

Infrastructure: A Growth Story

Infrastructure

The global infrastructure business comprises of varying sectors like transportation, utility and energy related assets with each sector having its own distinct performance behavior. Publicly listed infrastructure assets encompass a broad range of heterogeneous assets that provide essential services to the public. These include roads, bridges, dams, ports, airports, power generation and distribution, transmission of electricity, water and gas utilities and communications.

Broadly Infrastructure can be classified into three categories:

Economic Infrastructure: It includes assets that provide services used in production processes and final consumption in the economy. These are assets that are required for economic growth and involve a high initial cost outlay. They usually have a long operational life and show monopolistic characteristics, which generally means they have a high degree of price regulation. It is relatively easy to price or value gains for this component in economic or financial terms. Typical assets would be transport, telecommunications and utilities such as electricity, gas and water. In Australia, economic infrastructure represents 70% of the total infrastructure value.

Social infrastructure: This component comprises a system of networks and facilities supporting the people and the community. These assets are usually operated within the private sector and are used to support and provide public services such as hospitals, education, housing, recreation and leisure. Social infrastructure also includes systems such as the legal system, culture and capital markets. Investment in social infrastructure generally involves long-term contracts between the public and private sector with high potential leverage. Gains here are less tangible and can be more difficult to price or value in economic or financial terms.

Commercial infrastructure: Commercial infrastructure is a recent offshoot of the infrastructure asset class. This segment comprises assets for which the benefits of sharing infrastructure outweigh the competitive advantage of owning and operating one's own infrastructure. It is typically found in sectors in which governments have found that they have better pricing power by allowing greater competition through widely held licences. This component is characterised by a high degree of competition and includes assets such as satellites, cable networks, and mobile phone towers.

Importance of Infrastructure:

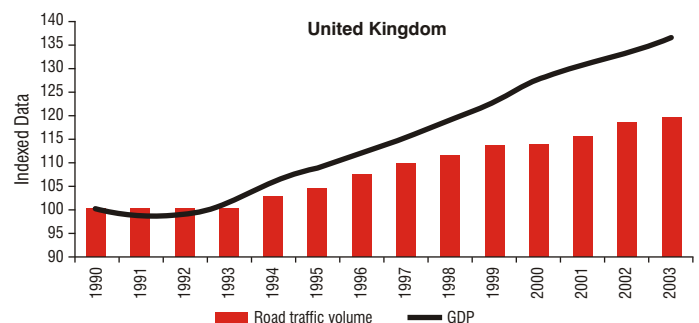
A country's economic growth is highly dependent on strong infrastructure. Good quality of ports, roads, bridges, electricity, telecommunications, transportation, water and sanitation is critical for an economy to remain competitive, gain economies

of scale and foster grassroots entrepreneurship. High quality of infrastructure is also crucial for maintaining and enhancing competitiveness, productivity and a decent standard of living. Long neglected by developing countries, it has now become imperative for such countries to upgrade their infrastructure.

Infrastructure today, therefore, has become the new growth industry and has created opportunities for companies in this sector. The developing countries, especially the BRIC nations (Brazil, Russia, India, China) are now generating more than half of net global economic growth together. There has been a considerable increase in industrial workforce in these countries and the resulting urbanization and industrialization has boosted the demand for new infrastructure — roads, power plants, ports, airport, etc.

The figure below shows the growth in road traffic in the UK in 1990-2003. It illustrates that with the growth in the GDP of a nation, the corresponding road traffic volumes also rises. Hence to cater this rising number of cars more Road and highways needs to be added and upgrading the old ones. Hence rising car sales also benefits infrastructure companies to fulfill demand of roads.

Historical road traffic growth in the UK



Source: DEFRA: e-Digest of Environmental Statistics, August 2006

The new demand for infrastructure has led to a multiplier effect (see Box - next page) by increasing demand in other sectors too.

