

S&P Global Infrastructure Index

Investments in infrastructure assets have long been utilised in tactical asset allocation by institutional investors due to their long-term investment horizon, high-grade bond quality, superior risk-adjusted returns and low correlation to traditional asset classes

Infrastucture assets represent a broad mix of businesses that provide essential services to society. They include transportation, utility and energy related hard assets. Publicly listed infrastructure assets include toll roads and bridge operators, airport and port operators, utility companies and companies involved in natural gas or petroleum transportation.

Infrastructure investing takes the form of long-term lease agreements between state and local governments and privately funded investment pools. Although relatively new in the US, infrastructure investing is popular in much of the rest of the world, particularly in Europe, Australia, Canada, and Asia.

Investments in infrastructure assets have long been utilised in tactical asset allocation by institutional investors due to their long-term investment horizon, high-grade bond quality, superior risk-adjusted returns and low correlation to traditional asset classes such as equities and bonds. Other unique characteristics of infrastructure assets include stable cash flows, upward revenue potential, and low outside competition.

The current global infrastructure assets market is around \$2.8 trillion, with as much as \$1 trillion estimated to be invested over the next decade. In the US, where listed transportation infrastructure assets have a small representation compared to the size of the public infrastructure market, privatisation has started to gain momentum and the opportunity for the market to grow is perceived to be high.

What are infrastructure assets?

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Infrastructure investing started in Australia, where today it is considered a separate asset class. Over the past decade, it has taken root in the UK and continental Europe and is now being seriously looked at by North American investors.

What are the distinguishing characteristics of infrastructure assets?

- ❑ **Long lived assets** – Infrastructure assets represent plants, electrical grids, toll roads and other projects that typically last decades.
- ❑ **Monopolistic** – Many infrastructure projects have no competition. For example, there is typically only one

toll bridge or electrical grid in a given region. When there is competition, it is usually limited by high barriers to entry.

What are the different kinds of infrastructure assets?

Infrastructure stocks can be divided into two broad categories:

- ❑ **Economic infrastructure** consists of assets that support commerce and for which a fee is typically charged. Standard & Poor's divides them into three clusters: Utilities, Transportation and Energy.
- ❑ **Social infrastructure** consists of social service facilities such as schools, public healthcare facilities and correctional facilities. In general, social infrastructure assets are not securitised or listed to the extent economic infrastructure assets are.

What are the risks of investing in infrastructure assets?

In general, the risk characteristics of infrastructure assets fall in between those of bonds and stocks.

- ❑ Many infrastructure businesses are subject to governmental oversight and regulation. Often there are caps on earnings, and rate hikes must be approved by oversight agencies before implementation.
- ❑ The sharp growth expected in infrastructure development has led to a shortage of qualified project management talent and experienced firms.
- ❑ Infrastructure projects are usually highly leveraged, so interest rates and debt refinancing must be managed properly. In addition, the debt and revenues could be in different currencies exposing investors to foreign exchange risks.

What are the different avenues of investing in infrastructure assets?

There are two main methods of investing in infrastructure assets – infrastructure funds and listed infrastructure assets – and each comes with distinct advantages and disadvantages (see Exhibit 1 on the next page).

What are listed infrastructure assets?

Listed infrastructure assets refer to economic infrastructure assets that are securitised and trade on an exchange. These may belong to any of three different clusters – Utilities Infrastructure, Transportation Infrastructure and Energy Infrastructure.

1. Two methods of investing in infrastructure

	Infrastructure fund	Listed infrastructure assets
Nature of investments	Active investment in a few projects	Exposure to broad market
Expenses	Moderate – typically 0.7–1% plus performance fees	Low – typically 0.5% to 0.6%
Liquidity	Low – investments usually locked up for a certain period	High – investments trade on an exchange and can be liquidated easily
Access	Low – funds usually open only to qualified or institutional investors	High – securities can be bought on an open market
Diversification	Low to moderate – funds can diversify, but there are due diligence and time constraints	High – a basket may encompass different infrastructure clusters and countries
Beta risk	Low	High

Source: Standard & Poor's

How big is the listed infrastructure market?

