Infrastructure Debt – An Attractive Component in Private Credit Portfolios

February 2024

Summary

In this paper we outline how infrastructure debt is an advantageous component of private credit portfolios. **We believe infrastructure debt can enhance private credit portfolios by providing improved diversification with an illiquidity premium compared to public assets, attractive risk-adjusted returns and downside protection, while benefitting from infrastructure-specific characteristics.** The Ares definition of infrastructure focuses on assets and businesses providing essential services in high barrier to entry markets and that have the potential to offer stable, long-term cash flows with inflation protection potential and high operating margins.

We believe there are four fundamental characteristics of private infrastructure debt, which make the asset class an attractive component of a private credit portfolio:

Low Correlation to Corporate Credit

Infrastructure debt provides diversification relative to broader private credit portfolios.

Consistent Performance Across Economic Environments

Infrastructure investments have relatively inelastic demand as they provide essential services to consumers in everyday life.

Compelling Risk-Adjusted Returns

Private infrastructure debt has historically offered enhanced yields versus public market investment grade credit to compensate for illiquidity.

Lower Risk than Equivalent Corporate Debt

The high-quality structure of private infrastructure debt transactions and essential nature of the services provided has resulted in historically low realized losses, high rates of recovery and low ratings volatility.

Furthermore, we believe assessing the potential benefits **of infrastructure debt today is warranted, given the long-term, durable market tailwinds of the asset class:**

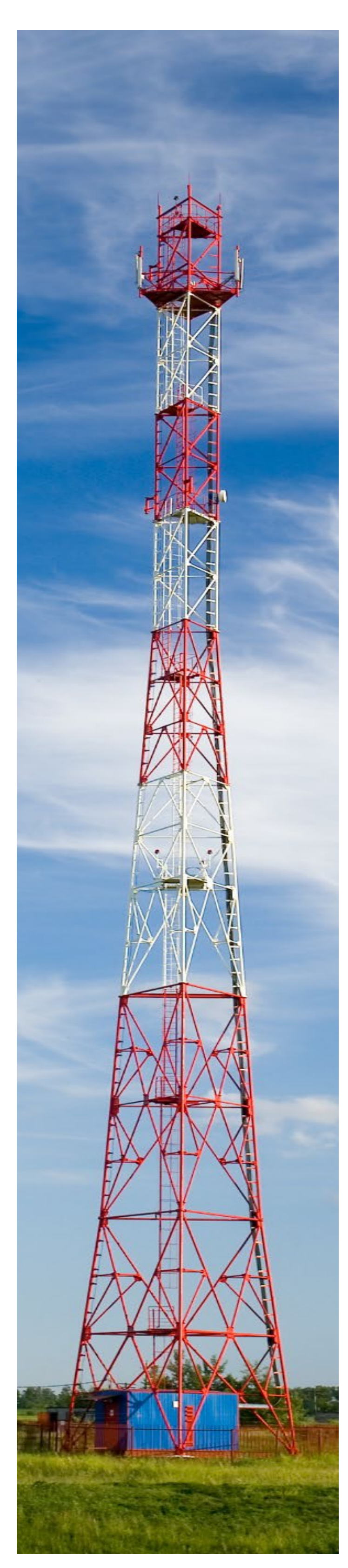
- **Digitalization, increased mobility and decarbonization trends are driving increased demand** for infrastructure. We see increased regulation, social evolution and technological advancements underpinning these trends now and in the future.
- **Constrained public investment and bank retrenchment have led to a recent supply and demand imbalance** for infrastructure equity and debt, creating opportunities for private markets to fill in the gap.
- **The increase in infrastructure equity projects and required financing has resulted in greater need for debt capital providers**, as returns for infrastructure equity investors are largely predicated on the amount of financing they can raise.

Global infrastructure investment is expected to exceed $3.7 trillion a year through 2035[1], with a total gap of $5.5 trillion over the same period that is expected to be funded by private investors, whether via debt or equity. As private lenders have become increasingly critical as a source of capital for infrastructure development, **we believe the market will continue to provide attractive opportunities for scaled, and experienced infrastructure lenders.**

[1] McKinsey, “Four ways governments can get the most out of their infrastructure projects.” January 2020. Projections and forward-looking statements are not reliable indicators of future events and there is no guarantee that such activities will occur as expected or at all. No assurance that trends continue as projected.

Defining Infrastructure

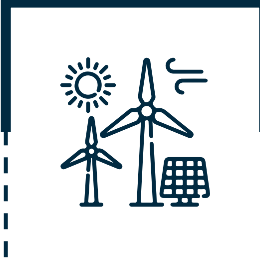
We believe infrastructure assets are defined by a set of specific characteristics that lay the groundwork for compelling performance through economic cycles. As a source of relatively stable, inflation-indexed cash flows, infrastructure assets can potentially act as both an income asset and an inflation hedge—qualities that are equally attractive in either an inflationary or a recessionary environment. The Ares Infrastructure Debt teams defines an infrastructure asset as having the below criteria.



