ASSESSING THE SIGNIFICANCE OF MOTIVATING FACTORS AND RISK FACTORS IN INFRASTRUCTURE FUNDS MANAGEMENT

GRAEME NEWELL and HSU WEN PENG
University of Western Sydney

ABSTRACT

Infrastructure, including tollroads, airports and utilities, has taken on increased importance for institutional investors in recent years. This paper assesses the increasing significance of infrastructure funds in Australia and identifies the importance of the motivating factors and risk factors for infrastructure fund managers. The ongoing future development of the infrastructure sector in the context of the current global credit crisis is also identified and discussed.

Keywords: Infrastructure, motivating factors, risk factors, investment model, global credit crisis

INTRODUCTION

Infrastructure can be classified into economic infrastructure (eg: utilities, tollroads, airports, pipelines, power stations and wind farms) and social infrastructure (eg: healthcare facilities, education facilities and correctional facilities). Importantly, infrastructure has taken on an increased role in investment portfolios in recent years (Peng and Newell, 2007).

Effective infrastructure is essential for economic growth and for the effective functioning of commercial property markets. Recent years have seen infrastructure (eg: tollroads, airport, ports, communication networks) emerge as a separate asset class for institutional capital, with the infrastructure asset class having distinctive characteristics and attractive features (Peng and Newell, 2007; RREEF, 2005). This has particularly been the case in a climate of significantly reduced government spending on infrastructure in most developed countries, as governments seek alternative funding options for infrastructure development and maintenance.

Similarly, in the developing countries (eg: Asia), there is an increased need for infrastructure services with population growth, improved standards of living, economic growth and increased social expectations (RREEF, 2006c, 2007, 2008). With over $30 trillion needed for global infrastructure development and maintenance to 2030 (World

Bank, 2006), this sees a significant investment gap for both developed and developing countries and the need for alternative private investment sources for global infrastructure development (RREEF, 2006a, b, c).

This global infrastructure context has seen infrastructure take on increased investment importance in recent years, both in Australia and internationally. This has been evident with the major institutional investors in infrastructure such as RREEF, Macquarie, AMP, Goldman Sachs, JP Morgan, Babcock & Brown and Carlyle, as well as the major listed infrastructure companies such as Vinci, Abertis Infrastructuras, Autostrade and Ferrovial. Infrastructure sectors favoured have included tollroads, airports, ports and communication networks. This increased level of institutional investor interest in infrastructure in recent years has been further reinforced by strong global listed infrastructure performance, reflected by significant risk-adjusted performance and portfolio diversification benefits for the infrastructure sectors in Australia (Peng and Newell, 2007) and the US (Newell and Peng, 2008).

As well as this performance analysis for infrastructure, it is also important to assess the strategic investment decision-making issues in effectively developing infrastructure portfolios and mandates. As such, the purpose of this paper is to assess the significance of infrastructure funds in Australia and present the results of a recent survey of infrastructure fund managers to identify the importance of the motivating factors and risk factors for infrastructure fund managers in Australia; particularly highlighting the context of the current global credit crisis.

SIGNIFICANCE OF INFRASTRUCTURE FUNDS IN AUSTRALIA

In recent years, infrastructure investment across the various infrastructure sub-sectors has taken on increased importance amongst the major institutional investors in Australia, including Macquarie, AMP, Babcock & Brown, Colonial First State and Hastings. This has seen the establishment of major listed Australian infrastructure funds and listed infrastructure companies (see Table 1) and major unlisted Australian infrastructure funds (see Table 2). These infrastructure funds account for over $83 billion in total infrastructure assets, with over 290 infrastructure assets in these portfolios (Peng and Newell, 2007). Often these infrastructure funds have significant international infrastructure exposure (eg: Macquarie), including European and US tollroads and European airports (Miara, 2008; RREEF, 2006a, b).