As of November 2006, the total market cap of global listed infrastructure assets that are members of the S&P/Citigroup Global Broad Market Index (BMI) was \$2.1 trillion. For a comparative perspective, the total size of global equity market was \$43.8 trillion.

What are the advantages of investing in listed infrastructure assets?

- Listed infrastructure assets have returns that have low correlations to both stocks and bonds. This makes them a good diversification from a stock/bond portfolio.
- Cash flows are relatively stable and immune to the business cycle. Pensions were early adopters because stable returns and yield make infrastructure assets fit easily into a liability-matching framework.
- Rapid infrastructure build-out in the developing markets is expected. As an example of the scope of future infrastructure projects, the Asian Development Bank estimates that over the next 10 years developing Asian countries will spend \$20 trillion–30 trillion on infrastructure projects.
- Monopolistic market conditions in many infrastructure businesses provide investors with stable returns.

What is the return and volatility profile?

Infrastructure stocks can complement stock and bond portfolios:

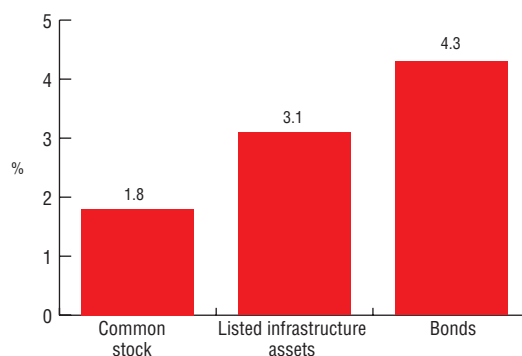
%	Bonds	Common stocks	Infrastructure stocks
Annualised returns	6.94	10.56	23.28
Annualised volatility	5.76	12.34	10.89
Correlations	41.40	70.70	

Sources: Standard & Poor's and Lehman Brothers. Figures are from 30 November 2001 to 31 January 2007. Common stocks refer to the S&P Global 1200, bonds refer to the Lehman Brothers Global Aggregate, and infrastructure stocks refer to the S&P Global Infrastructure Index.

Is listed infrastructure investing just a proxy for investing in utilities?

No. Listed infrastructure assets span across three distinct

2. Infrastructure stocks have yields between stocks and bonds



Source: Standard & Poor's, Lehman Brothers. Yields for common stocks are for the S&P Global 1200, yields for bonds are for the Lehman Global Aggregate Index, yields for listed infrastructure assets are for the S&P Global Infrastructure Index. Data as of 9 February 2007

clusters – Transportation Infrastructure, Utilities Infrastructure and Energy Infrastructure. Some infrastructure indices tend to have 80–90% weight in utilities due to a straightforward capitalisation-driven selection and weighting scheme. The S&P Global Infrastructure index has balanced exposure across the three infrastructure clusters, with only 40% weight in Utilities infrastructure assets.

What are the yields of listed infrastructure assets? .

Infrastructure stocks have yields between stocks and bonds (see Exhibit 2 above).

The S&P Global Infrastructure Index

What is the S&P Global Infrastructure Index?

The S&P Global Infrastructure Index is comprised of the largest publicly listed infrastructure assets that meet specific investability requirements. The index is designed to provide liquid exposure to the leading publicly listed companies in the global infrastructure industry, from both developed markets and emerging markets.



How is the index weighted?

The index is calculated with a modified capitalisation-weighted scheme based on the following principles:

- At each rebalancing, the Utilities, Transportation and Energy Infrastructure clusters have a weight of 40%, 40% and 20%, respectively. At each rebalancing, the number of constituents in each cluster is 30, 30 and 15, respectively.
- Within each cluster, constituents are market capitalisation weighted with adjustments being made, if necessary, so that no single stock has a weight of more than 5% in the final index.

How many constituents are there in the index? ...

The index has 75 members at each rebalancing with up to 15 constituents coming from emerging markets. For an emerging market stock to become a constituent it must have a liquid, developed market listing (NYSE ADRs, LSE GDRs or Hong Kong listings of Chinese stocks).

What types of listed infrastructure assets are included in the index?