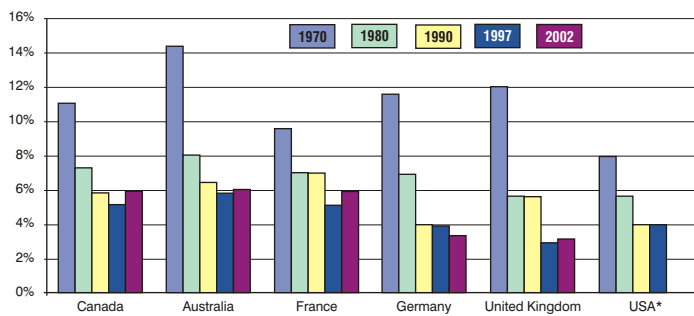
Globalization and a huge demand for steel from developing countries have led to increase world steel prices. The airline industry too has been increasing in value with key access to ports and airports along global pathways becoming more essential for expanding enterprise and profits. Where time is money, freeing businesses from interruptions like loss of power, congestion and transport bottlenecks become increasingly important.

Challenges in infrastructure:

Governments, often faced with growing deficits and other demands on spending, are struggling to keep up with the growing demand for infrastructure investment. While demand continues to rise, government spending on infrastructure has declined, creating a widening investment gap.

From 1970 and throughout the 1980s and 1990s, public spending on infrastructure was broadly on a downward trend, partly as a result of high expectations from private sector involvement in infrastructure and partly from a shift in focus to social issues and poverty reduction. Figure below shows the decreasing government expenditure on infrastructure in some select Organization for Economic Cooperation and Development (OECD) countries in recent decades.

Percentage of Government spending on Infrastructure (OECD)



Note*: 2002 data not available for the US
Source: National Accounts, OECD, August 2006

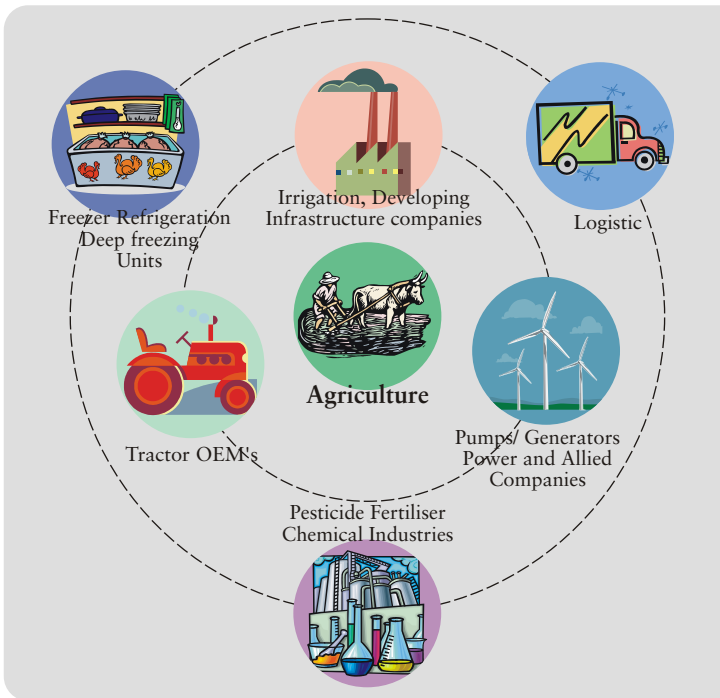
Government spending on infrastructure in OECD countries dropped to 2.2% of GDP in 1997-2003 from 2.6% in 1991-97.

Government capital formation, as a percentage of GDP, fell from 7.5% in 1984 to 3.9% in 2002.

