MEKETA CAPITAL

Investing in Private Infrastructure

RESEARCH | SEPTEMBER 2024

While there is a growing need for investment to improve and upgrade infrastructure around the globe, the traditional providers of infrastructure capital, such as governments and corporations, have been limited in their ability to invest. In the funding gap that has emerged, private capital has stepped in, providing an opportunity for investors. As an asset class, private infrastructure can provide investors with diversification, stable income, downside mitigation, and inflation protection across a wide variety of economic conditions.

What Are Infrastructure Investments?

Infrastructure is the foundation for the production and delivery of goods and services critical to the global economy. Infrastructure assets often have some combination of the following characteristics: long useful lives, high barriers to entry, monopolistic market positioning, and generally stable usage. Infrastructure investments also usually enjoy inelastic demand, relatively stable cash flows, and low long-term exposure to commodity prices. These attributes are usually attached to assets that have an "essentiality" component, such as those associated with transportation, energy and other critical utilities, government operations, and mass communication networks.

The private infrastructure asset class can be categorized both by the sectors it targets as well as by its risk-return profiles. Figure 1 depicts the various primary sectors that infrastructure invests in, as well as the key sub-sectors within each.

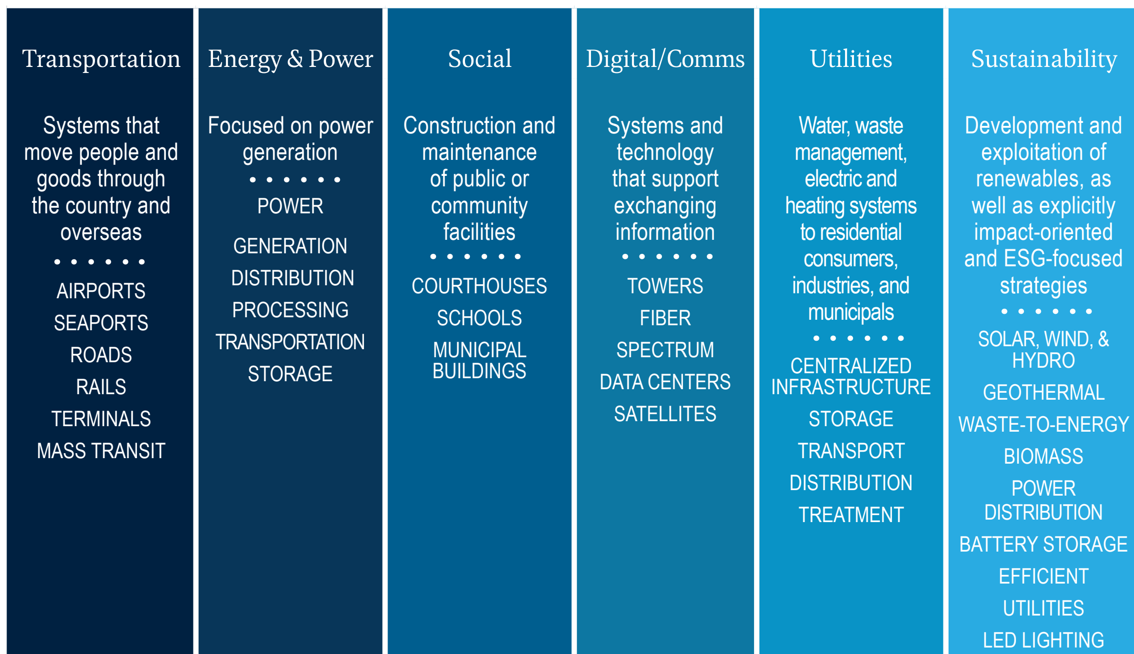


FIGURE 1
Breakdown of Infrastructure Sectors and Sub-Sectors
Source: Meketa Investment Group, 2023.

Investable Universe

The investable private infrastructure universe first became a noteworthy part of the private market landscape around 2006, and it has grown more robust ever since. Infrastructure funds have raised approximately $1.3 trillion from 2000 through 2022 (see Figure 2). More recently, aggregate capital raised per year has grown to a record $176 billion in 2022.[1] Since 2009, infrastructure fundraising has grown every year except during the COVID-19 pandemic in 2020. The number of funds in the infrastructure market in any given year has also grown considerably, reaching almost 200 in 2021.

