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## Why Infrastructure? Why Now?

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## What is Infrastructure?

- The underlying foundation of basic services, facilities, and institutions upon which a community depends
  - A.K.A. civil infrastructure, municipal infrastructure, or public works
- Often, the intersection of *public* assets and services with the *private* sector





## What are Public Assets and Services?

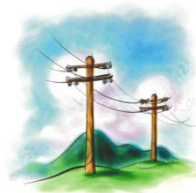
- Public assets belong to a city, state, or a republic (i.e., “everyone”)
  - Examples: national parks, roads, bridges, tunnels, railways, and courthouses
- Public services are provided to citizens by the government and financed by on-going tax revenues or user fees
  - Examples: utilities, education, postal service, health care, the judiciary, lotteries, police and firefighters, and the military





### Utilities

- Water Treatment
- Waster Distribution
- Waste Management
- Dams
- Power Generation
- Electricity Transmission
- Electricity Distribution
- Oil and Gas Storage
- Oil and Gas Transmission
- Oil and Gas Distribution



### Transportation

- Roads
- Bridges
- Tunnels
- Railways
- Airports
- Waterports
- Waterways



### Communications

- Broadcast Towers
- Cell Towers
- Copper Wiring
- Fiber Optic Cable
- Satellites



### Social

- Health Care (hospitals)
- Education (schools)
- Corrections (prisons)
- Judiciary (courthouse)
- Emergency Response (police & fire)
- Recreation (parks)





## History in the U.S.

- Mostly private enterprise until 1900's
  - Roads
    - Congress funded the National Road in 1806
  - Railroads
    - Profound effect on America's expansion in the 1800's
  - Utilities
    - State regulation of electricity started with Massachusetts in 1887
- Public sector took the lead in the twentieth century
  - Highways and airports



## Institutional Investing

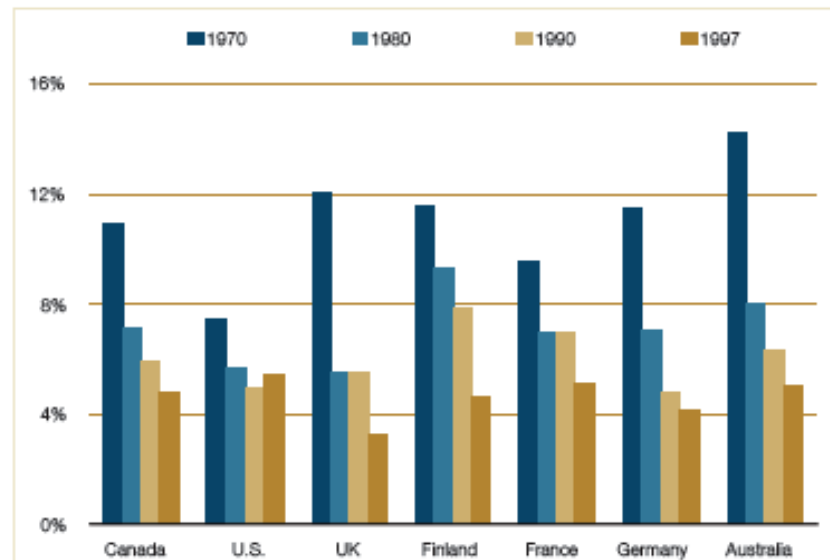
- Private investment is a fairly new/ rediscovered concept
  - Macquarie Bank in Australia is the pioneer
    - First deal in the early 1990's
  - The idea caught on elsewhere
  - Canada has been at the forefront in North America
- Pension plans in Australia and Canada have invested in infrastructure for ten years or more
  - Many large funds have allocated 5% or more to infrastructure.



