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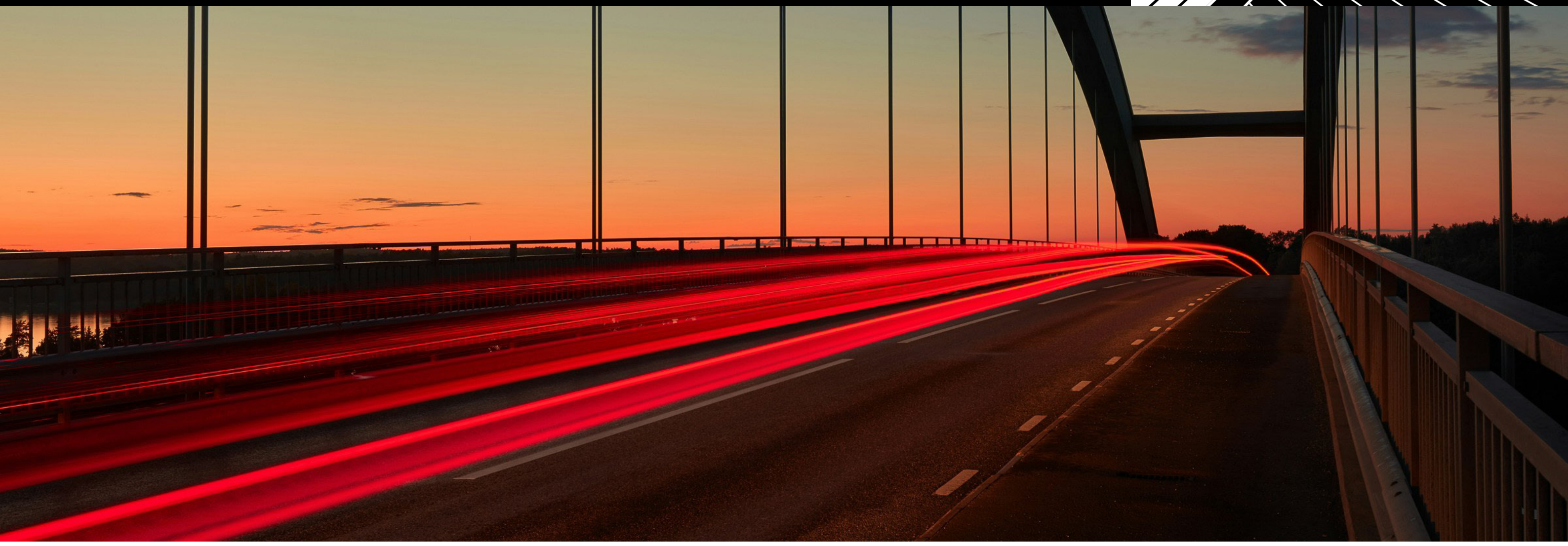
# Perspectives

## Unpacking the credit mechanics of infrastructure debt

Private Credit | April 2025



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## Executive summary

Infrastructure debt has become a well-established segment of private credit, offering resilience, attractive yields, and diversified exposure to strategically important sectors. In this fourth edition of our **Private Credit insights series**, we discuss the mechanics that we believe make infrastructure debt less susceptible to macroeconomic cyclicality, competitive pressures and geopolitical tension.

Consider the following attributes that may allow infrastructure debt to be an effective portfolio stabiliser for investors seeking long-term value and downside resilience:

- Infrastructure debt often incorporates credit enhancement mechanisms that help mitigate risks associated with economic volatility and borrower performance, providing investors with structured downside protections.
- With tangible assets, long-term contractual agreements, and essential economic functions, infrastructure debt provides a stable and predictable investment profile, making it an attractive alternative for investors seeking reliability in private credit markets.
- Unlike the covenant-lite trends dominating corporate credit, infrastructure debt retains rigorous covenant protections, reinforcing investor security and more predictable capital deployment.
- Backed by essential, long-lived assets, infrastructure debt can offer strong collateral security, stable revenue streams, and higher recovery values, even during times of economic volatility.

## Infrastructure debt: A resilient asset class

Infrastructure debt has emerged as an attractive and resilient asset class, with the ability to offer investors a unique combination of stable cash flows, strong underlying collateral, and structured risk protections. Unlike other forms of private credit that rely on corporate financial strength and operational performance, infrastructure debt can benefit from the relative security of tangible assets, long-term contractual agreements, and essential economic functions. In our view, these attributes make it particularly well suited for investors seeking an all-weather strategy offering both attractive risk-adjusted yield and downside protection in a dynamic market environment.

