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Financial Drivers of Asset Structure in Indian Project Finance Institutions: A Conceptual Review

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Abstract: ***The asset structure of a financial institution, meaning the composition, tangibility, and maturity profile of what it holds, has been treated in most of the capital structure literature as an exogenous determinant of leverage rather than as an outcome in its own right. This paper reverses that emphasis. Working entirely from the existing literature, it asks what financial forces shape the asset structure of the specialised institutions that finance infrastructure in India, a category that includes development finance institutions such as the National Bank for Financing Infrastructure and Development (NaBFID), the India Infrastructure Finance Company Limited, and sectoral lenders in power and renewable energy. The review synthesises three bodies of work that rarely speak to each other: the determinants tradition in corporate finance (Frank & Goyal, 2009; Rajan & Zingales, 1995; Titman & Wessels, 1988), the project finance literature on risk allocation and leverage (Byoun et al., 2013; Esty, 2004b), and the multi-level accounts that place firm decisions inside industry and country contexts (Kayo & Kimura, 2011). Seven theoretical lenses are compared and their conflicting predictions about asset composition are made explicit. From this synthesis the paper develops a five-tier framework that organises the drivers of asset structure into firm-specific, project-specific, financing, institutional, and macroeconomic layers, and it treats asset structure as an endogenous product of their interaction. The framework identifies where Indian evidence is thin, where the theories disagree, and which relationships are ready for empirical testing. Implications are drawn for institutional managers weighing tenor and sectoral concentration, and for policymakers designing the credit enhancement and bond market reforms on which the model depends.***
Keywords: Asset structure, Capital, Infrastructure, Project finance institutions, Development finance.

I. INTRODUCTION

Infrastructure is expensive, long-lived, and hard to finance with ordinary bank deposits. The G20's Global Infrastructure Hub, working with Oxford Economics, put the world's cumulative infrastructure investment need at roughly USD 94 trillion between 2016 and 2040, with India among the three Asian economies that together account for close to two-fifths of that total (Global Infrastructure Hub & Oxford Economics, 2017). India's own gap has been estimated at more than five percent of GDP, and private capital, particularly the long-dated money held by insurers and pension funds, remains only lightly committed to the sector (World Bank, 2025). Filling that gap is the reason a specialised financing architecture exists at all, and it is the reason the institutions inside that architecture look so different from a commercial bank.

Those institutions are the subject of this paper. Their defining feature is the shape of their balance sheet. A development finance institution that lends for twenty-five years against a power plant or a toll road ends up holding a portfolio dominated by long-tenor, illiquid, project-linked exposures, often concentrated in a handful of capital-intensive sectors. That portfolio is the institution's asset structure. How it comes to look the way it does, and what financial forces push it in one direction or another, is a question the literature has mostly approached from the wrong end.

Corporate finance has a large and mature literature on capital structure, the debt-equity mix, and within that literature asset structure appears repeatedly. It appears as tangibility, the ratio of fixed to total assets, and it is treated as a right-hand-side variable that helps explain leverage because tangible assets serve as collateral (Frank & Goyal, 2009; Rajan & Zingales, 1995; Titman & Wessels, 1988). The causal arrow runs from assets to financing. For a project finance institution that framing is incomplete. Such an institution does not first choose its capital structure and then acquire whatever assets happen to come along. Its asset structure is itself a decision, shaped by the cost and tenor of the funds it can raise, by the contractual risk allocation of the projects it appraises, by the prudential rules it operates under, and by the macroeconomic cycle. Asset structure, in other words, is better read as an outcome than as a given.

This reframing motivates the review. The paper does not present new data, run models, or test hypotheses. It reads the existing literature critically and asks a conceptual question: what are the financial drivers of asset structure in Indian project finance

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institutions, and how can they be organised into a coherent framework? Three literatures bear on the question and are seldom brought together. The determinants tradition explains why firms hold the asset and liability mixes they do. The project finance literature explains how leverage and contract structure work as risk management devices in stand-alone projects (Byoun & Xu, 2014; Byoun et al., 2013; Corielli et al., 2010). The comparative and multi-level literature shows that firm-level relationships are conditioned by industry and country factors (De Jong et al., 2008; Kayo & Kimura, 2011). Each has something the others lack, and none was written with Indian development finance institutions in view.