Table 1: Major listed Australian infrastructure funds/companies

Tollroads:	
Macquarie Infrastructure	Transurban
Connecteast	
Airports:	
Macquarie Airports	
Communication:	
Macquarie Communications Infrastructure	
Transmission and Distribution:	
SP AusNet	Spark Infrastructure
Diversified Energy and Utility Trust	Alinta Infrastructure
Envestra	
Integrated Utilities:	
Origin Energy	Australian Gas Light
Alinta	
Diversified Utilities:	
Babcock & Brown Infrastructure	
Generation:	
Babcock & Brown Wind Partners	

Table 2: Major unlisted Australian infrastructure funds

Australia Infrastructure Fund	Utilities Trust of Australia
Infrastructure Equity Fund	International Infrastructure
Global Infrastructure Fund II	Social Infrastructure
Infrastructure Fund	Australian Social Infrastructure Fund
Energy Infrastructure Fund	Infrastructure Fund of India

Importantly, while infrastructure has similar investment characteristics to property (eg: predictable cashflows, limited liquidity), the differences are also significant (eg: different investment packaging, larger scale of infrastructure, right to operate infrastructure versus property ownership) (Peng and Newell, 2007; RREEF, 2005). In particular, property cashflows are serviced from third party lease income, while infrastructure cashflows are

typically sourced from operating income including user tolls on roads and user fees on shipping ports. This sees infrastructure as being property-related, but being treated as a separate asset class with a separate allocation in a portfolio.

With superannuation in Australia accounting for over $1.1 trillion at March 2008 (APRA, 2008), this has seen a number of superannuation funds have a significant exposure to infrastructure in their portfolios. For example, this includes MTAA Super Fund (18% of portfolio), STAsuper (8%), UniSuper (6%) and Hostplus (4%). This is typically as an alternate asset class.

Infrastructure in Australia has been shown to deliver strong investment performance. In particular, Peng and Newell (2007) considered listed and unlisted infrastructure performance over 1995-2006, finding strong risk-adjusted performance and portfolio diversification benefits. Both listed and unlisted infrastructure were seen to out-perform the other major asset classes over this period, with unlisted infrastructure having less risk than listed infrastructure (see Table 3). Both listed and unlisted infrastructure were seen to provide portfolio diversification benefits with the major asset classes (see Table 4). Diversification benefits were evident between listed infrastructure and stocks (r=0.21), with less diversification benefit seen from the airports sector (r=0.54) than the tollroads sector (r=0.14). Diversification benefits between unlisted infrastructure and stocks were also evident (r=0.06). Listed and unlisted infrastructure showed some degree of correlation (r=0.36), while listed and unlisted infrastructure were not significantly correlated with direct property (r=0.03 and r=0.26 respectively). This performance analysis and portfolio diversification analysis further confirmed the differences between infrastructure and property as asset classes and highlighted the contribution of infrastructure in a mixed-asset portfolio.

Table 3: Infrastructure performance: Q3: 1995 – Q2: 2006

Asset class	Average annual return	Annual volatility
Listed infrastructure	24.89%	23.42%
Airports	8.05%	30.67%
Toll Roads	25.65%	24.39%
Unlisted infrastructure	14.11%	5.83%
Direct property	10.90%	1.46%
LPTs	13.75%	7.92%
Stocks	12.91%	10.97%
Bonds	7.20%	4.28%

Source: Adapted from Peng and Newell (2007)

Table 4: Infrastructure portfolio diversification benefits: Q3: 1995 – Q2: 2006

	Listed infrastructure	Toll roads	Airports	Unlisted infrastructure	Direct property	LPTs	Stocks	Bonds
Listed infrastructure	1.00							
Toll roads	0.99*	1.00						
Airports	0.40*	0.26	1.00					
Unlisted infrastructure	0.36*	0.36*	0.26	1.00				
Direct property	0.03	-0.01	0.36*	0.26	1.00			
LPTs	0.40*	0.39*	0.06	0.24	0.19	1.00		
Stocks	0.21	0.14	0.54*	0.06	0.14	0.17	1.00	
Bonds	0.38*	0.38*	-0.03	0.17	-0.12	0.49*	-0.21	1.00

*: significant correlation (P<5%)
Source: Adapted from Peng and Newell (2007)

