Smart Cities Mission data

Chart 9.3 makes the financial gap concrete. Even Pune and Ahmedabad — India's two most creditworthy municipal issuers — face capex needs that exceed their own revenues by 50–60%. For Lucknow and Patna, the gap is 200–500%. The financing gap is not the fault of ULB management — it reflects a revenue structure inherited from colonial-era property tax systems, politically constrained user charges, and decades of grant dependence that has atrophied the incentive to develop own-source revenues.

#

The Indore Example: What Is Possible

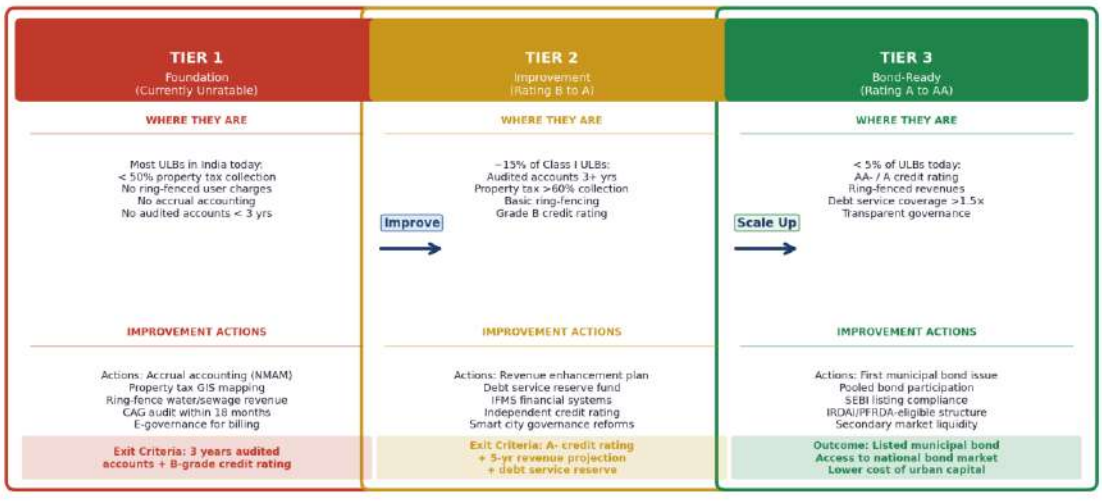
Indore Municipal Corporation issued India's first AAA-rated (CRISIL AAA) municipal bond in 2018 — ₹139.9 crore at 9.25% for 10 years. The bond was oversubscribed 3.2 times. Indore achieved this by: (a) achieving 95%+ property tax collection through aggressive door-to-door collection and GPS tracking; (b) ring-fencing its user charge revenues into a dedicated debt service reserve; (c) implementing accrual accounting under NMAM; and (d) getting CRISIL and ICRA ratings before approaching the market. Indore is the template. The question is how to replicate it at scale across 50–100 ULBs by 2030.

9.3 The Creditworthiness Gap: Building Bond-Ready Cities

The creditworthiness gap is the central challenge of India's municipal bond market. It cannot be addressed through financial engineering alone — it requires genuine fiscal reform at the ULB level, supported by state government enabling legislation and central government incentive programmes. The good news is that the reform agenda is well-known, technically straightforward, and capable of generating results within 3–5 years. The bad news is that it requires political will that has historically been difficult to mobilise.

Chart 9.4 — ULB Creditworthiness Improvement Programme: A Three-Tier Pathway

From 'Unratable' to 'Bond-Ready' — a structured programme for Indian Urban Local Bodies



Source: Authors' framework; 15th Finance Commission recommendations; SEBI municipal bond guidelines; MoHUA ULB capacity building programme.

Chart 9.4 — ULB Creditworthiness Improvement Programme: A Three-Tier Pathway | Source: Authors' framework; 15th Finance Commission; SEBI municipal bond guidelines; MoHUA ULB capacity building programme

The Three-Tier Creditworthiness Improvement Programme

Chart 9.4 presents the creditworthiness improvement programme as a three-tier pathway — from currently unratable ULBs through to bond-ready cities. The framework is not a ranking or judgement; it is a structured programme with specific, measurable criteria for graduation from one tier to the next.

Tier 1 — Foundation: From Unratable to Ratable (3–5 years)

The majority of India's 4,500+ ULBs are in Tier 1 — cities that cannot currently be assigned a credit rating because their financial information is insufficient, unreliable, or unavailable. Getting these ULBs to ratability is the foundational task of India's municipal finance reform programme.

- **Accrual accounting under NMAM:** The National Municipal Accounting Manual (NMAM) provides a standardised accrual accounting framework. SEBI's municipal bond framework already requires NMAM compliance for issuers. The bottleneck is capacity — most ULBs lack trained accountants. The proposed fix: Ministry of Finance and MoHUA co-fund a '1,000 Municipal Finance Officers' programme, placing trained accountants in all Class I ULBs by FY2026.
- **Property tax GIS mapping:** Property tax is typically 40–60% of ULB own-source revenues, but collection efficiency averages 50–55% nationally. GIS-based property mapping — which Indore, Pune, and Ahmedabad have used to expand their tax base and improve collection — is the single most impactful revenue improvement measure available. Cost: ₹5–15 crore per city. Expected revenue increase: 30–50% improvement in collection efficiency.
- **Ring-fencing of user charges:** Water and sewage user charges, parking fees, and advertisement revenues should be deposited into ring-fenced escrow accounts — legally protected from discretionary appropriation by the ULB or state government. This creates the predictable revenue stream that bond investors can model.
- **CAG audit within 18 months:** A ULB with accounts audited by the Comptroller and Auditor General within 18 months of the financial year provides bond investors with the minimum assurance standard. Many ULBs have audit arrears of 3–7 years. State governments must make CAG audit timeliness a condition of Tier 1 certification.

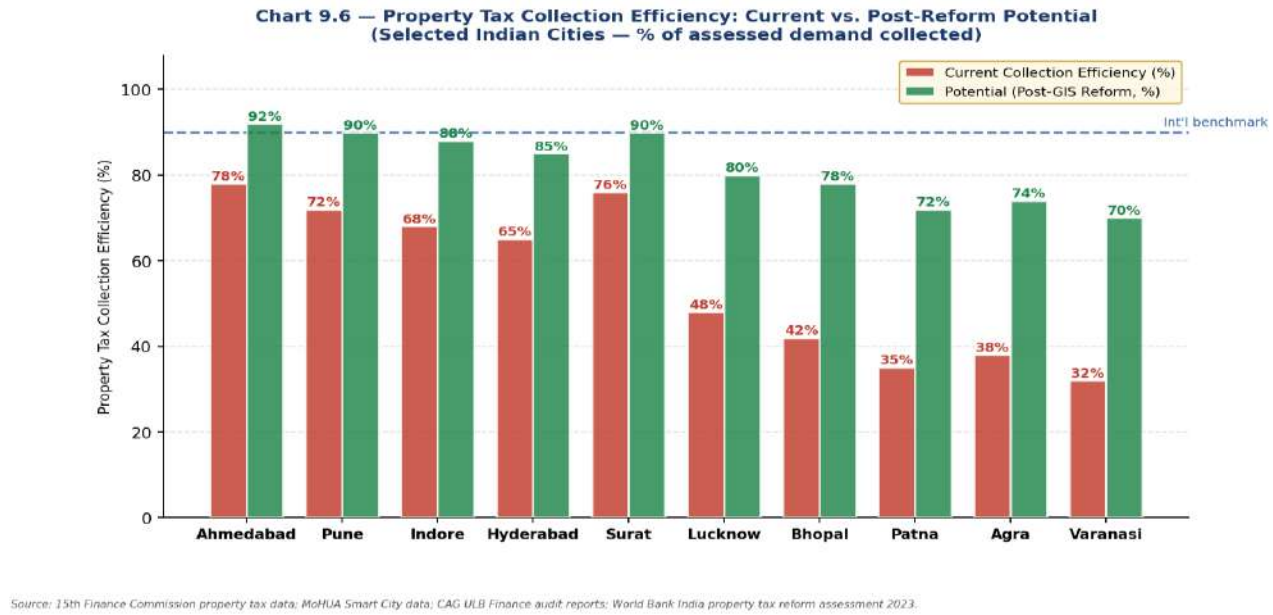


Chart 9.6 — Property Tax Collection Efficiency: Current vs. Post-Reform Potential | Source: 15th Finance Commission; MoHUA Smart City data; CAG ULB Finance audit reports

Chart 9.6 quantifies the property tax reform opportunity. Cities like Patna, Varanasi, and Agra currently collect just 32–38% of their assessed property tax demand — leaving 62–68% uncollected. With GIS mapping, e-billing, and enforcement reform, collection efficiency can reach 70–80% within 3 years. For Patna, this translates to approximately ₹1,500–2,000 crore of additional annual own-source revenue — sufficient to support a ₹3,000–4,000 crore municipal bond issuance with adequate debt service coverage.

Tier 2 — Improvement: From Ratable to Bond-Ready (2–3 additional years)

Tier 2 ULBs have achieved ratability — they have audited accounts, a credit rating (B or above), and basic financial management systems. The Tier 2 programme focuses on improving the credit rating to investment grade (A- or above) and developing the revenue and governance structures that institutional bond investors require.

Tier 2 Improvement Area	Current Challenge	Specific Action	Expected Outcome
Revenue Enhancement Plan	Ad hoc revenue projections; no 5-year fiscal model	Mandate 5-year municipal fiscal plan with conservative revenue projections approved by state government	Provides bond investors with credible debt service coverage analysis
Debt Service Reserve Fund	No pre-funded reserve; relies on current-year revenues	Deposit 6 months of projected debt service into DSRF before bond issuance	Rating upgrade of 1–2 notches; institutional investor confidence
IFMS Financial Systems	Excel-based accounting; no integrated systems	Implement Integrated Financial Management System (IFMS) with real-time revenue and expenditure tracking	Reduces audit time; enables quarterly financial reporting

Tier 2 Improvement Area	Current Challenge	Specific Action	Expected Outcome
User Charge Pricing Reform	Water/sewage at 30–40% cost recovery	Phased tariff increase to 80% cost recovery over 3 years, with poor household subsidy protection	Creates bondable revenue stream; maintains social equity
Smart City Governance	**Accountability gaps; political interference in operations**	**ULB boards with independent directors; city CEO appointment by UPSC equivalent**	**Governance premium on credit rating; institutional investor comfort**

Tier 3 — Bond-Ready: From Bond-Ready to Bond-Issuing

Tier 3 ULBs have investment-grade credit ratings, ring-fenced revenues, adequate debt service coverage, and governance structures that meet institutional investor standards. These cities are ready to issue bonds — but they need market support to make their first issuances successful and to establish the secondary market presence that will lower their future borrowing costs.

Tier 3 Enablers: Making the First Municipal Bond a Success

SEBI Anchor Investor Programme: SEBI should designate NaBFID, HUDCO, and 2–3 SEBI-registered impact funds as mandatory anchor investors in first-time ULB bond issuances — committing to purchase 25–30% of each issuance at a fixed spread above G-sec. This guarantees subscription and reduces the marketing risk for first-time issuers.

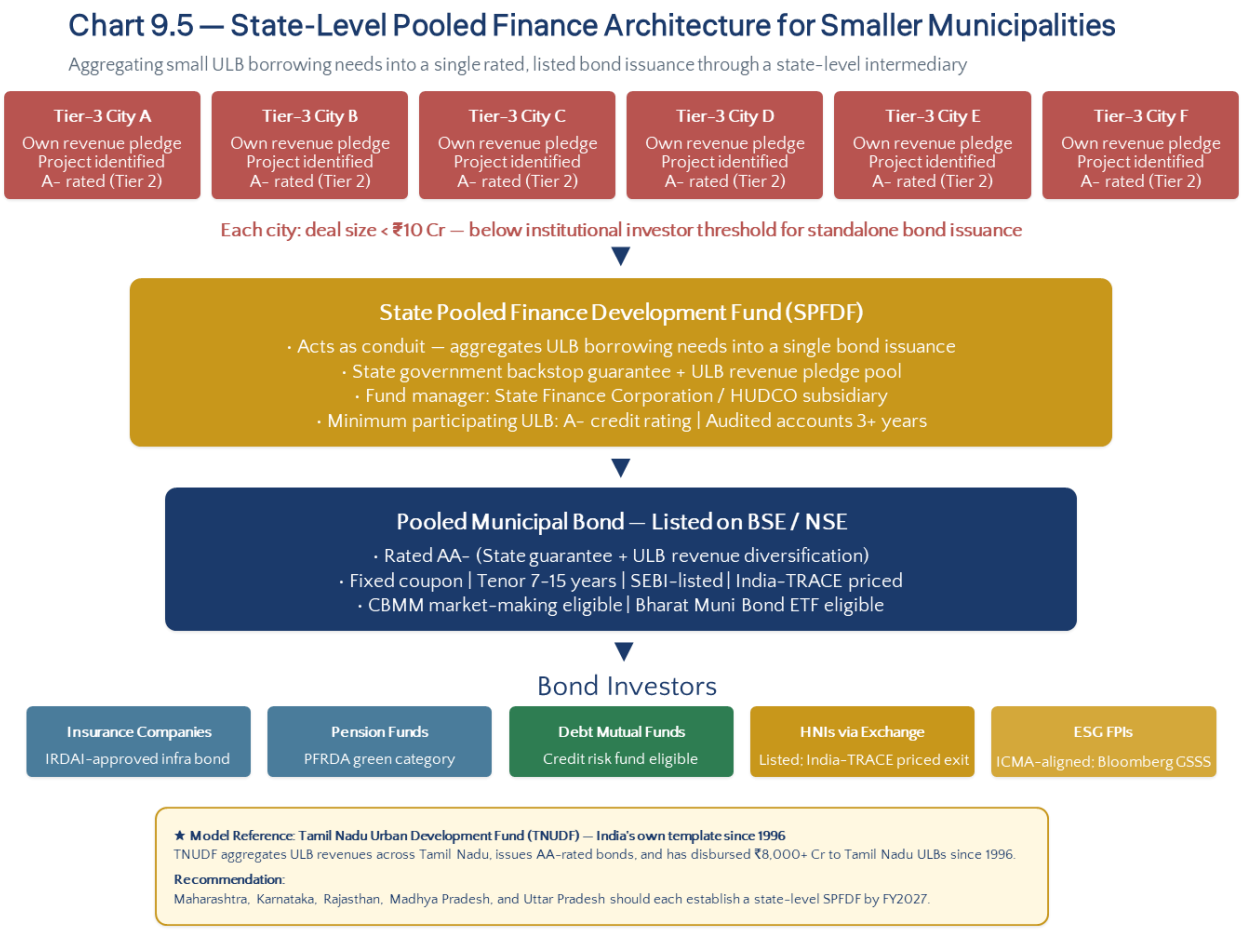
India-TRACE Muni Bond Segment: All municipal bonds should be included in the proposed India-TRACE price reporting system with a dedicated 'municipal bond' segment — providing retail and institutional investors with real-time secondary market prices and improving secondary market liquidity.

CBMM for Municipal Bonds: The proposed Corporate Bond Market Maker regime (Chapter 5) should include a 'municipal bond' sub-category — with 5 designated market-makers required to provide two-way prices on AA-rated municipal bonds. This creates the secondary market exit that institutional investor need.

Bharat Muni Bond ETF: A dedicated municipal bond ETF — modelled on Bharat Bond ETF but focused on AA-rated ULB bonds — would provide retail investors with access to municipal bond returns and create a pool of institutional demand that supplements direct bond investor appetite.

9.4 Pooled Finance: The Architecture for Smaller Cities

The three-tier creditworthiness programme addresses ULBs that can ultimately issue bonds individually. But the majority of India's urban population — living in Tier-2, Tier-3, and peri-urban agglomerations — will be served by ULBs that will never have the deal size to issue standalone bonds economically. For these cities, the solution is not individual bonds but **pooled finance:** aggregating multiple small ULB borrowing needs into a single, marketable bond issuance through a state-level intermediary structure.



Source: Authors' framework; TNUDF Annual Report 2023; World Bank pooled bond facility reports; Tamil Nadu Water Investment Company; MoHUA ULB finance data.

Chart 9.5 — State-Level Pooled Finance Architecture for Smaller Municipalities | Source: Authors' framework; Tamil Nadu Urban Development Fund (TNUDF) model; World Bank pooled bond facility reports

The State Pooled Finance Development Fund (SPFDF) — Design Proposal

Chart 9.5 presents the pooled finance architecture. At the centre is the State Pooled Finance Development Fund (SPFDF) — a state-level vehicle that aggregates borrowing mandates from participating ULBs, structures a diversified pool of municipal revenue pledges, and issues a single, rated, listed bond on the national market. The key innovation is credit enhancement: the SPFDF benefits from state government backstop guarantee, geographic diversification across ULBs, and senior claim on ring-fenced ULB revenues — enabling an AA- rating despite the underlying ULBs being individually A or A-.

International Reference: The Tamil Nadu Urban Development Fund (TNUDF) — India's Own Template

Background: Tamil Nadu Urban Development Fund (TNUDF) — established in 1996 — is India's most successful sub-sovereign pooled finance vehicle. TNUDF channels World Bank, ADB, and domestic market funding to urban local bodies across Tamil Nadu through loans and sub-debt structures. By 2024, TNUDF has disbursed over ₹8,000 crore to Tamil Nadu ULBs.

