

## INFRASTRUCTURE INVESTING

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### Introduction

Infrastructure refers to several types of facilities with an important role in the functioning of developed economies. These include major subsectors such as transportation (toll roads, bridges, airports, seaports), regulated utilities (water, electric, waste), communications (cell towers), social infrastructure (hospitals, schools, prisons), and energy (pipelines, storage facilities, independent power plants).

The need for massive infrastructure investment (measured in the trillions of dollars) is not in dispute. In its recent global infrastructure report, the OECD made the following estimates of worldwide infrastructure investment needs through 2030:

Rail, Road, Telecom, Electricity Transmission, Water	\$53 trillion or \$2.4 trillion per year
Electricity Generation	\$12 trillion or \$545 billion per year
Other Energy-related Investments (e.g. oil, gas, coal)	\$6 trillion or \$273 billion per year

*Source: OECD Global Infrastructure to 2030, April 2008*

At the same time, governments at all levels throughout the developed world are simply unable to supply the capital required for public infrastructure because of large deficits and severe budgetary pressures. Increasingly, they are seeking to access private capital to build new assets, expand or renovate existing assets, and supply the provision of essential services.

This long-term demand/supply imbalance should create strong fundamentals for infrastructure investments for many years to come.

The number of private infrastructure investment funds has expanded rapidly in recent years as the sector has drawn increasing attention from investors. Even so, it is estimated that globally, institutional investors have less than 1% of their assets invested in infrastructure. It is important to remember that infrastructure remains a young asset class. Only the energy infrastructure sector has a long and robust track record (more than 20 years in some cases); core infrastructure is much more recent, with few fund managers having anything close to a decade of experience.

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## Benefits to Investors

Adding infrastructure to an existing portfolio can be expected to provide investors with several important benefits. These include:

### Attractive risk/return profile

We believe that the best private infrastructure managers can provide net returns to investors of 10-14%. At the same time, we expect the volatility to be moderate; somewhere between equities and fixed income. However, sourcing, identifying, and accessing the best managers is a difficult endeavor. Because many managers lack operational expertise and most managers have little or no track record of success, we caution that many infrastructure funds are likely to disappoint their investors.

### Reduction in volatility

Because of its limited correlation with traditional asset classes, as seen in the chart below, adding infrastructure to a portfolio can be expected to enhance diversification and reduce the volatility of the overall portfolio.

### Correlations with Traditional Asset Classes

US Stocks	Non-US Stocks	Bonds	Cash
0.31	0.30	0.20	0.09

*Sources: P&I, Yahoo Finance, Bloomberg, Federal Reserve, Dow Jones. Period covered: 2003-2009.  
Indices used: Public Infrastructure/Dow Jones Brookfield Index; US Corporate Bonds/Barclays  
Capital Aggregate US Bonds; US Equity/S&P500; Non-US Equity/MSCI EAFE; Cash/US 90-day T-Bill.*

### Inflation hedging capabilities

Infrastructure assets are likely to provide a good hedge against inflation. Most infrastructure-related contracts contain clauses that allow for price increases tied to inflation. In addition, rising prices will boost the replacement costs of infrastructure assets, causing the value of existing projects to increase. Public infrastructure (public entities that are owners and operators of infrastructure assets) has a 0.33 correlation with inflation. We expect that private infrastructure (i.e. private equity style fund managers specializing in infrastructure assets) would be an even better inflation hedge.

## Attractive Subsectors

Infrastructure is comprised of several subsectors: transportation, regulated utilities, communications, social infrastructure, and energy.

We believe that energy is one of the most attractive subsectors in infrastructure today. Energy is a huge component of the world economy. Like other subsectors, there is a massive need for investment. Unlike other subsectors, however, there is a long history (over 20 years) of energy infrastructure managers providing excellent returns to investors.

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Experienced managers are available, verifiable track records exist across several economic cycles, and expected returns are generally higher than other subsectors. Many private energy infrastructure funds target a net return of 20-25%.

For this reason we recommend a heavy overweight to the energy infrastructure sector within any infrastructure allocation.

Attractive opportunities are also available in the other subsectors. Governments at all levels are increasingly looking to private sources of capital to meet their transportation, communication, and social infrastructure needs. More projects than ever are being built with private capital and/or being operated by private companies rather than government agencies. This is a trend that we expect will continue, as governments around the world face ongoing fiscal problems with no immediate solutions in sight.

