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Principal Private Infrastructure Debt



Stable income from backbone assets: An institutional investor's introduction to infrastructure debt

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EXECUTIVE SUMMARY

Infrastructure debt has moved from a niche segment of private debt to a core institutional asset class. It provides exposure to essential, long-duration assets, often supported by contractual or regulated cash flows. Global issuance reached a record \$1.5 trillion in 2025, crossing the \$1.0 trillion threshold for the fifth straight year.

This growth reflects more than a search for yield. Rising sovereign debt, geopolitical realignment, accelerating demand for physical and digital infrastructure, and the retreat of traditional lenders are expanding the opportunity set for private capital.

For institutional investors, infrastructure debt sits at the intersection of credit and real assets. It can offer durable income, capital preservation, diversification, and exposure to assets with return drivers that are generally less correlated with traditional strategies.

As a result, infrastructure debt is increasingly viewed not only as a relative value opportunity, but as a strategic allocation that helps finance the essential systems underpinning economic growth.

What is infrastructure?

Infrastructure means backbone assets that help the modern world function. Typically, these assets are physical facilities, networks, or systems. The common link across all the different types of infrastructure is that they enable economic, social, and operational function for specific communities, industries, and governments. These assets have relatively inelastic demand and are designed to deliver services over periods that can extend up to 100 years.



Power

Utilities, power generation, transmission, and electrification



Energy

Midstream pipelines and LNG



Transportation and logistics networks

Ports, airports, roads, railways



Digital infrastructure

Data centers, fiber, wireless networks, GPUs, and TPUs



Social infrastructure

Healthcare, education, public-private partnerships, stadiums, and arenas

Long-term demand drivers

Sustained investment in essential assets continues to expand the addressable market. Key forces driving this trend are government fiscal constraints, policy focused on infrastructure, long-term shifts in capital markets and lending, energy transition, and digital buildout.

Fiscal constraints and the expanding role of private capital

Governments around the world face perpetual fiscal constraints. Public debt levels are elevated and expected to continue rising, limiting the ability of public balance sheets to fully fund infrastructure investment. At the same time, demand for infrastructure—both replacement and new capacity—continues to expand. Private capital is playing an increasingly central role.

McKinsey estimates \$106.0 trillion in new investment is necessary through 2040 to meet the need for new and updated infrastructure. The required investment spans seven critical infrastructure verticals: transport and logistics (\$36 trillion), energy and power (\$23 trillion), digital (\$19 trillion), social (\$16 trillion), waste and water infrastructure (\$6 trillion), agriculture (\$5 trillion), and defense (\$2 trillion).

Infrastructure is becoming a strategic priority at national levels

In many countries around the world, infrastructure is no longer background policy, it is a national priority. Robust supply chains, energy security, strategic control of critical infrastructure, and technological competitiveness are paramount.

These shifts will continue to drive a new wave of infrastructure investment across regions with a focus on long-duration assets integral to local economies.

Bank retrenchment and the rise of private lenders

Regulatory changes and balance sheet constraints have reduced the ability of traditional banks to originate long-duration debt or complex infrastructure loans. This has created a financing gap, which institutional investors and private lenders increasingly fill through direct origination and institutional clubs.

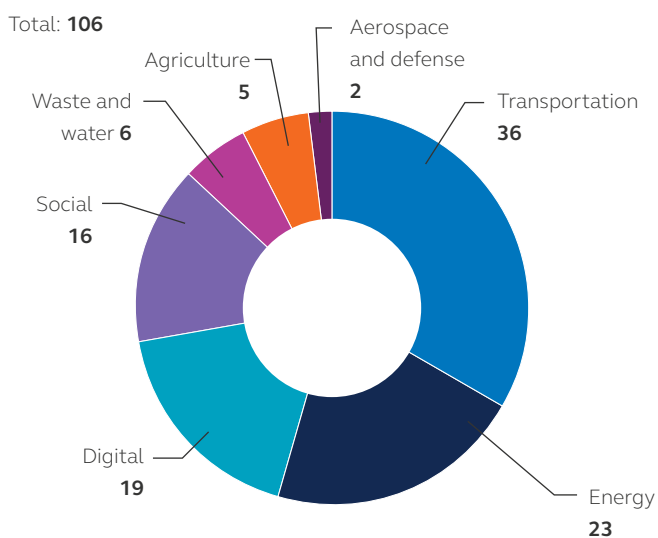
Big picture trends: Renewables, grid modernization, and digital buildout

Other big picture trends driving infrastructure investment include machine intelligence, energy transition, digitization, sustainable transport, and the globalization of trade. Some aspects of these trends are connected. The strong demand for new data centers is driving the spike in power demand across all generation types.