II. CONCEPTUAL FOUNDATIONS

A. Project Finance

Project finance is a financing method, not merely large-scale lending. Esty (2004b) describes it as the creation of a legally independent project company, funded with equity from one or more sponsors and non-recourse or limited-recourse debt, for the purpose of investing in a single capital asset. The debt is serviced from the project's own cash flows rather than from the balance sheets of the sponsors, and lenders' claims are secured against the project's assets and contracts. This structure has three consequences that matter for the present argument. It concentrates risk in a defined vehicle, it relies heavily on a web of long-term contracts to allocate that risk, and it typically carries very high leverage (Brealey et al., 1996; Esty, 2004a; Gatti, 2018).

The high leverage is not accidental. Byoun et al. (2013), examining several thousand project-financed investments across many countries, found that project companies use more debt when project risk is high but less debt when risk-reducing features such as off-take agreements are present, and less again when the project is large or has many sponsors. Leverage and contractual structure, on this reading, are substitute hedging mechanisms. Byoun and Xu (2014) extended the point to governance and country risk, showing that contracts and financial structure jointly respond to the political and legal environment. Corielli et al. (2010) demonstrated that the network of non-financial contracts around a project directly affects loan spreads and the deal's capital structure. Kleimeier and Megginson (2000) had earlier established that project finance loans differ systematically from ordinary syndicated credits in maturity and pricing. The common thread is that in project finance the financial structure is engineered around the project's operational and contractual characteristics, not chosen in the abstract.

This literature has one important limit for our purposes. It studies the project company, the special purpose vehicle, and its leverage. It rarely studies the institution on the other side of the loan, whose portfolio of such exposures constitutes an asset structure of its own. That asymmetry is one of the gaps the paper addresses.

B. Asset structure

Asset structure refers to the composition of an entity's assets: the split between fixed and current assets, the degree of tangibility, the maturity or tenor of the holdings, and their sectoral and instrument-level concentration. In the determinants literature the usual proxy is tangibility, the ratio of fixed assets to total assets, and its usual role is explanatory. Tangible assets can be pledged, they retain value in liquidation, and they reduce the expected costs of financial distress, so firms with more of them can support more debt (Frank & Goyal, 2009; Rajan & Zingales, 1995; Titman & Wessels, 1988). Indian evidence broadly fits this pattern, though not without friction: tangibility is often positively associated with leverage in Indian samples (Handoo & Sharma, 2014), yet several studies report the opposite sign or an insignificant one once profitability and liquidity are controlled for (Chakraborty, 2010; Saxena, 2022). The inconsistency is a signal that tangibility is doing different work in different settings.

Mazumder and Rao (2025) sharpened the point by showing that the tangibility-leverage association is itself conditional on the institutional environment, strengthening or weakening with creditor rights, financial development, and country-level transparency, and behaving differently during crises. This matters because it undermines the habit of treating asset structure as a fixed input. If the value of tangibility depends on the surrounding institutions, then the asset side of the balance sheet cannot be separated cleanly from the financing and regulatory environment. For a project finance institution, whose assets are almost entirely long-tenor secured claims on infrastructure, this interdependence is not a refinement but the central fact.

C. Project finance institutions in India

India's specialised infrastructure lenders sit within a longer and largely cautionary institutional history. The first development finance institutions, the Industrial Finance Corporation of India in 1948, the Industrial Credit and Investment Corporation of India with World Bank backing in 1955, and the Industrial Development Bank of India in 1964, were built to supply long-term capital to industry and infrastructure (Gatti, 2018, provides the general model; the Indian chronology is documented in Government of India, 2021). By the early 2000s the model had unravelled. Mounting non-performing assets and a structural mismatch between short-term

funding and long-term lending pushed the two largest institutions to convert into commercial banks, and for nearly two decades India had no dedicated infrastructure lender of scale. A second generation, including the India Infrastructure Finance Company Limited established in 2006, filled part of the space, but the underlying financing problem remained.