- **Provision of essential services**: infrastructure assets provide the foundation for basic public services that are necessary to support economic and social activity, such as road networks, airports, data centers and power lines. As such, infrastructure assets generally benefit from relatively inelastic demand.
- **Long-lived assets**: infrastructure assets are expected to remain in service for decades before a substantial overhaul or replacement is required. Infrastructure assets typically use straightforward and proven technologies with long operating histories.
- **Stable and visible cash flow generation**: the essential services provided by infrastructure assets are often paid for under long-term contracts that provide good visibility into future cash flows. Combined with largely inelastic demand and consistent usage of such critical and essential assets, this typically results in an ability to deliver stable current income and cash yield over time.
- **High barriers to entry**: Considerable up-front investment and a typically dominant market position provide significant barriers to entry and means many assets effectively operate in a local monopolistic or quasi-monopolistic environment. Regulatory frameworks are intended to balance the requirement to deliver a fair cost for end users with fair, risk-adjusted returns to investors.
- **Inflation-correlated revenues**: Cash flows produced by infrastructure assets are commonly linked to inflation. The right to increase revenue with inflation is often embedded in concession agreements and licenses. This linkage helps sustain margins of the asset through inflationary periods.
- **High operating margins**: After a large initial capital investment, infrastructure assets generally require relatively low ongoing operational and maintenance expenses. As such, these assets typically exhibit high operating margins once completed, enabling them to support debt commitments and generate stable cashflows for investors.

Core Infrastructure Asset Sectors

We focus on four core sectors of infrastructure we believe are most relevant for the future: energy, digital, transportation and utilities. By taking a broad view of infrastructure, there is ample opportunity to assess asset diversity.



Energy

- Power generation (renewable and thermal)
- Midstream & storage facilities
- LNG export facilities

Transportation

- Airport
- Ports
- Logistics

Digital

- Data centers
- Tower
- Fiber

Utilities

- Water
- Waste & recycling
- Electrical transmission lines

Infrastructure Debt within a Portfolio

Since the Global Financial Crisis, **private credit has evolved into a diversified asset class that we believe offers the potential for enhanced return and diversification relative to public credit investments.** Since 2010, the asset class has grown 6x, and private credit now stands at over $2.1 trillion in AUM.[2] The private credit universe encompasses a broad range of strategies, collateral types, regions and levels of seniority. Allocations to private credit can vary across asset class (corporate direct lending, real estate debt, infrastructure debt, asset-based finance and specialty finance), capital structure (senior, junior and mezzanine), and can encompass performing and non-performing loans. We believe **infrastructure debt is a compelling component of alternatives portfolios, and that including an allocation in an overall portfolio can provide diversification, compelling risk-adjusted returns and downside protection.** Below we expand on four fundamental characteristics of private infrastructure debt.

Low Correlation to Corporate Credit:

Infrastructure debt can help diversification, as the sector is not meaningfully correlated to corporate credit. A recent analysis performed by Ares shows that the average correlation between infrastructure debt and corporate debt is 0.36[3]. We believe this is due to relatively inelastic demand for the essential services that infrastructure provides. As such, infrastructure debt offsets some of the higher risks of corporate credit and specialty finance. Infrastructure investments can support portfolio diversification for investors building portfolios across asset classes.

The correlation matrix shown below utilizes public indices from Bloomberg and Bank of America, as well as a custom blended private index modeled by Ares in an effort to mimic infrastructure subordinated debt returns, based on indices from EDHEC Infrastructure & Private Assets Research Institute ("EDHEC"). EDHEC is a research center that is part of the EDHEC Business School, that provides market indices and benchmarks for investors in unlisted infrastructure equity and private debt.

Infrastructure Correlation Matrix[4]

	EDHEC Infrastructure Blend	Bloomberg Utility HY	ICE BofA Global High Yield Index
EDHEC Infrastructure Blend	1.00	0.31	0.36
Bloomberg Utility HY		1.00	0.83
ICE BofA Global High Yield Index			1.00

[2] Preqin data, as of January 2024

[3] Based on monthly values January 1, 2010, to August 31, 2023. Infrastructure debt is represented by an EDHEC Infrastructure Debt Blend index; calculated by blending 70% Infra300 Global Debt, equally weighted based on local currency, and 30% Infra300 Global Equity, equally weighted based on local currency, to correlate against the ICE BofA Global High Yield Index. This correlation can and will change over time and there is no assurance the trend will continue. Sources: Bloomberg, EDHEC.

[4] Correlations shown above are for the referenced indices and or return histories from January 1, 2010, to August 31, 2023, and based on monthly values. EDHEC Infrastructure Blend index is calculated by blending 70% Infra300 Global Debt, Equally Weighted Local Currency, and 30% Infra300 Global Equity, Equally Weighted Local Currency, to correlate to an infrastructure debt index. These correlations can and will change over time and there is no assurance the trend will continue. Sources: Bloomberg, EDHEC.