The infrastructure debt opportunity

Infrastructure debt has developed into a large and growing global market, with significant issuance volumes and a deepening institutional investor base. Preqin estimates dry powder across private equity infrastructure sponsors is over \$300 billion, which implies there is untapped demand for debt financing. Importantly, a growing share of transactions are now privately originated and negotiated, increasing the value of sourcing capabilities, structuring expertise, and active asset management.

EXHIBIT 1: Total infrastructure investment projected through 2040, by sector, \$ trillion

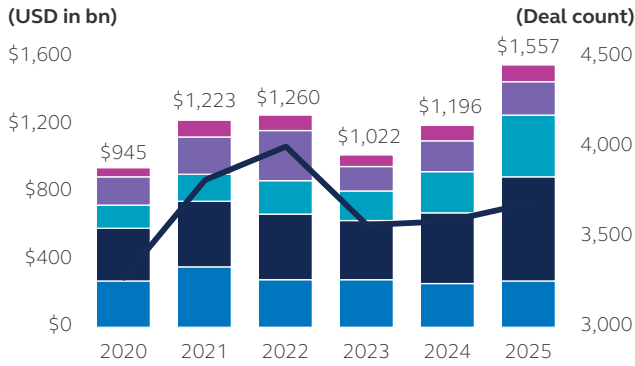


Source: McKinsey & Company, Food and Agriculture Organization, Global Infrastructure Hub, International Energy Agency, International Monetary Fund, Organization for Economic Co-operation and Development, Preqin, United Nations, World Bank, World Economic Forum, September 2025

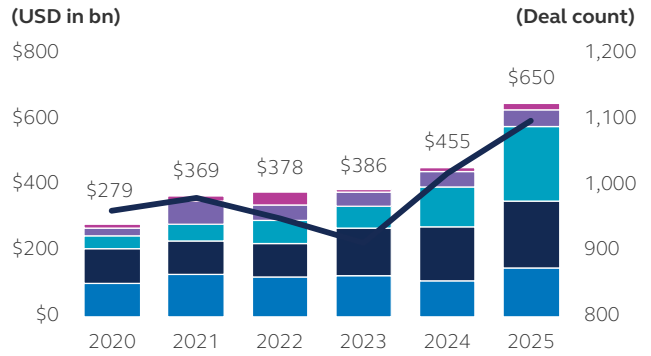
EXHIBIT 2: Deal volumes by geography

Legend reads bottom to top: Energy Power Digital Transportation Social

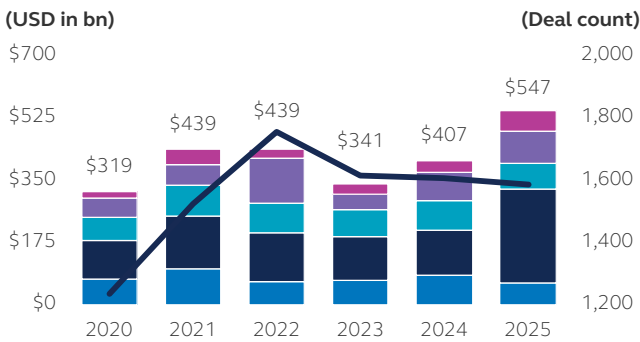
Global deal volume (2020-present)



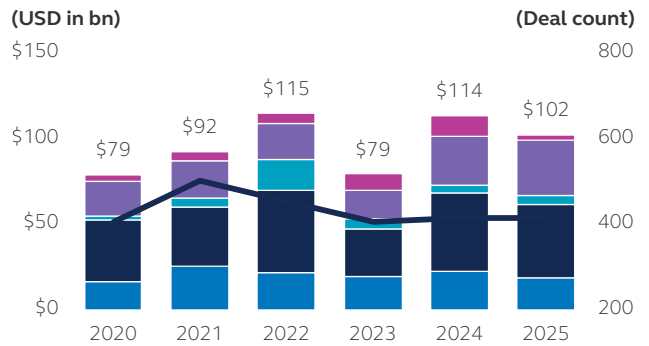
North America deal volume (2020-present)