Reforms benefitting Infrastructure development:

The importance of infrastructure has encouraged many countries to implement comprehensive reforms including restructuring, encouraging private participation, and establishing new approaches to regulation. Earlier, most developing countries relied on publicly owned monopolies to finance and operate their infrastructure, with disappointing results. Since the 1990s, there has been a rapid and widespread move by governments round the world to involve the private sector to take over the operation of existing infrastructure and to finance new infrastructure development. Since then, private participation in infrastructure has helped in expanding and improving services, create incentives for efficiency, and reduce the burden on strained public resources. In a number of countries, private sector is now involved in areas once considered the domain of governments, viz. power, gas, telecommunications, water, roads, railroads, ports, and airports. In order to meet rapidly growing demands for modern energy, telecommunications, water and transport, developing countries saw investment of nearly \$755 billion in nearly 2,500 private infrastructure projects over the period 1990 to 2001.

The main cause of infrastructure privatization for the government is simply the pressing need to balance its budget and find new resources for investment in infrastructure which is usually expensive and takes a long time for payback. Private firms are more focused, efficient and cost-effective than public sector entities. Various forms of public/private partnerships help governments to create efficiencies, reduce costs and



Multiplier Effect

The multiplier effect establishes the link between infrastructure development and other allied industries. Infrastructure development in the agricultural sector establishes link with allied industries. Let's say the government decides to allocate resources to this sector through the construction of a dam and a network of canals for water distribution. This exercise will activate other allied sectors such as cement for construction, pumps for better water supply, and tractors for tilling the land, fertilizers for better crops, and refrigerated trucks for transportation of the produce and so on. In essence the scale of infrastructure development is such that it energises all other industries linked to it.

thereby live within its means. They help in lowering operating costs, increasing capital investments and utilizing the most recent and efficient technologies. The private sector possesses better technical and managerial expertise, follows more sustainable pricing policies and better financial discipline, provides more resources for investing in expansion and is free from investment constraints that plagued the public sector.

Private investment in Infrastructure has occurred via the following routes:

- ▶▶▶ **Full private partnership (FPP):** In this case, the government transfers the complete ownership of the asset to private players. The govt. assumed no responsibility of risk.
- ▶▶▶ **Public-private partnership (PPP):** In this case, the investment is funded and operated through a partnership between the Govt. and one or more private players.
- ▶▶▶ **Private Finance initiative (PFI):** PFI schemes introduce the benefits of private sector management and finance into public sector projects. It differs from privatization as the responsibility of essential services to the public is not transferred to the private sector.

The Indian economy today is among one of the fastest growing economies in the world and infrastructure plays a very crucial in any country's economic development as it is both a driver as well as a magnet for investment. Recently the private sector, either by it self or in partnership with Government, has been playing an important role in infrastructure development. Several leading domestic and private and public sector companies like Reliance, the Tatas, NTPC, Power Grid and IOC are coming into the infrastructure sector in a big way. The government has taken some steps in improving private investments in infrastructure. It has allowed mutual funds to launch infrastructure funds. It has divested some of its holdings in sectors like telecom, energy, airlines to private players. It has also increased its infrastructure allocation in the booming tourism sector

Infrastructure Sector: A Compelling Investment Opportunity

An important feature of infrastructure assets is that as they mature, their riskiness decreases and valuation increases Infrastructure investments have been attracting institutional investors as it gives them an opportunity to boost yields and diversify portfolios. As investors increase their interest in putting their money in this new asset class, they also expect enhanced transparency in the asset.

Broadly the distinct characteristics of Infrastructure investments are as follows:

- ▶▶▶ **Long Life:** Infrastructure assets like electric grids, Wind turbines, hydraulic turbines, roads, Airports, ports pipelines are long living assets giving revenue through out.
- ▶▶▶ **Monopolistic:** Many infrastructure projects are **monopolistic** in nature as they have no competition. For instance, usually there is only one toll bridge or electrical grid in a given region. They also act as an entry barrier for new entrants and hence block market profitably.
- ▶▶▶ **Low correlation:** From the graph below we can observe that infrastructure is undeterred by the equity or bond market curves over last 15 years. Hence infrastructure investment gives an opportunity to diversify from the regular asset class.
- ▶▶▶ **More return less risk:** Infrastructure investment is relatively safer and lesser volatile compared to many asset classes. As the electric grids, turbines, ports, airports cannot be destroyed until and unless there is a big natural calamity or war. Hence the dependency of these assets with the political or economical environment is by and large lesser than compared other asset classes.