As banks reduce exposure to long-duration lending, infrastructure debt presents an opportunity for private lenders to provide flexible financing solutions while maintaining rigorous risk management. Building on our prior papers, we explore the key characteristics of infrastructure debt, comparing its credit enhancement mechanisms, collateral resilience, and performance in distressed situations against the relevant traits of corporate credit. This analysis highlights why infrastructure debt remains one of the most stable and attractive segments of private credit.

## The growth of infrastructure debt as a private credit strategy

The market for private infrastructure debt has experienced rapid expansion, driven by investor demand for more predictable yield, inflation protection, and long-duration assets. According to Preqin, private infrastructure debt assets under management (AUM) exceeded $US168 billion in 2024, reflecting an annual growth rate of 14.4% since 2015. This expansion is fuelled by several macroeconomic trends:

- Rising interest rates and inflation have led investors to seek floating-rate, inflation-linked debt instruments, which infrastructure debt commonly offers.[1]
- As evidenced by the rapid expansion of the private credit market, bank retrenchment from either longer-duration lending or sub-investment-grade financing has created opportunities for private lenders to step in to provide flexible financing solutions.[2]
- Secular trends such as digitalisation, decarbonisation, and demographic shifts are driving long-term demand for financing of new projects and refinancing of existing assets, reinforcing the themes and required scale outlined in **Infrastructure debt: First among equals**.

We believe these factors position infrastructure debt as a growing, income-generating asset class that appeals to institutional allocators of capital, including pension funds, large global alternative asset managers, family offices and wealth solutions providers and, insurance companies, all of which are seeking predictable cash flows and compelling risk-adjusted returns.

1. Infrastructure Investor, “The stars align for infrastructure debt” (March 2024).
2. McKinsey, “The next era of private credit” (September 2024).

## Credit enhancements in private infrastructure debt

Infrastructure debt often incorporates credit enhancement mechanisms within financing structures that provide investors with significantly stronger downside protections than those offered in corporate credit. These structural protections often act as the early warning and monitoring system and provide lenders with a safety net should the borrower run into liquidity challenges, mitigating risks associated with cash flow volatility, project execution, and borrower distress.

| Credit enhancement | Infrastructure debt | Corporate credit |
|---|---|---|
| **Collateral and security** | Loans typically backed by tangible, essential assets with long-term economic utility. | Collateral is often intangible (e.g. intellectual property, brand value, receivables) and may depreciate rapidly. |
| **Use of funds restrictions** | Loan drawdowns are only allowed for preapproved expenditures, often tied to construction milestones. | Typically have general use flexibility, with fewer lender-imposed restrictions. |
| **Business activity restrictions** | Often restricted from non-core business activities or expanding into unrelated sectors. | Typically have more flexibility to expand, restructure or take on additional leverage. |
| **Cash flow traps and reserve requirements** | Retains excess cash in the project special purpose vehicle (SPV) until certain financial thresholds (e.g. debt service coverage ratio ≥ 1.3x) are met. Maintenance and decommissioning reserves are often required. | Typically rely on free cash flow, and lenders do not impose mandatory reserve requirements. |
| **Performance-based triggers** | Covenants tied to operational key performance indicators, such as minimum production levels (e.g. 85% of forecasted power generation) or minimum utilisation rates (e.g. toll road traffic levels). | Typically, no production-based or operational triggers. Corporate borrowers may have financial performance covenants but not operational ones. |
| **Long-stop date and completion covenants** | Borrowers must meet a final completion deadline (long-stop date), after which lenders may accelerate repayment. | Rarely structured, as corporate borrowers are not tied to a single project. |
| **Debt service reserve accounts (DSRAs)** | Common for 6-12 months of principal and interest payments to be pre-funded, providing a liquidity cushion during disruptions. | Rarely required, as corporate borrowers typically rely on operational cash flow for debt servicing. |
| **Debt tranching and subordination** | Senior debt often protected by subordinated tranches or equity buffers, reducing senior lender exposure. | Common in sponsor-backed transactions but less structured than infrastructure debt. |
| **Change of control limitations** | Restrictions prevent the exit of key sponsors before a project reaches stable operation. | Less common in corporate credit, where change of control clauses may exist but are typically more flexible. |
| **Step-in rights and operational control** | Lenders often able to replace underperforming project operators, ensuring continued asset performance. | Lenders lack step-in rights, instead relying on sponsor influence. |

