

Introduction to Infrastructure



Los Angeles Fire and Police Pension System

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Infrastructure Sectors

What is Infrastructure?

- Physical structures, facilities and networks which provide essential services within a community
- Services provided are crucial to the economic productivity of a community
- Assets are either privately owned or owned/operated by government entities

Economic Infrastructure			Social Infrastructure
Transportation <ul style="list-style-type: none">•Airports•Bridges•Rail Systems•Seaports•Roadways•Tunnels	Energy Utilities <ul style="list-style-type: none">•Clean Energy•Pipelines•Power Distribution•Power Transmission•Renewables•Water Treatment, Distribution & Storage	Communications <ul style="list-style-type: none">•Broadcast & Wireless Towers•Cable Systems•Satellite Networks	<ul style="list-style-type: none">•Education Facilities•Healthcare Facilities•Judicial Buildings•Military Housing•Correctional Facilities

Infrastructure Opportunity

Demand for Infrastructure

- \$1.6 trillion required on infrastructure projects over the next 5 years in the U.S.
- Governments facing budgetary constraints looking for new ways to address infrastructure spending shortfalls
 - Infrastructure spending as a % of GDP has declined by 1/3 over last 40 years
- Certain government entities unable to tap the municipal debt market due to deteriorating credit ratings and fiscal priorities (education, healthcare, etc.)
- Political spotlight now placed on upgrading America's infrastructure
 - Catalyst to create jobs and jump start economy
- Turnover of existing private assets as companies seek to focus on core businesses
- Increasing share of private capital in new developments
 - Slow down in alternative markets due to credit crunch and financial crisis

Key Characteristics

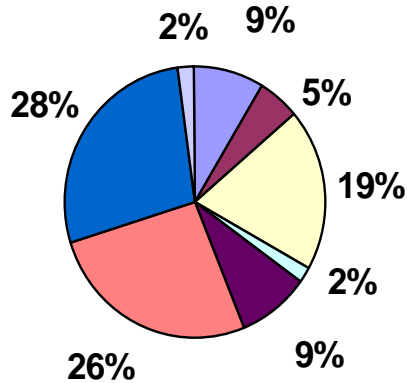
Why Invest in Infrastructure?

- Infrastructure is a unique asset class that offers investors a diversified source of stable, inflation-linked returns
 - Long Life Assets – Capital intensive assets with 25 to 99 year concessions, match for liability duration
 - Inflation Protection – Revenues typically linked to CPI
 - Monopoly or Quasi Monopoly – High barriers to entry due to scale and capital cost
 - Steady and Predictable Cash Flow – Produce strong and predictable yields
 - Low Correlation – Provides portfolio diversification, low beta
 - Inelastic Demand – Predictable demand with little volatility, less susceptibility to economic downturns
 - Limited Commodity Risk – Not subject to commodity pricing
 - Insensitive to Changes in Technology – Low risk of redundancy or technology obsolescence

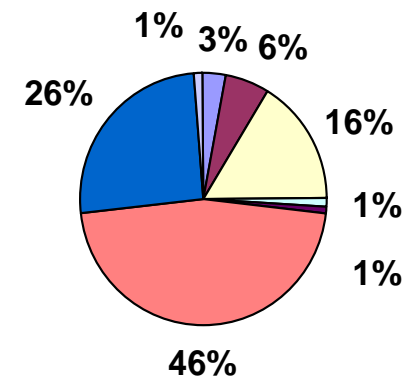
Infrastructure Activity

- Total global infrastructure expenditure requirements estimated at 2.5% of GDP or \$53 trillion through 2030¹
- Recent infrastructure deals closed by industry