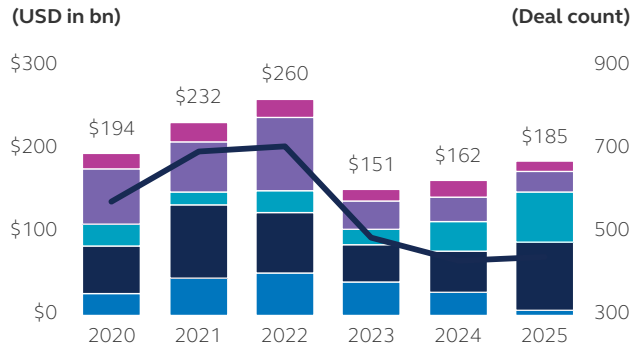
Europe deal volume (2020-present)



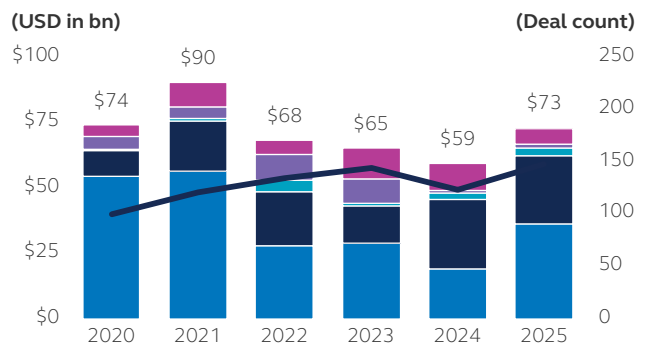
Latin America deal volume (2020-present)



Asia-Pacific deal volume (2020-present)



Middle East & Africa deal volume (2020-present)



Source: Infralogic, January 2026

How to define infrastructure debt

Private infrastructure debt consists of directly negotiated loans, notes, and credit instruments that support infrastructure assets or operating entities. Common investment characteristics include:

1 Income generation and relative value

Private Infrastructure debt offers a yield premium relative to public credit markets, typically reflecting illiquidity, complexity, and sourcing advantages rather than elevated credit risk. Investment-grade strategies commonly target returns between 6.0% and 7.0%, while high-yield strategies target returns between 7.0% and 10.0%. (see High-yield infrastructure debt: Defining characteristics below).

2 Cash flow visibility and resilience

Contractual or regulated revenue frameworks create cash flow stability through economic cycles, with assets that range from fully contracted (e.g., long-term power agreements) to consistent, volume-driven assets (e.g. roads, airports, and ports). Across this spectrum, underwriting emphasis is placed on downside risk reduction and asset coverage, reflecting a focus on stability and durability.

Underwriting will typically include scenario analysis anchored to real-world conditions to best understand the “stress case”. This enables a thorough understanding of how much leverage an asset can support in challenging markets, which helps build resilient portfolios.

3 Structural protections and covenants

Infrastructure debt structures typically incorporate multiple layers of creditor protection designed to limit downside risk. Common features include:

- Senior secured (or subordinated) claims on assets and cash flows
- Covenant protections tied to coverage and leverage metrics
- Cash flow controls and reserve mechanisms
- Structural enhancements to align interests with equity investors

4 Inflation sensitivity and duration

Many infrastructure assets are contractually indexed to inflation or have regulatory pass-through mechanisms, supporting real income generation over time. Combined with long-term maturities (often extending up to 30 years), infrastructure debt provides exposure to long-duration cash flows.

5 Diversification and portfolio efficiency

Return drivers in infrastructure debt are primarily linked to asset-level performance rather than economic cycles, resulting in low correlation with traditional asset classes. This can enhance portfolio efficiency through improved risk-adjusted returns and reduced portfolio volatility.

