Research Note:

A primer on infrastructure investing

Daniel W. Wallick
Jonathan Cleborne

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Institutional investors are increasingly considering infrastructure investing as a viable addition to their portfolios. Yet to many investors, "infrastructure investing" remains an amorphous term that could encompass a wide range of assets and strategies. Here we will lay out a definition of infrastructure investing, highlight its appeal and potential limitations, and contrast it with other potential investments.

Infrastructure assets are the physical structures, networks, and other facilities that provide services essential to economic productivity. They typically include transportation assets (such as toll roads, bridges, tunnels, railroads, seaports, airports), communications assets (radio and television towers, wireless networks, cable systems, satellite networks), regulated assets (electricity transmission lines, utilities, water systems), and social assets (schools, hospitals, prisons, courthouses). Direct private investment in these projects is typically contract-based, with the terms of the transaction laid out in legal documents. Often this takes the form of a "concession agreement" that details the obligations and entitlements of both owner and investor.

Since the 1990s, private infrastructure investing has developed momentum in several countries, including Canada, the United Kingdom, and Australia. Although the global infrastructure market is sizable (estimated at nearly $20 trillion), the private portion of this market remains modest. Current estimates put the worldwide value of privately owned or privately controlled infrastructure projects at $150 billion to $200 billion.[1]

Direct investments in infrastructure are often compared with other types of investments, including private equity, real estate, and fixed income. As with fixed income and real estate, a significant portion of most infrastructure investment returns comes from cash yield—a key difference from private equity. Compared with fixed income holdings, however, infrastructure investments tend to be less sensitive to interest rate risk. Compared with real estate, they are less sensitive to the economic cycle, with only limited fluctuation in the underlying asset's value. See Figure 1 for a fuller comparison.

Investors seeking infrastructure exposure can choose to invest either directly or indirectly. Direct purchases can involve contracting for concession rights to a single asset or, less typically, outright purchase of an asset from a public entity. A more common approach is obtaining direct exposure through investment in a commingled or pooled vehicle that in turn invests directly in a variety of these assets. Indirect investment typically means the purchase of publicly listed equity in companies that operate infrastructure assets (often achieved through an index product, such as an ETF). These approaches vary significantly in their risk and reward profiles, as shown in Figure 2.

1 RREEF Alternative Investments.

Several factors can draw investors toward the infrastructure market. Most infrastructure assets have:

- **Stable cash flows.** Infrastructure projects often face few competitors. Many operate as monopolies in industries with high barriers to entry, significant economies of scale, and few substitutes. User demand is often inelastic and, given the "essential" nature of the projects, cash flows may be expected to exhibit low sensitivity to economic cycles. These characteristics appeal to investors seeking steady and stable cash streams.
- **Inflation protection.** Infrastructure concession agreements often include some form of inflation protection. In many cases, revenues are explicitly or implicitly linked to inflation through provisions in utility rate case settings, road toll rate settings, or the like.
- **Long expected life.** Lease or concession agreements can range from 20 to 99 years.

Infrastructure investors also face several potential risks:

- **Regulatory and political risk.** Infrastructure assets are typically controlled by a government entity, either directly or indirectly. As a result, the privatization of an asset can involve many different stakeholders with potentially different objectives. Further, assets that have monopoly or near-monopoly status may face strong regulatory oversight. Pricing power in these instances may be limited.
- **Liquidity risk.** Liquidity is likely to be limited for directly owned, project-financed infrastructure assets. There is essentially no secondary market for these assets, and most do not lend themselves to conversion to alternate uses.
- **Emerging investment strategy risk.** Given the relative youth of infrastructure investing, little reliable data exists about its return profile and correlation with other asset classes. A lack of marketplace transparency results in greater uncertainty about asset valuations. The limited benchmarks that have been created in this market are almost exclusively tied to listed company stocks, making it hard to gauge relative performance.
- **Operating risks.** Physical risks are often present with infrastructure assets. Many are self-insured, making them financially as well as physically vulnerable to catastrophes such as hurricanes, earthquakes, or terrorist attacks. In addition, direct investment in infrastructure requires significant financing and operating expertise. A lack of skilled operators or departure of key personnel could create problems.

In addition to the risks just listed, which generally arise from the nature of the assets themselves, there are risks associated with the method investors choose to gain exposure to infrastructure.

Direct investing in infrastructure carries substantial idiosyncratic risks that can pose notable hurdles for the average investor. Infrastructure projects are largely stand-alone and can require significant resources to fully comprehend the investment opportunity. Diversification of risk can be difficult with projects that are few in number and massive in size.

Investment via an unlisted infrastructure fund can overcome many of these issues but poses its own set of challenges, including lock-up periods, high minimums, and fees. Vehicles that are broadly available, such as ETFs, do not generally appear to provide the benefits of direct investments; instead, they tend to be highly correlated with overall equity returns.

Conclusion

For some investors, infrastructure investing can offer an appealing opportunity to pursue long-term, stable, inflation-protected cash flows along with potential diversification of a traditional portfolio. However, given that the overall infrastructure market remains small, highly fragmented, and complex, investors should keep in mind that successful execution may depend on the combination of very costly resources with highly specialized expertise.

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Figure 1. Direct infrastructure investment compared with other investments

	Infrastructure	Real Estate	Bonds	Private Equity
Primary Source of Returns	Cash yield.	Some cash yield; some capital appreciation.	Cash yield.	Capital appreciation.
Income	Once mature, very stable; linked to GDP/inflation.	Sector dependent, mixture of fixed and variable interest rates.	Fixed coupon; interest rate sensitive.	Limited.
Capital appreciation	Lower to moderate.	Dependent upon asset characteristics and broad market conditions; can be higher.	Lower.	Typically higher.
Idiosyncratic risk	Higher; significant capital intensity limits ability to diversify.	Moderate; capital intensive, but can be accessed via diversified funds.	Lower; easily diversifiable.	Higher; capital intensity and distressed nature of typical investments increase risk.
Liquidity	Low.	Moderate.	High.	Low.
Market efficiency	Low.	Moderate.	High.	Low.
Investment nature	Project driven; requires due diligence and managerial expertise.	Some market-based, but often project-driven.	Market-based.	Project-driven; requires due diligence and managerial expertise.

Sources: RREEF Alternative Investments and Vanguard.

Figure 2. Comparison of infrastructure ownership structures

	Direct: Private Placement	Direct: Unlisted Fund (e.g., commingled vehicle)	Indirect: Listed Fund (e.g., ETF)
Liquidity	Low; no secondary market; concessions typically range from 20–99 years.	Moderate; most funds impose a several year lock-up period.	High; assets can be sold at any time.
Implementation	Project-based; can take years to structure a deal.	Typically offered as part of a closed-end fund.	Purchased on exchange.
Access	Extremely limited; only the largest institutions can typically gain access.	Limited; often have high investment minimums.	Broadly accessible.
Volatility and correlation to other asset classes	Low; most valuation done on an appraisal basis.	Low; most valuation done on an appraisal basis.	High; subject to overall equity market volatility; high correlation with utilities.
Required expertise	Financing structures; due diligence; ongoing management.	Manager selection.	Marginal.
Return orientation	Inflation-adjusted income.	Inflation-adjusted income.	Total return.

Sources: Callan Investments Institute and Vanguard.

P.O. Box 2600
Valley Forge, PA 19482-2600

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E-mail > research@vanguard.com

All investments are subject to risk. Investments in bonds are subject to interest rate, credit, and inflation risk.

Investors must buy or sell ETF shares in the secondary market with the assistance of a stockbroker. In doing so, the investor will incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.

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