[1] Source: Preqin, as of September 2023.*

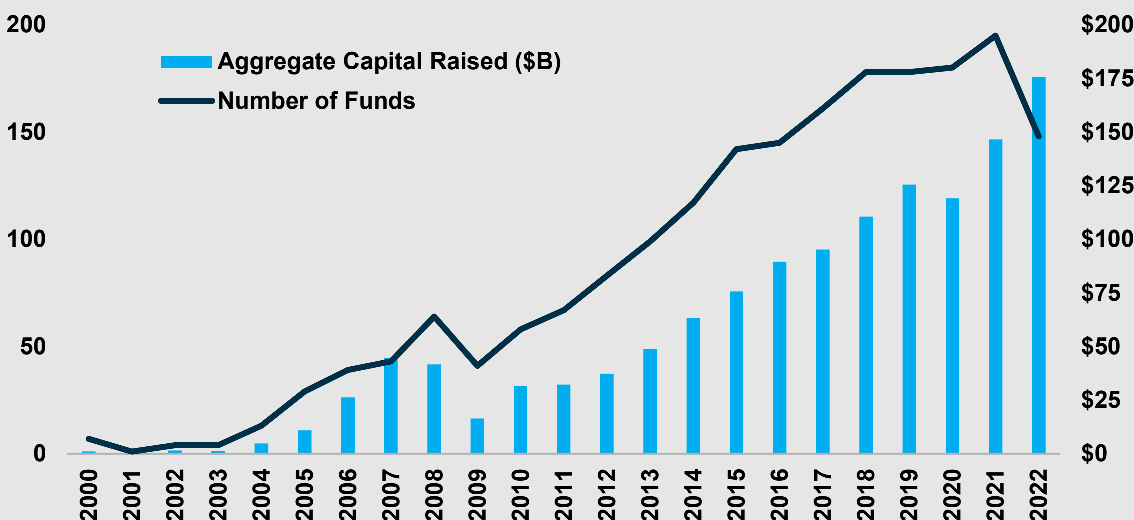
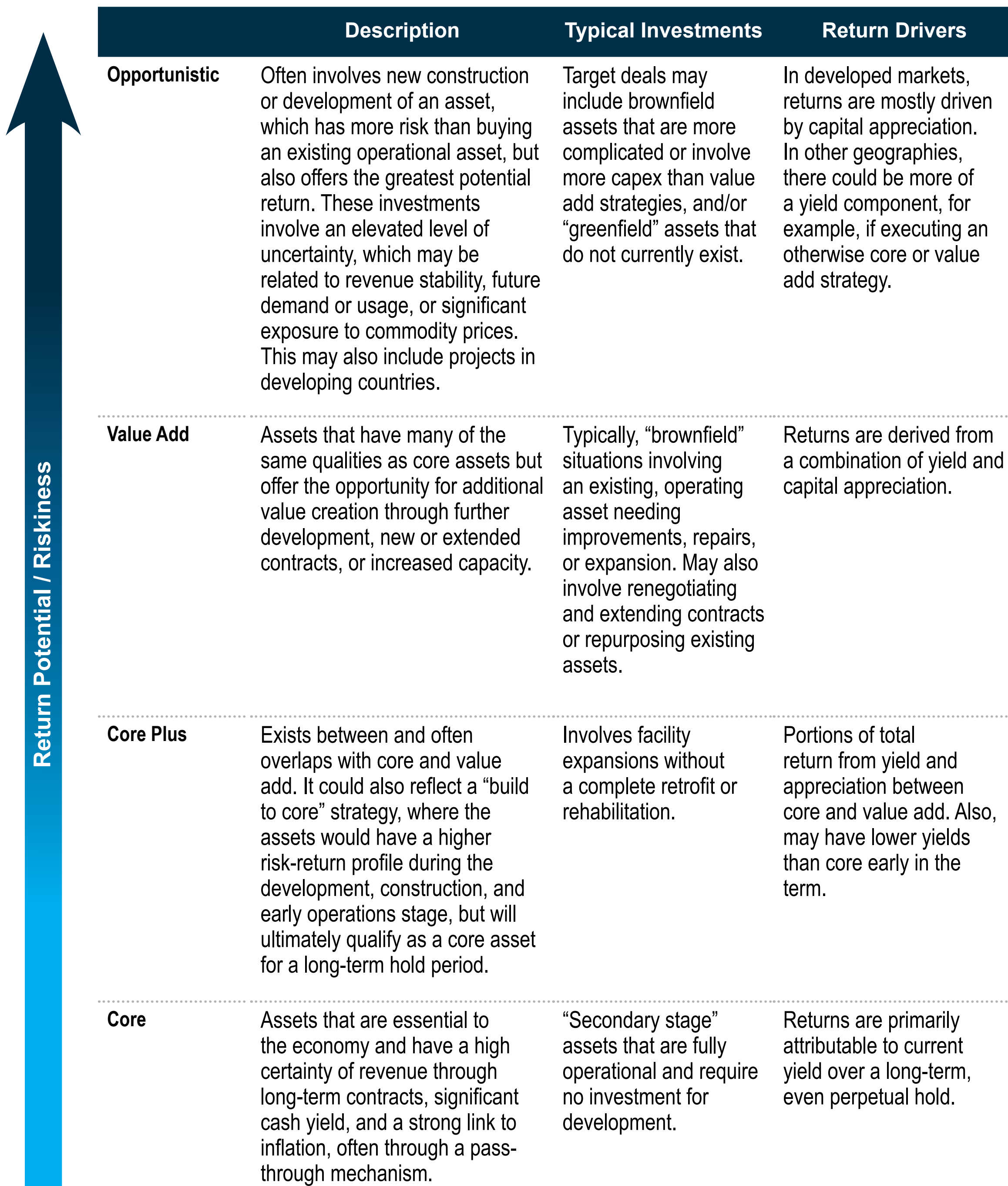