How it works: Participating ULBs pledge specific revenue streams (property tax, water charges, assigned revenues) to TNUDF. TNUDF aggregates these pledges into a portfolio, obtains a credit rating (AA from CRISIL, reflecting the state government guarantee and portfolio diversification), and accesses capital markets at significantly lower cost than individual ULBs could.

The bond market evolution: TNUDF issued India's first municipal bond in 1997 — ₹17 crore for a water supply project in Coimbatore. By 2023, TNUDF has become a reference issuer for sub-sovereign bonds, with institutional investors viewing TNUDF paper as a proxy for Tamil Nadu state credit with urban infrastructure exposure.

What other states should replicate: Maharashtra, Karnataka, Rajasthan, Madhya Pradesh, and Uttar Pradesh — states with large urban populations and multiple creditworthy ULBs — should establish state-level pooled finance vehicles modelled on TNUDF. The 15th Finance Commission specifically recommended this; only Maharashtra has made significant progress. Central government should make SPFDF establishment a condition of Smart Cities Mission Phase 2 funding.

Source: TNUDF Annual Report 2023; World Bank TNUDF project documents; MoHUA municipal finance database; Authors' analysis.

The National Municipal Finance Authority: India's Missing Institution

South Africa created the Infrastructure Finance Corporation (INCA) in 1996 — a dedicated sub-sovereign bond financing institution that has since facilitated over USD 3 billion of municipal bond and loan financing. Brazil's BNDES has a dedicated sub-national lending window. The US has the Federal Home Loan Bank System for municipal finance. India has no equivalent national institution dedicated to sub-sovereign and municipal finance.

Proposed: National Municipal Finance Authority (NMFA)

Structure: A statutory authority established under a dedicated Municipal Finance Act (or NaBFID amendment), with equity capital of ₹10,000 crore contributed by the Government of India — allowing it to leverage into ₹80,000–1,00,000 crore of sub-sovereign bonds and loans.

Mandate: (1) Direct lending to AA-rated ULBs at below-market rates; (2) Partial credit guarantee for ULB bonds issued by A-rated ULBs, enabling rating uplift to AA-; (3) Technical assistance for Tier 1 and Tier 2 ULB creditworthiness improvement; (4) Co-guarantee for state SPFDF bond issuances; (5) Capacity building grants for property tax reform and NMAM implementation.

Funding: NMFA raises funds from: (a) Government of India equity (₹10,000 crore); (b) Sovereign bonds with 'NMFA' label (eligible for IRDAI and PFRDA investment as quasi-sovereign); (c) Concessional loans from World Bank, ADB, and KfW under urban development facility; (d) Municipal bond market development levy (0.01% on all SEBI-regulated bond transactions — approximately ₹200 crore annually at current volumes).

International Model: Closest parallel is South Africa's Development Bank of Southern Africa (DBSA) Sub-National Finance Facility — which provides credit enhancement, technical assistance, and direct lending to municipalities across Southern Africa. DBSA has facilitated ZAR 80 billion of sub-sovereign finance since 2000.

Source: Authors' proposal; South Africa DBSA Sub-National Finance Facility; World Bank Municipal Finance Advisory Services; 15th Finance Commission recommendations; NaBFID Act 2021 provisions.

9.5 The Regulatory and Fiscal Reforms Required

Building a functional municipal bond market in India requires simultaneous reform at three levels: the ULB itself (revenue and governance reform); the state government (enabling legislation, guarantee backstop, SPFDF establishment); and the central government/SEBI (regulatory framework, institutional infrastructure, investor mandates). All three must move together — ULB reform without investor demand creates well-managed cities that still cannot access markets; investor mandates without ULB reform creates demand for bonds that don't exist.

SEBI's Municipal Bond Framework: What Exists and What Must Change

SEBI's existing municipal bond framework — last substantively updated in 2023 — is functional for the small number of creditworthy ULBs that can currently access the market. For the market to scale, the framework needs five enhancements:

- **Reduce minimum issuance size:** SEBI's current minimum of ₹50 crore is already low, but the practical minimum for institutional investor interest is ₹200–250 crore. For smaller ULBs, the solution is not lowering the minimum further but mandating participation in SPFDF structures that aggregate to this size.
- **Retail investor access:** Municipal bonds should be explicitly included in the Bharat Bond Direct platform (Chapter 7) and the retail bond platforms being developed. AA-rated SPFDF bonds, backed by state government guarantee, are suitable for retail investors seeking slightly higher yield than G-secs.
- **CBMM obligation for muni bonds:** Extend the Corporate Bond Market Maker regime to include 5 designated market-makers for municipal and SPFDF bonds — creating secondary market liquidity that institutional investors currently lack.
- **Tax incentive for municipal bond investors:** Introduce a partial income tax exemption (50% of interest income exempt) for retail investors holding municipal bonds for 3+ years — analogous to the US municipal bond tax exemption that has driven the world's largest muni bond market.
- **IRDAI and PFRDA municipal bond mandate:** Create a dedicated 'municipal/sub-sovereign bond' allocation category in IRDAI and PFRDA investment guidelines — allowing insurance companies and pension funds to allocate 1–2% of AUM specifically to AA-rated SPFDF and NMFA-guaranteed municipal bonds.

State Government Reforms: The Enabling Layer

Municipal bonds are ultimately a creature of state law — ULBs are constituted under state government legislation, and their revenue-raising powers, borrowing authority, and governance structures are defined by state acts. No central government mandate or SEBI framework can substitute for state-level enabling reform.

State Reform Required	Current Situation	Proposed Action	Priority States
Municipal Finance Legislation	Most states have outdated municipal acts that don't explicitly authorise bond issuance or ring-fencing	Amend state municipal acts to: (a) explicitly permit ULB bond issuance without state approval for AA-rated bonds; (b) legally ring-fence dedicated revenue streams; (c) establish SPFDF as a statutory body	Maharashtra, UP, Bihar, Rajasthan, Odisha
Property Tax Reform Legislation	Property tax rates and coverage set by state, often below revenue potential	State-level property tax legislation mandating GIS mapping and area-based taxation with floor rates	All states with Class I ULBs
User Charge Autonomy	ULBs cannot raise water/sewage tariffs without state government approval	Delegate tariff-setting to ULB boards for water and sewage with state floor/ceiling range	Maharashtra, Karnataka, Tamil Nadu first
State Guarantee Framework	Ad hoc state guarantees; not systematised	State Guarantee Fund for SPFDF bonds — capped at 0.5% of SGDP annually; transparent approval process	States with SPFDF ambitions
ULB Governance Reform	**Politically appointed administrators; no professional management**	**Municipal CEO appointment by UPSC-equivalent; fixed 3-yr term; performance-linked remuneration**	**All states — model after Tamil Nadu ULB governance reform**

Chapter 9 Summary: Funding the Cities of Viksit Bharat

The gap between India's municipal bond market and what Viksit Bharat requires is not a gap in ambition — it is a gap in institutional architecture. The ambition is there: SEBI has the framework, finance commissions have identified the need, and India's most forward-thinking cities have demonstrated what is possible. What is missing is the systematic, funded, accountable programme to close the gap.

50 Cities

India's target for bond-ready ULBs by 2030 — from fewer than 15 today. Achieving this requires the three-tier creditworthiness programme, 5 state SPFDFs, and the National Municipal Finance Authority to be operational by FY2026.

Priority Action	Lead	Timeline	Expected Market Impact
Three-Tier Creditworthiness Programme: 1,000 Municipal Finance Officers; GIS property mapping for 200 ULBs	MoHUA + Finance Ministry + State Govts	FY2025–27	50 new bond-ready ULBs by 2030; ₹10,000–15,000 Cr annual muni bond issuance
National Municipal Finance Authority (NMFA): ₹10,000 Cr equity; credit enhancement + technical assistance	Finance Ministry + Parliament	FY2025–26	Provides first-loss guarantee enabling 100+ ULBs to access bond market
5 State SPFDFs: Maharashtra, Karnataka, Rajasthan, MP, UP establish pooled finance vehicles	State Governments + MoHUA	FY2025–27	₹20,000–25,000 Cr of pooled muni bond issuance across 5 states by 2030
Bharat Muni Bond ETF: Retail-accessible ETF of AA-rated SPFDF and NMFA-guaranteed bonds	AMFI + SEBI + Finance Ministry	FY2026	Creates ₹5,000–10,000 Cr retail demand for municipal bonds; 5 million retail investors
IRDAI/PFRDA Muni Bond Mandate: 1–2% AUM in AA-rated municipal/SPFDF bonds	IRDAI + PFRDA + Finance Ministry	FY2026	₹7,700 Cr minimum institutional demand for municipal bonds at current AUM levels
50% Tax Exemption: Interest on retail-held muni bonds (3+ yr holding) partially exempt	**Finance Ministry + Parliament**	**FY2026 Budget**	**Transforms retail demand; replicates US muni bond market incentive at Indian scale**

The Chapter's Closing Vision

In 2047, India's Viksit Bharat centenary cities — 50 metropolises of one million or more — will be the physical manifestation of the country's development ambitions. Their water will be clean, their transit will work, their schools will be well-built, and their hospitals will be funded. Or they will not. The difference between these two futures is not money — India has money. The difference is whether the money that exists in India's insurance companies, pension funds, and household savings can flow efficiently to the cities that need it. Municipal bonds are the pipe through which that flow occurs. Building the pipe — through the creditworthiness programme, the NMFA, the state SPFDFs, the retail ETFs, and the tax incentives — is among the highest-priority tasks in Indian financial policy today.

CHAPTER 10

A Roadmap — Policy Recommendations and the Path to 2030

Synthesis of Chapters 1–9 | Infrastructure, Regulatory, Policy, and RBI dimensions | 2025–2030 sequenced action agenda

Nine chapters. One conclusion. India's bond market is not constrained by a lack of savings, a lack of issuers, a lack of investors, or a lack of regulatory framework. It is constrained by **the absence of a coordinated programme to connect all of these elements into a functioning ecosystem.** The money exists. The need exists. The regulatory architecture exists in outline. What has been missing is a structured, sequenced, accountable plan — with specific targets, designated actors, and a governance mechanism that ensures delivery.

This chapter provides that plan. It draws on the nine preceding chapters to synthesise India's bond market reform agenda into four categories — Infrastructure Measures, Regulatory Measures, Policy Measures, and RBI Measures — organised across three-time horizons: Immediate (0–12 months), Near-Term (1–3 years), and Medium-Term (3–5 years). It then sets specific, measurable 2030 targets against which progress can be held accountable. And it closes with the aspirational vision: India as a bond market that is deep enough to finance Viksit Bharat, diverse enough to include every Indian saver, and credible enough to attract the world's green and ESG capital.

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How to Use This Chapter

This chapter is designed as a working policy document. Each recommendation is tagged with the responsible actor, the time horizon, and the chapter reference where the full analysis appears. The 2030 Scorecard sets measurable targets. Policymakers, regulators, and market participants can use this chapter as a quarterly implementation checklist — tracking progress against the targets and adjusting the programme as India's bond market evolves.

The 2030 Scorecard: Where India Is and Where It Must Get To

Chart 10.1 — India's Bond Market: 2024 Baseline vs. 2030 Targets | Source: SEBI Annual Report 2023-24; CCIL; AMFI; RBI; Authors' 2030 targets

Chart 10.1 presents eight measurable targets for India's bond market by 2030. These are not aspirational round numbers — each is grounded in the analysis of the preceding chapters and calibrated against peer market benchmarks. Together they define what 'success' looks like: a bond market that is more than twice as large relative to GDP, that finances a significantly higher share of India's infrastructure needs, that has 10 million retail investors rather than 80,000, and that executes a higher share of transactions electronically at longer tenors.

The Eight 2030 Targets — Measurement Framework

1. Corporate Bond Market / GDP: 18% (FY2024) → 35% by FY2030 | Currently 18th globally; target: top 10 EM bond markets

2. Infra Bond Share of Corp Issuance: 4.8% (FY2024) → 18% by FY2030 | Matches Malaysia, South Korea peer average

3. Retail Bond Investors (direct): 80,000 (FY2024) → 10 million by FY2030 | Via Bharat Bond Direct + min lot ₹1,000

4. Avg Corporate Bond Tenor: 4.2 years (FY2024) → 8.5 years by FY2030 | Reflects infrastructure bond expansion

5. Electronic Trading % (Corp Bonds): 18% (FY2024) → 65% by FY2030 | Matches current US corporate bond market

6. Green Bond Share of Issuance: 2% (FY2024) → 12% by FY2030 | India becomes top-5 EM green bond market

7. FPI Utilisation Rate: 34% (as of Nov, 2025) → 70% by FY2030 | Requires hedging cost reduction + VRR reform

8. Municipal Bond Outstanding: ₹2,100 Cr (FY2024) → ₹75,000 Cr by FY2030 | 35× increase via SPFDF + NMFA

Review Mechanism: SEBI Annual Report to publish Bond Market Scorecard tracking all 8 metrics annually. Finance Ministry to present to Parliament every 2 years.

Chart 10.2 — India Bond Market Reform: Sequenced Action Plan 2025-2030

By time horizon, responsible actor, and infrastructure / regulatory / policy / RBI dimensions

	IMMEDIATE (0-12 months)	NEAR-TERM (1-3 years)	MEDIUM-TERM (3-5 years)	STRUCTURAL (5 years+)
INFRA MEASURES	NaBFID PCG Facility (₹15,000 Cr)	IIBGF ₹25,000-50,000 Cr + ADB/WB co-guarantee	Corporate Bond Futures Market	Bond Dev. Fund (SEBI+FM)
REGULATORY (SEBI)	India-TRACE mandate ₹10,000 min lot CBMM Regime	RFQ automation mandate Green Bond Gold Tier Muni bond retail ETF	Portfolio trading platform Bond market consolidated tape full rollout	Unified bond regulator (BMDC)
POLICY (Finance Ministry)	Stamp duty zero (exchange trades) Bharat Bond ETF II+III	IRDAI/PFRDA infra bond mandates NMFA established	50% muni bond tax exemption Sovereign green bond scale-up	VRR lock-in reform + FPI onshore hedge
RBI MEASURES	T+1 bond settlement pilot (exchange)	Bond T+1 full rollout CDS market development Credit repo expansion	Onshore INR/USD 5-yr swap market Repo market deepen	Bond market integrated infra

Source: Authors' synthesis of Chapters 1-9 recommendations. Timelines are indicative and depend on regulatory capacity and political will.

Chart 10.2 — India Bond Market Reform: Sequenced Action Plan 2025–2030 | Source: Authors' synthesis of Chapters 1–9 recommendations

DIMENSION 1 — Infrastructure Measures: Building the Financial Plumbing

Infrastructure measures are the foundational investments in market infrastructure and financing mechanisms — the credit enhancement facilities, digital platforms, and institutional vehicles — that enable bond market activity to occur. They are distinct from regulatory measures (rules that govern behaviour) and policy measures (fiscal and legislative choices). Infrastructure measures are largely within the control of the Finance Ministry, NaBFID, and SEBI acting jointly.

Immediate Infrastructure Measures (0–12 Months)

INFRA-1: India-TRACE — Real-Time Bond Price Reporting System [Chapter 5, 7]

Action: SEBI issues circular directing BSE and NSE — which already hold all OTC corporate bond trade reports under SEBI's 2018 mandate — to publish this data in real-time (within 15 minutes) on a free public portal. Note: CCIL is RBI-regulated; the correct operator for India-TRACE is the exchanges under SEBI's direct jurisdiction. RBI separately directs CCIL to share NDS-OM settlement data to ensure complete coverage.

Actor: SEBI + RBI (CCIL). Cost: ₹60–80 crore (one-time). Timeline: Pilot live within 12 months.

2030 Impact: Enables retail price transparency; reduces transaction costs by 30–50 bps (TRACE evidence); makes CBMM regime operational; foundational for Bharat Bond Direct.

INFRA-2: Corporate Bond Market Maker (CBMM) Regime [Chapter 5]

Action: SEBI notification designating 15 entities as Corporate Bond Market Makers with 2-way quoting obligation on 200 benchmark ISINs during market hours.

Incentives: Stamp duty waiver on CBMM transactions; RBI lower risk weight on CBMM bond inventory; ₹500 exchange-paid fee per executed round-trip quote.

2030 Impact: Creates functioning secondary market for 200 benchmark bonds; reduces bid-ask spreads; enables institutional and retail exit from bond positions.

Near-Term Infrastructure Measures (1–3 Years)

INFRA-3: National Takeout Financing Protocol (NTFP) + NaBFID Nodal Agency [Chapter 4]

Action: SEBI + RBI issue joint notification establishing NTFP — standardised framework for converting construction-phase bank loans into listed infrastructure bonds. NaBFID designated as single-window nodal agency.

Standard Documentation: SEBI, RBI, IBA, and FIMMDA develop standardised infrastructure bond trust deed and covenant set — reducing bespoke legal cost from ₹5–8 crore to <₹1 crore per transaction.

2030 Impact: ₹50,000 crore annual bank-to-bond takeout by FY2028; 3–4× capital multiplier for new greenfield infrastructure; direct enabler of 18% infra bond share target.

INFRA-4: India Infrastructure Bond Guarantee Fund (IIBGF) [Chapter 4, 8]

Action: Establish IIBGF as a Finance Ministry SPV with ₹25,000–50,000 crore corpus: GoI ₹15,000 crore + ADB USD 1 billion + World Bank USD 500 million + GCF USD 300 million.