The asset-liability mismatch at the heart of that history is well documented for the Indian banking system. Rakhe (2012), in a Reserve Bank of India working paper, traced the extent and persistence of the mismatch and its concentration in long-gestation exposures. When banks fund twenty-five-year assets with deposits that reprice in months, credit and liquidity risk accumulate on the asset side, and infrastructure is where it accumulates fastest. This is the problem the newest institution was designed to solve. The National Bank for Financing Infrastructure and Development (NaBFID) was established under an Act of Parliament in 2021 as a statutory development finance institution and India's fifth All India Financial Institution, wholly owned by the Government of India and capitalised with an initial equity infusion of twenty thousand crore rupees together with a five thousand crore grant (Government of India, 2021; Reserve Bank of India, 2022). It is regulated and supervised by the Reserve Bank as an All India Financial Institution and commenced lending late in the 2022-23 financial year (Reserve Bank of India, 2022; National Bank for Financing Infrastructure and Development, 2024). Its mandate is explicitly long-term and non-recourse, and a substantial share of its early sanctions carry tenors of twenty to fifty years (National Bank for Financing Infrastructure and Development, 2024). Its funding is raised from bond markets, bank borrowings, and multilateral lines rather than deposits, which is precisely the design intended to match the tenor of its assets. NaBFID and its peers therefore make ideal conceptual subjects: their asset structures are dominated by exactly the long-tenor, sector-concentrated, project-linked exposures that the general theory struggles to treat as endogenous.

III. THEORETICAL FOUNDATIONS

Capital structure theory was built to explain the debt-equity choice, but each of its major strands carries implicit predictions about the asset side as well. Reading the theories for what they say about asset composition, rather than only about leverage, is where the synthesis begins. The starting point remains the irrelevance proposition of Modigliani and Miller (1958), later corrected for the tax shield of debt (Modigliani & Miller, 1963), against which every subsequent theory is a catalogue of the frictions that make structure matter.

A. Trade-off theory

The trade-off theory holds that firms balance the tax advantages of debt against the expected costs of financial distress, converging on an interior optimum (Kraus & Litzenberger, 1973; Myers, 1984). Its prediction for asset structure is direct: because distress costs fall when assets are tangible and redeployable, firms that carry more debt should also hold more collateralisable assets, and the two decisions reinforce each other. For a project finance institution the logic implies a portfolio tilted toward secured, hard-asset exposures that can anchor high leverage. The theory struggles, however, with a well-known empirical embarrassment: the most profitable firms, which have the most taxable income to shield, tend to borrow least, the reverse of what a simple trade-off predicts (Frank & Goyal, 2009; Rajan & Zingales, 1995). This anomaly is the opening through which the pecking order enters.

B. Pecking order theory

The pecking order, grounded in information asymmetry, argues that firms prefer internal funds, then debt, then equity as a last resort, so that observed structure reflects a financing history rather than a target (Myers, 1984; Myers & Majluf, 1984; and, in its original informal statement, Donaldson, 1961). Here profitable firms borrow less because they can self-finance, which fits the anomaly the trade-off theory cannot. For asset structure the pecking order is less prescriptive, but it implies that institutions constrained in their access to cheap external funds will let asset growth track the availability of retained earnings and low-cost debt, producing a lumpier, more opportunistic asset profile. Indian evidence has long been read as showing both theories at work rather than one dominating (Chakraborty, 2010), which is a caution against any framework that privileges a single mechanism.

