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Modern Sources of Investment Project Financing: Bank Lending, Private Capital, and International Financial Institutions

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Abstract. The financing of investment projects is undergoing a structural reconfiguration. Bank lending remains the backbone of commercial project debt, capital markets and non-bank lenders are expanding their role, and international financial institutions (IFIs) increasingly act as catalysts of private capital rather than substitutes for it. Using a desk-based triangulation of internationally recognized datasets for 2023–2026 (UNCTAD, World Bank, joint multilateral development bank (MDB) reports, Project Finance International, IJGlobal, IMF), the paper compiles a comparative indicator set and derives several ratios. Global commercial project finance loans grew from US$355.0 billion in 2023 to US$591.4 billion in 2025 (a compound annual growth rate of 29.1%), and loans still account for more than 83% of commercial project debt. Private participation in infrastructure in low- and middle-income countries reached US$100.7 billion in 2024, roughly 2.5% of the annual investment gap for the Sustainable Development Goals. Private finance mobilized per dollar of MDB climate finance in high-income countries is about five times that in low- and middle-income countries. The paper proposes a risk-layered financing architecture that allocates funding sources along the project life cycle and formulates recommendations for sponsors, lenders, IFIs, and policymakers.

Keywords: project finance; bank lending; private capital; multilateral development banks; blended finance; private finance mobilization; infrastructure investment

Introduction

1. Background and relevance. Investment projects in infrastructure, energy, transport, and digital connectivity involve large upfront outlays, long construction periods, and revenues that accrue over decades. How they are financed therefore determines not only their cost of capital but also the allocation of construction, market, regulatory, and political risks. The need is considerable: UN Trade and Development (UNCTAD) estimates the investment gap for the Sustainable Development Goals (SDGs) in developing countries at more than US$4 trillion per year (UNCTAD, 2025), and closing infrastructure and climate gaps requires a step change in both public and private finance (Bhattacharya et al., 2016).

Three families of sources dominate. Commercial banks remain the principal providers of project debt, although their capacity is shaped by prudential regulation. Private capital, comprising foreign direct investment (FDI), private equity, infrastructure funds, institutional investors, and a

growing private credit sector, supplies equity and increasingly long-tenor debt. International financial institutions, here multilateral development banks (MDBs) and development finance institutions (DFIs), provide long-term lending, guarantees, and technical assistance and are expected to mobilize private capital by absorbing risks that commercial investors are unwilling to hold.

Recent data are mixed. Global FDI rose by 6% to US$1.6 trillion in 2025, but inflows to developing economies grew by only 2% and the 20 largest hosts attracted more than 80% of the total (UNCTAD, 2026). Commercial project finance loans reached a record US$591.4 billion in 2025 (Project Finance International [PFI], 2026a), and MDBs and DFIs mobilized a record US$278.5 billion of private finance in 2024 (MDB Task Force on Mobilization, 2026), yet UNCTAD (2025) recorded a 26% fall in international project finance in 2024. The question is how these sources relate to one another and where they fall short.

2. Theoretical foundations and literature. Corporate finance theory provides the starting point. In the frictionless setting of Modigliani and Miller (1958) the financing mix does not affect value, but real projects face information asymmetries (Myers & Majluf, 1984), agency conflicts (Jensen & Meckling, 1976), and credit rationing (Stiglitz & Weiss, 1981). These frictions explain why banks act as delegated monitors (Diamond, 1984) and why project finance exists: a stand-alone special-purpose vehicle with limited recourse to sponsors and a network of risk-allocating contracts concentrates monitoring and aligns incentives (Esty, 2004). Hainz and Kleimeier (2012), analyzing 4,978 syndicated loans in 64 countries, showed that higher political risk raises the likelihood of limited-recourse loans and of development-bank participation, consistent with development banks acting as mitigants of political risk.

Regulation and market structure add a further layer. Irani et al. (2021) showed that less-capitalized banks reduce loan retention in response to capital requirements, with nonbanks stepping in, while Acharya et al. (2024) argue that bank and non-bank intermediaries are so interwoven that risks have been transformed rather than migrated. The International Monetary Fund (IMF, 2024) documented private credit growth to about US$2 trillion and warned of opacity and leverage. Mazzucato and Penna (2016) argue that state investment banks play market-creating roles, whereas Attridge and Engen (2019) caution that blended finance has contributed less in the poorest countries than often assumed.