Products: First-loss guarantee (15% of bond) for BBB+ infra bonds; Partial Credit Guarantee (30–40%) enabling rating uplift to AA; Political risk guarantee for regulatory-sensitive sectors.

2030 Impact: Supports ₹4–6 lakh crore of infrastructure bond issuance over the decade at 10–12× leverage; directly enables IRDAI/PFRDA infra bond mandate (Regulatory Measure 4).

INFRA-5: Bharat Bond Direct — Mobile-First Retail Bond Platform [Chapter 6, 7]

Action: SEBI + AMFI + NaBFID launch Bharat Bond Direct app — UPI payment, Aadhaar KYC, ₹1,000 minimum, India-TRACE live prices, CBMM exit guarantee. Pilot 100,000 users by Q3 FY2027; national rollout FY2027.

Philippines Precedent: Philippines Bonds.PH was oversubscribed 17× on debut. India's UPI + Aadhaar infrastructure is 10× more developed.

2030 Impact: 10 million retail bond investors by 2030; the single largest driver of the retail participation target.

Medium-Term Infrastructure Measures (3–5 Years)

INFRA-6: Corporate Bond Futures Market [Chapter 5, new]

Action: SEBI + NSE develop a standardised corporate bond futures contract on the top 10 benchmark bond ISINs. RBI approval for bank participation in bond futures for hedging purposes.

International Reference: South Korean Won-denominated corporate bond futures have been critical to market-maker risk management in Korea's corporate bond market (22% infra bond share). Without hedging tools, market-making is capital-intensive and fragile.

2030 Impact: Enables market-maker risk management; reduces hedging costs; allows institutional investors to manage duration exposure; essential for Wave 3 algorithmic trading.

INFRA-7: Bond Market Development Fund [Chapter 5, 9]

Action: Establish a ₹2,000 crore Bond Market Development Fund — funded by a 0.01% levy on all SEBI-regulated bond transactions — to finance: (a) India-TRACE operating costs; (b) CBMM incentive payments; (c) ULB creditworthiness technical assistance (Chapter 9); (d) retail investor financial literacy for bonds.

2030 Impact: Provides sustainable funding for market infrastructure independent of annual budget cycles; self-financing once bond turnover reaches ₹25 lakh crore annually.

International Experience: Market Infrastructure Investment Pays

US TRACE (2002): Cost to FINRA of approximately USD 15 million annually. Academic evidence shows TCA savings of 30–50 bps per transaction — for a USD 10 trillion market, annual savings to investors of USD 30–50 billion. Return on investment: 2,000×.

Korea KDB Market-Maker Regime: Government-backed KDB provides market-making for 100+ corporate bond ISINs. Annual cost: approximately USD 100 million in capital allocation. Result: Korean corporate bond turnover ratio 3× India's; infra bond share 22%; retail participation 22%. The infrastructure investment paid off.

Malaysia Danajamin (2009): Government-backed guarantee institution for corporate bonds. Seeded with RM 5 billion. By 2023, Danajamin has enabled RM 22 billion of corporate bond issuances that would not have been possible otherwise. EPF (Malaysia's EPFO equivalent) infrastructure bond allocation rose from 2% to 12% post-Danajamin.

Australia Infrastructure Fund: Government seeded a dedicated infrastructure bond fund with AUD 10 billion (2011). By 2023, Australian infrastructure bonds are 18% of corporate bond issuance. Superannuation fund (pension) average tenor rose from 6 years to 14 years. Infrastructure-linked GDP multiplier of 1.8× measured by RBA.

DIMENSION 2 — Regulatory Measures: SEBI's 2025–2030 Agenda

Regulatory measures are actions that SEBI, IRDAI, and PFRDA can take largely within their existing statutory powers — circulars, notifications, guideline amendments, and supervisory actions that change the rules governing bond market behaviour. They are distinct from policy measures (which require Finance Ministry or parliamentary action) and infrastructure measures (which require capital investment).

Immediate Regulatory Measures (0–12 Months)

REG-1: Minimum Lot Size Reduction to ₹1,000 [Chapter 3, 6]

SEBI Circular: Reduce minimum investment for publicly listed corporate bonds from ₹1 lakh to ₹1,000 — the single most impactful retail access reform within SEBI's direct authority.

Implementation: Effective from April 1, 2026 (next financial year start). All existing bonds with ₹1 lakh minimum to be restructured through depository subdivision within 12 months.

Complementary action: BSE/NSE to build retail-friendly bond browsing interface alongside lot size reduction — ensuring the demand for lower-minimum bonds meets supply of usable retail platforms.

2030 Impact: Foundational for the retail investor target. Without this, Bharat Bond Direct cannot function. With it, every UPI-linked smartphone becomes a potential bond investment terminal.

REG-2: Mandatory CBMM Quoting Obligation [Chapter 5]

SEBI Notification: Mandatory 2-way quoting on 200 designated benchmark ISINs for 15 CBMM-registered entities. Maximum bid-ask spreads: 25 bps (<5yr), 50 bps (5–10yr), 100 bps (>10yr). Minimum quote size: ₹1 crore. Response to RFQ within 60 seconds.

Performance Monitoring: SEBI to publish monthly CBMM scorecards — quote uptime, spread compliance, fill rate. Underperforming CBMMs face licence suspension.

2030 Impact: Creates genuine two-way secondary market for 200 benchmark bonds — the prerequisite for retail investor exits confidence and institutional block trading efficiency.

REG-3: SEBI Liquidity Score Mandate [Chapter 3, 7]

SEBI Circular: Exchanges to publish standardised bond liquidity scores (1–5 scale) daily for all listed corporate bonds — based on trade frequency, bid-ask spread, and days since last trade.

Public disclosure: Liquidity scores to be published on India-TRACE portal and integrated into Bharat Bond Direct app — allowing retail investors to assess exit risk before buying.

2030 Impact: Reduces information asymmetry; steers retail investment toward more liquid instruments; creates market pressure on illiquid issuers to improve secondary market conditions.

Near-Term Regulatory Measures (1–3 Years)

REG-4: IRDAI / PFRDA Infrastructure Bond Mandate [Chapter 4, 6]

Joint Notification (IRDAI + PFRDA + Finance Ministry): Create dedicated 'Infrastructure Bond' allocation category — allowing up to 10% of life insurance AUM and 5% of NPS/EPFO corpus to be invested in NTFP-eligible infrastructure bonds rated AA or above.

Conditionality: Eligible bonds must be (a) NaBFID-approved under NTFP; (b) credit-enhanced to minimum AA; (c) listed on BSE/NSE; (d) India-TRACE priced. This protects institutional investors from IL&FS-type concentration risk.

Expected Institutional Demand Unlocked: IRDAI 10% = ₹4.5 lakh crore; PFRDA/EPFO 5% = ₹1.6 lakh crore. Combined: ₹6.1 lakh crore potential institutional demand for infrastructure bonds.

2030 Impact: The most powerful single regulatory action for India's bond market — directly addresses the demand-side gap for long-tenor infrastructure bonds.

REG-5: RFQ Automation Mandate + Portfolio Trading Protocol [Chapter 7]

SEBI Circular: All SEBI-regulated entities (MFs, insurance, pension funds) must execute minimum 50% of bond transactions above ₹5 crore through CBMM-connected RFQ platforms with automated response capability by FY2027.

Portfolio Trading: SEBI and exchanges develop standardised portfolio bond trade protocol — allowing institutional investors to submit 50–200 bond baskets for competitive electronic execution. Target: operational by FY2028.

2030 Impact: Raises electronic trading from 18% to 65% target; enables Wave 2 automation; reduces institutional execution costs; creates data for India-TRACE liquidity scoring.

REG-6: Green Bond Gold Tier + SEBI Enforcement of Proceeds Deployment [Chapter 8]

SEBI Circular: Establish 'India Gold Green Bond' designation for bonds achieving full ICMA GBP alignment + Bloomberg GSSS Index eligibility + third-party verified annual impact report.

Proceeds Enforcement: SEBI to require quarterly proceeds deployment reports for all labelled bonds; introduce 'label withdrawal' mechanism for non-compliant issuers; publish compliance registry.

2030 Impact: Enables ₹25,000–30,000 crore annual DFI-anchored green bond issuance; attracts ESG-mandated FPI flows; builds India's credibility as a serious green bond market.

Medium-Term Regulatory Measures (3–5 Years)

REG-7: Bond Market Development Council (BMDC) [Chapter 5]

FSDC Sub-Committee: Establish BMDC as a formal sub-committee of the Financial Stability and Development Council — chaired by Finance Secretary with SEBI Chairman and RBI Deputy Governor as co-chairs. Mandatory quarterly meetings.

Mandate: Approve cross-jurisdictional bond market product notifications; monitor 8 KPI targets annually; resolve inter-regulatory disputes on bond market issues within 60 days.

2030 Impact: Addresses the multi-regulator coordination failure that has been the single largest structural barrier to India's bond market development. Without this, reform fragmentation will persist.

International Experience: Regulatory Architecture for Bond Market Development

South Korea's FSC/FSS Dual Regulator: Korea's Financial Services Commission (FSC, policy) and Financial Supervisory Service (FSS, supervision) operate with a formal coordination mechanism for bond market development. Joint FSC-FSS-KDB-MOF committee meets monthly. Result: Korean bond market depth grew from 40% of GDP (2000) to 120% of GDP (2023).

Malaysia's SC/BNM Coordination: Securities Commission (SC, equivalent of SEBI) and Bank Negara Malaysia (BNM, equivalent of RBI) have a formal Memorandum of Understanding on bond market development — with joint working groups on each major sub-market (corporate bonds, green bonds, sukuk, sub-sovereign). Joint SC-BNM corporate bond masterplan (2011–2020) is credited with growing Malaysia's bond market from 80% to 140% of GDP.

Singapore MAS: The Monetary Authority of Singapore acts as the single regulator for all financial markets — removing coordination friction entirely. Not directly applicable to India's constitutional structure, but the Singapore example demonstrates that regulatory clarity correlates strongly with bond market depth.

India's opportunity: Rather than waiting for constitutional reform, India can replicate the coordination benefit through the BMDC — a formal, mandated, agenda-driven inter-regulatory body that treats bond market development as a shared institutional objective.

DIMENSION 3 — Policy Measures: Finance Ministry and Parliamentary Actions

Policy measures are actions that require Finance Ministry leadership, Parliamentary legislation, or inter-ministerial coordination — going beyond what any single regulator can do. They include fiscal measures (tax changes, budget allocations), legislative measures (new laws or amendments), and institutional establishment measures (creating new institutions like NMFA).

Immediate Policy Measures (0–12 Months)

POL-1: Stamp Duty Harmonisation — Zero on Exchange-Reported Trades [Chapter 5]

Finance Ministry Notification: Amend the Indian Stamp (Collection through Stock Exchanges) Rules 2019 to provide a complete stamp duty exemption on exchange-reported secondary market corporate bond transactions.

GST Council: Place bond market intermediation fees (brokerage, advisory, platform) on the exempt list — removing the 18% GST friction on bond trading.

Rationale: Creates positive incentive for market participants to report trades through exchange platforms (increasing India-TRACE coverage); reduces transaction cost friction for institutional block trading.

Revenue Impact: Estimated ₹800–1,200 crore annual revenue foregone — a modest cost relative to the market development impact. Offset partially by increased income tax revenue from larger capital market activity.

POL-2: Bharat Bond ETF Programme Expansion [Chapter 6]

Finance Ministry + AMFI: Launch Bharat Bond ETF II (infrastructure bonds — NTFP-eligible, NaBFID-approved) and Bharat Bond ETF III (green bonds — IGBGF-guaranteed) alongside existing Bharat Bond ETF (PSU bonds).

Budget announcement: 2025–26 Union Budget to provide ₹10,000 crore seed corpus for Bharat Bond ETF II (Infrastructure) — creating a visible policy signal and initial investor demand.

Distribution: All three Bharat Bond ETFs available on Bharat Bond Direct app with ₹500/month SIP facility — making recurring bond investment as simple as equity SIPs.

2030 Impact: ₹2–3 lakh crore Bharat Bond ETF AUM by 2030; 10 million retail investors via SIP mechanism; direct enabler of the retail participation target.

Near-Term Policy Measures (1–3 Years)

POL-3: NaBFID Parliamentary Amendment — Statutory Guarantee Authority [Chapter 4]

Parliament: Amend the NaBFID Act 2021 to grant NaBFID explicit, unconditional, Parliament-backed guarantee authority — analogous to the KDB in South Korea. This removes the administrative approval requirement for each guarantee, creating the certainty that institutional investors require.

Finance Ministry: Provide NaBFID with ₹15,000 crore additional equity capital for credit enhancement activities, plus ability to raise sovereign-backed bonds with AAA rating for IIBGF corpus.

2030 Impact: Transforms NaBFID from an aspiring DFI into an operationally capable credit enhancement institution — the single most important institutional change for infrastructure bond development.

POL-4: EPFO Investment Pattern Amendment [Chapter 4, 6]

Finance Ministry Notification: Amend EPFO's investment pattern to create a dedicated 3–5% Infrastructure Bond category — specifically for NTFP-eligible, NaBFID-guaranteed bonds rated minimum AA.

Rationale: EPFO's ₹22 lakh crore corpus has 20+ year liability duration — perfectly suited for long-tenor infrastructure bonds. A 3% allocation = ₹66,000 crore in immediate infrastructure bond demand.

Safeguard: EPFO infrastructure bond investment restricted to: (a) NaBFID-approved bonds only; (b) minimum AA rating; (c) listed on national exchange; (d) India-TRACE priced. Prevents IL&FS-type concentration.

2030 Impact: ₹66,000–1,10,000 crore of EPFO demand for infrastructure bonds — the largest single institutional demand unlock available.

POL-5: National Municipal Finance Authority (NMFA) — Establishment [Chapter 9]

Parliament / Finance Ministry: Establish NMFA as a statutory authority with ₹10,000 crore equity capital — providing credit enhancement, technical assistance, and direct lending to India's ULBs.

State government conditionality: NMFA funding available only to states that (a) establish state SPFDF, (b) enact property tax GIS reform, (c) implement NMAM accrual accounting across Class I ULBs.

Sovereign Green Bond Scale-Up: Finance Ministry to issue ₹25,000–50,000 crore Sovereign Green Bonds annually from FY2025 — building the green yield curve and signalling policy commitment to green finance.

2030 Impact: 50 bond-ready ULBs; ₹75,000 crore municipal bond outstanding; 5 state SPFDFs operational; direct enabler of the municipal bond target.

Medium-Term Policy Measures (3–5 Years)

POL-6: Municipal Bond Tax Incentive [Chapter 9]

Parliament / Finance Ministry: Introduce a 50% income tax exemption on interest earned by retail investors from AA-rated municipal bonds and SPFDF bonds held for 3+ years — replicating (at a smaller scale) the US municipal bond tax exemption that has built the world's largest sub-sovereign bond market.

Revenue Cost: Approximately ₹500–800 crore annually (once municipal bond market reaches ₹75,000 crore scale). Offset by property tax revenue improvement and reduced central grant dependence of better-funded ULBs.

2030 Impact: Transforms retail demand for municipal bonds; creates a specific investor class for sub-sovereign bonds; complements the Bharat Muni Bond ETF.

POL-7: VRR Reform and FPI Onshore Hedge Enablement [Chapter 6]

Finance Ministry + RBI: Reduce VRR lock-in period from 3 years to 18 months; raise VRR corporate bond sub-limit from ₹1.5 lakh crore to ₹3 lakh crore.

RBI: Develop onshore 3–5-year INR/USD swap market — enabling FPIs to hedge currency risk at longer tenors, reducing the hedging cost that makes Indian corporate bonds unattractive on a fully hedged basis.

SEBI: Work with Bloomberg and S&P to achieve EM Corporate Bond Index inclusion for Indian corporate bonds rated AA or above — creating passive ESG FPI flows.

2030 Impact: FPI utilisation rate from 41% to 70% target; ₹50,000–80,000 crore additional FPI corporate bond investment; critical for green bond ESG FPI access.

DIMENSION 4 — RBI Measures: The Central Bank's Critical Role

The Reserve Bank of India occupies a unique position in India's bond market architecture. As regulator of the G-sec market (the benchmark for all fixed income pricing), supervisor of Primary Dealers (the closest India has to designated market-makers), operator of the payments and settlement infrastructure (via CCIL), and regulator of banks (the largest participants in bond markets), RBI's actions — and inactions — have profound consequences for corporate bond market development.

R

RBI's Dual Role — And Why It Matters

RBI simultaneously manages India's monetary policy (which sets the risk-free rate around which all bond pricing is anchored) and supervises the banking system (which is both the largest source of corporate bond demand and the primary lender to infrastructure projects that bond markets must eventually refinance). This dual role gives RBI extraordinary leverage over bond market development — and extraordinary responsibility to use that leverage constructively.

Immediate RBI Measures (0–12 Months)

RBI-1: Corporate Bond T+1 Settlement Pilot [Chapter 7]

RBI / CCIL: Launch T+1 settlement pilot for exchange-traded corporate bonds — extending India's successful equity T+1 achievement to the bond market. Initial scope: BSE/NSE bond platform trades; CCIL-cleared transactions.

Infrastructure requirements: CCIL systems upgrade to support same-day settlement instruction matching for corporate bonds; DvP (Delivery vs. Payment) automation for demat-settled trades.

