

Infrastructure Investing: A Resilient Alternative in Times of High Inflation and Rates

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Private infrastructure, in our view, has displayed remarkable resilience in an environment characterized by stubbornly high inflation and broad-based expectations that interest rates will stay at current lofty levels for longer than originally forecast. We see many reasons behind such strength: infrastructure is widely perceived as a less cyclical asset class, it has historically outperformed in periods of high inflation, and its long-term prospects we believe remain bullish, bolstered, in no small part, by recently enacted government policy in the United States. But this optimistic scenario is not void of risks, particularly for investments in the large-capitalization end of the infrastructure spectrum, which is currently awash in capital.

As we explore these topics in detail, let's start with the current investor appetite for the asset class. Over the decade from 2012 to 2022, global infrastructure assets under management increased five-fold. Despite a nearly universal slowdown in fundraising in 2023, managers operating in the space remain flush with dry powder, which has more than quadrupled since 2022, according to data from Preqin.

We believe this strong influx of capital was due, in large part, to the asset class’s resilience in times of high and rising inflation. As shown in **Exhibit 1**, in the past 15 years since the Global Financial Crisis (GFC), investments in private infrastructure performed particularly well in times of inflation, beating public equities by 290 basis points on a quarterly basis when inflation was highest.

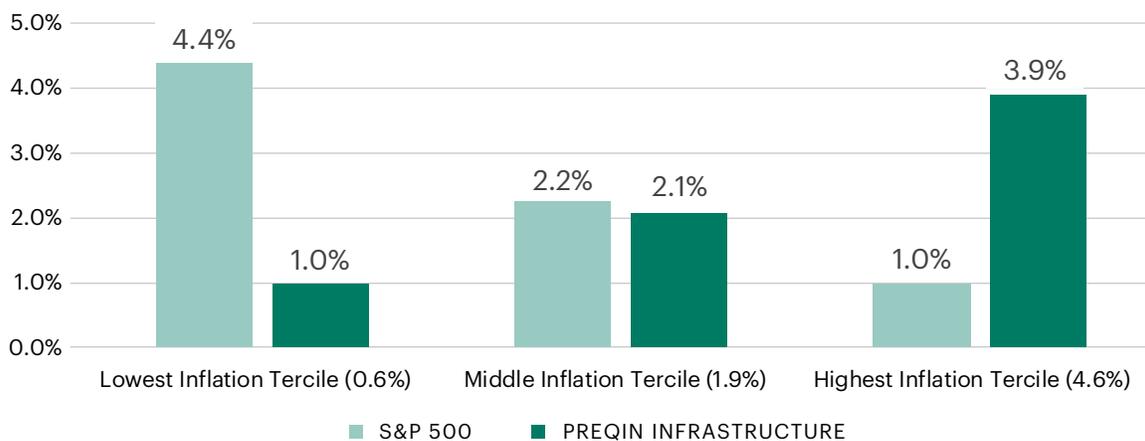
The asset class’s inflation-hedging traits stem from the fact that infrastructure assets often possess long-term contracts featuring “inflation escalators,” which allow prices charged

by operators and subsequent revenues to increase in step with inflation measures like the US consumer price index (CPI). This particular trait was one of the main reasons why institutional investors originally began investing in infrastructure.

Additionally, government policy and societal needs are creating new opportunities and acting as long-term tailwinds driving infrastructure investments. Governments need private capital to flow into infrastructure to finance critical societal projects like the transition to clean energy, the construction of digital communications networks, and the rebuilding of crumbling transportation corridors.

Exhibit 1: Infrastructure has shown resilience in times of rising and high inflation

Quarterly Returns of S&P 500 vs Infrastructure by Inflation Tercile, 2008–2022



Source: Bloomberg, US Bureau of Labor Statistics (for US Consumer Price Index, CPI), Preqin Infrastructure; 2008-2022.