## The Need for Infrastructure Investment

- Federal spending has declined since the late 1970's
  - Peaked in 1965 at 5.8% of the budget
- ASCE pegs the five-year “need” for investment in infrastructure at \$1.6 trillion

Government infrastructure investments as a % of total outlays in OECD countries



Source: National Accounts, OECD



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## The Case for Private Financing

### Public Problems:

Budget Deficits

Pension Deficits

Aging Infrastructure

### Public Solutions:

Raising Taxes

Cutting Services

Floating Debt

Selling/Leasing Public Assets



## Characteristics of Infrastructure Transactions

- Three forms of transactions
  - Full privatization
    - Government essentially relinquishes control
  - Public-private partnership (PPP or P3)
    - Government typically retains some control and may provide part of the financing
  - Private transaction
    - Formerly privatized entities changing hands from one private owner to another
- The most common form of PPP is the long-term lease, or “concession”
  - State or local government owns the asset
  - Government turns over daily operations to the concessionaire
  - Leases often range from 20 to 99 years
- Typically will use a high degree of leverage
  - 80%-85% debt for roads, 60%-70% for utilities, 60% for ports, and 50% for airports



## Types of Projects

- Brownfield
  - Require only refurbishing of existing infrastructure assets
  - Involve less risk of capital, as an existing stream of cash flows already exists
  - Examples:
    - An existing road that requires on-going maintenance
    - An airport that needs new gates and concessions
- Greenfield
  - New projects that typically require a significant initial outlay of capital
  - May take an exceptionally long time to come to fruition
    - Example: San Francisco BART extension



## Investment Characteristics

Benefits	Risks
High barriers to entry	Political/Regulatory
Long-term contracts	Illiquidity
Stable revenue and income	Financial (interest rates)
Limited economic cyclicality	Business and Operational
Inflation protection	Liability and Litigation



## Why is Infrastructure Treated as a Separate Asset Class?

- Some similarities to private equity and private real estate
  - Illiquid assets
  - Use of leverage
- Unique characteristics
  - Enormous barriers to entry
  - Long-duration contracts
- Returns not highly correlated to other asset classes
  - Limited sensitivity to economic cycles
  - Immune to real estate and credit cycles
- Returns driven by income until exit



## Historical Returns

Investment Category & Period	Annualized Return
1996 – 2005:	
European private infrastructure funds	12.5%
European listed infrastructure funds	14.3%
<i>European public equities</i>	12.6%
<i>European government bonds</i>	7.2%
1995 – 2006:	
Australian listed infrastructure funds	22.4%
Australian private infrastructure funds	14.1%
<i>Australian public equities</i>	12.9%
<i>Australian government bonds</i>	7.2%

Sources: European funds – RREEF; Australian funds – Peng and Newell (2007).