Fail rate target: Reduce OTC corporate bond fail rate from 5–8% to <1% within 24 months of T+1 pilot launch — matching the equity market improvement after T+1.

2030 Impact: Reduces counterparty risk; frees ₹1,500–2,500 crore of daily dealer working capital; makes intraday repo financing practical; essential for CBMM market-making efficiency.

RBI-2: RBI Directs CCIL — NDS-OM Data Sharing for India-TRACE [Chapter 5, 7]

India-TRACE is operated by BSE and NSE under SEBI's mandate — CCIL is RBI-regulated and is not SEBIs to direct. RBI's role: direct CCIL to share NDS-OM corporate bond settlement data in real-time with the BSE/NSE India-TRACE portal, ensuring complete coverage of OTC trades settled through CCIL.

Why this matters: BSE/NSE capture exchange-reported OTC trades (SEBI 2014 mandate). CCIL captures NDS-OM settlement data. Together these cover >95% of corporate bond secondary volume. RBI directing CCIL to share data with the BSE/NSE portal creates the complete consolidated tape without any institutional boundary violation.

2030 Impact: Complete India-TRACE coverage of corporate bond secondary market enables retail price transparency, institutional TCA benchmarking, CBMM quoting, and yield curve construction. RBI's data-sharing direction is the essential complement to SEBI's publication mandate.

Near-Term RBI Measures (1–3 Years)

RBI-3: Credit Default Swap (CDS) Market Development [Chapter 7, new]

RBI: Issue revised CDS guidelines removing the restrictions that have made India's CDS market essentially non-functional since the 2013 guidelines. Key changes needed: (a) allow banks to buy CDS protection on corporate bond portfolios without mandatory hedged physical position; (b) allow non-bank financial entities to act as CDS protection sellers; (c) standardise CDS documentation with ISDA.

Rationale: CDS is the risk management tool that enables corporate bond market-making. Without CDS, market-makers must hold unhedged credit risk — making the CBMM regime capital-intensive and fragile. The US corporate bond market's recovery of liquidity post-2008 was closely correlated with CDS market recovery.

International Reference: South Korea's CDS market has enabled KDB market-makers to maintain two-way quotes even in volatile conditions. Malaysia developed CDS alongside its bond market masterplan with BNM providing initial liquidity. RBI's current CDS restrictions are globally out of step.

2030 Impact: Reduces CBMM capital requirements by 30–40%; enables risk transfer for infrastructure bonds; develops a credit derivative market that prices credit risk transparently for the first time in India.

RBI-4: Onshore INR/USD Derivative Market Expansion [Chapter 6]

RBI: Expand the Rupee Interest Rate Swap (IRS) market — increasing participant eligibility, reducing margin requirements for FPI hedging, and developing a 5–10 year swap curve.

FPI hedging costs: RBI to allow FPIs to hedge INR/USD exposure through onshore forward agreements with tenors up to 5 years (currently effectively 1 year maximum for the liquid market) — directly reducing the hedge premium that makes Indian bonds unattractive on a fully hedged basis.

MIFOR reform: Replace MIFOR (the benchmark for INR swap pricing) with a more representative and transparent benchmark — reducing basis risk for FPI hedgers and domestic market-makers.

2030 Impact: Reduce hedge cost from 3.6% pa to ~2.5–3.0% pa — making India's AAA 5yr corporate bonds (yielding ~7.8%) attractive on a hedged basis vs US IG (5.8%); key to FPI utilisation target.

RBI-5: Credit Repo Market Expansion [Chapter 7, new]

RBI: Expand the eligibility for credit repo (repo using corporate bonds as collateral) to all AA-rated listed corporate bonds — currently restricted to specific categories. Reduce haircut requirements for AA-rated bonds in repo transactions from 10–15% to 5–8%.

Rationale: Credit repo is the liquidity mechanism for bond market-makers — allowing them to fund their bond inventory overnight at low cost. India's credit repo market is underdeveloped because of eligibility restrictions and high haircuts. Expanding it directly reduces market-making costs.

Tri-party repo: RBI to expand CCIL's tri-party repo platform to cover a wider range of corporate bond collateral — making overnight funding more efficient for CBMM entities.

2030 Impact: Reduces CBMM funding costs; enables larger market-maker inventory positions; deepens overnight money market; creates daily price signal for corporate bond credit quality.

Medium-Term RBI Measures (3–5 Years)

RBI-6: Primary Dealer Corporate Bond Market-Making Obligation [Chapter 3, 5]

RBI + SEBI Joint Notification: Extend Primary Dealer obligations to include corporate bond market-making — requiring PDs to maintain two-way quotes on a designated list of 50 corporate benchmark ISINs as a condition of their PD licence.

Incentive: PD corporate bond inventory to receive lower risk weight (50% vs 100%) in RBI's Basel III capital framework — compensating PDs for the capital allocated to corporate bond market-making activity.

Rationale: India's 21 Primary Dealers have the balance sheet, the G-sec trading infrastructure, and the RBI relationship to become effective corporate bond market-makers. Extending their mandate is more efficient than building a separate CBMM system from scratch — the two regimes can coexist, with PDs covering the 50 most liquid ISINs and CBMMs covering the broader 200.

2030 Impact: Adds 21 well-capitalised institutional entities to corporate bond market-making; deepens liquidity for benchmark bonds; creates a two-tier market-making architecture (PDs + CBMMs) that mirrors the structure of successful bond markets globally.

RBI-7: Project Finance Refinancing Framework [Chapter 4]

RBI: Issue revised guidelines for bank project loan classification that explicitly recognise NTFP-eligible infrastructure bonds as a valid exit route for construction-phase bank loans — removing the regulatory uncertainty that has slowed takeout financing.

Basel III treatment: RBI to provide regulatory capital relief for banks that successfully refinance construction-phase project loans into NTFP-approved infrastructure bonds — incentivising banks to participate in the takeout process rather than simply rolling over loans.

2030 Impact: Enables ₹50,000 crore annual bank-to-bond takeout by FY2028; each ₹1 of bank capital recycled supports ₹3–4 of new greenfield lending; directly enables India's infrastructure investment acceleration.

International Experience: RBI's Peer Central Banks on Bond Market Development

Bank Negara Malaysia (BNM): BNM's Credit Guarantee Corporation (CGC) provides partial credit guarantees for corporate bonds; BNM chairs the Malaysian bond market development committee; BNM has actively developed the sukuk (Islamic bond) market alongside conventional bonds. Malaysia's bond market is now 145% of GDP — the deepest in ASEAN. BNM's active development role is credited as the primary driver.

Bank of Korea (BOK): BOK explicitly includes corporate bond market development in its financial stability mandate — providing liquidity support to the corporate bond market through repo facilities during stress periods (2020 COVID crisis: BOK extended unlimited repo to primary dealers). BOK's Corporate Bond Purchase Programme prevented a credit freeze in March 2020.

Bank of Japan (BOJ): BOJ has purchased corporate bonds as part of its monetary policy toolkit — directly supporting bond market prices during periods of stress. More relevantly for India, BOJ's guidance on corporate bond settlement (T+1 since 2009) has been critical to Japan maintaining deep bond market liquidity despite negative interest rates.

RBI's opportunity: RBI does not need to purchase corporate bonds (India's monetary policy environment doesn't require it). But it can learn from BNM, BOK, and BOJ that central banks that treat bond market development as a core mandate — not merely a secondary concern — consistently produce deeper, more resilient fixed income markets.

The Complete Reform Agenda: 25 Actions, Four Dimensions, Three Horizons

#	Action	Dimension	Timeline	Lead Actor	Ch. Ref	2030 Impact
1	India-TRACE (Top 200 ISINs pilot)	Infrastructure	0–12M	SEBI → BSE/NSE	5,7	Price transparency; 30–50 bps TCA saving
2	CBMM Regime (15 market makers)	Infrastructure	0–12M	SEBI	5	Two-way liquidity for 200 benchmark bonds
3	Min lot ₹1,000 for listed bonds	Regulatory	0–12M	SEBI	3,6	Foundational for retail participation
4	Mandatory liquidity score publication	Regulatory	0–12M	SEBI	3	Retail risk transparency
5	Stamp duty zero on exchange trades	Policy	0–12M	Finance Ministry	5	Incentivises exchange-based trading
6	Bharat Bond ETF II + III launch	Policy	0–12M	Finance Min + AMFI	6,8	Retail green + infra bond access
7	T+1 settlement pilot (exchange bonds)	RBI	0–12M	RBI + CCIL	7	Counterparty risk reduction
8	RBI directs CCIL: share NDS-OM data with	RBI	0–12M	RBI	5,7	Completes India-TRACE coverage;

#	Action	Dimension	Timeline	Lead Actor	Ch. Ref	2030 Impact
	BSE/NSE India-TRACE portal					CCIL is RBI-regulated, not SEBI
9	NTFP + NaBFID nodal agency	Infrastructure	1–3yr	SEBI + RBI	4	₹50,000 Cr annual takeout by FY2028
10	IIBGF (₹25,000–50,000 Cr corpus)	Infrastructure	1–3yr	Finance Min + NaBFID	4,8	₹4–6 lakh Cr infra bond support
11	Bharat Bond Direct app	Infrastructure	1–3yr	NaBFID+AMFI+SEBI	6,7	10 million retail bond investors
12	IRDAI/PFRDA infra bond mandate	Regulatory	1–3yr	IRDAI+PFRDA+FM	4,6	₹6.1 lakh Cr institutional demand unlock
13	RFQ automation + portfolio trading	Regulatory	1–3yr	SEBI	7	18%→65% electronic trading
14	Green Bond Gold Tier + enforcement	Regulatory	1–3yr	SEBI	8	₹25,000–30,000 Cr DFI-anchored green bonds
15	NaBFID Parliamentary guarantee authority	Policy	1–3yr	Parliament+FM	4	Statutory credit enhancement certainty
16	EPFO investment pattern amendment	Policy	1–3yr	Finance Ministry	4,6	₹66,000–1,10,000 Cr EPFO demand
17	NMFA establishment	Policy	1–3yr	Parliament+FM	9	50 bond-ready ULBs; ₹75,000 Cr muni bonds
18	CDS market development	RBI	1–3yr	RBI	7	CBMM capital cost – 30–40%; credit pricing
19	Onshore INR/USD swap market (5yr)	RBI	1–3yr	RBI	6	Hedge cost –100 bps; FPI utilisation 70%
20	Credit repo market expansion	RBI	1–3yr	RBI	7	CBMM funding efficiency; overnight prices
21	**Corporate bond futures market**	**Infrastructure**	**3–5yr**	**SEBI + NSE + RBI**	**7**	**Duration hedging; Wave 3 automation**
22	Bond Market Development Fund	Infrastructure	3–5yr	SEBI + FM	5,9	Self-sustaining market infrastructure funding
23	Bond Market Dev. Council (BMDC)	Regulatory	3–5yr	Finance Ministry	5	Resolves multi-regulator coordination failure
24	Muni bond tax incentive (50% exempt)	Policy	3–5yr	Parliament	9	Retail demand for municipal bonds
25	PD corporate bond MM obligation	RBI	3–5yr	RBI + SEBI	3,5	21 PDs as corporate bond market-makers

The Path to 2030: A Vision of India's Bond Market

Viksit Bharat

cannot be built on bank loans alone. It requires a bond market that is the equal of India's ambitions — deep, diverse, transparent, and accessible to every Indian saver and every investor who believes in India's story.

Imagine India's bond market in 2030. A retail investor in Patna opens her Bharat Bond Direct app and sees live prices for thirty government and corporate bonds. She selects a 10-year NHAI infrastructure bond paying 8.2%, checks the India-TRACE price history, and invests ₹5,000 via UPI. Her bond is credited to her demat account the next morning. A European pension fund in Amsterdam, with a mandate to allocate 5% of its EUR 50 billion to emerging market green bonds, finds Indian AAA-rated solar bonds — IGBGF-guaranteed, ICMA Gold certified, Bloomberg GSSS Index-included — offering 5.5% after hedging. It invests USD 200 million. A mid-size manufacturing company in Coimbatore issues a 7-year bond — rated A, exchange-listed, India-TRACE priced, CBMM market-maker committed — at 8.8%. Its bank debt costs 9.5%. For the first time, the bond market is cheaper than the bank.

This is not a fantasy. Every single element of this vision is technically achievable with the 25 actions identified in this chapter. India has the savings. India has the issuers. India has the technology. India has the regulatory architecture. What India needs — and what this report has provided — is the roadmap.

The Single Most Important Insight of This Report

India's bond market is not underdeveloped because India is poor. Brazil, Malaysia, South Korea, and Thailand — all with lower per capita incomes than India at comparable stages of development — built deep bond markets. India is not underdeveloped because it lacks savings — it has ₹77 lakh crore in long-liability institutional savings sitting in G-sec portfolios. India is not underdeveloped because it lacks issuers — it has ₹190–250 lakh crore of infrastructure financing need through 2035.

India's bond market is underdeveloped because **the connection between its savings and its investment needs has never been made to work — reliably, transparently, at scale, and with retail inclusion.** Making that connection work is precisely what the 25 actions in this chapter are designed to do. The technology is ready (India-TRACE via BSE/NSE, UPI, Aadhaar). The institutions are ready (SEBI, BSE, NSE, NaBFID, AMFI — with RBI directing CCIL to share NDS-OM data). The demand is ready (institutional investors, global ESG funds, 800 million smartphone users). Only the political and regulatory will stands between India's bond market today and the bond market that Viksit Bharat requires.

The 2030 Accountability Commitment

This report recommends that the Finance Ministry publish an annual 'India Bond Market Scorecard' — tracking all 8 measurable targets defined in this chapter, alongside a quarterly implementation update on all 25 actions. This scorecard should be presented to the Parliamentary Standing Committee on Finance annually, and to the G20 Finance Ministers at India's annual G20 Sherpa briefing — making India's bond market development a matter of national and international accountability. Markets respond to credible commitments. This is India's commitment.

— End of Chapter 10 — End of Building the Bond: Financing Viksit Bharat —

CHAPTER 11

Building the Bond: Regulatory Reform, Fiscal Policy, and Central Bank Action

A structured synthesis of what must be done — by whom — to build India's debt capital markets | 2025–2030

The development of India's debt market is not one reform. It is four simultaneous programmes — in regulation, fiscal policy, central banking, and market infrastructure — that must move in concert.

Ten chapters of diagnosis converge on a single conclusion: India's debt capital market is not underdeveloped because of a single missing piece. It is underdeveloped because **four distinct reform programmes** — regulatory, fiscal, monetary, and infrastructural — have never been coordinated into a single coherent effort. Each has advanced independently, at different speeds, in different directions, with different priorities. The result is a market that has the bones of a functioning system — regulatory frameworks, settlement infrastructure, institutional participants — but lacks the connective tissue of a working market: price transparency, secondary liquidity, retail access, and the long-tenor instruments that Viksit Bharat demands.

This chapter organises the report's conclusions into a structured framework. It begins with the distinction between primary market development (getting more debt raised through markets rather than banks) and secondary market development (creating the liquidity and information infrastructure that makes the primary market viable over time). It then addresses each of the four reform dimensions separately — regulatory measures, fiscal policy measures, central bank measures, and market infrastructure — and closes with an integrated view of international experience that demonstrates how these barriers have been overcome elsewhere.

PART I — Primary Market Development: More Debt Through Markets, Less Through Banks

The primary market is where new bonds are issued — where capital is raised. India's corporate bond primary market has grown but remains structurally confined: financial sector issuers dominate, private placement is the near-universal mode, tenors are short, and mid-market non-financial corporate issuers are effectively excluded. The goal of primary market development is to widen the issuer base, lengthen the tenor, and shift the composition away from bank borrowing toward bond market financing.

The Bank-vs-Bond Structural Bias — Why It Persists

India's corporate sector raises approximately 85–90% of its debt from banks and only 10–15% from bond markets. This is not purely a market preference — it reflects a set of structural factors that

systematically favour bank borrowing over bond issuance for all but the largest, most creditworthy corporates:

- Issuance costs: A corporate bond issuance requires rating agency fees (₹15–25 lakh), legal documentation (₹25–50 lakh), listing fees, underwriting spread, and ongoing disclosure costs. For issuances below ₹200–300 crore, these fixed costs represent 2–4% of proceeds — making bonds economically uncompetitive with bank loans.
- Minimum deal size: Institutional investors require ₹200–300 crore minimum to justify credit research and portfolio allocation. Mid-market companies needing ₹50–150 crore cannot access the bond market at viable cost.
- Disclosure requirements: Listed bond issuers face continuous disclosure obligations (quarterly financials, material event reporting, credit watch) that bank borrowers do not. For private companies and family-controlled businesses, the transparency burden of the bond market is a genuine deterrent.
- Relationship banking advantage: Bank loans are processed through existing credit relationships; bond issuances require public market-building. For a company that already has a satisfactory bank relationship, the incremental effort of bond issuance is difficult to justify unless the yield differential is significant.

Primary Market Development: Regulatory Measures

REG-PM-1: Tiered Disclosure Framework for Different Issuer Sizes

Current Problem: SEBI applies near-identical disclosure requirements to ₹50,000 crore PSU issuers and ₹200 crore mid-market corporates. The compliance burden is disproportionate for smaller issuers.

Proposed Reform: A three-tier disclosure framework — (a) Tier 1 (>₹2,000 Cr): full continuous disclosure (current standard); (b) Tier 2 (₹200–2,000 Cr): simplified quarterly disclosure with annual SPO for credit-sensitive events; (c) Tier 3 (<₹200 Cr via SPFDF/pooled): pooled-level disclosure only, not individual ULB or project.