3. Research gap, aim, and contribution. Three gaps remain. First, bank lending, private capital, and IFI finance are usually studied in isolation, although in practice they are combined within the same transaction. Second, the datasets that describe them use different definitions, which makes cross-source conclusions fragile. Third, evidence from 2025 and 2026 has not yet been integrated into a coherent framework. The aim of this paper is therefore to assess the scale, structure, and complementarity of modern sources of investment project financing and to propose a framework for combining them. RQ1: How have the scale and structure of bank lending, private capital, and IFI finance evolved over 2023–2025? RQ2: What do cross-source indicators reveal about complementarities and gaps, particularly in private finance mobilization in low- and middle-

income countries? RQ3: How can the sources be combined into a coherent financing architecture, and what are the implications for practice and policy?

The novelty of the paper lies in three contributions: an integrated comparative indicator set for the three source families; a simple diagnostic, mobilization intensity by income group, which reveals a fivefold difference between high-income and low- and middle-income countries; and a risk-layered financing architecture that sequences sources along the project life cycle and yields testable propositions.

Materials and Methods.

1. Research design and data sources. The study is a descriptive, comparative, desk-based triangulation of secondary data, not an econometric test: no primary data were collected and no statistical inference is drawn. This suits a problem for which no single harmonized dataset exists, since triangulation across independent providers reduces reliance on any single definition. Sources were selected if they were (i) published by an intergovernmental organization, a multilateral institution, or a recognized commercial provider with documented methodology; (ii) covering 2023–2025, with 2026 publications used where available; (iii) relevant to one of the three source families; and (iv) publicly accessible. Bank lending and bond debt were covered by PFI league tables (PFI, 2025, 2026a, 2026b) and IJGlobal (2026); private capital by UNCTAD's World Investment Reports (UNCTAD, 2025, 2026), the World Bank's Private Participation in Infrastructure (PPI) database (World Bank, 2025), and the IMF Global Financial Stability Report (IMF, 2024); and IFI activity by the joint MDB/DFI report on private finance mobilization (MDB Task Force on Mobilization, 2026; European Investment Bank [EIB], 2026), MDB climate finance reporting (Asian Development Bank [ADB], 2025), and the statement of the MDB heads (Heads of Multilateral Development Banks, 2025).

2. Analytical procedure. Analysis proceeded in four steps: indicators were tabulated by source family; definitional differences among providers were documented; four derived indicators were calculated; and a qualitative source-fit assessment was carried out. The derived indicators are the compound annual growth rate (CAGR) of project finance loans over 2023–2025, (V2025 / V2023)^(1/2) − 1; the loan share of commercial project debt, loans divided by loans plus project bonds; a mobilization intensity ratio (MI), private finance mobilized divided by MDB own-account climate finance in the same income group; and a scale ratio of annual private participation in infrastructure to the annual SDG investment gap (all author's calculations). In the source-fit assessment, each source family was evaluated against three criteria: (a) capacity to absorb project-specific risks (construction, market, political, currency); (b) tenor and cost of capital; and (c) catalytic effect, i.e., the ability to attract additional private funding. This underlies the framework in Section 4.2.

3. Data comparability. The datasets differ in scope. PPI records primary-market projects reaching financial close in low- and middle-income countries in which private parties assume operating risk, excluding refinancings (World Bank, 2025); PFI records commercial project finance loans and bonds and reports multilateral lending separately (PFI, 2025); IJGlobal applies a broader definition (IJGlobal, 2026); UNCTAD compiles announced deals (UNCTAD, 2025); and MDB

mobilization follows a joint attribution methodology that is being updated (EIB, 2026). Figures from different providers are therefore not additive and are compared only cautiously; published figures are also revised, and commercial league tables are subscription-only, so public summaries were used.