Regardless of political rhetoric, there is no debating that recent policy initiatives—like the Infrastructure Investment and Jobs Act in 2021, and the Inflation Reduction Act (IRA) and the CHIPS Act in 2022—indicate that a large pool of public capital will be directed into global infrastructure over the next decade. In addition, “onshoring” incentives included in all three of those laws can help stimulate new infrastructure projects in the United States in semiconductors, nanotechnology, wind and solar power, electric battery manufacturing, electric charging and fueling, and a range of other areas. The combination of government action, technology innovation, and market/societal demand are creating what we believe will be historic opportunities, especially in the three areas of clean transition/renewables, digital communications infrastructure, and transportation. These opportunities could be enhanced significantly by the emergence of increasingly powerful artificial intelligence (AI) applications (see sidebar).

But a word of caution: As opportunities arise, we believe that investors should resist the urge to pile into deals and sectors vulnerable to future changes in policy and other geopolitical risks. The key, in our view, is to remain highly selective, avoid overpaying for assets, and target primarily infrastructure assets that will be essential to the economy and end customers for the next 20, 30, and even 50 years.

Further, despite its relative outperformance in inflationary periods, infrastructure is not invulnerable to the effects of rising prices and other macroeconomic fluctuations. Many of today’s infrastructure projects are highly leveraged. That is especially the case with large “new build” projects that require significant capital expenditures, like the build-out of wind farms or hyperscale data centers.

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Traditionally, high loan-to-value (LTV) ratios in infrastructure have been supported by strong cash flows. But with the rapid increase in interest rates, owners of infrastructure assets are devoting additional cash flows to service leverage and working to manage the impact of that cash drag on their balance sheets. Some big greenfield projects are experiencing the consequences of inflation more directly through increasing construction and labor costs.

Infrastructure is also being affected by the surge in market volatility. Specifically, huge capital inflows into infrastructure over the past decade have not been enough to entirely counteract the effects of the recent, broader decline in investment asset valuations. Some owners have become hesitant to sell into a market in which they might not receive what they perceive as full price for the asset. The result has been a widening gap between bids from potential buyers and asks from possible sellers.

Flexibility and selectivity can be the key in the current environment

In these challenging market conditions, there are steps investors can take to supplement infrastructure's natural inflation-protection qualities and further mitigate the negative impacts of rising prices and market volatility.

For starters, investors can maintain the flexibility and selectiveness to target only the most attractive assets in any given market conditions. Infrastructure investors who remain disciplined can be less vulnerable to cyclical shifts in market conditions. By limiting investments to essential infrastructure assets with inflation-protected, long-term contracts, and dominant or even monopoly-type market positions, investors can better insulate themselves from the effects of economic factors.

Investors can further optimize risk-adjusted returns by allocating up and down the capital structure. In a market with limited access to credit and high bid/ask spreads, the linear relationship between risk and return can be disrupted. In this type of environment, investors with the flexibility to invest across the capital structure can have greater opportunity to find pockets of return with lower risk profiles.

Finding value in the middle market

Investors can also minimize the impact of macroeconomic fluctuations overall by remembering that "purchase price matters." Investors who buy infrastructure assets at high valuations leave themselves less room to absorb any negative impacts from changes in the economic environment. Investors who adhere to a disciplined pricing model can have more leeway to create value, regardless of short-term economic conditions.

Over the past five years, we believe that philosophy has guided Apollo away from the top end of the infrastructure market, where too much money chasing too few deals has driven up valuations. We have found much greater value in the middle market, where equity checks are typically less than \$1 billion dollars, with many opportunities coming in the \$200 million to \$500 million range.

We see more candidates for consolidation in this space, and more opportunities to create value by acquiring assets with room for further build-out and/or operational enhancement. A utility asset that has been operated and regulated for decades is likely already operating efficiently and provides little opportunity for value extraction. An earlier stage fiberoptic network can provide opportunities for buyers to grow and mature the asset in order to sell it later as large-scale infrastructure.