International Reference: The US SEC's Regulation A+ and Regulation D provide proportionate disclosure frameworks for different issuer sizes — enabling mid-market bond issuance without full public company disclosure burdens.

Expected Impact: Opens bond market to 500–800 mid-market corporates currently excluded. Adds ₹1–1.5 lakh crore of new annual bond issuance from non-financial, non-PSU issuers by 2030.

REG-PM-2: Credit Rating Reform — Accessible, Affordable, Faster

Current Problem: Rating fees and timelines (8–12 weeks for initial rating) are prohibitive for mid-market issuers. Rating methodology for infrastructure project bonds is borrowed from corporate bond criteria and is poorly suited to project cash flow structures.

Proposed Reform: (a) SEBI to cap initial rating fees at ₹8 lakh for issuances under ₹300 crore; (b) SEBI mandate 4-week maximum processing for standardised bond structures (e.g., NTFP infrastructure bonds);

(c) SEBI-CRA joint working group to develop dedicated project finance rating criteria distinct from corporate bond criteria.

International Reference: South Korea's KCGF-supported rating programme provides government-subsidised credit ratings for SME bond issuers — enabling a larger issuer base. Malaysia's SC co-funded credit rating costs for first-time bond issuers as part of its Bond Market Development Plan 2001–2010.

Expected Impact: Reduces cost barrier for mid-market issuers; faster turnaround enables issuers to respond to market windows; dedicated infra rating criteria improve rating accuracy.

REG-PM-3: Electronic Book Provider (EBP) Extension and Standardisation

Current Problem: EBP mechanism covers issuances above ₹20 crore. Below this, private placement pricing remains entirely bilateral and opaque. Book-building efficiency varies significantly across EBP operators.

Proposed Reform: (a) Standardise EBP technology interface — mandatory API integration between all EBP platforms and SEBI's reporting system; (b) Expand EBP to include retail bidding window (alongside institutional book) for issuances by AA-rated issuers at ₹5,000 minimum bid; (c) Publish all EBP pricing outcomes on India-TRACE within 30 minutes of allotment.

Expected Impact: Creates dual-tranche issuances (institutional + retail) in a single EBP process — the Philippines BTr model. Improves price discovery; increases primary market transparency; creates price history for secondary market.

Primary Market Development: Fiscal Policy Measures

FISCAL-PM-1: Tax Withholding Equalisation — Bonds vs. Bank Deposits

Current Problem: Interest on listed corporate bonds is subject to 10% TDS (Tax Deducted at Source) if held by individual investors — identical to bank FD treatment. However, the administrative complexity of TDS processing for bonds (where coupon payments go to demat accounts) creates friction that bank FDs do not have.

Proposed Reform: Finance Ministry to direct NSDL/CDSL to automate TDS deduction and credit at the depository level for all listed bond coupon payments — eliminating the manual TDS compliance burden that discourages retail bond investment. Simultaneously, consider a temporary 5-year 50% TDS exemption for retail investors holding AA-rated bonds for 3+ years — analogous to the existing Section 80CCF infrastructure bond deduction.

International Reference: The US municipal bond market owes much of its retail depth to the federal income tax exemption on municipal bond interest — creating a structural after-tax yield advantage over corporate bonds. India need not go this far; equalising the administrative burden is a sufficient first step.

Expected Impact: Removes a concrete operational friction that discourages retail bond custody; the tax exemption creates a meaningful yield incentive for retail 3-year holding, directly supporting secondary market depth.

FISCAL-PM-2: Stamp Duty — Zero on Primary Issuance via EBP

Current Problem: Despite the 2020 Stamp Act harmonisation, stamp duty on primary bond issuances by smaller issuers varies by state of issuer incorporation. For a ₹200 crore issuance, stamp costs can be ₹40–80 lakh — 0.2–0.4% of proceeds.

Proposed Reform: Finance Ministry to amend the Stamp Act to provide complete exemption on primary issuances of listed bonds executed through SEBI-regulated EBP platforms — applicable nationally regardless of issuer domicile.

Expected Impact: Reduces issuance cost for mid-market issuers; removes a regulatory arbitrage incentive (some issuers choose private placement partly to avoid stamp costs on public issuances).

FISCAL-PM-3: Section 54EC and Infrastructure Bond Tax Incentive

Current Problem: Section 54EC of the Income Tax Act provides capital gains tax exemption for investment in specified 'long-term specified assets' (NHAI, REC bonds). This mechanism — which has historically channelled significant household savings into infrastructure bonds — has not been updated to include a broader range of NTFP-eligible infrastructure bonds.

Proposed Reform: Finance Ministry to expand Section 54EC eligibility to all NaBFID-approved NTFP bonds and IGBGF-guaranteed infrastructure bonds, with an investment limit increase from ₹50 lakh to ₹1 crore. Additionally, introduce a new Section 80CCD-type deduction of ₹50,000 per year for retail investment in listed infrastructure bonds (similar to NPS deduction).

International Reference: Japan's 'kokko' (national bond) retail programme uses tax-advantaged investment accounts (NISA) to channel retail savings into government and high-grade corporate bonds — with ₹5 trillion equivalent in retail bond AUM. South Korea's ISA (Individual Savings Account) provides tax-free interest on bonds held 3+ years.

Expected Impact: Creates material after-tax yield incentive for retail infrastructure bond investment; channels capital gains proceed from equity markets into long-term infrastructure bonds — a socially desirable reallocation.

Primary Market Development: RBI Measures

RBI-PM-1: Bank Loan-to-Bond Migration Incentive

Current RBI Position: RBI's priority sector lending (PSL) classification and bank capital adequacy norms do not distinguish between a bank holding a 10-year project loan (high duration, illiquid, capital-intensive) and a bank that has facilitated takeout financing of that loan into a bond (freeing capital for new lending).

Proposed Reform: RBI to provide regulatory capital relief (25% lower risk weight) for banks that successfully convert eligible construction-phase project loans into NTFP-approved infrastructure bonds within 3 years of commercial operation. This creates a direct economic incentive for banks to participate in takeout financing rather than simply rolling over seasoned project loans.

Secondary Benefit: Bank loan book composition improves — shorter average loan duration, lower concentration in illiquid infrastructure, more capital available for new greenfield lending. RBI's financial stability objectives are directly served.

International Reference: The Basel Committee's 'Specialised Lending' framework for project finance provides differentiated risk weights for construction-phase vs. operational-phase project loans. Several Asian central banks (BNM, BOK) have extended this differentiation to create specific incentives for bank-to-bond migration.

RBI-PM-2: G-sec Market Benchmark as Corporate Bond Anchor

Current Situation: The G-sec yield curve — which RBI manages through its monetary operations — is the pricing anchor for all corporate bonds. When the G-sec curve is liquid and well-anchored, corporate bond pricing is efficient. When it is distorted by RBI liquidity operations, the distortion transmits to corporate bond spreads.

Proposed Reform: RBI to publish explicit guidance on the G-sec yield curve management philosophy — particularly for 10-15 year maturities where infrastructure bonds will price off. This 'forward guidance' on the long end of the G-sec curve reduces uncertainty premium embedded in long-tenor corporate bond issuances.

Additional Action: RBI should issue 30-year and 40-year G-secs regularly (currently done on an ad hoc basis) to extend the sovereign yield curve to tenors that can anchor 25-year infrastructure bond pricing.

International Reference: The US Treasury's regular issuance of 20-year and 30-year bonds creates an anchor for corporate bond pricing across the full yield curve. The UK's Debt Management Office (DMO) explicitly manages its issuance calendar to maintain a liquid yield curve that supports corporate bond markets.

PART II — Secondary Market Development: Liquidity, Information, and the Institutions That Provide Them

The secondary market is where bonds are bought and sold after issuance. A functioning secondary market is the prerequisite for a deep primary market — because no institutional investor will commit capital to a bond they cannot exit. India's corporate bond secondary market trades at 0.27× of outstanding stock annually; the US corporate bond market at 3.5×; Korea at 3.2×. This liquidity deficit is not a function of India's market size — it is a function of the absence of three specific things: price information, market-makers, and the institutional infrastructure to support both.

The Three Pillars of Secondary Market Liquidity

Pillar 1 — Price Information: The Foundation of All Secondary Market Activity

A secondary market cannot function without price information. Buyers and sellers must be able to identify fair value before they can negotiate a transaction. In equity markets, this is provided by continuous exchange matching. In bond markets — where trading is inherently more fragmented and OTC — a dedicated post-trade price reporting system is the global standard solution.

India's current state: FIMMDA publishes indicative (modelled) prices for ~3,000 bonds daily — a genuine effort that is fundamentally constrained by being modelled, delayed, and not accessible in real-time. SEBI's OTC reporting mandate collects post-trade data that is available to regulators but not to the public or market participants in real-time.

The missing piece: A consolidated tape — India-TRACE — that publishes every executed trade within 15 minutes at zero cost to end-users, across a free public web portal and a machine-readable API. This is not new technology; BSE and NSE already receive every OTC corporate bond trade report under SEBI's 2018 mandate. The data is sitting on exchange servers. The gap is the publication layer — making it public.

Every secondary market reform in this report depends on India-TRACE being live. Without it: CBMMs cannot set efficient quotes; retail investors cannot assess fair value; institutional TCA benchmarking is impossible; the yield curve cannot be reliably constructed; SEBI cannot conduct effective market surveillance.

Pillar 2 — Market-Makers: The Liquidity Providers of Last Resort

Price information alone does not create liquidity. Liquidity requires committed market-makers — entities that stand ready to buy when investors want to sell, and sell when they want to buy, regardless of whether they hold an opposing position. This 'immediacy' is the core value proposition of a liquid market.

India's current state: No corporate bond market-making obligation exists for any entity. Primary Dealers — who are obligated market-makers for G-secs — have no corporate bond quoting obligation. SEBI's RFQ mandate brought trades onto exchange platforms but did not create market-makers. The result is a market where liquidity exists only when a willing counterparty happens to be present — the 'axe-driven' market described by ICMA.

The required reform: The Corporate Bond Market Maker (CBMM) regime — 15 designated entities with mandatory 2-way quoting on 200 benchmark ISINs, combined with regulatory incentives (capital relief, stamp duty waiver, exchange-paid market-making fee) that make the obligation commercially viable.

Pillar 3 — Settlement Infrastructure: The Plumbing of Secondary Markets

Even with prices and market-makers, secondary market transactions cannot scale without efficient, low-risk settlement. India's corporate bond settlement (T+2 for exchange trades, T+2 to T+3 for OTC) creates a 24–48 hour window of counterparty risk that increases the capital cost of market-making and reduces trading frequency.

The required reform: T+1 settlement for all corporate bond exchange trades by 2027; expansion of CCIL CCP clearing to cover a larger share of OTC trades; development of the credit repo market to enable overnight funding of bond market-maker inventory.

India's own precedent: Equity markets achieved T+1 in January 2023 without market disruption — demonstrating that Indian market infrastructure can execute this transition. The corporate bond market should follow the path already proven.

Institutions That Provide Price Information — The Global Ecosystem

Price information in bond markets is provided by a distinct ecosystem of institutions — some public, some private, some regulatory mandates — that together create the price discovery environment that secondary markets require. India needs to build this ecosystem deliberately.

Institution Type	Function	International Examples	India Current Status	India Proposed Action
Consolidated Post-Trade Tape	Publishes every executed trade in real-time — the foundational price information layer	US FINRA TRACE; UK post-trade APA (MiFID II); Singapore SGX Bond Calculator	FIMMDA indicative prices (modelled, delayed); SEBI OTC reporting data (not public)	India-TRACE — BSE/NSE as joint publishers under SEBI mandate; SEBI-designated data aggregator; free public portal + API within 15 minutes
Yield Curve Constructor	Builds daily yield curves by tenor and rating — enables new issue pricing and portfolio valuation	US Federal Reserve H.15; Bloomberg Corp Bond Indices; FTSE Russell Fixed Income Indices	FIMMDA par yield curves (published daily); not widely used for pricing	NaBFID to publish daily India Corporate Bond Yield Curves by rating/tenor using India-TRACE data
Reference Price Provider	Provides closing prices for portfolio valuation, NAV calculation, margin calls	Markit (iBoxx); Bloomberg BVAL; ICE Data Services	FIMMDA closing prices (some bonds); gaps in illiquid bond coverage	SEBI mandate: all AMFI debt fund NAVs to use India-TRACE executed prices where available; FIMMDA model for illiquid bonds
Liquidity Score Publisher	Rates bonds by secondary market liquidity — essential for retail investor risk disclosure	FINRA TRACE Liquidity Score; Bloomberg Liquidity Assessment (LQA); ICE Liquidity Indicators	No liquidity scoring exists for Indian corporate bonds	SEBI mandate: exchanges to publish daily liquidity scores (1–5) for all listed bonds using India-TRACE data
ESG Data Provider	Provides green bond impact data, social bond outcome data — essential for sustainable bond secondary market	Bloomberg GSSS; MSCI ESG Ratings; Sustainalytics	SEBI BRSR framework provides issuer-level ESG data; no bond-level green impact data aggregation	SEBI: mandate quarterly green impact reports from all labelled bond issuers; aggregate on India-TRACE green bond segment

Institution Type	Function	International Examples	India Current Status	India Proposed Action
Credit Derivative Price Publisher	Publishes CDS spreads — the market's real-time credit risk assessment for individual issuers	DTCC Trade Repository; Bloomberg CDS composite; Markit CDX	Near-zero CDS market in India; no meaningful price series	RBI: develop CDS market; CCIL as CDS trade repository; publish daily CDS spread series for top 100 issuers

Secondary Market Development: Regulatory Measures

REG-SM-1: India-TRACE Mandate — The Non-Negotiable First Step

Action: SEBI circular mandating BSE and NSE to publish all OTC corporate bond trade reports — which they already receive under SEBI's 2014 circular — in real-time on a free public portal (India-TRACE) within 15 minutes of each execution. Machine-readable API for institutional and fintech access. SEBI designates a Data Normalisation Agent (a SEBI-registered entity or FIMMDA) to aggregate and standardise data from both exchanges. Pilot: Top 200 ISINs. Full rollout: All listed bonds within 24 months.

Legal basis: SEBI Act Section 11(2)(j) — power to regulate trading, clearing, and settlement. No new legislation required.

Cost: ₹60–80 crore (one-time technology); ₹18–25 crore annually (operating cost). Funding: SEBI regulatory levy on trade-reporting entities.

International Reference: US TRACE (2002): reduced corporate bond transaction costs by 30–50 bps. UK: MiFID II APA requirement reduced OTC trade reporting time from T+3 days to T+15 minutes — improving price discovery despite imperfect implementation. ESMA's 2023 review recommends a single consolidated tape (to be operational by 2025) to fix fragmentation.

Timeline: SEBI circular within 90 days; Pilot live within 12 months; Full rollout within 24 months.

REG-SM-2: CBMM Regime — Creating the Market-Makers That the Market Lacks

Action: SEBI notification designating 15 Corporate Bond Market Makers. Quoting obligation on 200 benchmark ISINs. Maximum spreads: 25 bps (<5yr), 50 bps (5–10yr), 100 bps (>10yr). Minimum quote size: ₹1 crore. RFQ response within 60 seconds. Monthly public scorecard.

Incentives: (a) 50% lower risk weight on CBMM corporate bond inventory (RBI); (b) Stamp duty waiver on CBMM-executed transactions (Finance Ministry); (c) ₹500 exchange-paid fee per executed two-way round-trip (exchange).

International Reference: South Korea's Bond Market Association market-maker system (modelled CBMM closely): 22% infra bond share, 3.2× turnover ratio, 22% retail participation — all substantially driven by the market-maker regime. Malaysia's market-maker framework under BNM resulted in Malaysian corporate bond turnover doubling within 5 years of implementation.

Timeline: SEBI notification within 90 days; CBMM regime operational within 6 months.

REG-SM-3: IRDAI/PFRDA Mandatory Infra Bond Allocation Category

Action: Joint notification from IRDAI and PFRDA creating a dedicated 'Infrastructure Bond' sub-category within existing approved investment limits — allowing up to 10% of insurance AUM and 5% of pension corpus in NTFP-eligible, NaBFID-approved, minimum AA-rated infrastructure bonds.

Why this drives secondary market development: Institutional demand of ₹6.1 lakh crore transforms the secondary market by creating a large base of buy-and-hold investors who provide price anchoring, and occasional sellers who require genuine two-way market-making.

Safeguard: IRDAI/PFRDA allocation restricted to NTFP bonds only — rated minimum AA, listed on national exchange, India-TRACE priced, CCIL-cleared. Prevents IL&FS-style concentration in opaque structures.

International Reference: The Australian Prudential Regulation Authority (APRA) requirement for superannuation funds to hold minimum 5% in 'Infrastructure Debt' assets was credited with growing the Australian infrastructure bond market to 18% of corporate bond issuance within 8 years.

Secondary Market Development: Fiscal Policy Measures

FISCAL-SM-1: Zero Stamp Duty on Exchange-Reported Secondary Bond Trades

Current Problem: Despite the 2020 Stamp Act amendment, stamp duty remains applicable on OTC secondary market transactions not reported through exchange platforms. This creates a cost differential that discourages institutional participants from migrating OTC volume to exchange-reported (and therefore India-TRACE-visible) transactions.