C. Agency Theory

Agency theory locates the driver in conflicts of interest, between managers and shareholders and between shareholders and creditors (Jensen & Meckling, 1976). Debt disciplines managers by pre-committing free cash flow to fixed payments and reducing the funds available for empire-building (Jensen, 1986). In project finance this mechanism is unusually sharp, because non-recourse debt and a ring-fenced vehicle strip out managerial discretion almost entirely, and the high leverage itself is the governance device (Byoun et al., 2013; Müllner, 2017). The theory predicts that asset structures will be organised to make cash flows contractible and

monitorable, favouring assets whose output is sold under long-term contracts. It says less about the intermediating institution, whose own agency problem, a state-owned lender pursuing developmental as well as financial objectives, is different in kind.

D. Resource-based View

The resource-based view shifts attention from financing frictions to the firm's bundle of valuable, rare, and hard-to-imitate resources as the source of advantage (Barney, 1991; Wernerfelt, 1984). Applied here, it suggests that a project finance institution's asset structure reflects accumulated capabilities in appraisal, structuring, and monitoring rather than financing constraints alone. An institution that has built genuine expertise in, say, renewable energy will hold a portfolio concentrated there, not because the numbers forced it but because its capabilities make those assets more valuable in its hands than in a generalist's. The finance-centric theories are silent on this, and the resource-based view supplies a driver, organisational capability, that the determinants literature usually omits.

E. Institutional Theory

Institutional theory argues that organisations conform to the rules, norms, and expectations of their environment, and that this conformity, not efficiency alone, shapes their structures (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; North, 1990). The prediction for asset structure is that regulation, creditor rights, and legal enforcement will leave a heavy imprint, and that institutions in the same field will come to resemble one another through mimetic and coercive pressures. The comparative capital structure literature confirms the empirical bite of this: De Jong et al. (2008) and Öztekin (2015) show that country institutions condition firm financing, and Mazumder and Rao (2025) show that they moderate the tangibility-leverage link directly. For an Indian institution operating under Reserve Bank prudential norms and a specific statutory mandate, institutional pressures are arguably the strongest single force on asset composition.

F. Stakeholder Theory

Stakeholder theory holds that firms are accountable to a wider set of claimants than shareholders, including employees, communities, suppliers, and the state (Freeman, 1984). It is rarely invoked in capital structure work, yet it is indispensable for state-owned development finance institutions, whose principal stakeholder is a government pursuing public objectives. When the sovereign owns the lender, the asset structure is partly an instrument of policy, tilted toward sectors and regions the state wishes to develop even where a purely financial calculus would counsel otherwise. Stakeholder theory names this driver, which agency and trade-off theories, built on shareholder wealth maximisation, cannot accommodate.

G. Signaling Theory

Signaling theory treats financial decisions as devices for communicating private information to less-informed outsiders (Ross, 1977; Spence, 1973). A firm's willingness to take on debt or hold particular assets can signal management's confidence in future cash flows. For a project finance institution the signaling channel operates through its funding: a long-tenor bond issued at a fine spread over sovereign paper signals credit quality, and the ability to raise such funds in turn permits the institution to hold longer-dated assets (National Bank for Financing Infrastructure and Development, 2024). Signaling thus links the liability side to the asset side, reinforcing the paper's argument that asset structure cannot be understood in isolation from financing.

IV. FINANCIAL DRIVERS OF ASSET STRUCTURE

The determinants literature has catalogued the variables that move capital structure, and by extension asset structure, for decades. The most reliable firm-level factors have proved remarkably stable across studies and countries: size, profitability, tangibility, growth, and industry conditions recur as the core set (Frank & Goyal, 2009; Titman & Wessels, 1988). What that literature has done less well is organise these into levels and adapt them to institutions whose assets are project claims rather than plant and equipment. Kayo and Kimura (2011) took the decisive step of showing, through hierarchical modelling, that firm, industry, and country levels each contribute distinct variance to leverage, with firm and time levels dominating but country and industry adding real explanatory power. The framework below extends that logic downward to the project level and sideways to the financing level, giving five tiers suited to project finance institutions.