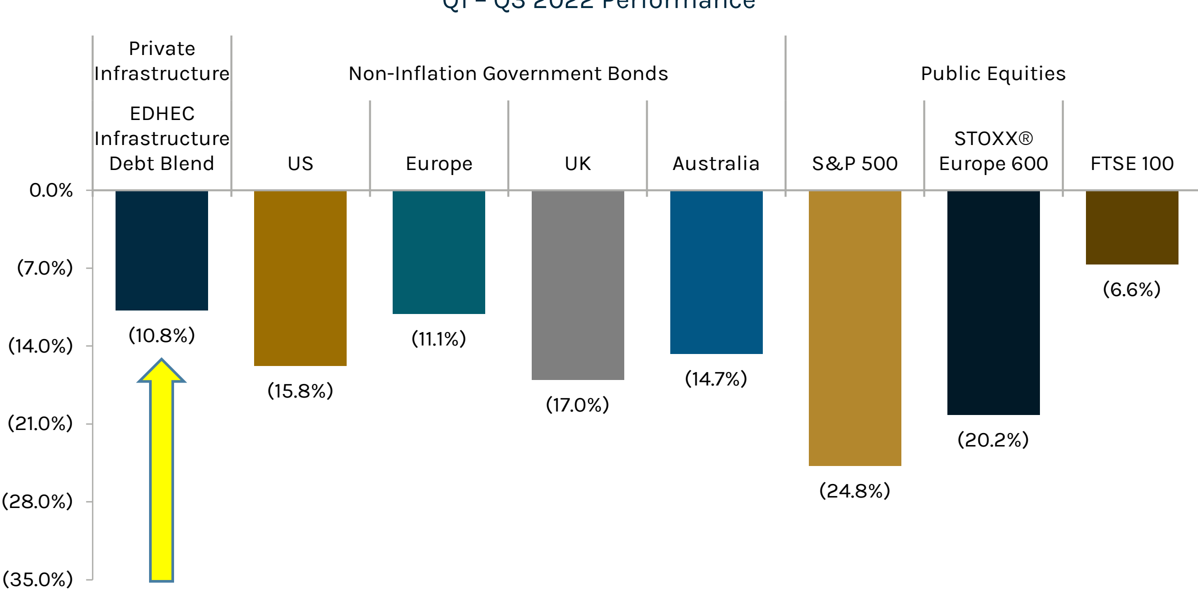
Consistent Performance Across Economic Environments:

Infrastructure investments have relatively inelastic demand as they provide essential services with fundamental importance to consumers in everyday life. Infrastructure assets have shown compelling performance relative to broad-based equity indices and inflation linked bonds both during periods of decline and recovery. The Ares team analyzed performance from Q1 2022 through Q2 2023 to understand relative performance of the EDHEC Infrastructure Blend index, which is calculated by blending 70% EDHEC Infra300 Global Debt, and 30% EDHEC Infra300 Global Equity, against Bloomberg Utility High Yield and ICE BofA Global High Yield indices.

During this period, rising global inflation and interest rates resulted in meaningful negative pressure across bonds and public equities, reaching a trough at the end of Q3 2022. However, infrastructure assets performed better on a relative basis.

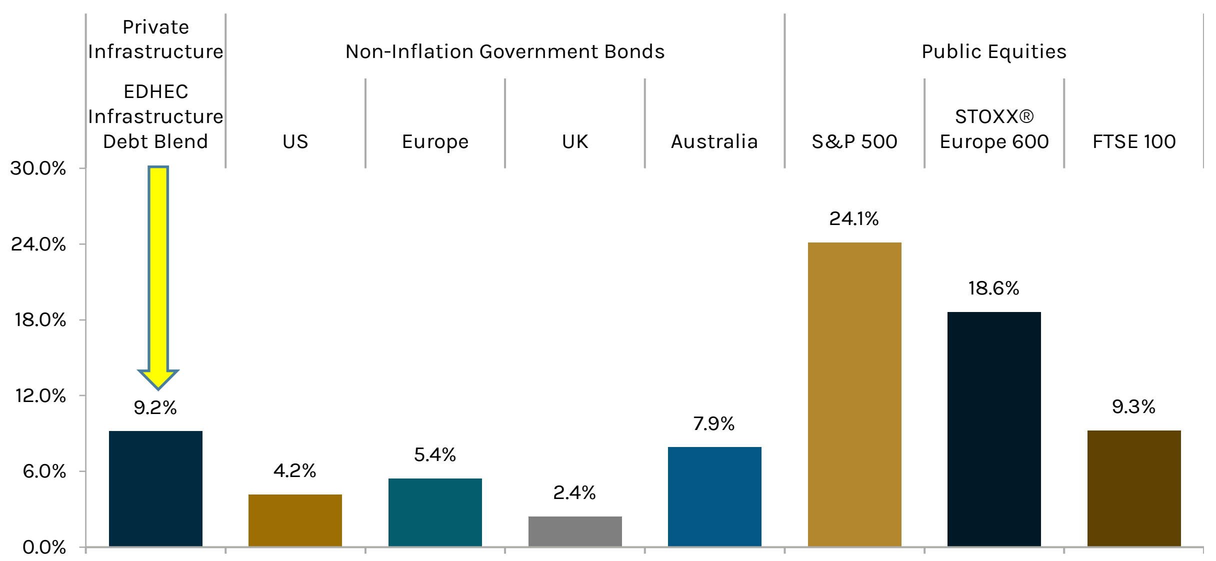
From Q4 2022 to Q2 2023, as the global economy started to recover, infrastructure assets were able to keep apace, and in some instances, outpace public equity indices. We believe this is likely due to the underlying assets' ability to reprice in an inflationary environment. Ares' analysis indicates that infrastructure assets can catch up to, and potentially exceed, any short-term valuation impacts in a rising rate environment. **The data over the past six quarters supports the thesis that infrastructure can perform well in both declining and positively performing market backdrops.** For additional information around the impact of rising rates and inflation on infrastructure assets, please refer to Ares' White Paper written in collaboration with EDHEC (*Inflation and Rising Rates: Impact on Infrastructure Assets*, October 2022).