As discussed in our prior paper, **Infrastructure debt vs direct lending: A comparative analysis**, Moody's found that infrastructure debt has an average recovery rate of ~70%, significantly higher than the ~52% average recovery rate for unsecured corporate debt.[3] The presence of subordinated capital, pre-funded reserves, and step-in rights ensures that senior lenders in infrastructure transactions are less exposed to capital losses, particularly in distressed scenarios.

## Covenants and investor protections

Infrastructure debt is typically governed by strict financial covenants, which provide early warning triggers and enforce prudent capital management to reduce risk exposure for lenders. These covenants ensure that projects maintain strong debt service capacity, asset upkeep, and financial discipline. Unlike corporate credit, where covenant-lite structures have become prevalent, and even "covenant in name only" arrangements have weakened investor protections, infrastructure debt continues to retain rigorous covenant protections. This reinforces investor security and more predictable capital deployment. Common covenants in infrastructure debt include:

1. **Debt service coverage ratio (DSCR)**
   A key covenant in infrastructure debt financing is the DSCR, which mandates that projects generate sufficient cash flow to cover debt obligations. This metric provides a built-in safeguard for lenders, ensuring that repayment capacity remains strong throughout the project's lifespan. Given the more predictable nature of infrastructure revenue, DSCR requirements are often structured more conservatively than in other credit segments, reducing the likelihood of unforeseen financial strain.

2. **Restricted payments and cash flow controls**
   Prioritising debt service over equity distributions reduces financial risk. Unlike with corporate credit, structured cash flow waterfalls dictate revenue allocation, ensuring reserves for maintenance, debt service, and capital expenditures before excess cash is distributed. Lenders may enforce cash sweep provisions for early repayment if performance declines and impose dividend lockups tied to DSCR or leverage thresholds. These measures enhance repayment security, preserve liquidity, and mitigate financial distress, ensuring stable long-term operations.

3. **Leverage restrictions**
   Leverage restrictions are also a fundamental component of infrastructure debt agreements, ensuring that debt levels remain aligned with asset performance. Unlike credit agreements where borrowers may take on excessive leverage to fund expansion or shareholder distributions, infrastructure debt structures maintain strict borrowing thresholds, preserving asset viability and reducing refinancing risk.

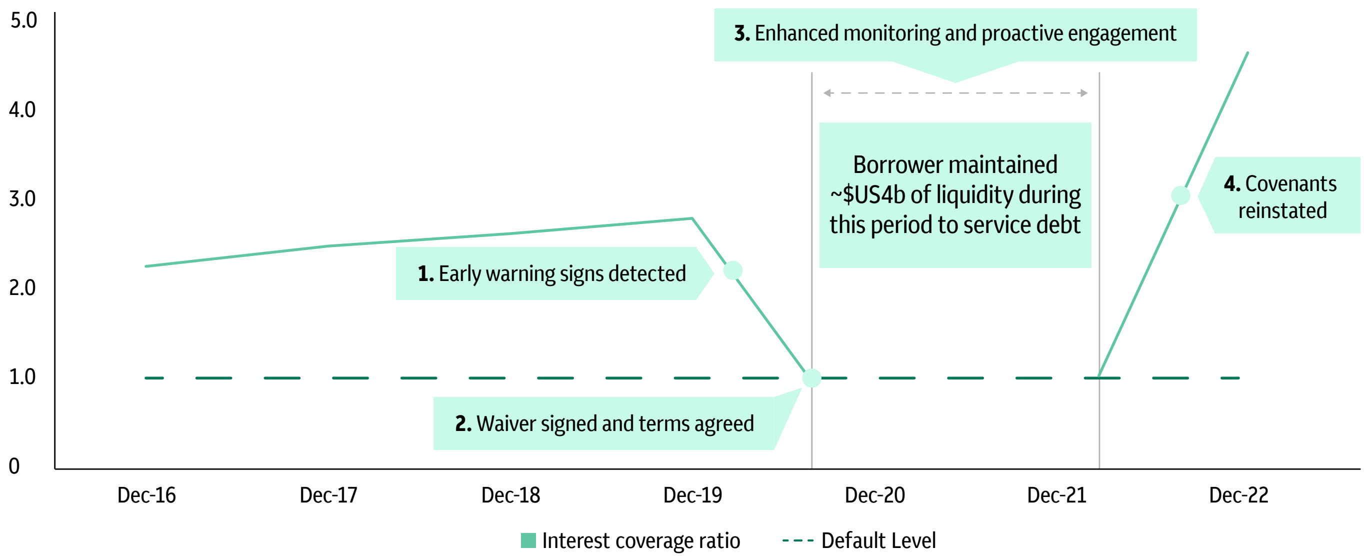
4. **Maintenance and operating covenants**
   Asset longevity, revenue stability, and lender protection are signature benefits of infrastructure debt. Unlike corporate credit, infrastructure assets require ongoing upkeep to sustain cash flows. Lenders typically mandate minimum maintenance spending, periodic reporting, and qualified operators to prevent asset deterioration and operational risks. Covenants also enforce insurance coverage, environmental compliance, and contingency planning to safeguard asset performance. These measures preserve collateral value, ensure stable debt repayment, and reinforce the resilience of infrastructure debt investments.