Therefore, we recommend an investment approach that provides diversification across many subsectors, as well as other metrics such as geography, strategy, project stage, and manager. Broad diversification also creates the desirable low to moderate risk profile.

### Implementation Difficulties

Although investors increasingly understand the attractive opportunity that infrastructure provides today, they often find it difficult to implement an infrastructure program for several good reasons:

- ◆ Traditional infrastructure is an emerging asset class. There is no long-term return series for the sector to support the calculation of traditional risk and return metrics.
- ◆ It is difficult to evaluate infrastructure managers because the vast majority have limited operating history and little or no track record.
- ◆ There have been very few “clean” exits from infrastructure projects. Many exits have been transfers to related funds.
- ◆ Sourcing, analyzing, and selecting the right managers requires domain experience and due diligence expertise

New infrastructure funds are being set up all the time, often as spin-outs from the project finance arms of large banks. These folks can sound very plausible in pitches, but there is a world of difference in financing large scale infrastructure projects through bank franchises and judging the best investments for risk capital. Such difficulties suggest that most investors will benefit from enlisting an experienced advisor to guide them through implementation of their program.

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## Investment Approaches

There are several different approaches that investors can take to gain infrastructure exposure.

### Public equities

This approach provides liquidity, but unfortunately, fails to provide the other advantages of infrastructure mentioned above. Specific disadvantages to this approach include high volatility, less diversification due to correlation to public markets, and reduced effectiveness as an inflation hedge.

### Direct investments in projects

This approach requires significant scale, substantial internal resources, and specialized expertise that only a handful of institutional investors possess.

### Private equity-type funds

Investing in these funds is the best way to access the many benefits that infrastructure has to offer. However, this approach requires significant time, expertise, and resources to evaluate and choose the best managers. It also requires numerous commitments to achieve diversification by sector, strategy, geography, manager, and vintage year.

### Funds-of-funds

Given the implementation difficulties associated with infrastructure investing, and the disadvantages of the above approaches, many thoughtful investors have chosen to access infrastructure managers through funds-of-funds. A good fund-of-funds provides excellent diversification; professional manager identification, due diligence, and selection; access to the best managers; and streamlined administration and reporting. There is an extra layer of fees, of course, but benefits provided to investors are well worth the cost.

## Due Diligence and Manager Selection

The number of infrastructure managers is growing rapidly. However, only a minority have the specialized hands-on experience and operational expertise we believe will be necessary for success. Very few infrastructure managers have track records of any kind and there have been very few exits from investments. In fact, we believe that many, maybe even most, managers are likely to disappoint their investors. All these factors make it difficult to analyze managers.

Therefore, extensive due diligence is crucial in choosing an infrastructure manager. Multiple meetings with all key partners in all key office locations is required to get through the marketing hype and learn which managers possess the critical skills necessary to develop, build, and/or operate infrastructure projects and generate attractive returns for investors. This is a task that requires significant time and effort.

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## Recent Experience/Lessons Learned

Infrastructure investments, on the whole, did not perform well during the financial crisis and recent recession. This experience proved instructive, and the many painful lessons have been learned over the past few years will benefit investors going forward. These lessons include:

- ◆ Infrastructure assets are not immune to the economic cycle. Utilization of, and revenues from, many assets will decline during economic slowdowns
- ◆ Prices paid must be lower, especially where the economics are volume-based, to reflect the risk of individual project volatility,
- ◆ Extreme leverage can be dangerous.

Today, these observations appear to be simple statements of obvious facts. Several years ago, however, infrastructure managers were telling prospective investors exactly the opposite. Because of the experience of the past few years, however, we believe that managers are now modeling downside scenarios more accurately, using leverage more judiciously, and paying much lower prices for assets in recognition of the risks involved. This disciplined approach is a welcome change and should result in more stable and attractive returns for investors going forward.

## Summary

Private infrastructure is a relatively new asset class which started in the late 1990's in the UK, Australia, and Canada, early 2000's in continental Europe, and mid-2000's in the US. It is drawing increasing attention from investors who are searching for new ways of generating yield. Adding infrastructure to an existing portfolio can be expected to provide investors with several important benefits, including attractive returns, moderate risk, diversification, and inflation hedging. Implementation of an infrastructure portfolio is a difficult endeavor, largely because of its short history as an asset class. For investors with limited human resources, investing in a fund-of-funds managed by knowledgeable and selective professionals is the best option to achieve a risk adjusted return that is attractive. Our view is that an overweight to the energy subsector greatly increases investors' likelihood of success by enhancing diversification and increasing the return profile of the portfolio.

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