Infrastructure Performance as an Inflation Hedge (Q1-Q3 2022) and During Recovery (Q4 2022-Q2 2023)[5]



[5] As of June 30, 2023. EDHEC Infrastructure Blend index is calculated by blending 70% Infra300 Global Debt, equally weighted based on local currency, and 30% Infra300 Global Equity, equally weighted based on local currency, to correlate to an infrastructure debt index. Sources: CapitalIQ, Datastream, EDHEC

Q4 2022 – Q2 2023 Performance

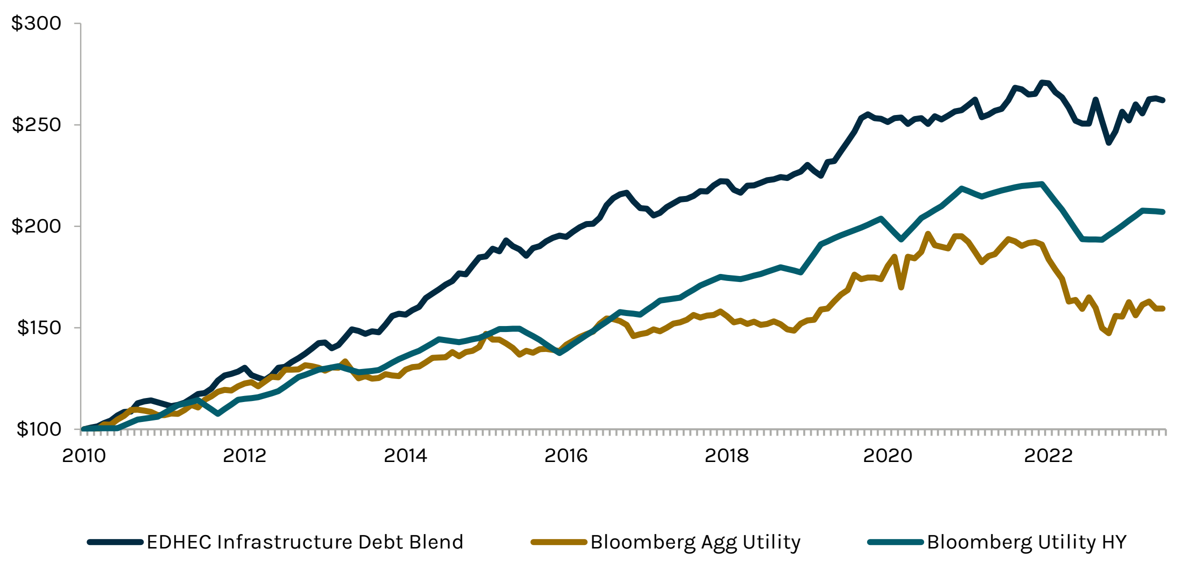


Note: Performance information is not representative of Ares strategies.

Compelling Risk-Adjusted Return:

Private infrastructure debt has historically offered enhanced yields versus public market investment grade credit to compensate for illiquidity, as well as for the complexity inherent in underwriting the credits. Infrastructure debt has behaved very differently than public infrastructure indices, with a meaningful return premium over comparable public indices. One reason for the differential is that private debt and public debt are weighted to different sectors. Private lenders are able to access more non-utility infrastructure, particularly in the transport, renewables and digital sectors.

Infrastructure Debt versus Public and Private Indices – Performance of $100 invested[6]