3. Moody's Investors Service (2023), accessed March 2025.

## Case study: Airports during the COVID-19 pandemic

The following analysis highlights the benefits of investor protections within infrastructure debt, facilitating early engagement and bilateral discussions to address temporary challenging situations.

Figure 1:
**Interest coverage ratio**




Source: Macquarie Asset Management analysis, March 2025.

### Timeline of events

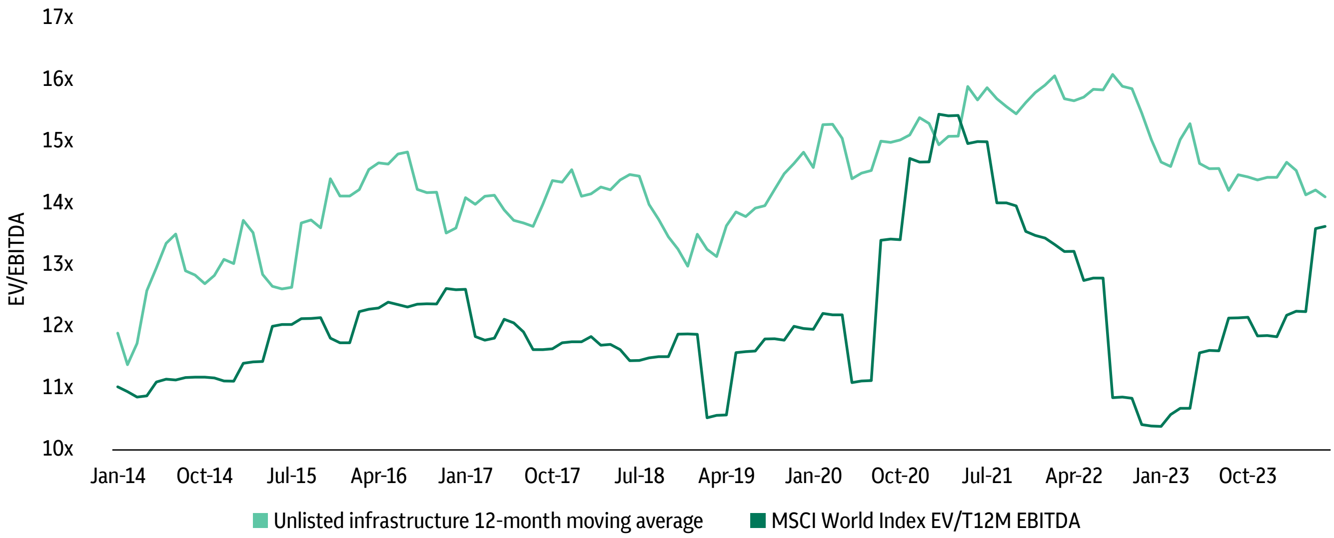
1. **Early alert during COVID-19 pandemic:** As the COVID-19 pandemic emerged and the world went into lockdown, lenders were alerted to a potential default situation. This early warning enabled lenders to quickly mobilise and engage directly with borrowers.
2. **Temporary relief and enhanced reporting:** A waiver was signed to temporarily relieve the borrower from the interest coverage ratio (ICR) covenant due to the pandemic's financial strain. The ICR covenant ensures the borrower can meet debt obligations by maintaining a certain ratio of earnings to interest expenses. In return for this relief, the borrower agreed to provide more detailed and frequent financial updates and accepted a higher interest rate during the waiver period to compensate lenders.
3. **Proactive monitoring and management:** During the period of increased coupon rate and waived ICR, lenders maintained close monitoring and proactive management. A minimum cash covenant at the holding company level was also established to help service debt.
4. **Reinstatement of covenants:** As global lockdown eased and air traffic resumed, the covenants were reinstated.