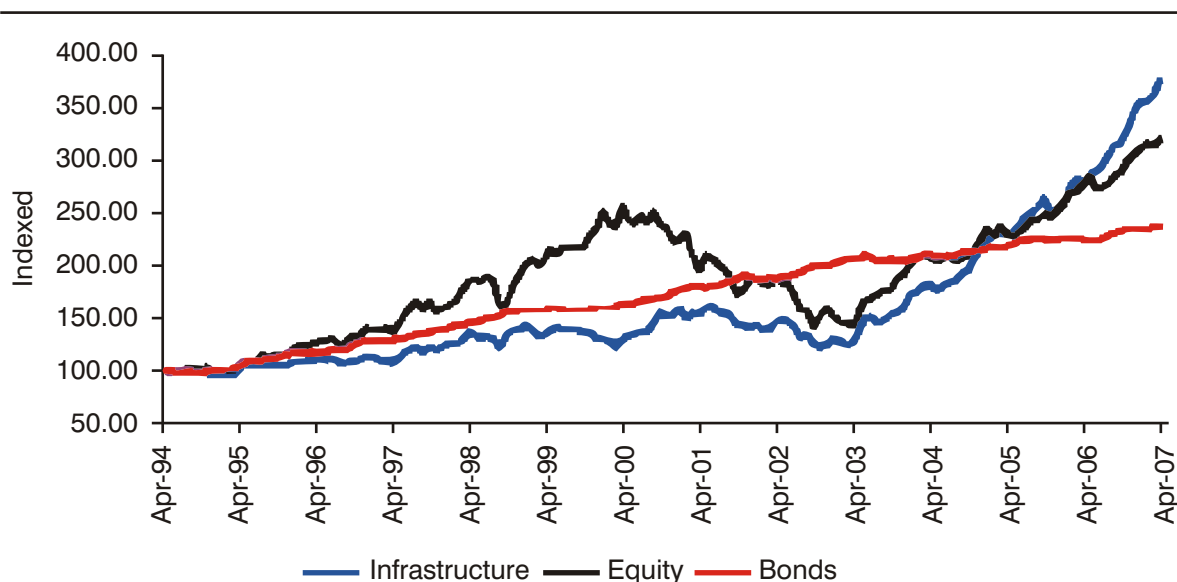
Broader range of infrastructure as an asset class will also allow investors for further diversification by blending in the traditional and alternative asset classes. The maturation of infrastructure as an asset class and the recognition of infrastructure as a unique and distinct investment will allow investors to gain confidence in their investments.

Infrastructure businesses are also required to be free from governmental control and regulation. The heightened growth expected in infrastructure development will require better qualified project management talent and experienced firms.

Such features of infrastructure are attractive to institutional investors, since they set them apart from other asset classes. Their immunity to the business cycle also provides some degree of diversification and risk mitigation.

Infrastructure assets are durable assets and have a long gestation period often lasting over 50 years. This long-duration nature of infrastructure assets is appealing to many public and corporate pension funds in particular. These assets that provide the potential for long-term investment horizons are much in demand by institutional investors.

Infrastructure vs. bonds & Equities (total return US\$)



Source: Bloomberg. Macquarie Bank Limited, April 2007

As illustrated in the Figure, infrastructure has provided similar returns to that of equity over the last 13 years at a lower volatility. Since April 1994, infrastructure has earned a nominal return of 10.93% pa, compared with 9.63% pa for equities and 6.82% pa for bonds.

Since bottoming out in September 2002, equities and bonds have generated total nominal returns of 128% and 19%, respectively. During the same period, infrastructure generated returns of 204%. Infrastructure has therefore performed competitively when compared to traditional investments such as equities and bonds both in the short and the long term.