FIGURE 2
Global Private Infrastructure Aggregate Capital Raised and Number of Funds
Source: Preqin, as of September 2023.*

Note: Past Performance is Not Indicative of Future Performance. May Lose Value.

Infrastructure Strategies

Infrastructure strategies, differentiated by their risk and return profiles, are often the first dimension established for diversification within an infrastructure program. Both equity and debt strategies are available in infrastructure. Equity strategies may be broadly characterized as core, core plus, value add, and opportunistic, on a continuum from lower risk and return to higher risk and return (see Figure 3). The strategies are not mutually exclusive. Additionally, the risk/return profile of any individual asset may purposefully change over an owner's holding period, as managers may enter an investment at a relatively higher risk-return profile, work to de-risk or otherwise improve the asset, and exit by selling it to investors with a relatively lower risk/return target.



	Description	Typical Investments	Return Drivers
Opportunistic	Often involves new construction or development of an asset, which has more risk than buying an existing operational asset, but also offers the greatest potential return. These investments involve an elevated level of uncertainty, which may be related to revenue stability, future demand or usage, or significant exposure to commodity prices. This may also include projects in developing countries.	Target deals may include brownfield assets that are more complicated or involve more capex than value add strategies, and/or "greenfield" assets that do not currently exist.	In developed markets, returns are mostly driven by capital appreciation. In other geographies, there could be more of a yield component, for example, if executing an otherwise core or value add strategy.
Value Add	Assets that have many of the same qualities as core assets but offer the opportunity for additional value creation through further development, new or extended contracts, or increased capacity.	Typically, "brownfield" situations involving an existing, operating asset needing improvements, repairs, or expansion. May also involve renegotiating and extending contracts or repurposing existing assets.	Returns are derived from a combination of yield and capital appreciation.
Core Plus	Exists between and often overlaps with core and value add. It could also reflect a "build to core" strategy, where the assets would have a higher risk-return profile during the development, construction, and early operations stage, but will ultimately qualify as a core asset for a long-term hold period.	Involves facility expansions without a complete retrofit or rehabilitation.	Portions of total return from yield and appreciation between core and value add. Also, may have lower yields than core early in the term.
Core	Assets that are essential to the economy and have a high certainty of revenue through long-term contracts, significant cash yield, and a strong link to inflation, often through a pass-through mechanism.	"Secondary stage" assets that are fully operational and require no investment for development.	Returns are primarily attributable to current yield over a long-term, even perpetual hold.

FIGURE 3
Infrastructure Strategy Descriptions and Risk-Return Profiles
Source: Meketa Investment Group, 2023.

Historical Performance and Manager Alpha

Figure 4 shows the annual returns of private infrastructure's primary core/core plus and non-core strategies.