Global
US \$446.9 B²



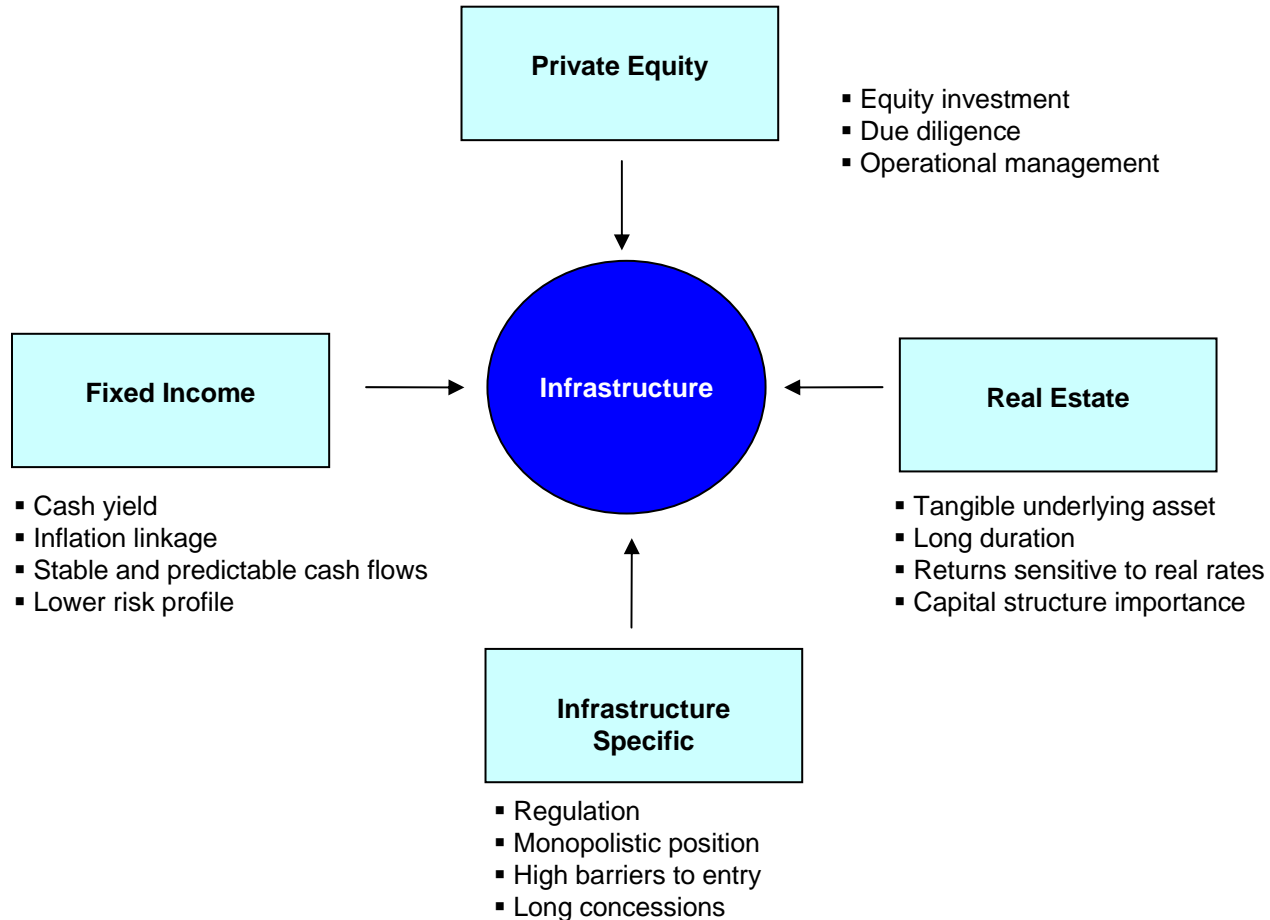
North America
US \$74.8B²



1. Source: OECD. "Infrastructure to 2030: Mapping Policy for Electricity, Water, and Transport. Estimate increases to 3.5% of world GDP with the inclusion of electricity generation and other energy related infrastructure.
2. Source: Infrastructure Journal. Data represents activity during last 36-months as of November 2007.

