European Infrastructure Markets:
The Emergence of an Alternative Asset Class

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II. Why the interest in Infrastructure Investing?
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Section I

What is Infrastructure Investing?
What is Infrastructure?

Essential real assets and services capable of generating a strong and stable cash return

<table>
<thead>
<tr>
<th>Economic infrastructure</th>
<th>Social infrastructure</th>
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<tr>
<td>Transport</td>
<td>Utilities</td>
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<tr>
<td>• Bridges</td>
<td>• Gas networks</td>
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<td>• Toll roads</td>
<td>• Electricity networks</td>
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<td>• Tunnels</td>
<td>• Power generation</td>
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<td>• Airports</td>
<td>• Water &amp; sewerage</td>
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<td>• Sea ports</td>
<td>• Renewable energy</td>
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<td>• Freight rail</td>
<td>• Communications infrastructure</td>
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Focus on: “User–pays” assets that provide essential services capable of generating a strong and stable cash return
Infrastructure: A Unique Asset Class

Compelling Investment Characteristics for Investors:

- High barriers to entry: “quasi–monopolies”
  - Regulatory, permitting constraints
  - Physical, property constraints
  - High initial capital expenditure
- Stable cash flow, typically with inflation hedge
  - Inelastic demand, given scarcity of resource
  - Long useful life of assets
- Hybrid nature of both fixed income and capital gains
  - Best opportunity for capital gains from investments involving development risk, or some monopoly businesses
- Variety of risk and return profiles
  - Range from low-risk regulated assets to high-risk Greenfield projects
Infrastructure Has Similar Characteristics to Other Asset Classes

Comparison of Infrastructure and Other Relevant Asset Classes

**Infrastructure**
- Stable, often monopolistic
- High entrance barriers
- High Income return

**Fixed Income**
- Regular return component
- Inflation hedge
- Emphasis on cash-flow
- Low risk profile

**Private Equity**
- Capital intensive
- Due diligence process
- Active operative management

**Real Estate**
- Tangible asset / right of use
- Long duration
- Good diversification potential

*Source: Gothaer Asset Management; RREEF*
Lifecycle of Infrastructure Assets

Examples:

- Greenfield toll-roads
- New energy sources
- Infrastructure in emerging economies
- Expansion projects
- New privatizations with potential development opportunity
- Established airports, toll roads, utilities
- Regulated assets (privatized)

Development:
Brand new infrastructure built with unproven demand

Growth:
“Ramp up” from early demand

Mature:
Stable, income oriented returns driven by established usage
Section II

Why the interest in Infrastructure Investing?
Infrastructure as an Asset Class continues to Grow due to Increased Supply and...

**Drivers of Transaction Opportunities**

<table>
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<th>Private to Private</th>
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<tr>
<td>q Portfolio rationalisation by utility, transport &amp; communications companies</td>
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<tr>
<td>q Refinancing</td>
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<tr>
<td>q Secondary and tertiary sales</td>
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<td>q Development and expansion</td>
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<tr>
<th>Public to Private</th>
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<tr>
<td>q Economic &amp; Demographic developments: creates demand</td>
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<tr>
<td>q Historical under-spending: makes demand/provision imbalance more acute</td>
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<tr>
<td>q Budget deficits: Governments unable to fund infrastructure demand from traditional sources</td>
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</table>
.... Demand

Surge of capital entering the infrastructure market

- Continuing growing global investment capital looking for secure assets
- Growth in the European retirement market will continue to drive demand for steady, predictable and inflation protected, income-oriented investments, such as Infrastructure
- Increasing number of global financial institutions, private equity firms and public companies are entering the infrastructure space
- Emergence of publicly listed infrastructure funds is a new trend; IPOs of generalist, managed infrastructure funds
Significant rise in institutional demand for infrastructure investment opportunities

**Current Allocation to Infrastructure and Plans to Invest**

*Share of respondents (%)*

- **Australia**: Have a Current Allocation (30%), Plan to Invest in Next 3 years (25%)
- **UK**: Have a Current Allocation (25%), Plan to Invest in Next 3 years (20%)
- **Germany**: Have a Current Allocation (15%), Plan to Invest in Next 3 years (15%)
- **USA**: Have a Current Allocation (10%), Plan to Invest in Next 3 years (30%)
- **Japan**: Have a Current Allocation (5%), Plan to Invest in Next 3 years (15%)

*Note: Based on Survey of 330 institutional investors, Summer 2006*

*Source: Greenwich Associates; RREEF*
The Rationale for Infrastructure Investing

β Market fundamentals:
- Strong user demand and constrained supply
- Shift away from the use of public funds to provide infrastructure assets
- Investment gap

β Investment characteristics compared to bond and equity markets
- Historically strong absolute and relative performance
- High and stable income yield
- Low volatility
- Long duration and liability matching
- Diversification potential
Section III

Characteristics of Investment Returns
Measuring Market Behavior

- Significant difficulties exist
- The large scale and unique characteristics of infrastructure assets
- Limited number of transactions
- Significant variations in behaviour according to:
  - Maturity – development stage and developed infrastructure
  - Asset type – utilities, toll-roads, airports, etc.
- The maturation of the asset class