Results

1. Bank lending and the commercial debt market. According to PFI, the global project finance loan market expanded from US$355.0 billion in 2023 to US$417.4 billion in 2024 (+17.5%) and US$591.4 billion in 2025 (+41.6%) (PFI, 2025, 2026a), a CAGR of 29.1% over 2023–2025. Project bond issuance was flat in 2023–2024 (US$63.5 and 63.7 billion) but increased by 82.8% to US$116.5 billion in 2025. Loans thus accounted for 84.8% of the combined loan-and-bond market in 2023, 86.8% in 2024, and 83.5% in 2025: banks remain dominant, but the lower 2025 share indicates that capital markets are gaining ground.

The 2025 expansion was strongly influenced by digital infrastructure: data-centre project loans reached just over US$100 billion, roughly one-sixth of all project finance loans (PFI, 2026b; author's calculation), although market participants noted some fatigue in data-centre debt by year-end. The distribution is highly uneven: North America and Europe account for about 77% of the US$1.174 trillion global project finance total reported by IJGlobal (2026; author's calculation), and the gap between this total and PFI's US$707.9 billion for the commercial market shows how strongly totals depend on provider definitions.

2. Private capital. Global FDI rose by 4% to US$1.5 trillion in 2024 but fell by 11% excluding volatile conduit flows through European financial centers (UNCTAD, 2025). In 2025 it increased by 6% to US$1.6 trillion; inflows to developed economies grew by 11%, whereas developing economies recorded growth of only 2% to US$901 billion, about 56% of the total (UNCTAD, 2026). The composition is shifting: strategic sectors (AI infrastructure, semiconductors, critical minerals, energy-transition technologies) accounted for 44% of global greenfield project values in 2025, up from 16% in 2020, driven mainly by data centers, while renewable energy, infrastructure, and manufacturing declined. Low-income and lower-middle-income economies attracted only about 10% of strategic-sector investment in 2020–2025, versus more than 20% in other sectors.

Within infrastructure, the World Bank's PPI database records US$100.7 billion of private participation in low- and middle-income countries in 2024, 16% above 2023 and 20% above the five-year average, the first time since the COVID-19 pandemic that PPI exceeded US$100 billion (World Bank, 2025). Relative to an SDG investment gap above US$4 trillion per year (UNCTAD, 2025), this is roughly 2.5% (author's calculation). Private credit, a further channel of long-term debt, held about US$2 trillion in assets (IMF, 2024).

3. International financial institutions. MDBs and DFIs mobilized a record US$278.5 billion of private finance in 2024, 27% more than in 2023, of which US$108.7 billion (+24%) went to middle- and low-income countries (MDB Task Force on Mobilization, 2026). Banking and business services and debt instruments each accounted for around 40% of mobilization in these countries (EIB, 2026).

MDB climate finance reached a record US$137 billion in 2024 (+10%), of which US$85.1 billion went to low- and middle-income economies; private finance mobilized for climate investment amounted to US$134 billion, of which US$33 billion related to low- and middle-income economies and US$101 billion to high-income economies, against MDB own climate finance of US$51.5 billion in the latter group (ADB, 2025). The resulting mobilization intensity is 0.39 in low- and middle-income countries (33.0 / 85.1) and 1.96 in high-income countries (101.0 / 51.5), a ratio of approximately 5.1 to 1 (author's calculations). MDB capital adequacy reforms have also raised additional lending headroom over the next decade to more than US$650 billion (Heads of Multilateral Development Banks, 2025).

4. Cross-source synthesis. Table 1 summarizes the main indicators. Three regularities emerge. First, commercial bank lending is the largest pool of project debt and grew rapidly, but it is concentrated in high-income markets and a few sectors. Second, private capital is large in aggregate but selective: low-income and lower-middle-income economies attracted only about 10% of strategic-sector investment, and PPI covers a small fraction of the financing gap. Third, IFIs mobilize record volumes, but mobilization intensity in low- and middle-income countries is much lower than in high-income countries.