For investors with the ability and discipline to take advantage of these opportunities, we remain highly bullish on infrastructure as an asset class across all stages in the economic cycle and market conditions.

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Five Ways AI Can Transform Infrastructure

The rapid development of artificial intelligence (AI), generative AI (GenAI), and machine learning (ML) is ushering in a new era of efficiency and impact in infrastructure—and changing the way infrastructure investors think and invest.

New AI-driven technologies are streamlining the sector and generating valuable new insights for both operators and investors. We see the primary impact of AI as two-fold. First, the integration of these new technologies will likely require a wave of investment into infrastructure asset classes such as telecommunications and energy generation. Second, AI-powered applications can transform asset management and investment processes, making capital allocation vastly more efficient and enhancing asset quality.

In the near-term, we believe AI/ML is poised to disrupt and drive investments in at least three industries central to the infrastructure asset class:



Telecommunications: The boom in GenAI technologies like Open AI’s ChatGPT, Google’s Bard, and others is driving demand for data centers to meet the growing need for computing power and server computing density. Significant capex investments will likely be needed to improve existing systems, including investments in energy storage, and build new ones, including investments in supporting energy infrastructure such as storage and production.



Renewable Energy: Related to the increased demand for data solutions, one of the fundamental requirements for ubiquitous AI deployment will likely be the availability of carbon-free energy at grid scale. The data center industry is already a major buyer of PPA agreements for renewable energy. We believe the growth and proliferation of AI will drive significant investment in additional clean energy generation and storage solutions. Also, AI/ML can allow for enhanced control and better management of energy consumption and optimization, ultimately lowering costs and improving the operational function of assets.



Transportation: While we do not expect AI to change the fundamentals for transportation assets to the extent foreseen in telecommunications and renewable energy, these new technologies could result in significant improvements in the way transportation assets are managed. For example, toll road operators can use AI to improve congestion pricing, optimize tolls, and reduce traffic congestion.¹ Across the board, AI solutions can help managers of transportation assets more efficiently navigate demand/supply imbalances and ultimately improve performance.

Across the entire asset class, we have identified five areas in which generative AI and other large language models (LLMs) could disrupt the investment and management of infrastructure assets:

- 1 **Efficiency in Asset Evaluation and Allocation:** AI systems are gaining the ability to analyze an unprecedented amount of data on hard assets or renewable energy sources (location, material condition, output, etc.) and help make informed investment decisions around allocation of capital and general asset evaluation.
- 2 **Production Forecasting and Planning:** The ability to incorporate a wide variety of data—including weather patterns and historical production data—is enhancing the accuracy of forecast-based modeling (i.e., energy production forecasts) and changing the dynamic of how due diligence is conducted.
- 3 **Predictive Maintenance:** GenAI tools can be utilized to develop predictive models for infrastructure operations and maintenance (O&M), identifying potential issues early in their lifecycle before they become a significant issue from an operative and cost standpoint. These capabilities will likely reduce uncertainty and provide stronger cash flow visibility.
- 4 **Regulatory Compliance:** AI tools can keep track of policy changes in an ever-evolving regulatory landscape. AI can also help assess the impact of these changes on infrastructure assets and ensure that portfolio companies and management teams are synchronized with new legislation and policy shifts that can have a profound impact on infrastructure assets, including changes in federal and state tax credits in renewables, federal grant programs in transportation, and many others.
- 5 **Sustainable and Environmental, Social & Governance (ESG) Investing:** ESG and sustainable investing are now intrinsically linked with infrastructure as an asset class and play an important role in most investor mandates. AI tools can enhance the ability to track ESG metrics, provide valuable insights, and help improve alignment between investors and portfolio managers.

¹ <https://hai.stanford.edu/news/counting-cars-new-ai-driven-approach-fine-tunes-road-tolls-reduce-traffic>

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