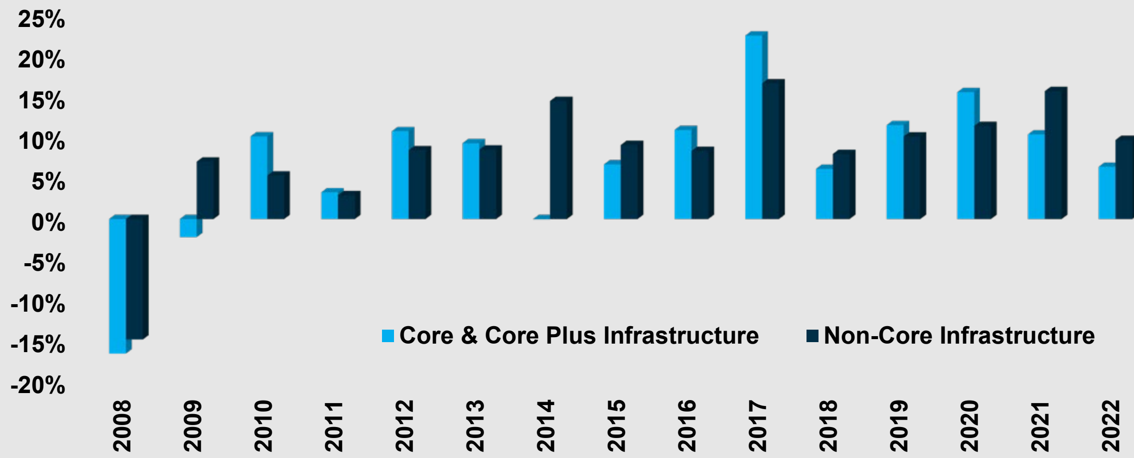


FIGURE 4

Annual Returns by Infrastructure Strategy

Source: Quarterly returns sourced from Cambridge Associates via IHS Markit as of July 2023.* Indices: Cambridge Core & Core Plus Infrastructure Composite, Cambridge Opportunistic Infrastructure Composite, Cambridge Value Added Infrastructure Composite.

Note: Past Performance is Not Indicative of Future Performance. May Lose Value.

Manager and fund selection in private infrastructure, like all private markets, is essential to achieving top quartile returns. Interquartile spreads can be interpreted as how much potential value lies in selecting superior funds or managers within each asset class (see Figure 5). For infrastructure funds with vintage years 2011 to 2020, the average quartile spread was 9.0%. Compared to other private markets, infrastructure has a smaller interquartile spread than natural resources (12.9%), private equity (14.8%), and non-core real estate (10.8%), though it is still significantly larger than that for public US large-cap equities (4.1%). The inclusion of core funds in the infrastructure composite may partly explain why the spread is lower than that for the other private market composites.