Like most stocks, infrastructure has also been affected by the global credit crisis. Globally, this has seen lesser total return performance by the various infrastructure sub-sectors in the first quarter of 2008, including tollroads (-10.9%), airports (-11.4%), ports (-15.2%), communications (-11.9%) and diversified infrastructure (-21.7%) (UBS, 2008). This global uncertainty has also impacted on individual infrastructure stocks in Australia over the first quarter of 2008. This includes Macquarie Infrastructure (-7.3%), Macquarie Airports (-16.7%), Babcock & Brown Infrastructure (-23.2%), Macquarie Communication Infrastructure (-17.4%) and Macquarie International Infrastructure (-15.8%) (UBS, 2008). Concerns have also been expressed regarding increased infrastructure fund risk factors in the current investment environment; particularly concerning high debt levels, high management fees, distribution payment policies, over-paying for assets, and corporate governance and structure issues (RiskMetrics, 2008).

METHODOLOGY

To obtain a fuller understanding of institutional investor decision-making in the infrastructure sector, a survey of infrastructure funds in Australia was conducted in October 2007. This survey addressed a range of issues, but largely focused on the motivating factors and risk factors in infrastructure fund management. These motivating factors and risk factors were identified by a literature review (eg: Peng and Newell, 2007; RREEF, 2005, 2006c) and a preliminary discussion with fund managers involved in infrastructure investment. This saw 13 motivating factors and 15 risk factors identified,

with additional factors able to be included by the survey respondents. Both listed and unlisted infrastructure funds were considered; to give a fuller perspective of available infrastructure investment vehicles.

Surveys were sent to the fund managers of 32 infrastructure funds, comprising 21 listed funds and 11 unlisted funds. These funds represented all of the known available major infrastructure funds, as well as providing coverage of all of the infrastructure sectors. Ten infrastructure fund managers responded, with the survey response rate being 31%. As shown in Table 5, these survey respondents accounted for $26.5 billion in total assets, representing 32% of total infrastructure fund assets in Australian infrastructure funds.

Table 5: Infrastructure fund manager survey: respondent profile

Survey conducted: October 2007

Number of infrastructure fund managers responding: 10; comprised listed (4) and unlisted (6) infrastructure funds

Survey response rate: 31%

Total assets: $26.5 billion

Survey respondent's percentage of total infrastructure assets: 32%

Infrastructure sectors covered by survey respondents: tollroads, airports, seaports, water, gas, electricity, social infrastructure

To assess the importance of the various motivating factors and risk factors, a 5-point rating scale was used; ranging from 1=unimportant, 2=less important, 3=important, 4=very important and 5=critical. Participants also responded via several open-ended survey questions.

80% of respondents invested across different types of infrastructure, with the infrastructure sectors covered including tollroads, airports, seaports, communication networks and utilities. 70% of respondents included international infrastructure in their infrastructure portfolios, including the UK, Europe, New Zealand and Asia. The extensive asset base and infrastructure activities of these infrastructure fund managers further reinforces the integrity of the responses received in this infrastructure fund manager survey.

FUND MANAGER DECISION-MAKING IN THE INFRASTRUCTURE SECTOR

Motivating factors

Table 6 presents the importance of the various motivating factors for infrastructure investment in Australia. Long duration and liability matching (average score of 4.4) and predictable and stable cashflows (4.4) were seen as the most important motivating factors; both being seen to be critical or very important by at least 80% of survey respondents. More recent experience by these institutional investors with infrastructure sees the increased understanding of infrastructure risk as a positive factor (average score of 4.1). This sees infrastructure fund managers as being comfortable with their infrastructure risk management strategies. Infrastructure's monopoly characteristics, inflation-hedging characteristics (due to CPI-adjusted income streams) and portfolio diversification benefits were also seen as key motivating factors for infrastructure investment. These motivating factors were generally in accord with the established benefits of infrastructure (RREEF, 2005) and support the empirical analysis findings by Peng and Newell (2007) for Australian infrastructure performance. The significant capital inflows available in recent years were not seen as important motivating factors, reflecting a more strategic approach to infrastructure funds management rather than one driven by the availability of substantive levels of capital. No more than 20% of survey respondents saw this factor as critical or very important.