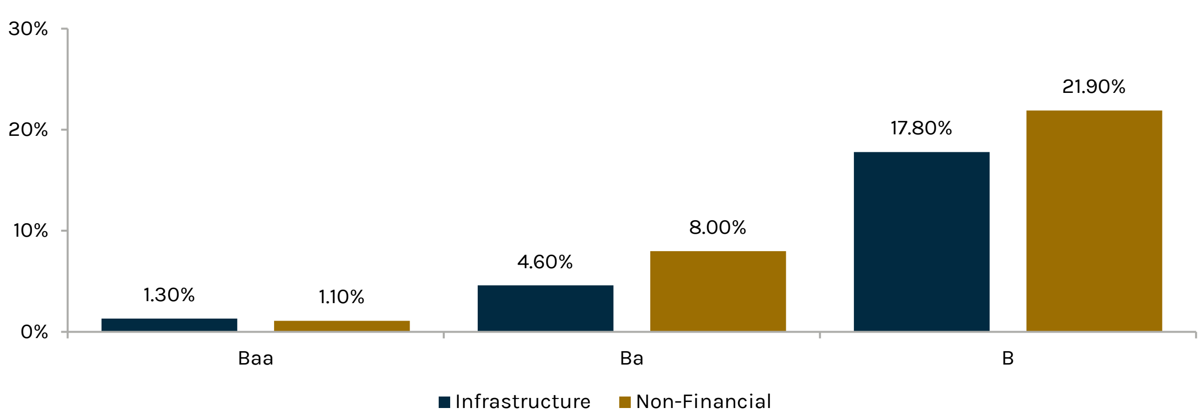


[6] EDHEC Infrastructure Blend index is calculated by blending 70% Infra300 Global Debt, equally weighted based on local currency, and 30% Infra300 Global Equity, equally weighted based on local currency, to correlate to an infrastructure debt index. Sources: CapitalIQ, Datastream, EDHEC

Lower Risk than Equivalent Corporate Debt:

The high quality of infrastructure debt and the essential nature of the services provided has resulted in a historical record of low losses, high rates of recovery and low ratings volatility. A recent study by Moody's of debt securities from 1983 to 2021 showed that default rates over a five-year time horizon for rated corporate infrastructure and project finance assets averaged 2.3% while rated non-financial corporates averaged 9.6%.[7] Even more starkly, default rates for rated project finance loans are meaningfully lower than similarly rated corporate loans, especially in sub investment grade assets.

Infrastructure vs. Non-Financial Corporate Cumulative Default Rates (5 Year Time Horizon)[8]



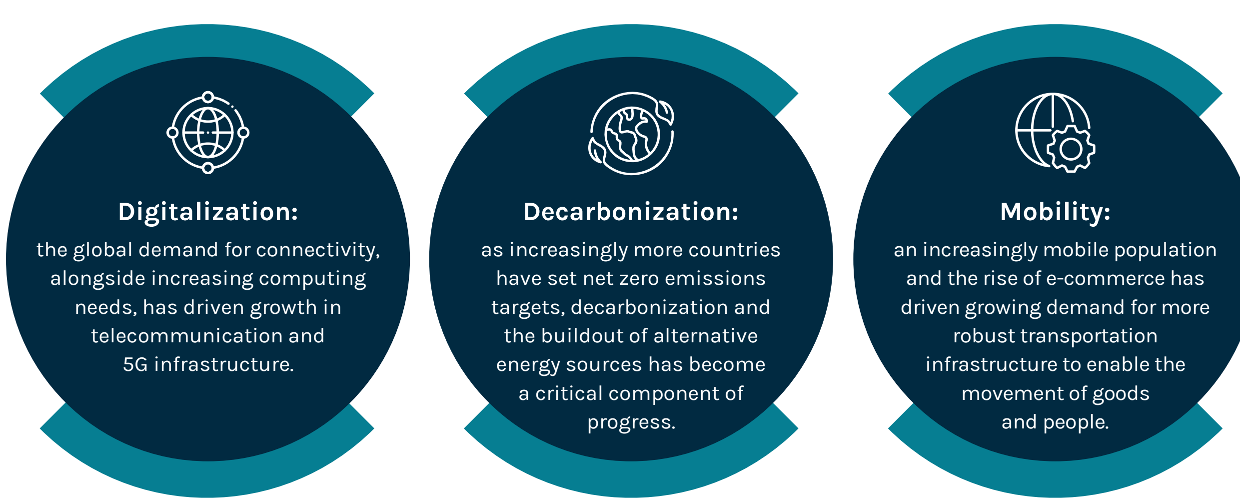
Between 1983 and 2021, the ultimate recovery rate for senior secured loans was 94%, and the average recovery rate for senior unsecured loans was 71%. When converted to a cumulative loss ratio, Ba rated infrastructure projects realized a loss at year five of 1.97% versus non-financial corporate loses of 4.96%.[9] The improved recovery rates are largely because infrastructure debt investments are often collateralized against meaningful physical assets, providing asset coverage that protects to the downside in a liquidation compared to corporate loans.

In addition, ratings volatility was noticeably lower for infrastructure securities, especially through the 2008-09 Global Financial Crisis and recession, as well as in 2015-16 when stress in commodity sectors resulted in meaningful downgrade rates among non-financial corporates. Our research shows ratings stability was largely due to less volatility in the capital markets for infrastructure assets and more supportive regulatory environments.