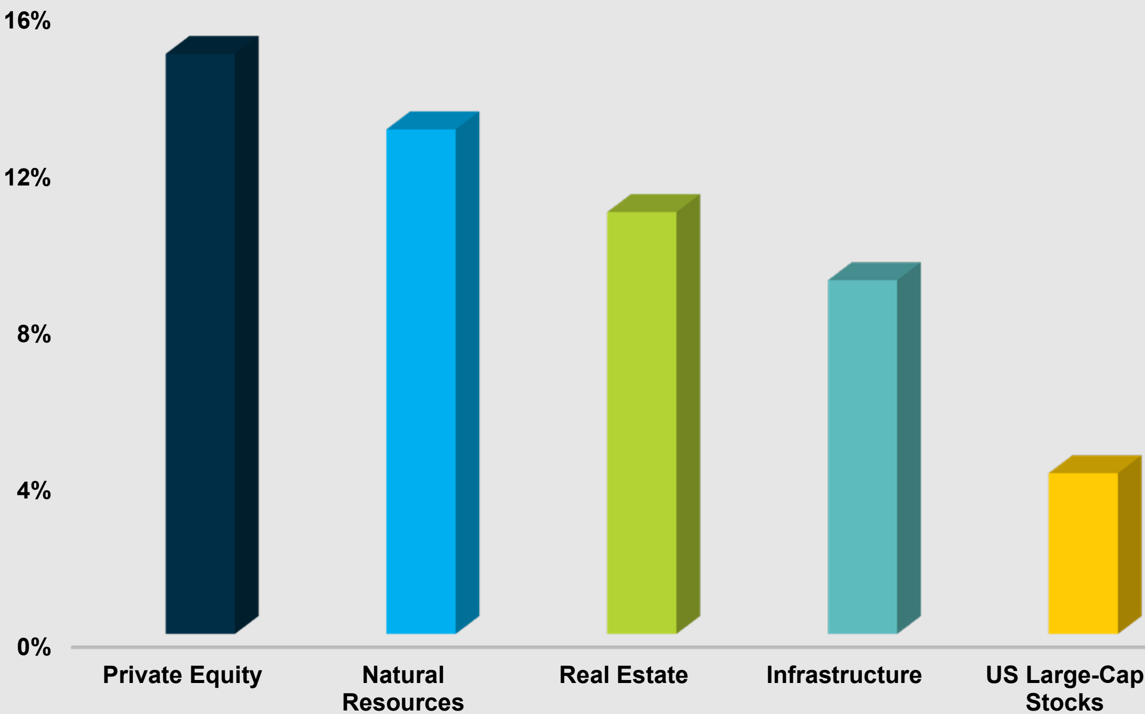


FIGURE 5

Trailing 10-Year Interquartile Spread

Source: Data sourced from Morningstar and Cambridge Associates via IHS Markit. Private asset funds raised Vintage Year 2011 to 2020. US equity data for the trailing 10 years as of December 31, 2022. Cambridge data sourced July 2023, Morningstar data sourced October 2023. Indices: Cambridge Infrastructure Composite, Cambridge Natural Resources Composite, Cambridge Private Equity Composite, Cambridge Real Estate Composite, Morningstar US Large Cap Equity Universe. Average fund count is 21 for natural resources, 10 for infrastructure, 108 for private equity, 63 for real estate, and 320 for US equity. Natural resources does not have data for the 2020 vintage year and Infrastructure does not have data for the 2011 vintage year.

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Why Invest in Infrastructure?

The infrastructure asset class may be appealing to investors for a number of reasons, primarily diversification benefits and inflation hedging potential. Another appealing aspect of infrastructure is the potential for income generation, depending on the strategy employed.

Diversification from Major Asset Classes

Infrastructure's correlation to both US bonds and equities has varied considerably since 2008. On average, both core/core plus and non-core private infrastructure have exhibited a correlation near zero to US bonds since 2008 (see Figures 6 and 7). The extreme variability of the rolling 1-year correlation implies that there is no significant correlation between these asset classes. US equity also shows substantial variability in its correlations with core/core plus and non-core infrastructure. However, the average correlation is positive, at 0.55 and 0.63, respectively. This implies they are somewhat correlated to equities, which seems intuitive as, in the long run, returns for both sets of assets are likely to be driven by economic growth.

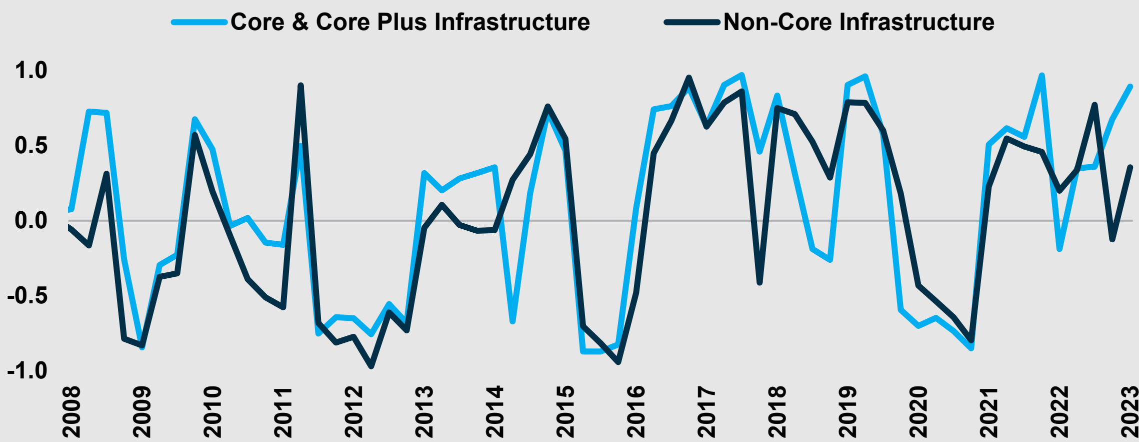

FIGURE 6

Rolling 1-Year Correlation to US Bonds

Source: Quarterly returns sourced from Bloomberg and Cambridge Associates via IHS Markit as of July 2023.** Indices: Cambridge Core & Core Plus Infrastructure Composite, Cambridge Opportunistic Infrastructure Composite, Cambridge Value Added Infrastructure Composite, Bloomberg US Aggregate Bond Index.