This case study illustrates the crucial role of infrastructure debt covenants as an early warning mechanism. By enabling lenders to intervene and structure a solution before the situation could deteriorate further, these covenants proved their worth. Impressively, no interest payments were missed during this challenging period, underscoring the covenants' effectiveness in safeguarding lenders' interests and helping to ensure financial stability.

## The resilience of infrastructure debt collateral

Infrastructure is widely regarded as a comparatively stable and predictable asset class. Our analysis indicates that private infrastructure valuations tend to have a negative correlation with interest rates and a positive correlation with inflation. Between 2H22 and 1H24, as interest rates rose, transaction multiples declined from approximately 16.1x to 14x. However, this market volatility was relatively muted compared with broader equity markets, as high inflation helped infrastructure assets offset some of the negative impact of rising interest rates.

Figure 2:
**Unlisted infrastructure valuations compared to global listed equities**




Source: Bloomberg, Macquarie Asset Management (September 2024). Private infrastructure series is based on 1,138 data transaction multiples for deals that reached financial close between January 2008 and June 2024. EV/T12M EBITDA = enterprise value to trailing 12 months earnings before interest, taxes, depreciation and amortisation. Past performance is not indicative of future results. For illustrative purpose only. For more detail, read our report, “Private infrastructure valuations” (June 2023).

Further to the above, infrastructure debt benefits from the resilience of the underlying collateral, which bolsters security and enhances recovery values in distressed scenarios. According to S&P Global Ratings, infrastructure debt outperforms corporate credit in default scenarios,[4] as essential service assets retain demand and revenue potential even during periods of financial stress.

4. Default, Transition, and Recovery: 2023 Annual Infrastructure Default And Rating Transition Study

### Why infrastructure collateral is more resilient:

- **Essential services**: Infrastructure assets such as power grids, toll roads, and digital infrastructure form the backbone of modern economies. These assets ensure continued demand even during economic downturns, providing a steady stream of revenue.
- **Built to last**: Unlike corporate assets, which may depreciate rapidly or become obsolete, infrastructure projects like bridges, power plants, and airports are designed for decades of use, preserving their economic value over time.
- **Predictable revenue streams**: Infrastructure projects often operate under long-term contracts, such as power purchase agreements or concession agreements. These contracts provide predictable and stable revenue streams, including provisions for inflation adjustments and minimum revenue guarantees.
- **Resilience through economic cycles**: Infrastructure services such as water supply and waste management are necessities not luxuries. This less-cyclical nature, combined with diversified revenue sources like user fees and government payments, makes infrastructure debt less vulnerable to economic downturns.

Even in cases of financial distress, infrastructure assets tend to maintain significant value. Their tangible, essential nature makes them highly marketable, ensuring a pool of potential buyers or investors. This enhances recovery prospects, making infrastructure debt a compelling investment choice within a private credit portfolio.

## Conclusion

Private infrastructure debt has firmly established itself as a resilient, high-yielding, and strategically important asset class within private credit. Its structured credit enhancements, strict financial covenants, and strong collateral protections provide institutional investors with a stable and predictable income stream, even in volatile market conditions. Unlike other private credit segments, infrastructure debt is typically less susceptible to economic cyclicality and competitive pressures, making it an effective portfolio stabiliser for investors seeking long-term value and downside resilience.

As the private lending market evolves, infrastructure debt will continue to play a critical role in institutional portfolios, offering a unique combination of capital preservation, inflation protection, and attractive risk-adjusted returns. With its robust risk management framework and essential service-based revenue models, infrastructure debt stands as an attractive investment option for those looking to optimise portfolio diversification while capturing premium yields. Its ability to weather market fluctuations and sustain consistent performance ensures its continued growth and relevance in the expanding private credit landscape.

**IMPORTANT INFORMATION**

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