[7] Moody's, "Infrastructure default & recovery rates, 1983-2021." October 2022
[8] Moody's, "Infrastructure default & recovery rates, 1983-2021." October 2022
[9] Moody's "Infrastructure default & recovery rates, 1983-2021." October 2022

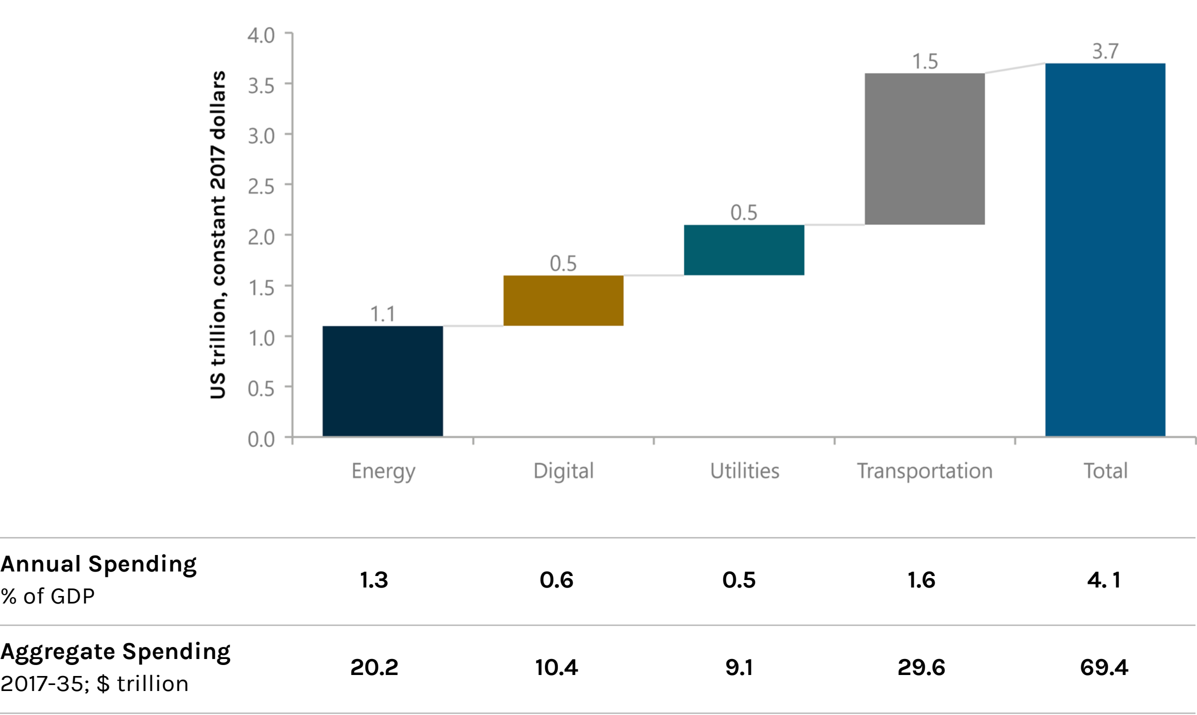
Infrastructure Debt: Critical Capital Provider

Global infrastructure growth is being driven by long-term, durable market trends. In today's market, we view three key infrastructure themes that are providing strong tailwinds across a variety of infrastructure segments:



Given these trends, McKinsey estimates that investment in global infrastructure is expected to total $3.7 trillion, annually, between 2017 and 2035.[10]

Annual Global Infrastructure Investment (2017-2035)[11]



	Energy	Digital	Utilities	Transportation	Total
Annual Spending % of GDP	1.3	0.6	0.5	1.6	4.1
Aggregate Spending 2017-35; $ trillion	20.2	10.4	9.1	29.6	69.4

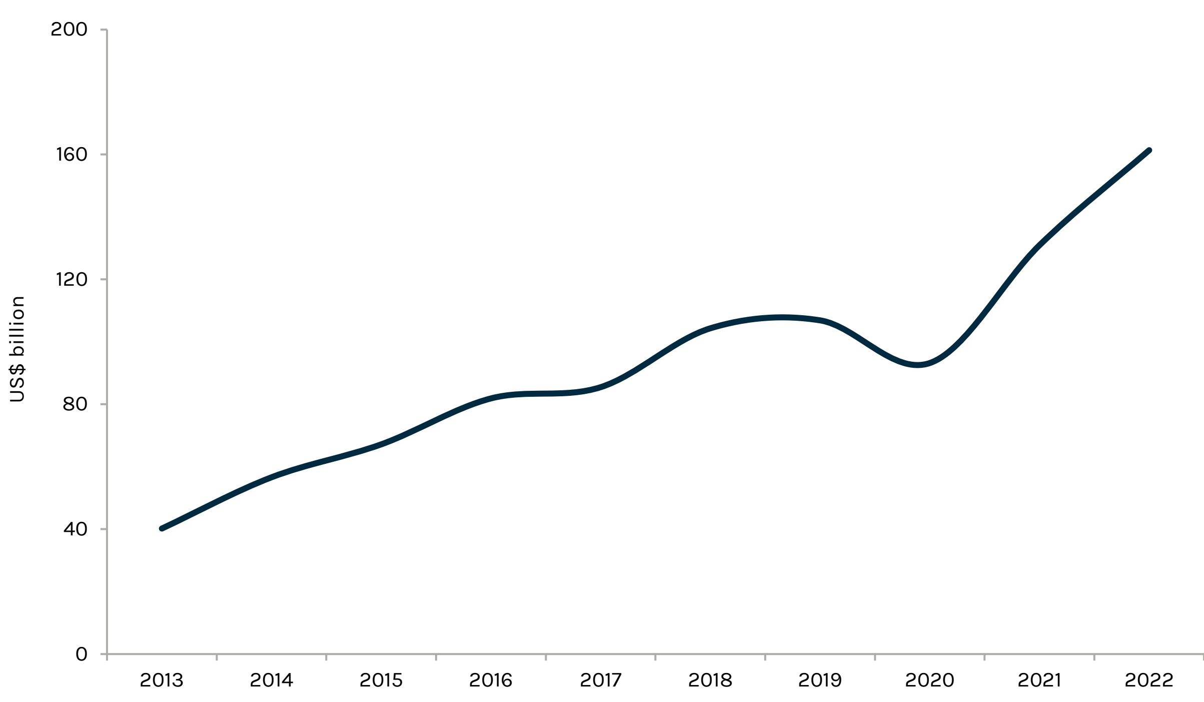
Note: Projections and forward-looking statements are not reliable indicators of future events and there is no guarantee that such activities will occur as expected or at all.