Other important motivating factors for infrastructure investment which the infrastructure fund manager respondents identified in open-ended questions in the survey included:

- organic growth opportunities within acquisitions
- capital structuring at acquisition
- ability to leverage at corporate level
- stable and rational regulatory environment
- less volatility due to being less prone to the business cycle
- inefficient market allows return premium.

This further reflects the added-value opportunities of infrastructure and the stable environment from governments increasingly seeking private funding opportunities for infrastructure development and maintenance in recent years.

Table 6: Motivating factors for infrastructure investment

Factors	Average score	Percent classified as 'Critical' or 'Very Important'
Long duration and liability matching	4.4	100%
Predictable and stable cashflows	4.4	80%
A greater understanding of infrastructure investment risk	4.1	70%
Monopolistic characteristics	3.7	50%
Characteristic of inflation-hedging	3.6	60%
Portfolio diversification benefits	3.5	70%
Strong performance of infrastructure sectors	3.4	50%
Favourable tax structure/treatment	3.2	20%
Greater availability and choice of infrastructure assets	2.9	20%
Significant capital inflows available for infrastructure assets	2.9	20%
Higher/enhanced yield than commercial properties	2.7	40%
Desire for new product diversity	2.5	10%
Compelled to expand due to strong capital inflows into fund	2.2	10%

Risk factors

Table 7 presents the importance of the various risk factors or difficulties for fund managers investing in infrastructure; reflecting the uncertainties of investing in this alternative asset market. Uncertainty of government policy (average score of 3.4) and over-valuation of infrastructure assets (3.4) were seen as the most important risk factors by infrastructure fund managers. Other important risk factors were lack of quality infrastructure stock, uncertainty of patronage estimates, and the quality and availability of infrastructure performance data. For example, while listed infrastructure performance

benchmarks are available (eg: UBS, Macquarie), there is no benchmark investment performance series available for unlisted infrastructure in Australia, with only individual unlisted infrastructure fund performance reported (eg: Mercer). An unlisted infrastructure performance series for Australia over 1995-2006 has been developed by Peng and Newell (2007); no equivalent unlisted infrastructure series being available for other major infrastructure markets (eg: UK, Europe, US). Rising interest rates were not recognised as an important risk factor (average score of 2.9); nor was the use of complex and highly geared structures for infrastructure investment seen as an important risk factor by these infrastructure fund managers.

Table 7: Risk factors for infrastructure investment

Factors	Average score	Percent classified as 'Critical' or 'Very Important'
Uncertainty of government policy regarding infrastructure	3.4	60%
Over-valuation of infrastructure assets	3.4	60%
Lack of quality infrastructure stock	3.2	40%
Uncertainty of patronage estimates	3.2	40%
Competition of infrastructure investment/acquisitions	3.1	30%
Quality and availability of infrastructure data	3.1	30%
Rising interest rates	2.9	30%
Difficulty in identifying sound infrastructure investments/acquisitions	2.9	30%
Inconsistency and ambiguity of legislation	2.8	30%
Maturation of the asset class	2.8	10%
Difficulty in identifying reliable/strategic business partners	2.7	30%
Complex and highly geared structures	2.7	10%
Large investment scale	2.5	10%
Limited liquidity	2.4	10%
High management fees	1.9	10%

Importantly, the infrastructure fund managers did not score these potential difficulties as highly as the motivating factors for investing in infrastructure (see Table 6), with lower levels of difficulties being seen as critical or very important. This reflects the infrastructure fund managers being comfortable with the infrastructure investments where they already have significant expertise and knowledge, as well as being familiar with the various infrastructure sub-markets. This confidence may need to be offset to some degree by the only recent development of the infrastructure sector and the lack of performance data in the unlisted infrastructure sector.

Infrastructure management and investment strategies

With the infrastructure investment gap expanding and increased opportunities for private involvement in infrastructure provision, several infrastructure investment options are available. Full private provision (FPP) was seen as the most popular privatised infrastructure scheme, with 90% of respondents having participated in a FPP arrangement. This FPP scheme has the major advantage of investors being able to retain some rights to the infrastructure asset at the end of the concession period. Public-private partnerships had also been utilised by 30% of respondents, with none adopting a private finance initiative scheme.