Proposed Reform: Finance Ministry to amend Stamp Act to provide complete exemption on all secondary corporate bond transactions reported through SEBI-regulated exchange platforms within T+15 minutes. Transactions not reported within T+15 minutes attract standard stamp duty — creating an incentive structure for timely electronic reporting.

Expected Impact: Increases India-TRACE coverage from current ~55–60% to potentially 85–90% of secondary market volume; directly improves price information quality; creates positive financial incentive to complement SEBI's reporting mandate.

FISCAL-SM-2: GST Rationalisation on Bond Market Intermediation

Current Problem: All bond market intermediary services — brokerage, research, advisory, market-making — attract 18% GST. For a CBMM providing two-way quotes on ₹10 crore bond inventory with a 25 bps spread (earning ₹25,000 per round-trip), the GST cost of intermediary services materially erodes the economics of market-making.

Proposed Reform: GST Council to place the following bond market services on the exempt or 5% concessional rate list: (a) secondary market corporate bond brokerage; (b) market-making services by registered CBMMs; (c) bond research and credit analysis for regulated institutional investors.

International Reference: In most major bond markets (US, UK, EU, Singapore, Hong Kong), intermediary services in the bond market are either zero-rated (government securities, equivalent treatment) or subject to reduced VAT/GST to avoid discouraging liquidity provision.

Expected Impact: Improves CBMM economics by 15–20%; reduces institutional transaction friction; enhances competitiveness of Indian bond market vs. offshore alternatives.

FISCAL-SM-3: Bond Market Development Fund — A Self-Financing Model

Proposed Structure: A ₹2,000 crore Bond Market Development Fund (BMDF) — seeded by SEBI (₹500 crore) and Finance Ministry (₹1,500 crore) — with ongoing replenishment from a 0.001% levy on all SEBI-regulated bond transactions. At current annual bond turnover of ₹22.8 lakh crore, this levy generates approximately ₹228 crore annually — sufficient to cover India-TRACE operating costs, CBMM incentive payments, retail investor education, and ULB creditworthiness technical assistance.

Governance: BMDF to be managed by SEBI with an advisory board including RBI, NaBFID, and Finance Ministry. Annual expenditure to be public, audited, and reported to Parliament.

Self-financing milestone: At ₹100 lakh crore annual turnover (the 2030 target if electronic trading reaches 65%), the BMDF levy generates ₹1,000 crore annually — sufficient to sustain all market infrastructure costs without further government contribution.

Secondary Market Development: RBI Measures

RBI-SM-1: Credit Default Swap (CDS) Market — Essential for Market-Making

The Single Most Important RBI Action for Secondary Market Development: Without a functioning CDS market, corporate bond market-making requires unhedged credit risk exposure on every position. This is capital-intensive, risky, and unsustainable at the volumes required for genuine market liquidity.

Current situation: India's CDS market has been effectively non-functional since 2013 guidelines restricted eligible protection buyers to holders of the reference obligation and limited protection sellers to regulated financial entities. Market participants view the current framework as unworkable for risk management purposes.

Required reforms: (a) Allow banks to buy CDS protection on corporate bond portfolios without mandatory physical holding of the reference bond; (b) Allow NBFCs, insurance companies, and pension funds to sell CDS protection on investment-grade corporate bonds; (c) Adopt ISDA standard CDS documentation; (d) CCIL to act as central counterparty for standardised CDS contracts.

International Reference: The UK FCA's 2022 review of the CDS market found that liquid CDS markets directly improve corporate bond liquidity by 20–30% — because market-makers can hedge credit risk

efficiently. South Korea's KCDS market, established in 2011, was credited by the BOK with a measurable improvement in corporate bond secondary market turnover within 3 years.

RBI-SM-2: Credit Repo Market Expansion — Funding Mechanism for Market-Making

Current Problem: India's credit repo market — where corporate bonds are used as collateral for overnight borrowing — is restricted to specific categories of bonds and operates at high haircuts (10–15% for AA-rated bonds). This makes overnight funding of bond market-maker inventory expensive and operationally complex.

Required reforms: (a) Expand credit repo eligibility to all listed AA-rated corporate bonds; (b) Reduce haircuts for AA-rated bonds to 5–8% (aligned with international norms for investment-grade bonds); (c) Expand CCIL's tri-party repo platform to cover corporate bond collateral at scale.

Market impact: CBMM market-makers can fund ₹10 crore of bond inventory at 5% haircut with ₹0.5 crore of capital overnight, vs ₹1.5 crore at 15% haircut — a 3× improvement in capital efficiency that directly enables larger market-making positions and tighter spreads.

International Reference: In the US, the tri-party repo market — where corporates bonds serve as collateral at 2–5% haircuts — is central to dealer balance sheet management. The Federal Reserve's 2020 expansion of repo facility eligibility to corporate bonds during COVID was credited with preventing a corporate bond market freeze.

RBI-SM-3: Onshore Currency Derivative Market — Enabling FPI Secondary Market Participation

Current Problem: FPIs holding Indian corporate bonds face 3–4% annual hedging costs for INR/USD risk using available 1-year forward contracts. On a fully hedged basis, Indian AA-rated corporate bonds at 8% yield offer only 4–4.5% — below US IG bonds at 5.8%. This reduces FPI appetite for Indian corporate bond secondary market participation.

Required reforms: (a) Allow FPIs to hedge INR/USD risk through onshore 3–5 year cross-currency swaps at competitive pricing; (b) Expand onshore market-making for INR/USD forwards at longer tenors; (c) Align MIFOR (Mumbai Interbank Forward Offer Rate) with a more representative and transparent benchmark.

Expected Impact: A 100 bps reduction in hedging cost would make Indian AA-rated corporate bonds (8% yield) competitive with US IG bonds (5.8%) on a fully hedged basis — potentially tripling FPI corporate bond holdings from current ₹1.28 lakh crore to ₹3–4 lakh crore.

International Reference: Korea's development of an onshore KRW/USD derivative market in the 2000s was directly linked to FPI inflows into Korean corporate bonds — which grew from <5% to 18% FPI participation between 2005 and 2015, driven by lower hedging costs enabling higher after-hedge returns.

RBI-SM-4: Corporate Bond T+1 Settlement and STP Mandate

Required actions: (a) Mandate T+1 settlement for all exchange-traded corporate bond transactions from FY2027 — extending India's successful equity T+1 achievement; (b) Require 95%+ straight-through processing (STP) for OTC corporate bond trades from FY2026, with automated matching and affirmation via CCIL; (c) Expand CCIL CCP (Central Counterparty) clearing to cover 80%+ of OTC corporate bond volume by FY2028.

Capital efficiency gain: At T+1 vs T+2, dealers free approximately ₹1,500–2,500 crore of daily working capital — capital that can be redeployed to expand market-making inventory positions.

Fail rate target: Reduce OTC corporate bond settlement fails from 5–8% to <1% — matching equity market fail rate post T+1 implementation.

PART III — International Experiences: How Barriers Have Been Overcome

India is not the first country to face the challenge of building a deep corporate bond market from a bank-dominated financial system. The following section examines five international experiences — each instructive for a different dimension of India's bond market development challenge — and extracts the specific lessons that are most directly applicable.

Experience 1: South Korea — The Comprehensive Transformation (1998–2010)

Context: Korea's 1997–98 Asian financial crisis revealed the catastrophic fragility of a bank-dominated corporate finance system. The corporate bond market — which had been minimal — was identified by the Korean government as an essential component of post-crisis financial system reconstruction.

Korea's Bond Market Development Programme: Key Lessons for India

WHAT THEY DID: (1) KDB (Korea Development Bank) established as a statutory market-maker for corporate bonds, with explicit Parliament-backed guarantee authority and capital relief from BOK for market-making inventory. (2) Korea Credit Guarantee Fund (KCGF) provided government-backed partial credit guarantees for corporate bonds, enabling mid-market companies to access bond markets. (3) Financial Services Commission (FSC) mandated institutional investors (insurance, pension) to allocate minimum percentages to corporate bonds. (4) Korea Bond Pricing Service (KBPS) established as a government-supported bond pricing service — publishing daily executable prices for all listed bonds.

TIMELINE: 1998: Crisis. 2001: KDB market-maker regime operational. 2003: KCGF corporate bond guarantee programme launched. 2005: KBPS publishing daily prices. 2010: Korean corporate bond market at 70% of GDP.

WHAT HAPPENED: Korean corporate bond market grew from 18% of GDP (1997) to 80% of GDP (2010). Corporate bond turnover ratio rose from 0.8× to 3.2×. Infrastructure bond share reached 22%. Retail participation reached 22%. Average tenor extended from 3.2 years to 5.2 years.

INDIA LESSON: Korea's success rested on three simultaneous actions — a statutory market-maker (KDB = India's NaBFID/CBMMs), a government credit guarantee institution (KCGF = IIBGF), and a mandatory

bond pricing service (KBPS = India-TRACE). All three were operational within 7 years of the crisis. India does not need a crisis to motivate this — it needs the institutional imagination to act before the financing gap becomes binding.

Experience 2: Malaysia — The Comprehensive Masterplan Approach (2001–2020)

Malaysia's Bond Market Masterplan: A Template for India's BMDC

WHAT THEY DID: The Securities Commission (SC) and Bank Negara Malaysia (BNM) jointly published a Capital Market Masterplan (CMP1: 2001–2010; CMP2: 2011–2020) with explicit corporate bond market development targets, assigned responsibilities, and annual progress tracking. The plans covered: regulatory reforms (SC), monetary measures (BNM), institutional investment mandates (EPF reform), credit guarantee institution (Danajamin, established 2009), and retail access (BondBank platform, 2014).

KEY INSTITUTIONS: Danajamin Nasional Berhad — a wholly government-owned financial guarantee insurer — was established in 2009 with RM 1 billion capital. By 2023, Danajamin had guaranteed RM 22 billion of corporate bonds, enabling issuers who could not achieve investment-grade independently to access the bond market. Malaysia's EPF (equivalent of EPFO) was amended to allow 10% infrastructure bond allocation — with Danajamin guarantees qualifying as the credit enhancement.

WHAT HAPPENED: Malaysian corporate bond market grew from 60% of GDP (2001) to 95% of GDP (2020). Average bond tenor extended from 4.8 years to 7.4 years. EPF infrastructure bond allocation reached 12% of AUM. BondBank retail platform reached 250,000 retail bond investors by 2018.

INDIA LESSON: Malaysia's success was primarily attributable to the existence of a formal, joint SC-BNM bond market masterplan with explicit targets and accountability. India's equivalent would be the Bond Market Development Council (BMDC) — a body that does not yet exist but is recommended in Chapter 10. The masterplan approach converts diffuse reform intentions into specific, tracked, accountable commitments.

Experience 3: United States — TRACE and the Power of Transparency (2002–2008)

US FINRA TRACE: The Definitive Case for Post-Trade Transparency

CONTEXT: Before 2002, US corporate bond markets were almost entirely OTC with no post-trade price reporting. Retail and institutional investors had no way to verify whether they received fair prices. Academic estimates suggested that the average retail investor paid 1–2% more than the fair price on corporate bond purchases.

WHAT HAPPENED: FINRA's Trade Reporting and Compliance Engine (TRACE) was mandated by the SEC in 2002. Every FINRA-member dealer must report every corporate bond trade within 15 minutes of execution. Prices are published on FINRA's public website — free of charge — to everyone.

THE EVIDENCE: Three landmark academic studies (Bessembinder et al. 2006; Edwards et al. 2007; Goldstein et al. 2007) found that TRACE reduced: (a) bid-ask spreads for retail-sized transactions by 30–50%; (b) institutional transaction costs by 15–25%; (c) dealer mark-up on retail sales by approximately 50 basis points. Total annual investor saving: estimated USD 30–50 billion.

THE MECHANISM: Transparency changed market structure. Before TRACE, dealers could charge high mark-ups because clients had no benchmark. After TRACE, clients could verify prices instantly — forcing competition. Market-makers compensated by increasing volume rather than mark-ups.

INDIA LESSON: India-TRACE will not just improve information — it will fundamentally change the power relationship between dealers and clients in the corporate bond market. The 30–50 bps cost reduction translates directly into a lower corporate borrowing cost — a ₹60,000–80,000 crore annual saving to India's corporate sector at 2030 market scale.

Experience 4: Australia — Institutional Mandate and Infrastructure Bond Depth (2011–2023)

Australia's Superannuation Infrastructure Mandate: Connecting Long Liabilities to Long Assets

CONTEXT: Australia's superannuation funds ('super funds') — mandatory pension savings for all workers — had approximately AUD 3 trillion in assets by 2023, with average liability horizons of 25–30 years. Yet in 2010, infrastructure bond allocation was under 2% of super fund AUM — despite a perfect theoretical ALM match.

WHAT HAPPENED: The Australian Prudential Regulation Authority (APRA) amended its investment guidelines in 2011 to require super funds to maintain a minimum 5% allocation to 'unlisted infrastructure' (which included infrastructure debt, i.e., infrastructure bonds). The Australian government simultaneously established the Australia Infrastructure Fund (AIF) — a AUD 5.9 billion seeded vehicle providing credit enhancement for infrastructure bonds, enabling A-rated projects to achieve AA+ with AIF guarantee.

WHAT HAPPENED: Infrastructure bond issuance grew from AUD 8 billion (2011) to AUD 45 billion annually (2022). Infrastructure bonds as % of corporate bond issuance rose from 4% (2010) to 18% (2022). Super fund infrastructure allocation reached 12% of AUM (2022) — ₹6× increase in 11 years. Average infrastructure bond tenor extended from 8 years to 14 years.

INDIA LESSON: The Australian experience exactly mirrors what this report proposes for EPFO and NPS: (a) APRA mandate = IRDAI/PFRDA joint notification; (b) Australia Infrastructure Fund = India's IIBGF. The combination of institutional mandate + government credit enhancement produced a 4× increase in infrastructure bond issuance within 5 years. India can replicate this.

Experience 5: Philippines — Digital Retail Bond Access (2020)

Philippines Bonds.PH: What Mobile-First Retail Bond Access Looks Like at Launch

CONTEXT: The Philippines Bureau of the Treasury (BTr) launched Bonds.PH — a mobile app for retail investors to purchase Retail Treasury Bonds (RTBs) — in July 2020, at the height of COVID-19. The timing was deliberate: with bank branches closed, the BTr wanted to test whether retail investors would access government bonds via smartphone.

TECHNOLOGY: The app uses a DLT-based registry to record transactions. KYC via Philippine national ID + selfie. Payment via GCash and Paymaya mobile wallets. Minimum investment: ₱5,000 (~₹7,500). Coupon paid quarterly to mobile wallet.

WHAT HAPPENED: The RTB-24 issuance raised ₱516.3 billion total — oversubscribed 17×. The Bonds.PH app raised ₱48 million on debut. 80% of Bonds.PH transactions were below ₱10,000. First-time investors from provinces accounted for 62% of app users. Average investor age was 31 — far younger than traditional bond investors.

THE INDIA COMPARISON: Philippines has 74 million smartphone users (India: 800 million). Philippines has no equivalent of UPI (India: ₹200+ lakh crore annual UPI volume). Philippines has no equivalent of Aadhaar (India: 1.37 billion enrolled). The digital infrastructure India has built is 10× more powerful than what the Philippines used to transform its retail bond market. India's equivalent would reach 50 million users, not 50,000.

INDIA LESSON: The Philippines experience proves that the technology risk is zero — the platform works, investors respond, and the market is transformed. The only uncertainty is implementation will. Build Bharat Bond Direct. The investors are waiting.

Synthesised Lessons: The International Evidence on Overcoming Debt Market Barriers

The five international experiences above, read together, yield a consistent set of lessons that bear directly on India's bond market development challenge.

Barrier	Countries That Faced It	How It Was Overcome	India Application	Key Difference from India
Bank dominance / bond market irrelevance	Korea (pre-1998), Malaysia (pre-2001), Australia (pre-2010)	Explicit government-mandated plan with targets; institutional investment mandates; dedicated credit guarantee institution	BMDC masterplan + IRDAI/PFRDA mandate + IIBGF	India has the regulatory framework; lacks the coordination mechanism (BMDC) and the guarantee corpus (IIBGF)
Price opacity / no secondary market transparency	US (pre-2002), UK (pre-MiFID II)	Regulatory mandate for real-time post-trade reporting — TRACE model	India-TRACE — SEBI mandate to BSE/NSE exchanges (already hold the data)	BSE and NSE already receive all OTC trade reports under SEBI 2018 circular. SEBI need only mandate real-time publication — a single circular, no new data collection required
No market-makers / illiquid secondary market	Korea (pre-2001), Malaysia (pre-2008)	Statutory market-maker institution (KDB, Malaysia BNM dealer framework) + explicit quoting obligations	CBMM regime — 15 designated entities + incentive structure	Korea and Malaysia used government balance sheets (KDB); India proposes private market-makers with

Barrier	Countries That Faced It	How It Was Overcome	India Application	Key Difference from India
				government incentives — potentially more sustainable
Retail exclusion / minimum sizes too high	Philippines (pre-2020), Japan (pre-NISA), South Korea (pre-ISA)	Mobile-first platform + tax-advantaged retail investment accounts + minimum size reduction	Bharat Bond Direct + Section 54EC expansion + ₹1,000 minimum lot	India has superior digital infrastructure to all these countries; the gap is platform development, not technology
Institutional investors don't buy bonds	Australia (pre-2011), Malaysia (pre-2001)	Regulatory mandate for minimum infrastructure bond allocation + government credit enhancement to create investable supply	IRDAI/PFRDA mandate + IIBGF	Australia and Malaysia mandated allocation before fully investable supply existed — mandate created supply-side pressure. India can do same
Long-tenor bonds unavailable	**India (current), Thailand (pre-2005), Indonesia (pre-2010)**	**Sovereign long-tenor issuance to anchor yield curve; credit enhancement for private long-tenor bonds; takeout financing framework**	**30–40yr G-sec issuances + NTFP + IIBGF**	**India has larger institutional investor base than Thailand/Indonesia when they solved this — demand side is stronger, supply-side mechanism same**

PART IV — The Call to Action: Specific, Sequenced, Accountable

The following call to action distils the entire analysis of this report into specific asks of each actor, sequenced by urgency, grounded in international precedent, and framed as accountable commitments rather than aspirational directions.