*For illustration purpose only*
Infrastructure along the Risk/Reward Spectrum

- Development Infrastructure
- Opportunistic Real Estate
- Growth Infrastructure
- Value-Added Real Estate
- Mature Infrastructure
- Real Estate Securities
- Core Plus
- Core

‘Opportunistic’ investment strategies

‘Value added’ investment strategies

‘Core’ investment strategies

Source: RREEF Infrastructure

For illustrative purposes only.
Approach to Calculating Market Behaviour: Hypothetical Index

- Develop a hypothetical “late stage” infrastructure index by examining the performance of a representative group of listed infrastructure companies. Three key stages:

1. Weight sectors based on market size
2. Identify a set of companies representative of late-stage infrastructure
3. Generate a weighted return series based on representative companies

- Limitations in the approach mean the hypothetical series is likely to differ to the actual performance of actual infrastructure classes
  - The use of listed companies rather than underlying infrastructure assets
  - The use of some companies with relatively short time series

- The approach should be seen as an attempt to contribute to the understanding of the asset class and should not be relied on as an indicator of future performance nor in making investment decisions.
Historic Performance: The Case of Europe

Annual Average Returns for Major European Asset Classes to End 2006

-5% 0% 5% 10% 15% 20% 25% 30% 35%
1 year 3 year 5 year 10 year

European Equities
European Direct Real Estate
European Government Bonds
Hypothetical Infrastructure Index

Note: For Illustrative purposes only
Source: MSCI European Equity Index, SB European Government Bond Index, PMA/IPD and RREEF Research
Volatility Has Tended to Fall Between Equities and Bonds

Volatility of Major European Asset Classes, based on Rolling 12 month Standard Deviations

Source: RREEF Research; MSCI
Giving Infrastructure an Attractive Risk/Return Profile

European Asset Class Risk Return Profiles, 10 years to end 2006

Note: For illustrative purposes only
Source: MSCI European Equity Index, EPRA, SB European Government Bond Index, MSCI 7-10yr Bond Index, MSCI Transport & MSCI Utility Index, PMA/IPD and RREEF Research
# Expected Returns Vary by Sector

<table>
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<tr>
<th>Sector</th>
<th>Expected Return</th>
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<tr>
<td>Rail</td>
<td>6-10%+</td>
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<tr>
<td>Roads</td>
<td>10-13%</td>
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<tr>
<td>Airports</td>
<td>11-13%</td>
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<tr>
<td>Water/Wastewater</td>
<td>10-14%</td>
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<tr>
<td>Distribution/Transmission</td>
<td>12-14%</td>
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<tr>
<td>Seaports</td>
<td>15%+</td>
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</table>

**Average expected return** 6-15%+

*Source: Booz Allen Hamilton, Infrastructure Market, Interview Input, July 17, 2006*
Section IV

Infrastructure Investment opportunities: a set of opportunities
Access to Infrastructure Assets

- Different ways to gain equity exposure to infrastructure
- Direct investments in infrastructure assets/projects
- Unlisted Infrastructure Fund
- Listed Infrastructure Fund
- Listed Infrastructure Company e.g. United Utilities
- Infrastructure Securities Fund
Expertise and Willingness to delegate as a determinant of product selection

Alternative Options for Infrastructure Investing

- In-house management
- Separate account
- Infrastructure Securities
- Co-investments
- Co-mingled funds
- Infra.Securities Funds
- Fund of Funds

Source: RREEF Research
# Direct versus Indirect

## Relative Strength of different models for investing in Infrastructure

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Direct Infrastructure</th>
<th>Private Infrastructure Funds</th>
<th>Infrastructure Securities</th>
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<tbody>
<tr>
<td>Access to Direct Infrastructure</td>
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<td>Access to Good Infrastructure Managers</td>
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<td>Scope for Portfolio Diversification</td>
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<td>Liquidity</td>
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<td>Costs of Trading</td>
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<td>Costs of Asset Management</td>
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<td>Performance volatility</td>
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*Source: RREEF Research*

*Note: '°' Significant Strength, '•' Some Advantages, 'Neutral'*
Section V

Conclusion
Summary

- Infrastructure investment involves investing **equity in businesses that own/operate the physical structures and networks** used to provide essential services to society.

- Infrastructure as an asset class is evolving quickly due to **favourable supply and demand**
  - Growing global investment capital looking for secure assets and with tightening Real Estate markets institutional investors are looking with increased interests at alternatives
  - Global economic & demographic developments drive increasing opportunities for private sector participation in the sector

- Infrastructure has investment characteristics of **long-duration assets** with stable, yield-dominated returns, which makes them compatible with requirements of pension and insurance portfolios

- Infrastructure offers a **range of risk and return profiles** due to differences in performance from the different stages as well as specific sectors

- **Gaining access to infrastructure** can be achieved through direct investment, listed infrastructure funds as well as unlisted, listed and securities funds

- With the asset class maturing we expect to see **more products** coming to the markets, offering a wider range of opportunities suitable for different investment profiles