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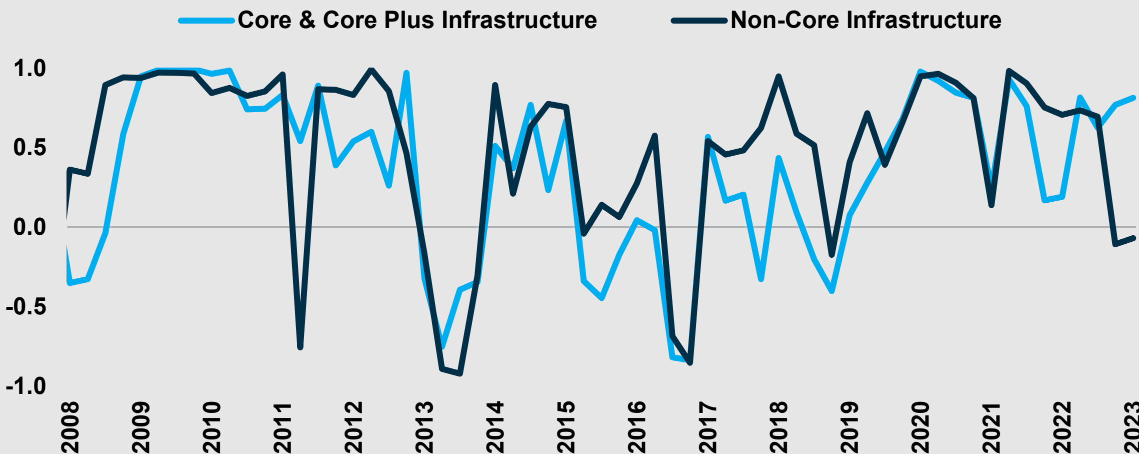

FIGURE 7

Rolling 1-Year Correlation to US Equity

Source: Quarterly returns sourced from Bloomberg and Cambridge Associates via IHS Markit as of July 2023.** Indices: Cambridge Core & Core Plus Infrastructure Composite, Cambridge Opportunistic Infrastructure Composite, Cambridge Value Added Infrastructure Composite, Russell 3000 TR.

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Diversification During Market Downturns

Private infrastructure may help to provide investors downside protection during market downturns. As shown in Figure 8, core/core plus and non-core infrastructure strategies have fared better than equities during the major market downturns over the last 15 or so years.