[10] McKinsey, "Four ways governments can get the most out of their infrastructure projects." January 2020.
[11] McKinsey, "Four ways governments can get the most out of their infrastructure projects." January 2020.

Although there has been long-term acknowledgement that shoring up core infrastructure is critical, **public investment in infrastructure has generally declined as a share of GDP in a majority of G20 economies since the Global Financial Crisis.** Across geographies, cutbacks have occurred in the United Kingdom, European Union and the United States[12]. Although there has been long-term acknowledgement that shoring up core infrastructure is critical, McKinsey estimates that globally there is a gap of roughly $5.5 trillion of infrastructure investment that governments will not likely fund between 2017 and 2035.[13] **This state of play has led to a supply/demand imbalance in infrastructure.** The tailwinds for growth are stronger than ever across the sector, so demand for infrastructure capital is rapidly rising, even while public funding for infrastructure has declined.

The private sector has raised meaningful equity capital to fill the gap and benefit from the growth tailwinds in infrastructure. Infrastructure equity funds have raised over $600 billion in the past five years.[14] As of December 2023, infrastructure equity funds were actively raising over $470 billion in cumulative capital.

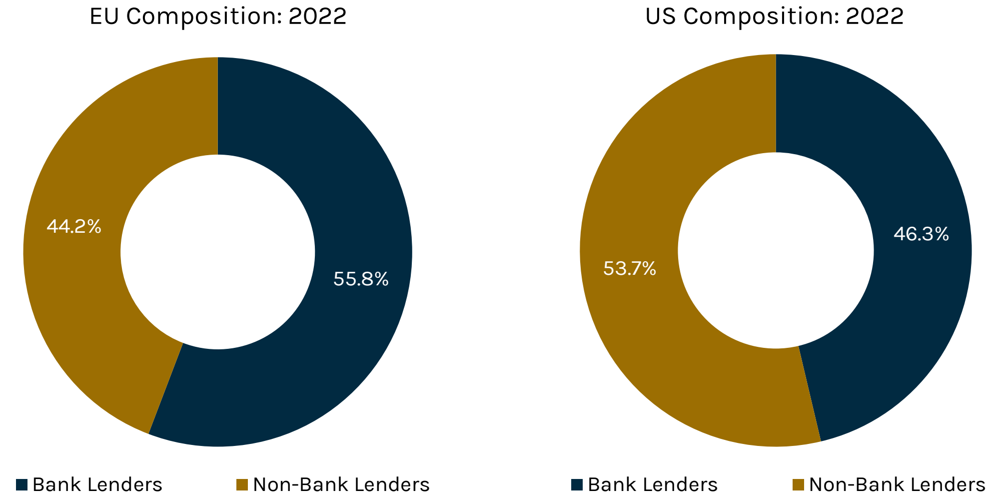
Annual Infrastructure Equity Capital Raised[15]



As infrastructure equity fundraising has increased, it has increased the need for debt capital, given returns for infrastructure equity investors are partially predicated on the amount of financing they can raise. However, banks have not recently be able to keep up with the market demand, as banking regulations continue to be more stringent and bank appetite to hold loans on balance sheets decline. Traditional lenders continue to grapple with regulatory, capital and liquidity challenges resulting from the Global Financial Crisis, COVID-19 pandemic, 2022 market volatility and recent bank failures. **Given this trend toward a pull-back in bank lending, almost half of all financing in infrastructure in 2022 originated from private lenders.**

[12] McKinsey Global Institute, "Bridging Infrastructure Gaps: Has the World Made Progress?" October 2017
[13] McKinsey Global Institute, "Bridging Infrastructure Gaps: Has the World Made Progress?" October 2017
[14] Preqin, Historical Fundraising Infrastructure Funds, as of December 2023
[15] Preqin, Historical Fundraising Infrastructure Funds, 2018 – July 2023