A. Firm-specific Drivers

At the institution level the classic determinants apply with modification. Size confers access to markets and diversification, and larger institutions can hold larger, more concentrated single exposures without threatening solvency (Frank & Goyal, 2009). Profitability and internal capital generation govern how far the institution can fund asset growth without external issuance, the pecking order channel (Myers & Majluf, 1984). Tangibility is nearly total for these lenders, since their assets are secured project claims, which shifts the interesting variation to the quality and enforceability of that security rather than its presence. Two firm-level drivers are distinctive to development finance institutions. The first is capital adequacy and the leverage the regulator permits, which sets a hard ceiling on asset growth. The second is ownership: sovereign ownership lowers the cost of funds through implicit and explicit guarantees and simultaneously imports policy objectives into the asset mix (Government of India, 2021; Reserve Bank of India, 2022), a point where the resource-based and stakeholder lenses do more work than the determinants tradition.

B. Project-specific Drivers

This tier has no counterpart in the ordinary firm literature and is where the project finance research earns its place. The risk profile of the underlying project, its completion risk, revenue certainty, and contractual protection, feeds directly into the institution's asset structure because it determines tenor, security, and pricing. Byoun et al. (2013) showed that leverage in project vehicles responds to project risk and to the presence of off-take agreements, and Corielli et al. (2010) showed that the surrounding non-financial contracts move loan spreads and capital structure. Aggregated across a portfolio, these project-level features determine how much of the institution's assets are long-tenor versus medium-tenor, contracted versus merchant, and concentrated in which sectors. Sectoral composition itself becomes a driver: a portfolio weighted toward operational renewable assets with power purchase agreements has a different risk and maturity structure than one weighted toward greenfield transport. The project tier, in short, translates deal-level engineering into institutional-level asset composition.

C. Financing Drivers

Because a development finance institution funds long assets with market borrowings rather than deposits, the terms on which it raises money shape what it can hold. Three variables matter most. The cost of funds relative to lending rates sets the spread and hence the viability of long-tenor assets; NaBFID's ability to place long bonds at a fine spread over government securities is what lets it match asset tenor without eroding margin (National Bank for Financing Infrastructure and Development, 2024). The depth of the domestic bond market determines whether long-dated funding exists at all, and India's shallow market has historically been the binding constraint (World Bank, 2025). Credit enhancement and blended finance, including partial credit guarantees and multilateral concessional lines, change the risk that the institution must retain and therefore the assets it can prudently hold (OECD, 2015; World Bank, 2025). The asset-liability mismatch documented by Rakhe (2012) is the negative image of this tier: where funding tenor cannot match asset tenor, the asset structure is forced shorter or riskier than the mandate intends.

D. Institutional Drivers

The institutional tier captures the rules within which the other tiers operate. Prudential regulation by the Reserve Bank sets exposure limits, provisioning norms, and capital requirements that directly bound sectoral and single-borrower concentration. Creditor rights and the speed of legal enforcement determine the realisable value of security and therefore how much weight collateral can bear, the mechanism Mazumder and Rao (2025) found to moderate the tangibility-leverage relationship across countries. The comparative literature is unambiguous that these country-level institutions shape firm financing, both directly and by altering the effect of firm-level variables (De Jong et al., 2008; Öztekin, 2015). Institutional theory adds the prediction that peer institutions will converge on similar asset structures through mimetic and coercive isomorphism (DiMaggio & Powell, 1983), a testable claim about whether India's infrastructure lenders come to resemble one another.

E. Macroeconomic Drivers

The outermost tier is the cycle. Interest rates, inflation, GDP growth, and fiscal space move both the demand for infrastructure credit and the cost of supplying it. Korajczyk and Levy (2003) established that macroeconomic conditions and financial constraints jointly drive capital structure choice, with constrained and unconstrained firms responding differently to the cycle. For infrastructure lenders the transmission is amplified: rate rises lengthen payback periods on already long assets, and fiscal stress alters the government's willingness and ability to backstop the institution.

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The scale of the underlying need, the multi-trillion-dollar gap quantified by the Global Infrastructure Hub and Oxford Economics (2017), sets the ceiling on how large these portfolios can grow, while the macroeconomic environment sets the pace at which they can be built safely.