Infrastructure stocks are divided into three clusters, based on the Global Industry Classification Standard (GICS), as follows:

GICS	Description	Infrastructure cluster
10102040	Oil & Gas Storage & Transportation	Energy
20305010	Airport Services	Transportation
20305020	Highways & Railtracks	
20305030	Marine Ports & Services	
55101010	Electric Utilities	Utilities
55102010	Gas Utilities	
55103010	Multi Utilities	
55104010	Water Utilities	

How do the constituents break out as far as geography and size?

As of 31 January 2007 the country breakdown is as follows:

Country	Weight (%)	Count	Country	Weight (%)	Count
Australia	9.27	4	Japan	7.65	7
Austria	0.57	1	Mexico	0.54	1
Brazil	0.31	3	Netherlands	0.88	1
Canada	7.09	3	New Zealand	0.83	1
Chile	0.18	1	Norway	0.61	2
China	5.61	8	Portugal	1.61	1
Denmark	0.26	1	Russia	0.53	1
France	5.92	4	South Korea	0.53	1
Germany	8.36	3	Spain	10.41	4
Hong Kong	1.27	1	UK	7.74	6
Italy	6.94	3	US	22.89	18

The weighted average market capitalisation was \$13 billion, as of 31 January 2007. There is, however, no specific targeting for geography or size distribution in the index. Therefore, these weights change over time.

How does this index compare to a global equity benchmark?

	S&P Global Infrastructure		S&P Global 1200	
	Month	Annualised	Month	Annualised
Compound ROR (%)	1.76	23.28	0.84	10.56
Standard deviation (%)	3.14	10.89	3.56	12.34
Down dev (%)	1.74	6.04	2.45	8.50
Sharpe ratio	0.48	1.68	0.17	0.60
Sortino ratio	0.84	2.92	0.23	0.78

Sources: Standard & Poor's. Data is from 30 November 2001 to 31 January 2007.

How often are constituents added to and removed from the index?

The index is reviewed and rebalanced once a year. The reference date is the first trading day of November and the index is rebalanced after the close of the third Friday in November. Throughout the year, constituents may be deleted due to corporate events such as mergers, acquisitions, takeovers or delistings. There are no intra-year additions to the index. The complete methodology is available on the web at www.indices.standardandpoors.com.

What are the ticker symbols for the index?

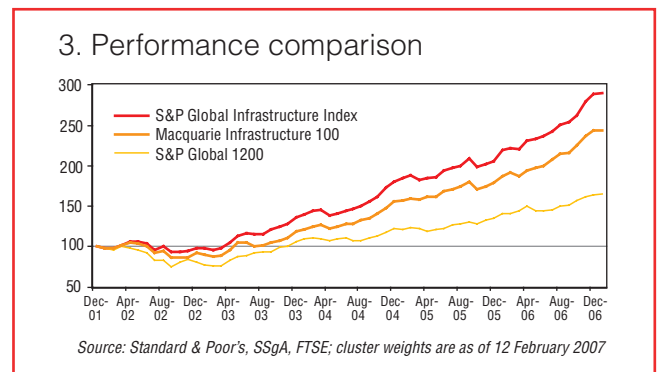
Index	Bloomberg	Reuters
S&P Global Infrastructure Index – Price Return (USD)	SPGTINFR	.SPGTINFRA
S&P Global Infrastructure Index – Price Return (Euro)	SPGTINFE	.SPGTINFE
S&P Global Infrastructure Index – Total Return (USD)	SPGINTR	.SPGTINTR
S&P Global Infrastructure Index – Total Return (Euro)	SPGTITRE	.SPGTITRE

Are there any comparable indices for listed infrastructure assets?

Yes. Macquarie Bank of Australia has an index called the Macquarie Global Infrastructure 100. The table below shows some characteristic comparisons and Exhibit 3 shows return comparisons.

Characteristic	S&P Global Infrastructure	Macquarie Global Infrastructure 100
Count of stocks	75	100
% weight in utilities cluster	40	89
Correlation with S&P Global 1200 Utilities	84%	94%
Count of emerging market stocks	15*	0

* all listed in London, Hong Kong or New York





For further information, please contact:

Donna Moloney
Marketing Director
Standard & Poor's Index Services, Europe
Tel: +44 (0)20 7176 8458
Email: donna_moloney@standardandpoors.com



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