Infrastructure Financing Landscape: Opportunity Set for Alternative Lenders[16]



In 2022, project finance loan new issuance reached $323 billion, which accounted for a little less than 50% of infrastructure debt new issuance for the year.[17] These volumes imply that another $300 billion of financing came from lenders outside of the banking sector, pointing to the role of private infrastructure debt funds in financing additional transactions. Extrapolated over a five-year time horizon, that implies a potential financing opportunity of $1.5 trillion for private lenders[18], and there should be **increasing opportunity for direct lenders in the infrastructure space to provide capital solutions.**

In addition to providing financing, **private debt solutions can provide additional enhancements vis-à-vis traditional bank facilities and might even be a preferred solutions provider relative to a bank in some cases**. One key differentiator is that a private lender can provide a buy-and-hold solution and commit to terms and structure, versus a bank deal done on a best-efforts basis subject to flex terms. Another key benefit of private debt is greater execution certainty in tight timelines and ability to provide growth capital. Moreover, scaled private lenders in the infrastructure space are able to provide capital efficiently and create bespoke packages that reflect the specific nuance of each transaction, including negotiated terms to create downside protection.

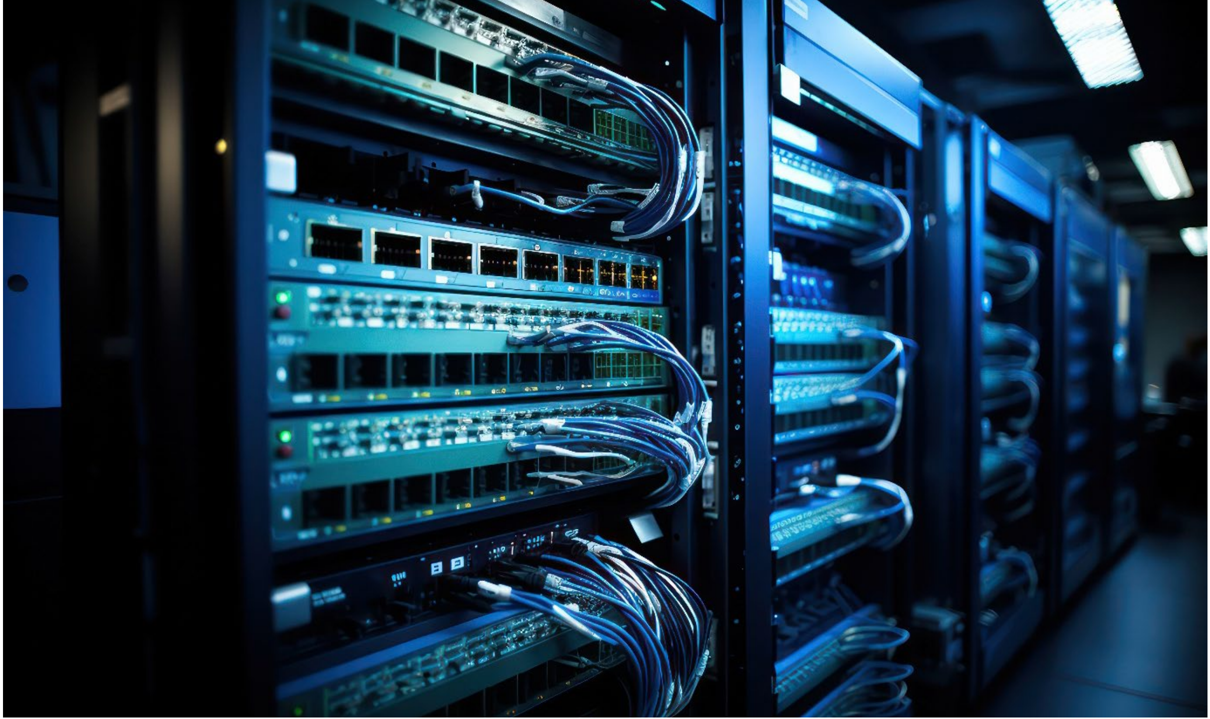
[16] Preqin, Historical Fundraising Infrastructure Funds, 2018 – July 2023
[17] Bloomberg, Loan Search, September 2023
[18] Projections and forward-looking statements are not reliable indicators of future events and there is no guarantee that such activities will occur as expected or at all.

Conclusion

Global investor interest in infrastructure debt continues to rapidly increase, and it is being recognized as a potential core component of private credit portfolios. Investors are learning about the benefits of infrastructure debt, from creating diversity within a portfolio to how the underlying assets can provide stable, reliable and consistent cash flows that result in improved risk-adjusted returns and downside protection.

However, information on infrastructure debt is rare to come by, and infrastructure debt deals are typically arranged bilaterally and reliant on long-term relationships, which limits investors' ability to access the space. Given the confidential nature of the sector, access can also be challenging for existing or new managers who do not already have a strong foothold in the market.

As the need for private capital in infrastructure continues to grow, we believe scaled, experienced asset managers with strong, geographically embedded teams will be positioned to provide complex, bespoke solutions over the long-term.



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