V. CRITICAL LITERATURE SYNTHESIS

Read together, the three literatures agree on more than their separateness suggests, and they disagree in ways that are productive rather than merely unresolved. The firmest area of agreement is the core set of firm-level determinants. Across developed and emerging markets, size, profitability, tangibility, and growth recur with broadly consistent signs, and the reliability of this set is one of the field's genuine settled findings (Frank & Goyal, 2009; Titman & Wessels, 1988). The second point of agreement is that these firm-level relationships are not universal constants but are conditioned by industry and country, a conclusion that the hierarchical (Kayo & Kimura, 2011) and comparative (De Jong et al., 2008; Öztekin, 2015) work reached independently. The third is specific to project finance: leverage and contractual structure function as coupled risk-management instruments rather than as separate choices (Byoun & Xu, 2014; Byoun et al., 2013; Corielli et al., 2010).

The disagreements are equally instructive. The trade-off and pecking order theories continue to give opposing accounts of the profitability-leverage sign, and Indian evidence has refused to settle the matter decisively, reporting patterns consistent with both (Chakraborty, 2010; Chauhan, 2017; Handoo & Sharma, 2014; Saxena, 2022). The sign on tangibility is similarly unstable in Indian samples, which Mazumder and Rao (2025) help explain by making the relationship conditional on the institutional environment rather than fixed. These are not defects in the evidence so much as evidence that the underlying relationships are context-dependent, which is exactly what a multi-level framework predicts.

Three gaps emerge from the synthesis. First, the project finance literature studies the project vehicle's leverage but not the intermediating institution's asset structure, so the portfolio-level object of interest here has been largely unexamined. Second, the determinants literature treats asset structure as an explanatory variable rather than an outcome, leaving the reverse question, what drives asset structure, comparatively neglected. Third, almost none of this work addresses development finance institutions specifically, and even less addresses Indian ones, despite the recent creation of a statutory infrastructure bank whose entire design turns on managing the asset side. The framework that follows is built to occupy this space.

VI. PROPOSED CONCEPTUAL FRAMEWORK

The framework treats asset structure as an endogenous outcome, the dependent construct, produced by the interaction of five nested tiers of drivers. It adapts the hierarchical logic of Kayo and Kimura (2011) by adding a project tier below the firm and a financing tier alongside it, both of which are essential for institutions that fund long assets with market borrowings and hold project claims rather than operating assets.

The five tiers are ordered from the specific to the general. Firm-specific drivers (size, internal capital generation, capital adequacy, ownership) set the institution's capacity and objectives. Project-specific drivers (risk profile, contractual protection, tenor, sector) translate deal engineering into portfolio composition. Financing drivers (cost and tenor of funds, bond market depth, credit enhancement) determine what the institution can afford to hold. Institutional drivers (prudential regulation, creditor rights, enforcement, isomorphic pressure) bound and shape the whole. Macroeconomic drivers (rates, growth, fiscal space, the infrastructure gap) set the cycle and the ceiling.

Three features distinguish this framework from a simple list of determinants. It is nested rather than flat: outer tiers condition the effect of inner ones, so that the same firm-level variable behaves differently under different regulatory and macroeconomic regimes, consistent with the moderation results in the comparative literature (De Jong et al., 2008; Mazumder & Rao, 2025). It is endogenous with respect to asset structure: rather than using tangibility to explain leverage, it treats the whole asset profile, its tenor, concentration, and security, as the thing to be explained. And it is theory-plural: each tier is governed by the lenses best suited to it, which is why no single theory anchors the framework and why the classical finance theories are supplemented by the resource-based, institutional, and stakeholder views. The result is a structure in which the asset composition of an institution such as NaBFID is legible as the joint product of its own capabilities and objectives, the projects it appraises, the funds it can raise, the rules it obeys, and the cycle it operates in.