Table 1. Selected indicators of investment project financing by source family

Indicator	Value	Source
Bank lending: global project finance loans, 2023 / 2024 / 2025	US$355.0 / 417.4 / 591.4 billion	PFI (2025, 2026a)
Bank lending: global project bond issuance, 2023 / 2024 / 2025	US$63.5 / 63.7 / 116.5 billion	PFI (2025, 2026a)
Private capital: PPI in low- and middle-income countries, 2024	US$100.7 billion (+16%)	World Bank (2025)
IFIs: private finance mobilized by MDBs and DFIs, 2024 (all countries / low- and middle-income)	US$278.5 / 108.7 billion	MDB Task Force on Mobilization (2026)
IFIs: MDB climate finance, 2024 (global / low- and middle-income)	US$137 / 85.1 billion	ADB (2025)

Note. Values as published; derived ratios are the author's calculations. Figures from different providers are not additive (Section 2.3). PFI = Project Finance International; FDI = foreign direct investment; PPI = private participation in infrastructure; IFIs = international financial institutions; MDBs = multilateral development banks.

Discussion.

1. Interpretation of the results. Three findings stand out. First, bank lending remains the backbone of commercial project debt but is evolving. A CAGR of 29.1% and a loan share of 83.5–86.8% confirm the role of banks as delegated monitors and structurers of non-recourse debt (Diamond, 1984; Esty, 2004), while the 82.8% rise in project bond issuance in 2025 suggests that

capital markets absorb a growing portion of long-tenor funding, with banks originating and structuring while other investors hold risk (Irani et al., 2021; Acharya et al., 2024). Data-centre lending, at roughly one-sixth of all loans, creates sector concentration that lenders and supervisors should monitor.

Second, private capital is plentiful in aggregate but selective in allocation. The 2025 FDI recovery was concentrated in a few countries and capital-intensive strategic sectors, and infrastructure registered declines (UNCTAD, 2026). PPI of US$100.7 billion is only about 2.5% of the annual SDG investment gap, and private credit, given its opacity and leverage (IMF, 2024), is an uncertain substitute for regulated bank lending. Private capital follows risk-adjusted returns and by itself is unlikely to close infrastructure gaps in high-risk jurisdictions, where information asymmetries and agency problems are most severe (Jensen & Meckling, 1976; Myers & Majluf, 1984).

Third, IFIs mobilize record volumes, but mobilization intensity differs sharply across income groups: about 0.39 in low- and middle-income countries and 1.96 in high-income countries. This is consistent with Hainz and Kleimeier (2012), who found that development banks join syndicates where political risk is high, and suggests that where risks are greatest, current instruments attract fewer co-financiers per public dollar. The ratios are not measures of relative efficiency, since they reflect different risk environments and the attribution methodology is being revised (EIB, 2026), and much mobilization reaches projects only indirectly through banking and business services. These results echo Attridge and Engen (2019) and support Mazzucato and Penna's (2016) view that public banks should be judged by their capacity to create and shape markets, not only by the volume they lend.

The divergence between UNCTAD's 26% fall in international project finance in 2024 and PFI's 17.5% rise in commercial loans probably reflects differences in scope and timing: UNCTAD compiles internationally financed projects from announcements, whereas PFI records commercial loans at financial close, including largely domestic deals (IJGlobal, 2026).

2. A risk-layered financing architecture. The results suggest that bank lending, private capital, and IFI finance are best understood as complementary layers rather than competing alternatives. This paper therefore proposes a risk-layered financing architecture (RLFA), summarized in Table 2, which assigns each source to the project life-cycle stage and the risks it is best placed to absorb, building on the delegated-monitoring logic of bank lending (Diamond, 1984), the risk-allocation logic of project finance (Esty, 2004), and the political-risk-mitigation role of development banks (Hainz & Kleimeier, 2012).