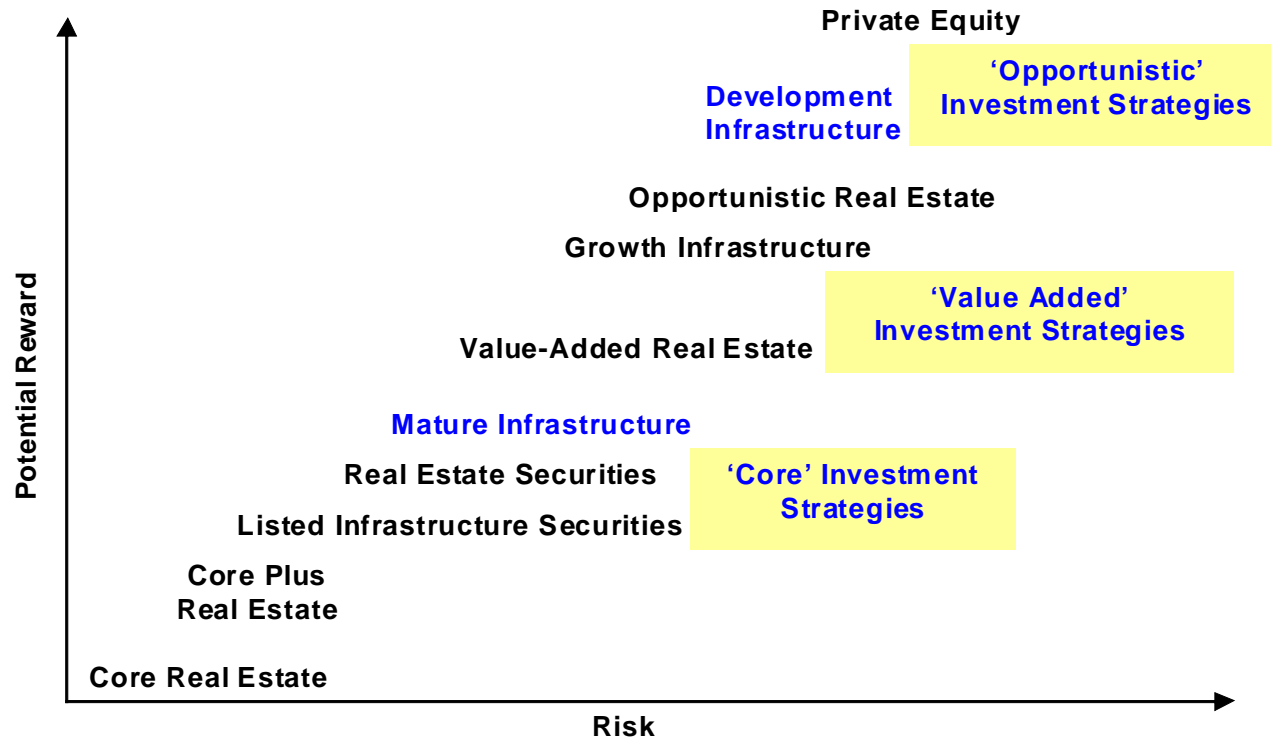
Asset Class Comparison

- Infrastructure is a hybrid asset class with similarities to traditional asset classes