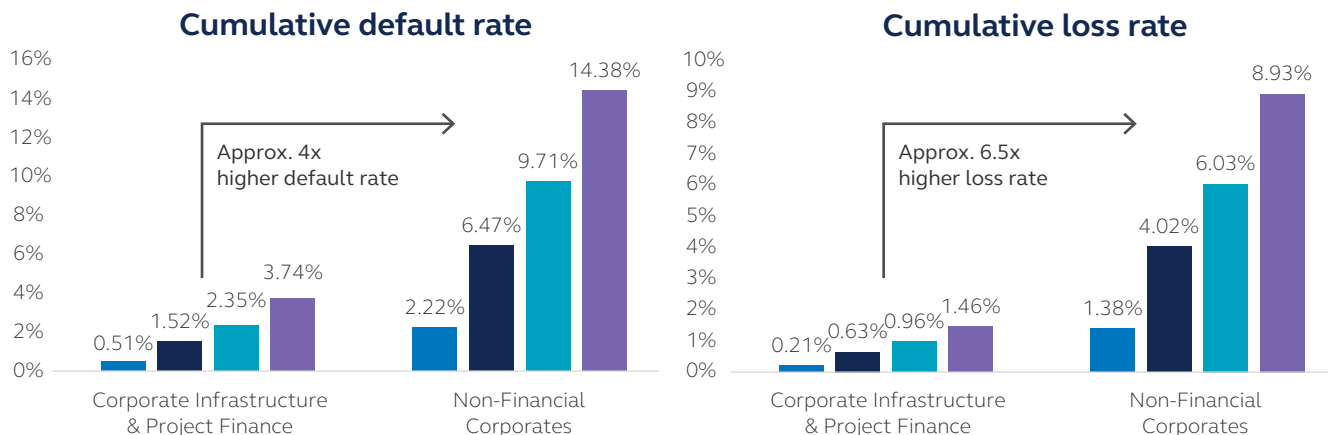
6 Lower default rates and higher recoveries

Historically, the asset class has exhibited low default rates and high recovery levels, reflecting both structural protections and the enduring value of essential assets. Moody's has tracked infrastructure debt defaults since 1983, and corporate debt is 4x more likely to default than infrastructure debt. For infrastructure debt that does go through restructuring, recoveries are modestly higher at 67% versus 56% for senior secured and 60% versus 38% for senior unsecured.

Source: Moody's, September 2025

EXHIBIT 3: Average overall cumulative default and loss rates, 1983-2024

■ Year 1 (1st bar) ■ Year 3 (2nd bar) ■ Year 5 (3rd bar) ■ Year 10 (4th bar)



Source: Moody's, September 2025. Principal analysis. Non-financial corporates include all corporates except those in financial services. Past performance is not a reliable indicator of future results. Historical data may not persist in future market environments.

High-yield infrastructure debt: Defining characteristics

Infrastructure high-yield opportunities typically fall into four categories:

Junior debt (HoldCo/MidCo/Mezzanine):

These investments are backed by infrastructure assets with contractual or regulated cash flows, but the debt sits above the asset equity and below operating company debt in the capital structure. Investor protections typically include cash flow distribution tests, consolidated leverage limits, and debt service reserve requirements.

Growth-oriented infrastructure:

Assets supporting long-term growth themes—such as renewable energy buildouts and data center development—often require significant ongoing capital investment, creating demand for higher-yield financing solutions.

Infrastructure-adjacent assets:

These investments support the operation and expansion of core infrastructure but are not infrastructure assets themselves. Examples include equipment finance and other essential maintenance services.

Size and geographic dislocations:

Some assets exhibit investment-grade characteristics, including stable cash flows and strong credit fundamentals, but are classified as high-yield due to their mid-market scale or geographic location rather than underlying credit risk. Examples might include contracted pipelines operating in jurisdictions whereby the credit is capped by the sovereign and/or counterparty rating.

Where we are in the cycle

The current environment represents a particularly compelling entry point for infrastructure debt:

- Higher base interest rates have increased all-in yields
- Bank retrenchment is supporting growing institutional opportunities
- Public and private investment in infrastructure is accelerating globally
- Macrotrends (energy transition, digitalization) are driving sustained demand

At the same time, increased complexity and dispersion within the opportunity set reinforce the importance of disciplined underwriting and manager selection.

Identifying manageable versus unmanageable risks

Detailed risk frameworks are critical to identify and manage factors that can materially impact an investment.

EXHIBIT 4: Risk framework

MANAGEABLE RISKS



- Offtake credit quality
- Cost inflation
- Operational history
- Supply or resource/volume
- Revenue volatility
- Contract renewal risk
- Construction risks (schedule, cost overruns)
- Environmental
- Market volatility

LESS MANAGEABLE RISKS

- New technology
- Regulatory permitting
- Political environment
- Governance
- Market adoption/formation

Portfolio role: A bridging asset class

Infrastructure debt occupies a distinct place in institutional portfolios: it is underwritten like credit, but its cash flows are often rooted in real assets.