VII. MANAGERIAL AND POLICY IMPLICATIONS

For the managers of these institutions the framework reframes portfolio construction as an explicit balancing of tiers rather than a series of deal-by-deal decisions. If asset structure is endogenous to funding, then the tenor and pricing of liabilities should be managed jointly with the tenor and concentration of assets, and the asset-liability mismatch that undid earlier Indian development

finance institutions (Rakhe, 2012) becomes a first-order strategic variable rather than a treasury detail. The resource-based tier implies that deliberate capability-building in specific sectors is itself a driver of a defensible asset structure, which argues for specialisation over opportunistic diversification. The project tier implies that contractual risk allocation at origination, the presence of off-take or concession protection, should be read as a portfolio-shaping choice and not only a credit-appraisal one (Byoun et al., 2013; Corielli et al., 2010).

For policymakers the framework locates the binding constraints in the financing and institutional tiers. A shallow bond market caps the availability of the long-dated funding on which safe long-tenor assets depend, so measures that deepen it, including partial credit enhancement to lift bond ratings and broaden the investor base, act directly on asset structure (OECD, 2015; World Bank, 2025). Creditor rights and the speed of enforcement determine the realisable value of security and therefore how much collateral can bear, which means that insolvency and enforcement reform is capital structure policy by another name (Mazumder & Rao, 2025). Prudential calibration matters symmetrically: rules loose enough to permit useful concentration in genuine areas of capability, but tight enough to prevent the repetition of past concentration failures. None of these are new instruments, but the framework clarifies why they operate on the asset side and not only the liability side. These observations are analytical rather than prescriptive, and any specific reform requires the country- and time-specific evidence the review deliberately does not supply.

VIII. FUTURE RESEARCH AGENDA

The most direct empirical opportunity is to take asset structure as a dependent variable at the institutional level and test the five-tier framework against panel data on Indian development finance institutions and their peers, a design that would invert the usual specification in which tangibility sits on the right-hand side. Because the newest institutions have short histories, early work will necessarily be cautious about statistical power, and the review's refusal to fabricate findings should be read as an invitation to build that evidence rather than assume it.

Several specific questions follow. Does isomorphism operate among India's infrastructure lenders, so that their asset structures converge, as institutional theory predicts (DiMaggio & Powell, 1983)? How much of the variance in institutional asset structure is attributable to each tier, replicating the variance-decomposition logic of Kayo and Kimura (2011) at a new level of analysis? Does sovereign ownership measurably tilt asset composition toward policy priorities, testing the stakeholder channel against the financial one (Freeman, 1984)? Does the depth of bond market access, and the availability of credit enhancement, causally lengthen the tenor of assets held (OECD, 2015; World Bank, 2025)? And does the tangibility moderation that Mazumder and Rao (2025) found across countries also appear within India across time as creditor rights and enforcement evolve? Each question is answerable with existing methods once the data accumulate, and each would test a distinct edge of the framework rather than the framework as an undifferentiated whole.

A second line of work is comparative. Placing Indian institutions alongside development finance institutions in other emerging markets would show whether the five-tier structure travels, and whether the Indian configuration of shallow bond markets and strong sovereign backing produces a distinctive asset profile. A third line is conceptual: integrating sustainability and climate objectives, increasingly central to infrastructure mandates, into the stakeholder and institutional tiers, since green and transition finance change both the projects appraised and the rules applied.

IX. CONCLUSION

The asset structure of a project finance institution is not a given from which financing follows. It is an outcome, shaped by the institution's own capabilities and objectives, by the projects it chooses to appraise, by the funds it can raise and on what terms, by the regulatory and legal rules it operates under, and by the macroeconomic cycle. Reading it that way requires stitching together three literatures that have mostly worked apart: the determinants tradition that catalogued the firm-level drivers, the project finance research that showed leverage and contracts to be coupled risk-management tools, and the multi-level accounts that placed firm decisions inside industry and country contexts. This review has argued that the join is worth making, has made the theoretical disagreements explicit rather than smoothing them over, and has proposed a five-tier framework that treats asset structure as the endogenous product of firm-specific, project-specific, financing, institutional, and macroeconomic drivers. India's recently rebuilt infrastructure financing architecture, with a statutory development bank at its centre and a long history of asset-liability failure behind it, is an unusually clear setting in which to test the framework. The empirical work remains to be done, and the honest conclusion of a conceptual paper is to have specified precisely what that work should ask.