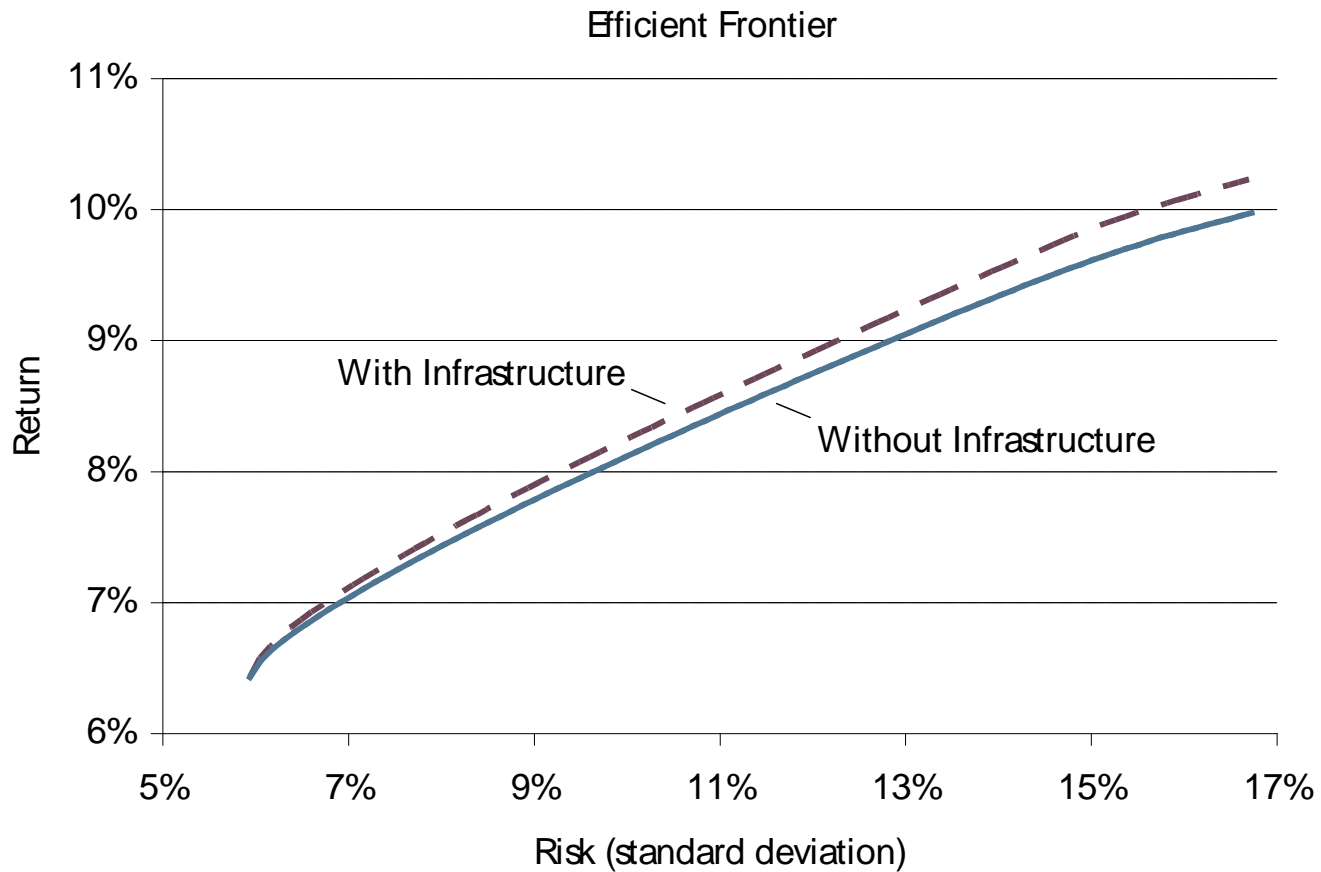


## Risk and Return Expectations

Asset Class	Expected Return (%)	Expected Risk (%)
Investment Grade Bonds	5.3	5
High Yield	6.7	11
Core Real Estate	7.2	12
<b>Infrastructure</b>	<b>8.9</b>	<b>18</b>
Public Equity	9.0	17
Private Equity	11.1	26



### Infrastructure Allows for Construction of More Efficient Portfolios





## Types of Investment Vehicles

- Private Vehicles
  - Closed-end funds
  - Open-end funds
- Publicly Listed Vehicles
  - Listed closed-end funds
  - Public open-end securities strategies



## How to Invest

- Plan sponsors with long-term time horizons should consider initial allocations of 2% to 5%
- Build a diversified portfolio of infrastructure assets over time
  - Diversify by strategy, geography, and asset type
  - Employ multiple managers
- Emphasize private market strategies
  - Consider using public strategies to meet the balance of the allocation



## Summary

- Infrastructure is a fairly new asset class
- Infrastructure assets are structured to provide a stable, predictable, long-term cash flow stream
- The investment opportunities in the U.S. are modest but growing
- We believe that infrastructure is a unique asset class
  - Low correlation with most other asset classes, as well as different risk and return expectations
- Plan sponsors should evaluate the asset class closely
  - Focus on private market funds
  - Invest in a diversified manner