On the credit side, the asset class is supported by long-term contracts or regulation, senior secured claims, and covenant packages designed to preserve lender protections. On the real-asset side, it provides exposure to essential services, revenue mechanisms that may adjust with inflation, and long-duration cash flows linked to the useful life of the assets.

These characteristics make infrastructure debt a tool for investors seeking income, capital preservation, and inflation hedging. Allocation decisions should reflect a clear trade-off between return targets, credit quality, liquidity, duration, sector exposure, geography, and structural themes.

Manager selection is central. Strong origination networks, structuring expertise, and active asset monitoring are better positioned to access differentiated opportunities and preserve downside risk reduction through cycles.

	Investment Grade	High-Yield	Mezzanine
Position in capital structure	Senior secured lending to contracted or regulated infrastructure assets	Senior or subordinated exposure where there may be market, volume, or structural risk	Junior positions beneath senior lenders
Asset profile	Highly contracted or regulated assets (e.g., conventional and renewable power plants, midstream energy pipelines, and data centers)	Assets with partial merchant exposure, shorter contracts, or greater sensitivity to demand	Assets where cash flows may be more variable, or structures designed to enhance return through deeper structural risk
Risk drivers	Counterparty strength, contract durability, and regulatory framework stability	Merchant exposure, volume risk, shorter contract tenors, and structural subordination	Cash flow variability, refinancing risk, deeper subordination, and recovery uncertainty
Investor benefits	Stability, downside risk mitigation, and capital preservation with moderate yield	Higher income in exchange for greater variability in cash flows or structural position	Focus on highest total return for accepting higher risk and more sensitivity to asset performance
Typical tenor/duration	10-30 years	5-7 years	5 years
Typical role in a portfolio	Core income allocation with emphasis on stability and capital preservation	Income enhancement within a diversified private credit allocation	Opportunistic allocation for investors with higher risk tolerance
Portfolio strategy	Attractive alternative to public fixed income	High risk-return profile to complement other private credit	Attractive returns with downside risk mitigation to complement direct lending, infrastructure equity, and private equity



CONCLUSION

Private infrastructure debt is increasingly positioned as a strategic allocation within institutional portfolios. Its appeal extends beyond relative value considerations within credit markets to reflect its role in financing essential economic systems.

In a global environment characterized by fiscal constraints, geopolitical fragmentation, and rising demand for infrastructure investment, the asset class offers a differentiated combination of:

- Stable, contract-driven cash flows
- Defensive credit characteristics
- Inflation-linked income streams
- Long-duration exposure
- Diversification benefits

As such, infrastructure debt represents not only an attractive investment opportunity but also a critical channel through which private capital contributes to the development and stability of the global economy.

Principal Asset Management: Private infrastructure capabilities

Principal Asset Management's private infrastructure platform leverages its broader private credit and real asset capabilities to originate and structure investments across essential infrastructure sectors, including power, energy, digital, transportation, and social assets.

The team focuses on direct and club origination and bespoke structuring, targeting investments with durable cash flows, strong contractual or regulatory frameworks, and robust downside risk reduction. This disciplined, globally oriented approach seeks to deliver consistent risk-adjusted returns and highly customized portfolio construction solutions.

Risk considerations

Past performance is no guarantee of future results. Investing involves risk, including possible loss of principal. Infrastructure companies face various business risks, including high interest costs, leverage, regulatory expenses, economic slowdowns, surplus capacity, competition, fuel availability constraints, and energy conservation policies. They are also subject to government regulation of customer rates, operational incidents, tariffs, and changes in tax laws, regulatory policies, and accounting standards. Investing in infrastructure assets or related debt involves risks that cannot always be foreseen or quantified, including ownership burdens, economic conditions at local and global levels, and supply and demand dynamics for infrastructure services and access. Private market investments carry distinct risks due to illiquidity, limited transparency, and higher minimum investment requirements. These include liquidity, market, capital, and regulatory risks, as well as higher fees and longer investment horizons compared to publicly traded securities. Real assets require independent evaluation before investing. As an asset class, they are less developed, more illiquid, and less transparent than traditional asset classes.

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