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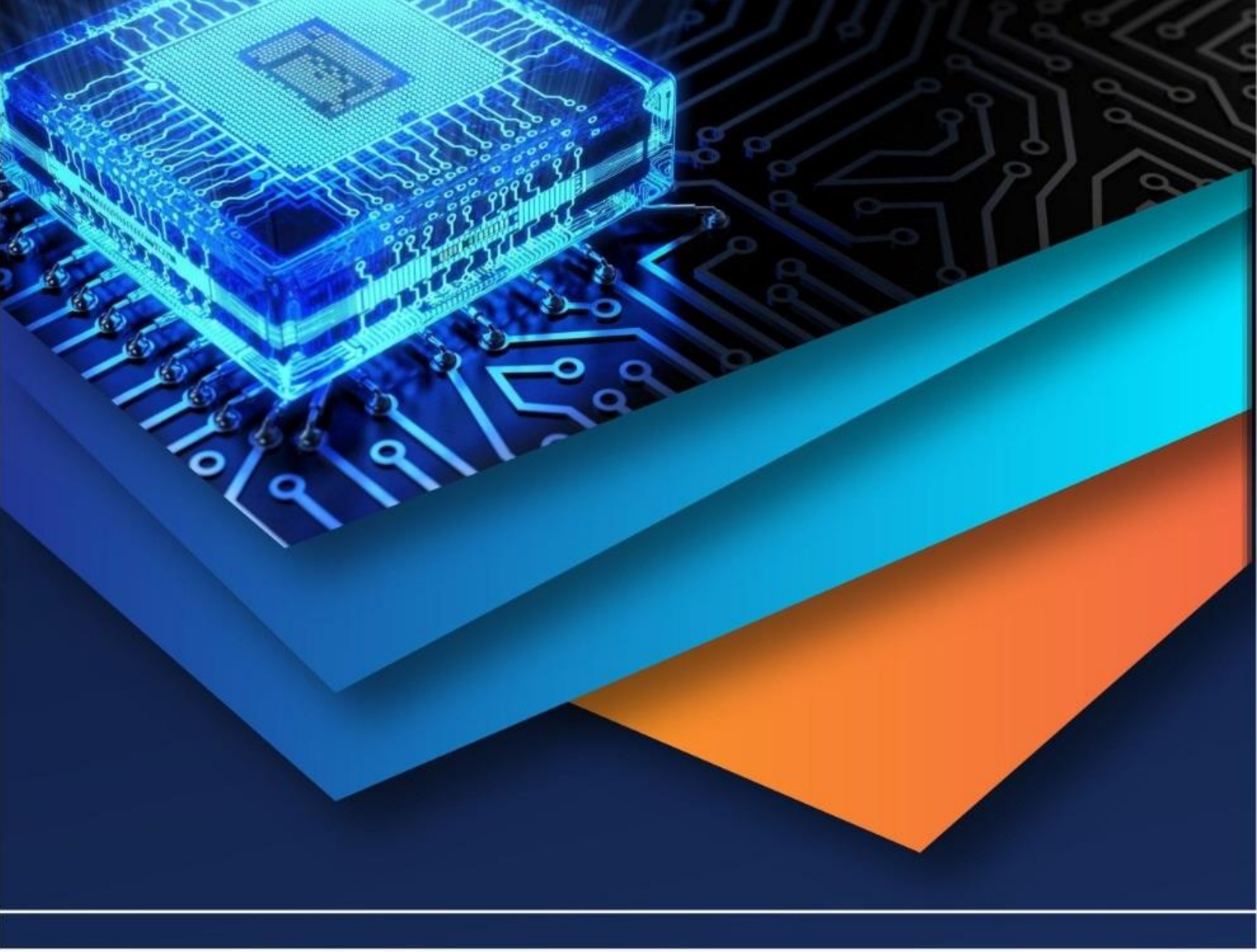

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