With successful infrastructure projects requiring specialist input at various stages, 60% of respondents had cooperated with partners in maintaining the infrastructure assets in their portfolios. As seen in Table 8, a good reputation (average score of 4.4) was the major criteria in selecting a business partner for an infrastructure project; followed by extensive experience (4.1). 86% of infrastructure fund managers saw these two selection criteria as critical or very important, with less importance given to capital supply by consortium partners.

Table 8: Criteria for business partner selection

Partner attribute	Average score	Percent classified as 'Critical' or 'Very Important'
Good reputation	4.4	86%
Extensive experience	4.1	86%
Supplying capital	3.0	29%

Interest rate volatility

Rising interest rates have been a major concern in the infrastructure investment market in recent years, reflecting the impact of increasing interest rates on these typically highly geared infrastructure investment vehicles and the impact on cap rates/capital values. While 70% of respondents recognised interest rates as a concern for their infrastructure funds, 70% of these fund managers had applied interest rate hedges to the borrowings of

their infrastructure funds, including escalation provisions linked to the inflation rate, fixed interest rates and forward rate agreements. The use of these interest rate risk management strategies further reinforces the low score previously given to rising interest rates amongst the various infrastructure risk factors (see Table 6).

Infrastructure stages

Later stage or mature infrastructure assets involve established businesses with a history of consistent and robust cashflows. The investment characteristics are well understood or readily predictable, with investment returns largely from the stable income flow rather than capital growth (RREEF, 2005). In contrast, development stage infrastructure assets have a higher level of business risk which includes construction risk, uncertain demand growth and early year post-privatisation risk (RREEF, 2005). This sees later stage and development stage infrastructure having different risk/return profiles.

60% of infrastructure fund managers had invested in both development stage and later stage infrastructure, with the remaining 40% of respondents only including later stage infrastructure in their portfolios. Both development and later stage infrastructure were seen as suitable assets in their portfolios, with development infrastructure typically classified into the value-added asset category. Appropriate gearing levels for infrastructure funds were estimated to be in the range of 60-90%, although nearly all infrastructure funds had higher gearing levels than those considered appropriate by the infrastructure fund manager respondents. This potentially presents a major risk factor for debt refinancing in the current global credit crisis environment.

Future infrastructure investment

All infrastructure fund managers showed strong interest in increasing their levels of infrastructure investment; particularly in the areas of transportation infrastructure, as well as in utilities (eg: pipelines, energy distribution networks). Australia was seen as the primary focus of this infrastructure investment expansion (60% of respondents), with investment expansion opportunities also seen for the US (50% of respondents), UK (40%), Europe (40%), with opportunities in Asia being seen as less significant (30% of respondents).

CONCLUSION

Infrastructure investment has taken on increased importance with institutional investors in recent years, with Australian infrastructure fund managers (eg: Macquarie, AMP, Babcock & Brown) having significant infrastructure markets both in Australia and internationally. Infrastructure has also been strongly supported by superannuation funds as a key alternate asset class in their total portfolios. This has seen the rapid growth of infrastructure funds management in Australia, currently accounting for over $83 billion in total infrastructure assets.

Given the increasing significance of infrastructure funds management, this paper has identified the importance of motivating factors and risk factors in infrastructure funds management, with the significance of the motivating factors exceeding the risk factors, reflecting the experience and confidence of fund mangers in these infrastructure sub-sectors.

While the current global credit crisis has added another layer of uncertainty to all asset classes including infrastructure, the longer term prospects for infrastructure funds remain strong, both in Australia and internationally, as well as in both developed and developing markets. Increasing government support to infrastructure privatisation, increasing investor support for infrastructure as an asset class, increasing understanding of infrastructure as an asset class and the rapid expansion of infrastructure demands in Asia and Eastern Europe are likely to be catalysts for ongoing global infrastructure development, investment and funds management activity.

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