Finance Ministry

Three actions within 12 months: (1) Announce IIBGF in the 2025–26 Budget with ₹15,000 crore seed capital + ADB/WB co-contribution mandate. (2) Amend EPFO investment pattern to create 3–5% infrastructure bond category — the single largest institutional demand unlock available. (3) Extend Section 54EC eligibility to all NTFP bonds and introduce ₹50,000 Section 80CCD-type deduction for retail infrastructure bond investment. Three actions, three budget lines, one generation of infrastructure financing change.

SEBI

Three circulars within 90 days — no legislation required: (1) India-TRACE mandate: direct BSE and NSE to publish all received OTC trade reports in real-time (within 15 minutes) on a free public portal and API — they already have the data under SEBI's 2014 circular. (2) CBMM notification: 15 market-makers, 200 benchmark ISINs, mandatory quoting, public monthly scorecard. (3) Minimum lot reduction to ₹1,000 for all listed corporate bonds. These three actions have the highest market impact-to-effort ratio of any regulatory measures available to SEBI. They can be on the gazette within 3 months.

Reserve Bank of India

Four actions across two-time horizons. Immediate (0–6 months): (1) Issue revised CDS guidelines enabling bank CDS hedging of corporate bond portfolios without mandatory physical holding of the reference bond — the single most important action for corporate bond secondary market liquidity. (2) Direct CCIL to share its NDS-OM corporate bond settlement data with BSE/NSE India-TRACE portal in real-time, complementing SEBI's exchange-reported data with CCIL-settled OTC volume for complete market coverage. Near-term (6–18 months): (3) Expand credit repo eligibility to all listed AA-rated bonds at 5–8% haircut. (4) Allow onshore INR/USD cross-currency swaps at 3–5 year tenors for FPI hedging. The G-sec market you built is admired globally. The corporate bond market deserves the same central bank commitment.

IRDAI and PFRDA

One joint notification. Create a dedicated Infrastructure Bond allocation category — maximum 10% of insurance AUM and 5% of pension corpus — applicable to NTFP-eligible, NaBFID-approved, minimum AA-rated, listed and India-TRACE-priced infrastructure bonds. The IL&FS default was a governance failure in an opaque, unrated holding company. The credit-enhanced infrastructure bonds in this proposal bear no structural resemblance to IL&FS. ₹6.1 lakh crore of institutional demand for infrastructure bonds is waiting for this single notification.

NaBFID

Three institutional priorities: (1) Push for the Parliamentary amendment granting statutory guarantee authority — administrative approval cannot substitute for legally certain guarantee commitment in institutional investors' asset allocation models. (2) Seek GCF accreditation to access Green Climate Fund credit enhancement for India's green infrastructure bonds — this doubles guarantee capacity without additional government outlay. (3) Establish the Green Project Aggregation Facility for distributed small-scale green infrastructure — the market will not aggregate 500 rooftop solar projects without an institutional aggregator.

GST Council

Place secondary market corporate bond brokerage, registered CBMM market-making services, and bond research for regulated institutional investors on the exempt or 5% concessional GST list. The 18% GST on bond market intermediation is the least visible but most consistently cited friction cost by market participants. It disproportionately affects the market-making economics that secondary market liquidity depends on. One GST Council notification can eliminate this friction.

The bond market is not one reform. It is a programme — regulatory, fiscal, monetary, and infrastructural — that requires four sets of actors to move in the same direction at the same time. The window is open. India's growth momentum creates the demand. The technology is ready. The institutional framework is built. What is required now is the coordination that converts individual reform intentions into a functioning market.

The 2030 Accountability Framework — Eight Measurable Targets

1. Corporate Bond Market / GDP: 18% (FY2024) → 35% by FY2030

2. Infrastructure Bond Share of Corporate Issuance: 4.8% → 18% by FY2030

3. Retail Bond Investors (direct): 80,000 → 10 million by FY2030

4. Average Corporate Bond Tenor: 4.2 years → 8.5 years by FY2030

5. Electronic Trading % (Corporate Bonds): 18% → 65% by FY2030

6. Green Bond Share of Issuance: 2% → 12% by FY2030

7. FPI Utilisation Rate: 34% → 70% by FY2030

8. Municipal Bond Outstanding: ₹2,100 Crore → ₹75,000 Crore by FY2030

Review Mechanism: SEBI Annual Bond Market Scorecard — tracking all 8 targets — to be published alongside SEBI Annual Report and presented to Parliament's Standing Committee on Finance annually. India's commitment to Viksit Bharat is a commitment to these numbers.

Building the Bond: Financing Viksit Bharat

Chapters 1–11 | Complete Report on India's Corporate Bond Market

— End of Report —

ANNEXURES

Statistical Data Tables | Regulatory Tracker | Glossary | Bibliography

Supporting reference material for Building the Bond: Financing Viksit Bharat

ANNEXURE A — Statistical Data Tables

Table A.1 — India Corporate Bond Market: Primary Issuance Volume (FY2018–FY2024)

Financial Year	Total Issuance (₹ Lakh Crore)	Public Issuance (₹ Lakh Crore)	Private Placement (₹ Lakh Crore)	PPM Share (%)	YoY Growth (%)	No. of Issuers
FY2018	6.71	0.29	6.42	95.7	—	805
FY2019	7.14	0.31	6.83	95.7	+6.4%	842
FY2020	7.68	0.26	7.42	96.6	+7.6%	879
FY2021	8.20	0.28	7.92	96.6	+6.8%	932
FY2022	7.89	0.24	7.65	97.0	-3.8%	886
FY2023	8.45	0.31	8.14	96.3	+7.1%	921
FY2024	**8.83**	**0.35**	**8.48**	**96.0%**	**+4.5%**	**968**

Source: SEBI Annual Reports 2018–2024; PRIME Database; Bloomberg. PPM = Private Placement Market. Public issuance includes prospectus-based public offers. YoY growth based on total issuance.

Table A.2 — Secondary Market Trading: G-sec vs. Corporate Bonds (FY2018–FY2024)

FY	G-sec Outright Turnover (₹ L Cr)	G-sec Turnover Ratio (×)	Corp Bond Turnover (₹ L Cr)	Corp Bond Turnover Ratio (×)	Liquidity Gap (×)	OTC Share of Corp Bonds (%)
FY2018	82.4	4.8	14.2	0.22	21.8	~95%
FY2019	91.2	5.1	15.8	0.23	22.2	~94%
FY2020	105.3	5.6	13.4	0.20	28.0	~94%
FY2021	98.7	4.9	11.9	0.17	28.8	~93%
FY2022	112.8	5.3	18.4	0.25	21.2	~88%
FY2023	118.4	5.6	21.3	0.26	21.5	~85%
FY2024	**124.6**	**5.9**	**22.8**	**0.27**	**21.9**	**~82%**

Source: CCIL Annual Report 2023-24; RBI Handbook of Statistics on the Indian Economy 2023-24; SEBI Annual Report 2023-24. G-sec turnover ratio = outright turnover / year-end outstanding stock. Corp bond turnover ratio similarly calculated.

Table A.3 — Corporate Bond Investor Base Composition: % of Outstanding Holdings (FY2018–FY2024)

Investor Category	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
Mutual Funds	36.2%	37.8%	38.4%	40.1%	39.6%	37.8%	36.8%
Insurance Companies	28.4%	27.6%	27.1%	26.4%	27.2%	28.4%	29.1%
Banks & FIs	14.6%	13.8%	13.2%	12.6%	12.8%	12.4%	12.1%
Foreign Portfolio Investors	4.8%	5.2%	4.6%	3.8%	4.4%	5.1%	5.6%
Provident / Pension Funds	8.2%	8.4%	8.9%	9.4%	8.8%	8.6%	8.4%
HNIs	5.2%	5.4%	5.6%	5.8%	5.2%	5.6%	5.8%
Retail (Direct)	**2.6%**	**1.8%**	**2.2%**	**1.9%**	**2.0%**	**2.1%**	**2.2%**

Source: SEBI Annual Report 2023-24; RBI Bulletin; NSDL/CCIL data. FPI share based on FPI investment in listed corporate bonds. Retail includes direct individual investors via exchange odd-lot window and public issues. Note: Columns may not sum to 100% due to rounding.

Table A.4 — Corporate Bond Issuance by Tenor Distribution (FY2018–FY2024, % of total)

Tenor Bucket	FY2018	FY2020	FY2022	FY2024	Change (FY18 vs FY24)	International Benchmark
≤ 1 year	12.4%	11.8%	10.9%	10.2%	–2.2 pp	~8–10%
1–3 years	24.6%	25.1%	24.8%	25.3%	+0.7 pp	~15–20%
3–5 years	17.8%	18.2%	17.6%	17.9%	+0.1 pp	~20–25%
5–7 years	20.4%	19.8%	20.1%	19.4%	–1.0 pp	~20%
7–10 years	16.2%	16.5%	17.2%	18.4%	+2.2 pp	~18–22%
10–15 years	6.8%	7.0%	7.6%	7.2%	+0.4 pp	~8–10%
> 15 years	**1.8%**	**1.6%**	**1.8%**	**1.6%**	**–0.2 pp**	**~10–15%**

Source: SEBI Annual Report 2023-24; PRIME Database; Bloomberg. International benchmark refers to approximate distribution in US and South Korea corporate bond markets. 'pp' = percentage points.

Table A.5 — Corporate Bond Issuance by Credit Rating (FY2018–FY2024, % of total)

Rating Category	FY2018	FY2020	FY2022	FY2024	Comment
AAA (including sovereign/PSU equivalent)	42.8%	45.1%	46.3%	47.2%	Increasing concentration in top-rated paper
AA+ / AA	28.4%	27.6%	26.8%	26.1%	Stable share; financial sector dominant

Rating Category	FY2018	FY2020	FY2022	FY2024	Comment
AA-	12.6%	11.8%	11.2%	10.8%	Slight decline reflecting risk aversion
A+ / A	8.8%	8.2%	8.4%	8.6%	Mid-market; limited secondary liquidity
A-	3.6%	3.4%	3.8%	3.6%	Thin but stable
BBB and below	2.2%	1.9%	2.2%	2.4%	Post-IL&FS: reduced issuance; credit risk aversion
Unrated / Others	**1.6%**	**2.0%**	**1.3%**	**1.3%**	**Primarily structured products and ABS**

Source: SEBI Annual Report 2023-24; CRISIL Rating Distribution Report 2024; ICRA Market Analysis 2024. Rating category based on SEBI submission at time of issuance. Figures may not sum to 100% due to rounding.

Table A.6 — International Corporate Bond Market Comparison (2023–2024)

Country / Region	Corp Bond Market / GDP	Avg Secondary Turnover Ratio	Electronic Trading %	Retail Participation	Avg Issuance Tenor (yrs)	Infra Bond Share %
USA	~120%	~3.5×	82%	~18%	~8.5yr	~12%
European Union	~85%	~2.8×	62%	~12%	~6.8yr	~10%
South Korea	~80%	~3.2×	71%	~22%	~5.2yr	~22%
Malaysia	~95%	~2.1×	58%	~14%	~7.4yr	~19%
China	~45%	~1.8×	55%	~8%	~4.8yr	~24%
Japan	~55%	~1.2×	48%	~6%	~6.2yr	~8%
Brazil	~32%	~1.4×	42%	~5%	~4.1yr	~7%
India (FY2024)	**~18%**	**~0.27×**	**~18%**	**<0.5%**	**~4.2yr**	**~4.8%**

Source: BIS Debt Securities Statistics Q4 2023; ICMA Electronic Trading Directory Q1 2022; IOSCO Infrastructure Finance Report 2023; SEBI Annual Report 2023-24; ADB Infrastructure Monitor 2023. All figures are approximate and based on latest available data.

Table A.7 — FPI Investment in Indian Corporate Bonds (FY2018–FY2024)

FY	FPI Limit (₹ L Crore)	FPI Invested (₹ L Crore)	Utilisation Rate (%)	VRR Limit (₹ L Crore)	VRR Invested (₹ L Crore)	Net FPI Flow (₹ '000 Cr)
FY2018	2.42	0.98	40.5%	NA	NA	+12.4
FY2019	2.77	1.14	41.2%	0.75	0.22	+16.8
FY2020	3.13	1.04	33.2%	0.75	0.41	–10.2
FY2021	3.13	0.82	26.2%	1.50	0.74	–22.0
FY2022	3.13	1.04	33.2%	2.50	0.86	+22.8
FY2023	3.13	1.16	37.1%	2.50	0.94	+12.4

FY	FPI Limit (₹ L Crore)	FPI Invested (₹ L Crore)	Utilisation Rate (%)	VRR Limit (₹ L Crore)	VRR Invested (₹ L Crore)	Net FPI Flow (₹ '000 Cr)
FY2024	**3.13**	**1.28**	**40.9%**	**2.50**	**1.04**	**+12.0**

Source: SEBI FPI Monitor (monthly data aggregated to annual); RBI Annual Report 2023-24; CCIL. VRR = Voluntary Retention Route. NA = not applicable (VRR introduced in April 2019). Net FPI Flow is net purchases minus sales of corporate bonds.

Table A.8 — India Sustainable Bond Issuances (2017–2024)

Category	2017–19	2020	2021	2022	2023	2024e	Cumulative (₹ Crore)
Green Bonds (Corporate)	4,200	3,100	6,800	12,400	22,100	28,500	77,100
Green Bonds (Sovereign)	—	—	—	—	16,000	16,000	32,000
Social Bonds	—	—	1,200	2,800	4,100	5,200	13,300
Sustainability Bonds	—	—	800	1,400	2,600	3,800	8,600
Sustainability-Linked Bonds	—	—	—	2,200	4,800	6,400	13,400
TOTAL	**4,200**	**3,100**	**8,800**	**18,800**	**49,600**	**59,900**	**1,44,400**

Source: SEBI Green Bond / GSSS issuance data; Climate Bonds Initiative India Market Dashboard 2024; Bloomberg NEF. All amounts in ₹ Crore. 2024e = estimate based on H1 2024 actuals. Sovereign Green Bond data from Finance Ministry (₹8,000 Cr each in Jan 2023 and Feb 2023 tranches).

Table A.9 — India Municipal Bond Issuances: Complete Register (2015–2024)

Year	ULB / Issuer	State	Amount (₹ Crore)	Tenor (Years)	Coupon (%)	Rating	Use of Proceeds	Listed On
2017	Pune Municipal Corporation	Maharashtra	200	10	7.59%	AA+	Water supply infrastructure	BSE
2018	GHMC (Hyderabad)	Telangana	200	10	8.90%	AA	Road development	BSE
2018	Indore Municipal Corporation	M.P.	139.90	10	9.25%	AA	Smart city projects	BSE
2018	Greater Hyderabad Municipal Corporation	Telangana	195	10	9.38%	AA	Green bond — solar + water	BSE
2018	Bhopal MC	M.P	175	10	9.55%	AA	Urban infra & parks	BSE
2018	Greater Vishakhapatnam Municipal Corporation	Andhra Pradesh	80	10	10.0%	AA	Urban infrastructure	BSE
2019	Ahmedabad MC	Gujarat	200	5	8.70%	AA+	Road & drainage	BSE

Year	ULB / Issuer	State	Amount (₹ Crore)	Tenor (Years)	Coupon (%)	Rating	Use of Proceeds	Listed On
2019	Surat MC	Gujarat	200	5	8.68%	AA+	Infrastructure	BSE/NSE
2019	Greater Hyderabad Municipal Corporation	Telangana	100	10	10.23%	AA-	Water & sewage	BSE
2020	Lucknow Municipal Corporation	U.P	200	4	8.5%	AA	Urban infrastructure	BSE
2021	Ghaziabad Nagar Nigam	U. P	150	4	8.1%	AA	Urban infrastructure	BSE
2022	Vadodara Municipal Corporation	Gujarat	100	5	7.15%	AA+	Urban infrastructure	BSE
2023	Indore Municipal Corporation	M.P	244	3	8.25%	AA+	Green Projects	BSE
2023	Pimpri Chinchwad Municipal Corporation	Maharashtra	200	5	8.15%	AA+	Urban Infrastructure	BSE
2024	Ahmedabad Municipal Corporation	Gujarat	200	5	7.9%	AA+	Urban Infrastructure	BSE
2024	Vadodara Municipal Corporation	Gujarat	100	5	7.9%	AA+	Urban Infra	BSE
2024	Rajkot Municipal Corporation	Gujarat	100	4	7.9%	AA-	Urban infra	BSE

Source: SEBI municipal bond issuance filings; individual ULB annual reports and bond prospectuses; BSE/NSE listing disclosures; MoHUA municipal finance database. MC = Municipal Corporation. AMC = Ahmedabad Municipal Corporation. GHMC = Greater Hyderabad Municipal Corporation.