Table 2. Risk-layered financing architecture for investment projects

Layer and project stage	Lead sources	Principal risks absorbed	Typical instruments
L1. Preparation and early	IFIs and DFIs, public sponsors, concessional	Pipeline, regulatory, and	Project-preparation grants, first-loss tranches, equity,

development	donors	development risk	technical assistance
L2. Construction	Commercial bank syndicates with IFI participation	Completion, political, and currency risk	Non-recourse syndicated loans, IFI co-lending, guarantees, political-risk insurance
L3. Ramp-up and stable operation	Banks, project bonds, private equity and infrastructure funds	Demand and operating risk	Term loans, project bonds, sponsor equity, hedging
L4. Refinancing and capital recycling	Institutional investors, private credit funds, bond markets	Interest-rate and refinancing risk	Bond refinancing, asset sales, long-tenor private placements

Note. Author's framework, based on the source-fit assessment (Section 2.2).

The RLFA sequences sources along the life cycle instead of ranking them, links each layer to the risks a source is best placed to absorb, and introduces mobilization intensity as a diagnostic of the IFI layer. Three testable propositions follow. Proposition 1: the larger the share of project risks that commercial lenders cannot diversify (political, currency, completion), the greater the marginal contribution of IFI guarantees and first-loss capital relative to direct IFI lending. Proposition 2: refinancing of operating projects into capital markets and institutional portfolios (Layer 4) releases bank balance-sheet capacity and increases the system-wide throughput of new projects. Proposition 3: reporting mobilization intensity by income group and instrument, rather than in aggregate, improves the targeting of scarce concessional resources.

3. Practical recommendations. For policymakers in host countries, the priority is to build bankable project pipelines and reduce the risks that governments can influence: standardized concession and public-private partnership contracts, credible tariff and dispute-resolution frameworks, and project-preparation facilities (Layer 1), together with rules allowing domestic pension and insurance funds to hold operating infrastructure assets (Layer 4).

For commercial banks and sponsors, IFI participation and guarantees should be used deliberately as mitigants of political and completion risk in Layer 2 (Hainz & Kleimeier, 2012), followed by refinancing into bond and institutional markets once construction risk is retired; lenders should also set concentration limits for fast-growing segments such as data centers (PFI, 2026b).

For IFIs, the priority is to convert new lending headroom of more than US$650 billion (Heads of Multilateral Development Banks, 2025) into instruments that transfer risk directly (guarantees, first-loss tranches, local-currency lending) and to report mobilization intensity by income group and instrument under the updated joint methodology (EIB, 2026).

For regulators, the interconnection of banks and non-banks (Acharya et al., 2024; IMF, 2024) implies that oversight should follow the links between the sectors, including bank credit lines to private credit funds, supported by consistent data on non-bank exposures to infrastructure.

4. Limitations and directions for further research. The study relies on secondary data whose definitions differ across providers; the derived ratios are indicative, not causal. The period is

short (2023–2025), figures are subject to revision, and the propositions of Section 4.2 have not been tested econometrically. Future research could use loan-level syndicated lending data to test Propositions 1 and 2 and evaluate the additionality of concessional resources ex post.

Conclusions. This paper examined bank lending, private capital, and IFIs as sources of investment project financing. In response to RQ1, commercial project finance loans grew at a CAGR of 29.1% over 2023–2025 to US$591.4 billion and still make up more than 83% of commercial project debt, while project bonds grew by 82.8% in 2025; FDI recovered to US$1.6 trillion but became more concentrated; and MDBs and DFIs mobilized a record US$278.5 billion of private finance in 2024. In response to RQ2, PPI in low- and middle-income countries covers only about 2.5% of the annual SDG investment gap, and private finance mobilized per dollar of MDB climate finance is about five times higher in high-income than in low- and middle-income countries. In response to RQ3, the paper proposes a risk-layered financing architecture that assigns each source to the stage and risk category where it has a comparative advantage.

The main implication is that scaling up project finance where it is most needed depends less on the aggregate volume of capital than on the allocation of risk: instruments that transfer political, currency, and completion risk, together with refinancing channels that recycle bank capital, are the levers through which the three source families can reinforce one another. Future research should test the propositions with transaction-level data and refine the measurement of mobilization.

Data availability. All data analyzed are from the publicly available sources cited in the text; derived indicators can be reproduced from the reported figures.