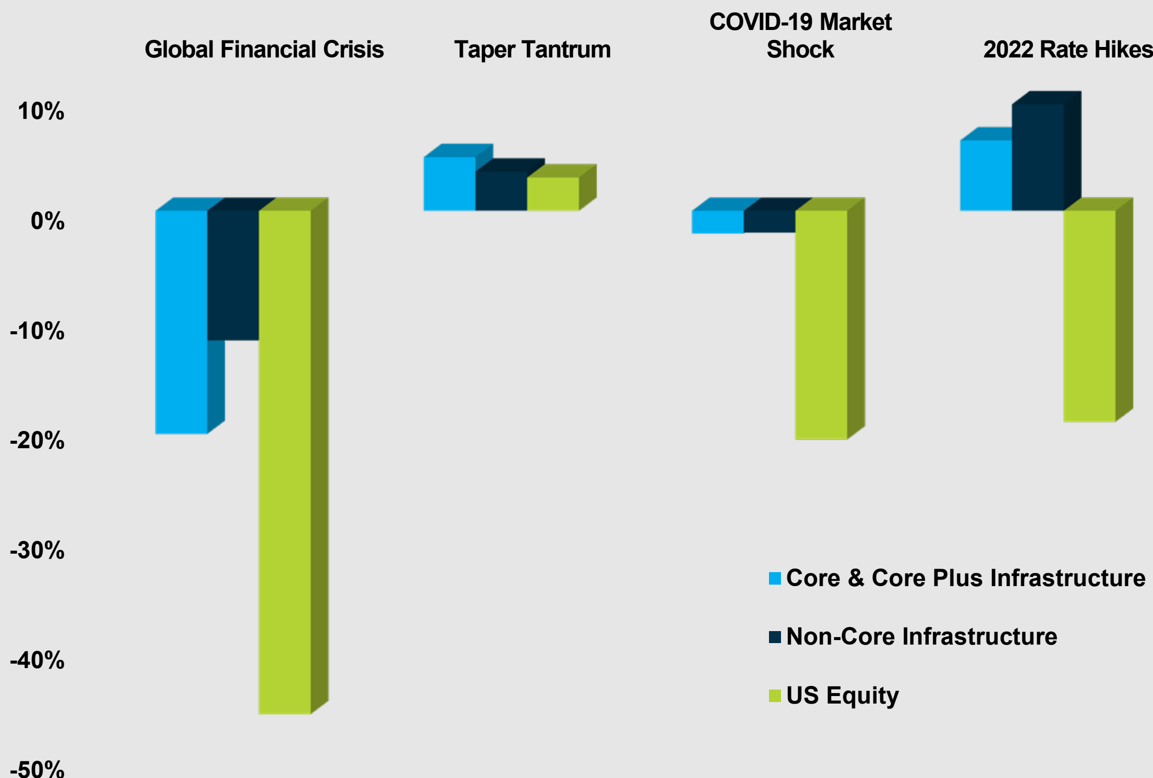

FIGURE 8

Returns During Historical Market Downturns

Source: Meketa's Asset Allocation Tool. Returns are cumulative for the time period over which the scenario occurred. Dates for the four events in order are: Oct 2007 – Mar 2009, May - Aug 2013, Feb 2020 - Mar 2020, Jan – Dec 2022.

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Inflation Hedge

A commonly cited purpose of private infrastructure allocations is inflation protection. Many infrastructure assets include physical property that is expected to maintain or increase in value during periods of inflation. Additionally, many infrastructure investments' revenue streams have explicit inflation links under contract or concession schemes.

Looking at a few specific historical scenarios, infrastructure's potential inflation protection is demonstrated in Figure 9. Both core/ core plus and non-core private infrastructure outperformed US equities in the inflationary scenarios, even generating positive returns. These inflationary scenarios are for the period Q2 2003 to Q4 2022, due to lack of data for earlier quarters. While inflation was low for the majority of this period, the spike in inflation near the end of the period provided perhaps the first true test of infrastructure (and many other assets) as an inflation hedge. The analysis does not suggest that infrastructure will always generate positive returns during future inflationary times. It implies that core/core plus infrastructure is more responsive to inflation than non-core infrastructure, as would be expected since core/core plus tends to have a higher percentage of contracted and otherwise inflation-linked revenues.

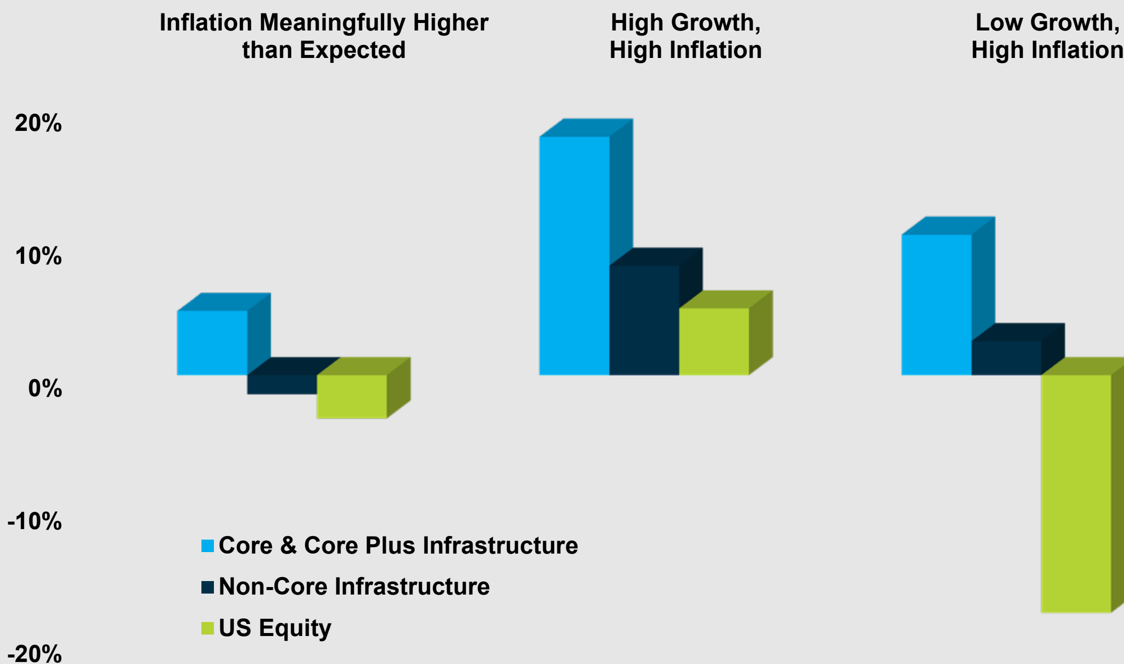

FIGURE 9

Inflationary Scenarios

Source: The inflationary scenarios analyzed were over the period 4/1/2003 to 12/31/2022 as this was the earliest data available for core/core plus private infrastructure and gave the largest time period to analyze inflationary periods over. Note that fund count from 4/1/2003 to 10/1/2007 is low, with less than 8 funds per strategy.