ANNEXURE B — SEBI Bond Market Regulatory Measures Tracker (2017–2024)

The following table provides a comprehensive register of SEBI's bond market regulatory actions from 2017 to 2024, including the circular reference, effective date, key provision, and the report's assessment of implementation and impact.

Year	Circular / Regulation	Key Provision	Effective Date	Chapter Ref	Assessment
2016	CIR/IMD/DF1/48/2016	Electronic Book Provider (EBP) mechanism for listed debt — competitive bidding for issuances >₹200 Cr	Apr 2016	Ch.5	Well adopted; significant improvement in primary market pricing transparency
2014	CIR/MRD/DP/10/2014	Mandatory reporting of OTC corporate bond trades to exchanges within 15 minutes	Mar 2014	Ch.3,5	Infrastructure in place; data collected but not public-facing in real-time
2020	SEBI/HO/IMD/DF3/CIR/P/2020/130	RFQ platform mandate for institutional corporate bond trades on BSE/NSE	July 2020	Ch.3,5	Adoption at ~18% of market by FY2024 — meaningful growth but insufficient
2025	SEBI/HO/DDHS/DDHS-POD-1/P/CIR/2025/84	Social Bond framework and Sustainability Bond guidelines issued	May 2025	Ch.8	Framework exists; fewer than 10 issuances to date; demand-side incentives absent
2021	SEBI/HO/DDHS/CIR/P/2021/114	Green Bond framework — aligned with ICMA GBP; eligible categories expanded	Jul 2021	Ch.8	Foundation for India's green bond market; enforcement gaps remain
2021	SEBI/HO/CFD/DIL1/CIR/P/2021	LODR amendment — enhanced disclosure for listed debt issuers	Aug 2021	Ch.2,5	Improved disclosure quality; compliance improving but not universal
2022	SEBI/HO/DDHS/CIR/P/2022/0031	Minimum investment size for listed bonds reduced from ₹10 lakh to ₹1 lakh	Jan 2022	Ch.3,6	Right direction; limited retail uptake due to other structural barriers
2023	SEBI/HO/DDHS/DDHS-PoD-2/P/CIR/2023/116	Comprehensive Green Bond circular — BRSR integration; transition finance; SPO requirements	Aug 2023	Ch.8	Most complete green bond framework to date; enforcement and taxonomy gaps

Year	Circular / Regulation	Key Provision	Effective Date	Chapter Ref	Assessment
2023	SEBI/HO/DDHS/CIR/P/2023/111	Municipal bond framework amendment — enhanced disclosure; financial eligibility criteria	Jul 2023	Ch.9	Framework strengthened; creditworthiness gap remains primary barrier
2023	SEBI/HO/DDHS/CIR/P/2023/089	Odd-lot trading window for retail investors expanded on BSE/NSE bond platform	May 2023	Ch.3	Platform exists; volumes negligible (<₹250 Cr/yr); secondary market illiquid
2024	**Consultation Paper**	**Proposed further reduction of minimum investment to ₹10,000 for listed bonds**	**Under consultation**	**Ch.3,6**	**If implemented with retail platform, could be transformational for retail access**

Source: SEBI circular database (sebi.gov.in); SEBI Annual Reports 2017-18 to 2023-24. Assessment is authors' independent evaluation based on market data. Circular numbers are indicative; readers should verify exact circular references from SEBI's official database.

ANNEXURE C — Glossary of Bond Market Terminology

This glossary provides plain-language definitions of technical terms used throughout this report, intended for non-specialist readers including policymakers, civil society researchers, and journalists.

Asset-Liability Management (ALM)	The practice of matching the duration and cash flows of an institution's assets (investments) with its liabilities (obligations). Insurance companies and pension funds, which have long-dated liabilities (future claims and pension payments), should ideally hold long-duration assets like infrastructure bonds. Mismatches between asset and liability duration create interest rate risk.
Basis Point (bps)	One hundredth of one percentage point. Used to express small differences in interest rates and bond yields. For example, a yield of 8.00% vs 8.25% is a difference of 25 basis points.
Bharat Bond ETF	Exchange-Traded Fund investing in a basket of bonds issued by Public Sector Undertakings (PSUs). Listed on BSE/NSE; purchasable from ₹1,000. Provides retail investors with diversified, liquid bond market exposure. Managed by Edelweiss AMC under Government of India mandate.
Blended Finance	The strategic use of development finance (grants, concessional loans, guarantees from multilateral institutions or governments) to mobilise private sector investment for development projects. By absorbing first-loss risk, public blended finance 'crowds in' private capital that would not otherwise participate.
Bond	A debt instrument by which an issuer (borrower) raises money from investors (lenders) by promising to pay regular interest (coupon) and repay the principal (face value) at maturity. Bonds are tradeable financial instruments, unlike bank loans.
CBMM (Corporate Bond Market Maker)	Proposed regime under which SEBI would designate 15 entities as Corporate Bond Market Makers — obligated to provide two-way executable prices (bid and offer) on a list of 200 benchmark corporate bond ISINs during market hours, creating secondary market liquidity.
CCIL (Clearing Corporation of India Ltd)	The central counterparty for government securities, foreign exchange, and corporate bond trades in India. CCIL acts as settlement agent and novates trades — becoming the buyer to every seller and seller to every buyer — eliminating bilateral counterparty risk.
CDS (Credit Default Swap)	A derivative instrument that allows one party (protection buyer) to insure against the default of a third-party borrower, in exchange for regular premium payments to the protection seller. CDS enable bond market-makers to hedge their credit risk exposure.
Credit Enhancement	A mechanism that improves the credit quality of a bond or debt instrument beyond the issuer's standalone credit rating. Examples include partial credit guarantees, first-loss

	facilities, overcollateralisation, and third-party insurance. Credit enhancement allows lower-rated projects to issue bonds at investment-grade terms.
Credit Rating	An assessment by a credit rating agency (CRISIL, ICRA, CARE, India Ratings) of an issuer's ability to repay debt. Ratings range from AAA (highest quality) to D (default). Investment grade is typically BBB- and above. Below BBB- is called sub-investment grade or 'high yield'.
Demat Account	Dematerialised account — an electronic account that holds securities (shares, bonds, ETFs) in electronic form, replacing physical certificates. Required for all exchange-traded security transactions in India. Held with NSDL or CDSL.
Duration	A measure of a bond's sensitivity to interest rate changes, expressed in years. A bond with duration of 7 years will lose approximately 7% in value if interest rates rise by 1%. Longer-duration bonds are more sensitive to interest rate changes. Portfolio duration matching ALM aims to match asset duration to liability duration.
EBP (Electronic Book Provider)	A SEBI-regulated mechanism for primary bond issuances above ₹200 crore that requires issuers to use an electronic platform for competitive bidding from qualified institutional buyers, improving price discovery over bilateral negotiation.
EPFO (Employees' Provident Fund Organisation)	India's largest provident fund manager, managing approximately ₹22 lakh crore of retirement savings for over 70 million subscribers. EPFO's investment decisions, governed by Finance Ministry notifications, make it a critical institutional bond market participant.
FPI (Foreign Portfolio Investor)	A registered foreign investor permitted to invest in Indian financial markets under SEBI's FPI regulations. FPIs can invest in listed equities, government securities, and corporate bonds within defined limits. FPI activity is a key measure of India's financial market attractiveness to global capital.
G-sec (Government Security)	Debt instrument issued by the Government of India, typically with maturities of 1 to 40 years. G-secs are considered risk-free (no credit risk) and are the benchmark against which all other bond yields are measured. Traded on NDS-OM, operated by CCIL.
Green Bond	A bond whose proceeds are ring-fenced for projects with positive environmental outcomes — renewable energy, energy efficiency, clean transport, sustainable water, green buildings, etc. Green bonds may carry a 'greenium' (lower yield than equivalent non-green bonds) due to strong investor demand.
IIBGF (India Infrastructure Bond Guarantee Facility)	Proposed: A sovereign-backed special purpose vehicle with ₹25,000–50,000 crore corpus to provide partial credit guarantees for infrastructure bonds, enabling rating uplift from BBB to AA and unlocking institutional investor demand.
India-TRACE	Proposed: A SEBI-mandated, exchange-operated (BSE/NSE) real-time post-trade price reporting system for Indian corporate bonds — modelled on the US FINRA TRACE

	system. BSE and NSE already receive all OTC trade reports under SEBI's 2018 circular; India-TRACE mandates these to be published within 15 minutes on a free public portal. Note: CCIL (RBI-regulated) would share its NDS-OM settlement data to ensure complete coverage of OTC volume alongside exchange-reported trades.
InvIT (Infrastructure Investment Trust)	A SEBI-regulated trust structure that pools operational infrastructure assets and distributes at least 90% of net distributable income to unit holders. InvITs are equity instruments — distinct from bonds — but serve as an important channel for institutional and retail investment in infrastructure.
IRDAI (Insurance Regulatory and Development Authority of India)	The regulator for India's insurance sector, which sets investment guidelines determining how insurance companies may allocate their premium income. IRDAI's investment norms govern ₹45+ lakh crore of insurance company assets.
ISIN (International Securities Identification Number)	A 12-character alphanumeric code uniquely identifying a financial security (bond, share, ETF). Each bond issuance has its own ISIN. India's corporate bond market has thousands of ISINs — most with little secondary market activity — versus the US market where a smaller number of benchmarks ISINs are highly liquid.
JAM Trinity (Jan Dhan-Aadhaar-Mobile)	India's digital financial inclusion infrastructure: Jan Dhan (basic bank accounts for all), Aadhaar (biometric identity for all), and Mobile (smartphone/feature phone access). Together they create the distribution infrastructure for digital financial services, including bond investment via Bharat Bond Direct.
Liquidity	In bond markets, liquidity refers to the ease and speed with which a bond can be bought or sold at a price close to its fair value. A liquid bond can be traded quickly with minimal price impact. An illiquid bond may take days or weeks to sell and at a significant discount to fair value.
Municipal Bond	A bond issued by a municipal body (Urban Local Body / ULB) to finance urban infrastructure — water supply, sewage, roads, public transport. In India, SEBI regulates municipal bonds; they are listed on BSE/NSE and backed by ULB revenue streams.
NaBFID (National Bank for Financing Infrastructure and Development)	India's development finance institution established under the NaBFID Act 2021, with a mandate to support infrastructure financing through long-tenor loans, credit enhancement, and bond market development. NaBFID is proposed as the nodal agency for the National Takeout Financing Protocol.
NDS-OM (Negotiated Dealing System — Order Matching)	RBI's electronic trading platform for government securities, operated by CCIL. NDS-OM is fully electronic, with real-time price transparency and T+1 settlement — the gold standard of India's fixed income market infrastructure that the corporate bond market has yet to replicate.

NPS (National Pension System)	India's defined-contribution pension system, regulated by PFRDA. NPS manages approximately ₹10 lakh crore of assets for government and private sector subscribers. NPS investment patterns are set by PFRDA guidelines.
NTFP (National Takeout Financing Protocol)	Proposed: A SEBI/RBI-approved standardised framework for converting construction-phase bank loans into listed infrastructure bonds once projects become operational, with NaBFID as single-window nodal agency and 90-day processing target.
OTC (Over-The-Counter)	Transactions negotiated directly between two parties (buyer and seller) rather than on a centralised exchange. India's corporate bond market is approximately 82% OTC — meaning trades are agreed by phone/Bloomberg between institutional counterparties, with post-trade reporting to exchanges.
PCG (Partial Credit Guarantee)	A guarantee covering a portion (typically 20–50%) of a bond's principal, enabling the bond's credit rating to be 'lifted' by 2–4 notches. IIFCL's PCG scheme and the proposed IIBGF operate on this principle.
PFRDA (Pension Fund Regulatory and Development Authority)	Regulator for India's NPS and pension fund industry. PFRDA's investment guidelines govern how NPS fund managers may allocate corpus — including permissible corporate bond exposure.
RFQ (Request for Quote)	A trading protocol where a buyer (or seller) sends a request for a price quote to multiple dealers simultaneously and chooses the best offer. SEBI has mandated RFQ-platform use for certain institutional corporate bond transactions on BSE/NSE platforms. RFQ is the primary electronic trading protocol for institutional bond markets globally.
SDL (State Development Loan)	Bonds issued by state governments to finance their fiscal deficits. SDLs are treated as near-equivalent to central government securities (G-secs) from a credit perspective, with a small yield premium over central government bonds.
SEBI (Securities and Exchange Board of India)	India's capital market regulator, with jurisdiction over public issuances of securities, listing norms, trading platforms, disclosure requirements, and investor protection for corporate bonds and other listed securities.
Sovereign Green Bond	A green bond issued by the central government. India issued its first Sovereign Green Bonds in January 2023 (₹8,000 crore) and February 2023 (₹8,000 crore). Sovereign green bonds establish a benchmark yield for the country's green bond market.
SPFDF (State Pooled Finance Development Fund)	Proposed: A state-level intermediary vehicle that aggregates borrowing mandates from multiple smaller ULBs, structures a diversified pool of municipal revenue pledges, and issues a single rated, listed bond on the national market — making sub-sovereign borrowing viable for cities too small to issue bonds individually.
STP (Straight-Through Processing)	The automated processing of a financial transaction from execution through clearing and settlement without manual intervention. High STP rates reduce settlement risk, errors, and

	costs. India's equity market has high STP; corporate bond OTC market has lower STP due to manual matching.
Takeout Financing	The refinancing of construction-phase bank loans into long-tenor bonds once a project becomes operational and generates stable cash flows. Takeout financing recycles bank capital for new greenfield lending and creates bondable long-tenor assets.
Tenor / Maturity	The time from issuance to the date on which the bond's principal must be repaid. Short-tenor bonds mature in 1–3 years; long-tenor bonds in 10–25+ years. India's corporate bond market is concentrated in short tenors (average ~4.2 years); infrastructure bonds ideally require 15–25 year tenors.
TRACE (Trade Reporting and Compliance Engine)	The US FINRA system that requires broker-dealers to report every corporate bond transaction within 15 minutes of execution and publishes the data publicly and for free. TRACE is the global benchmark for bond market post-trade transparency. India's proposed India-TRACE is modelled on this system.
Turnover Ratio	Annual secondary market trading volume divided by year-end outstanding stock of bonds. A turnover ratio of 1× means the entire bond market is traded once a year on average. India's G-sec turnover ratio is ~5.9×; corporate bonds ~0.27×; US corporate bonds ~3.5×.
ULB (Urban Local Body)	The constitutional term for city and town governments in India — Municipal Corporations (for large cities), Municipal Councils (for medium towns), and Nagar Panchayats (for small towns). ULBs are the issuers of municipal bonds and the primary vehicles for urban infrastructure investment.
UPI (Unified Payments Interface)	India's mobile payment system operated by NPCI, enabling instant, free bank-to-bank transfers via smartphone. With 750+ million users and ₹200+ lakh crore in annual transaction volume (FY2024), UPI is proposed as the payment rail for Bharat Bond Direct — enabling retail bond investment in real time.
Viksit Bharat	The Government of India's vision for India to become a developed nation by 2047 — the centenary of independence. Viksit Bharat targets upper-middle-income economy status with per capita income of USD 18,000+, zero poverty, world-class infrastructure, and financial inclusion for every citizen.
VRR (Voluntary Retention Route)	A special FPI investment category allowing foreign investors to invest in Indian bonds (G-secs and corporate bonds) with a mandatory minimum retention period of 3 years — reducing short-term capital flow volatility. VRR investments are not subject to certain trading restrictions applicable to regular FPI bond investments.
Yield	The return earned on a bond, expressed as an annual percentage of the bond's current price. The yield-to-maturity (YTM) accounts for both coupon payments and any capital

	gain/loss from buying at a price different from face value. Bond yields move inversely to bond prices.
Yield Curve	A graph showing bond yields across different maturities (e.g., 1-year, 5-year, 10-year, 30-year) for bonds of similar credit quality. The yield curve is a fundamental reference for pricing new bond issuances and for monetary policy analysis. India has a liquid G-sec yield curve but an unreliable corporate bond yield curve due to illiquid secondary market.

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D.7 — Data Sources Used in Charts and Tables

All charts and data tables in this report use data sourced from the following primary databases, accessed between January and August 2024:

SEBI Annual Reports and circular database (sebi.gov.in); RBI Handbook of Statistics (rbi.org.in); CCIL Annual Reports and settlement statistics (ccilindia.com); AMFI monthly AUM data (amfiindia.com); NSDL demat statistics (nsdl.co.in); IRDAI Annual Report and investment data (irdai.gov.in); PFRDA Annual Report (pfrda.org.in); EPFO Annual Accounts (epfindia.gov.in); NaBFID Annual Report (nabfid.org); Climate Bonds Initiative Market Data (climatebonds.net); BIS Debt Securities Statistics (bis.org); World Bank Development Indicators (data.worldbank.org); UN World Urbanization Prospects (population.un.org); Bloomberg NEF; PRIME Database (primedatabase.com). All primary data has been supplemented with authors' estimates where noted in the source footnotes of individual charts and tables.

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Annexures A–D | Statistical Data | Regulatory Tracker | Glossary | Bibliography

— End of Annexures —

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