Asset Class Comparison

Infrastructure Investment Strategies

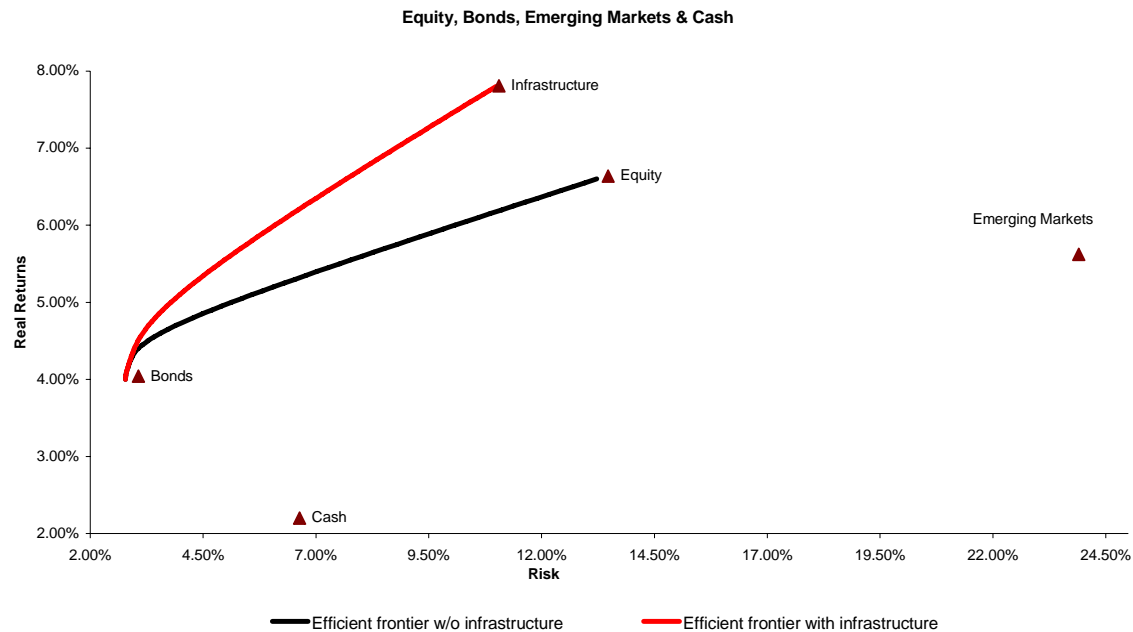


Source: RREEF Research
For illustrative purposes only.

Efficient Frontier

- At a set risk level within a diversified portfolio, infrastructure assets provide a higher return than a portfolio without infrastructure

Efficient frontiers with emerging markets, cash, equities and bonds (13 years)



Source: Evalueserve Analysis, April 2007

Infrastructure Performance

- Infrastructure offers attractive returns with lower risks

Illustrative Investment Performance

Asset Type	Risk	Cash Yield	Avg. Equity IRR	Capital Appreciation
Toll Roads	Low-Medium	4-9%	8-12%	Limited
Public Private Partnerships	Low-Medium	6-12%	9-14%	Limited
Regulated Assets	Low-Medium	6-10%	10-15%	Limited
Rail	Medium	8-12%	14-18%	Yes
Airports	Medium	5-10%	15-18%	Yes
Toll Roads-Greenfield	Medium-High	3-5%	12-16%	Yes
Broadcast Networks	Medium-High	8-10%	15-20%	Yes
Power Generation	High	4-12%	12-25%	Yes
Average	Medium	5-9%	10-15%	Modest

Source: JPMorgan Asset Management

Infrastructure Risks

➤ Potential Institutional Investor/Pension Plan Concerns

Leverage	<ul style="list-style-type: none"> ▪ Deals are typically leveraged between 40% and 80% ▪ Possibly transform low risk assets into risky investments ▪ Changes in credit environment alters refinancing risk
Market Inefficiency	<ul style="list-style-type: none"> ▪ Over \$50 billion of new funds in market in 2006/2007 ▪ Competitive auctions - overpaying ▪ Current pricing – deal outliers or trend setters ▪ Management teams with proven track record are important ▪ Limited history and track record in infrastructure space
Political and Headline Risk	<ul style="list-style-type: none"> ▪ Public acceptance of privatization ▪ Different political landscape in every state and municipality
Regulatory Risk	<ul style="list-style-type: none"> ▪ Regulated assets subject to changes ▪ Government influence on pricing ▪ Potential negative impact bottom line
Construction and Development	<ul style="list-style-type: none"> ▪ Project overruns and delays transfer to construction partners ▪ Volume/demand risk for new developments ▪ Availability payments
Structuring	<ul style="list-style-type: none"> ▪ Concerns over possible changes in UBTI rules
Labor Issues	<ul style="list-style-type: none"> ▪ Greenfield projects could generate new jobs while the privatization of brownfield assets could eliminate skilled labor members ▪ Adherence with Responsible Contracting and Public Outsourcing Policies ▪ Concession agreements must address labor members and involve labor participation early in the process
Asset Control	<ul style="list-style-type: none"> ▪ Stipulations via concession agreements limit some management control (pricing, growth, decision approvals, etc.) ▪ Asset control needs to be appropriately priced

Introduction to Infrastructure

Infrastructure as a Strategic Asset Class

- PCA believes infrastructure has developed into an new asset class
- Compelling risk and return characteristics support infrastructure as a component of a real return asset class
 - Portfolio diversification and return enhancement
 - Inflation hedging
 - Opportunity to generate competitive risk adjusted returns relative to other asset classes with less dependence on asset appreciation
 - Low volatility
- Infrastructure could be part of a real return or inflation-linked asset class
- Need to determine where infrastructure best fits into the portfolio
- Should be cautious in making investments – take your time and do your homework!
 - Fund management selection is crucial
 - Transaction risks need to be properly priced
 - Infrastructure criteria to be developed (definition, benchmarks, risk tolerance, strategy, portfolio construction, fees, etc.)