Source: Reflects average, annualized asset class returns. These figures are from Meketa's scenario analysis based on data from Cambridge Associates via IHS Markit, Bloomberg, and FRED from 4/1/2003 to 12/31/2022. See the appendix for more details on and descriptions of the inflationary periods included in Meketa's scenario analysis.

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Risk Considerations

As with any asset class, private infrastructure investments can present risks to understand and consider before investing. For example, regulatory and legislative developments may impact partnerships and pricing structures. There may also be environmental, social, and governance (ESG) risk if the infrastructure project will disrupt a region's community, such as a large highway project, or if the construction results in pollution or environmental hazards.

Infrastructure investments may also be affected by construction risks, such as higher-than-expected costs or construction delays. And for infrastructure projects that have revenues that are dependent on the market price being higher than the production cost, such as in energy, price volatility can have an effect on revenues.

It's also important to know that leverage is a common characteristic of infrastructure, which entails risk. While the amount of debt managers place on investments is typically directly related to the certainty and security of the revenue streams, high amounts of leverage result in high amounts of interest to be paid.

Diversifying with Private Infrastructure Investments

An allocation to private infrastructure may provide several benefits to investor portfolios, from diversification and downside protection to serving as a hedge against asset depreciation during high inflationary periods.

Infrastructure encompasses a wide variety of strategies with respect to their level and type of risk, as well as their return potential. As always, investors should conduct careful due diligence to make sure that investments match their objectives and risk comfort level.

Appendix

Inflation scenario analysis

- → Meketa's Inflation Scenario Analysis is for the period April 2003 - December 2022.
- → The Scenario Analysis is based on a generalized linear regression ("GLS") model that estimates the effects of realized and surprise inflation on monthly asset returns, controlling for the economic environment. The GLS model assumes a residuals autocorrelation of 1. Quadratic independent variables are added to the regression model to account for potential non-linearity between an asset class and inflation. Estimated scenario returns at the asset class level are then calculated as the expected value of asset class returns, conditional on the inflation scenario.
- → Inflation is the monthly change in CPI from the 3-month rolling average CPI, surprise inflation is the difference between this month and last month's inflation rate, and GDP Growth is the percent change in GDP from the previous quarter. Inflation and GDP data are taken from the St. Louis Federal Reserve Bank's FRED database.
- → Inflation meaningfully higher than expected is when surprise inflation is in the 75th percentile of positive, historical surprise inflation.
- → High Growth and High Inflation is when real GDP growth is the 75th percentile of historical GDP growth and inflation is in the 75th percentile of historical inflation.
- → Low Growth and High Inflation is when real GDP growth is the 25th percentile of historical GDP growth and inflation is in the 75th percentile of historical inflation.
- → Indices Used: Russell 3000 TR, Cambridge Core & Core Plus Infrastructure Composite, Cambridge Opportunistic Infrastructure Composite, Cambridge Value Added Infrastructure Composite

Risks and Disclosures

*There is no complete and reliable data set for private investments. The information is extremely limited, and most data is compiled from funds that elect to self-report and tend to be biased toward higher performing funds. Losses are underreported. Funds included in these measures lack commonality and transparency. Over time, components of the data may change. Funds may begin or cease to be represented based on these factors, thereby creating a "survivorship bias" that may additionally impact the data reported.

**The Cambridge Infrastructure Index is a horizon calculation based on data compiled from 93 infrastructure funds, including fully liquidated partnerships, formed between 1993 and 2015. The Cambridge Core Infrastructure Index is comprised of Cambridge's Core & Core Plus Infrastructure index and Non-Core is comprised of 50% of Cambridge's Value Added Infrastructure index and 50% of Cambridge's Opportunistic Infrastructure index. The Russell 3000 Index measures the performance of 3,000 stocks and includes all large-cap, mid-cap and small-cap US equities, along with some microcap stocks. The Bloomberg US Aggregate Bond Index is a broad-based, market capitalization-weighted bond market index representing intermediate-term investment-grade bonds traded in the US.

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