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References

1. Acharya, V. V., Cetorelli, N., & Tuckman, B. (2024). Where do banks end and NBFIs begin? (NBER Working Paper No. 32316). National Bureau of Economic Research. https://doi.org/10.3386/w32316
2. Asian Development Bank. (2025, September 9). Multilateral development banks hit record $137 billion in climate finance. https://www.adb.org/news/multilateral-development-banks-hit-record-137-billion-climate-finance
3. Attridge, S., & Engen, L. (2019). Blended finance in the poorest countries: The need for a better approach. Overseas Development Institute.
4. Bhattacharya, A., Meltzer, J. P., Oppenheim, J., Qureshi, Z., & Stern, N. (2016). Delivering on sustainable infrastructure for better development and better climate. Brookings Institution.
5. Diamond, D. W. (1984). Financial intermediation and delegated monitoring. The Review of Economic Studies, 51(3), 393–414. https://doi.org/10.2307/2297430
6. Esty, B. C. (2004). Why study large projects? An introduction to research on project finance. European Financial Management, 10(2), 213–224.
7. European Investment Bank. (2026). New report on mobilization of private finance by multilateral development banks and development finance institutions shows record levels

[Press release]. https://www.eib.org/en/press/news/new-report-on-mobilization-of-private-finance-by-multilateral-development-banks-and-development-finance-institutions-shows-record-levels

8. Hainz, C., & Kleimeier, S. (2012). Political risk, project finance, and the participation of development banks in syndicated lending. Journal of Financial Intermediation, 21(2), 287–314. https://doi.org/10.1016/j.jfi.2011.10.002
9. Heads of Multilateral Development Banks. (2025, June 28). Heads of multilateral development banks commit to strong joint action on development priorities [Joint statement]. World Bank. https://www.worldbank.org/en/news/statement/2025/06/28/heads-of-mdbs-commit-strong-joint-action-on-development-priorities
10. IJGlobal. (2026, January 26). IJGlobal full-year 2025 infrastructure and project finance league table report. Green Street. https://www.greenstreet.com/?p=15388
11. International Monetary Fund. (2024). Global financial stability report: The last mile: Financial vulnerabilities and risks (April 2024). https://www.imf.org/en/Publications/GFSR/Issues/2024/04/16/Global-Financial-Stability-Report-April-2024
12. Irani, R. M., Iyer, R., Meisenzahl, R. R., & Peydró, J.-L. (2021). The rise of shadow banking: Evidence from capital regulation. The Review of Financial Studies, 34(5), 2181–2235. https://doi.org/10.1093/rfs/hhaa106
13. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics, 3(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X
14. Mazzucato, M., & Penna, C. C. R. (2016). Beyond market failures: The market creating and shaping roles of state investment banks. Journal of Economic Policy Reform, 19(4), 305–326.
15. MDB Task Force on Mobilization. (2026). Mobilization of private finance by multilateral development banks and development finance institutions: 2024 joint report. International Finance Corporation. https://www.ifc.org/en/insights-reports/2026/mobilization-of-private-finance-by-mdbs-dfis-2024-joint-report
16. Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. The American Economic Review, 48(3), 261–297.
17. Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics, 13(2), 187–221. https://doi.org/10.1016/0304-405X(84)90023-0
18. Project Finance International. (2025). Global PF – Loans up, bonds static [League table summary for 2024]. https://www.pfie.com/americas/1471767/pfi-help
19. Project Finance International. (2026a). PFI financial tables 2025. https://www.pfie.com/global/2376006/pfi-help
20. Project Finance International. (2026b). A surprising result (Issue 809, 29 January–11 February 2026). https://www.pfie.com/global/2375933/pfi-help

21. Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. The American Economic Review, 71(3), 393–410.
22. UNCTAD. (2025). World investment report 2025: International investment in the digital economy. United Nations. https://unctad.org/publication/world-investment-report-2025
23. UNCTAD. (2026). World investment report 2026: International investment in a turbulent era (Chapter I). United Nations. https://unctad.org/system/files/official-document/wir2026_ch01_en.pdf
24. World Bank. (2025). Private participation in infrastructure (PPI): 2024 annual report. https://ppi.worldbank.org/content/dam/PPI/documents/PPI-2024-Annual-Report-Interactive.pdf