Source: Macquarie Research

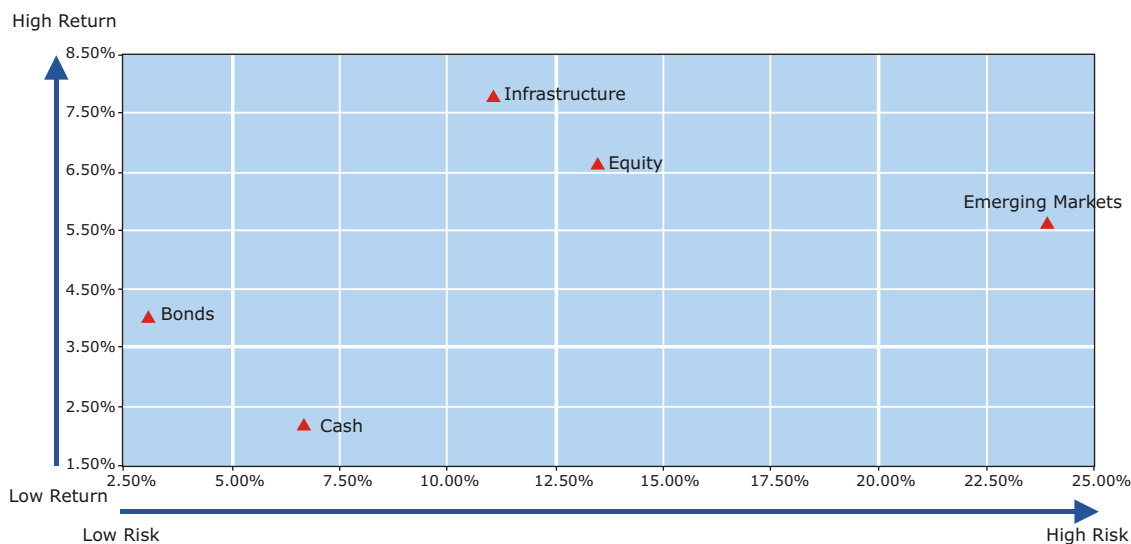
Comparative analysis of characteristics of various asset classes

FACTORS	EQUITIES ³⁵	BONDS	EMERGING MARKETS ³⁶	CASH	INFRASTRUCTURE
Definition	Interest of owner (common and preferred) in the company	A promise to repay the principal along with the interest on a specified or maturity date	Developing countries with growing financial markets	Money in the form of currency, bills, deposit accounts, money market securities, etc	Assets that are used on a long-term basis, providing essential services to the public or community
Income	High capital gains with low fixed income	High fixed income with low capital gains	High capital gains with low fixed income	Low capital gains	At developing stage: Low capital gains with low fixed income (and volume growth); at maturity stage: High fixed income with low capital gains.
Volatility	High	Low	Very high	Very low	Moderate
Liquidity	High	High	Market dependent	Very high	Moderate, but mostly long-term horizon

Source: Evalueserve Analysis, August 2006

Distinctive return:

On studying the risk return characteristics of the various asset classes such as Infrastructure, Equities, Emerging markets, Bonds and Cash, Infrastructure is seen to be most attractive. It provides the highest returns at risk levels lesser than emerging markets and equities. This relationship between risk and return of various asset classes is represented in the graph below:-



Source: Evalueserve Analysis, April 2007

How to invest in infrastructure?

It is possible to invest in the infrastructure sector either through mutual fund schemes like the Tata Infrastructure Fund, Tata Indo-Global Infrastructure Fund etc or by directly investing into stocks of companies in sectors such oil, power, telecom, transportation, banks, auto ancillaries, etc.

On the debt side there are several investment opportunities through infrastructure bonds.

Infrastructure Index

As investors increase their interest in putting their money in this new asset class, they also expect enhanced transparency. Investors would need benchmarks to enable them to compare infrastructure performance against other asset classes. The **S&P Global Infrastructure Index** is designed to serve the investment community's need for a benchmark representing the global infrastructure market. The index includes 75 large, liquid infrastructure stocks that balance representation across three infrastructure clusters: Utilities, Transportation and Energy.