

Russell Research

Title: **Australians and Infrastructure Investment**

Author: Nicole Connolly, Director, Alternative Investment Consulting

Date: March 2012

Synopsis: Australian industry superannuation funds have invested in domestic infrastructure assets since the mid 1990s, with a steady increase in target allocations towards this asset class over time. With the growth of the superannuation industry projected to triple by 2035¹, the demand for infrastructure opportunities both domestically and globally is expected to rise significantly. This research paper explores the nature of the infrastructure market and discusses how investors can access these opportunities, while being aware of the challenges facing the industry.

1 Super System Review 2010, headed by Jeremy Cooper

Acknowledgments: The author would like to acknowledge the valuable input of a number of Russell associates in the creation of this research paper, in particular, Vikrant Gupta, Frank Russo, Migara Alles, Whitlam Zhang, Tamara Larsen and Graham Harman.

MARCH 2012

Australians and Infrastructure Investments

By: Nicole Connolly, Director, Alternative Investment Consulting

SECTION I: INTRODUCTION

HISTORY OF AUSTRALIAN MARKET

Australian superannuation funds, and in particular industry funds, have been strong supporters of private infrastructure since the 'institutionalisation' of the market in the mid 1990's. This institutionalisation was on the back of the privatisations that occurred in electricity, gas, transport and communication services at both Commonwealth and State level. During that time approximately \$60 billion was transacted. The electricity privatisations alone in Victoria during 1992, 1995, 1996 and 1997 equated to \$22 billion¹. Less than half of these privatisations were non infrastructure public floats such as GIO, Commonwealth Bank and Telstra, however the remainder - mostly electricity, gas generation and pipeline assets were trade sales, including to the institutional market.

The first institutional fund manager to raise an unlisted infrastructure fund was Hastings in 1994 on the back of these privatisations. Industry Funds Management (IFM) and AMP Capital Investors were soon to follow in 1995. As such, Australia was one of the first regions to institutionalise the private infrastructure market. Other regions have followed, including the UK which also experienced a high degree of privatisation of 'traditional public services' during the 1990's.

SIZE OF THE MARKET

Russell estimates that there is approximately \$15 billion² of infrastructure assets currently represented in unlisted closed-end Australian wholesale funds today, which is managed by about 12 -15 fund managers. We also estimate that there is approximately \$2 billion being raised by Australian managers in the market today. Despite the 18 year history of private infrastructure in the Australian market, the size and number of institutional grade fund managers remains small. It is also worth pointing out that two managers (IFM and Hastings) dominate the unlisted space, representing approximately 75% of the \$15 billion.

This compares to an explosion of managers that have emerged globally over the past 4 years. The global market emerged in earnest back in 2006 with a number of first time funds coming to the market. This trend has continued with Preqin³ suggesting that as at January 2012 there are 144 unlisted infrastructure funds in

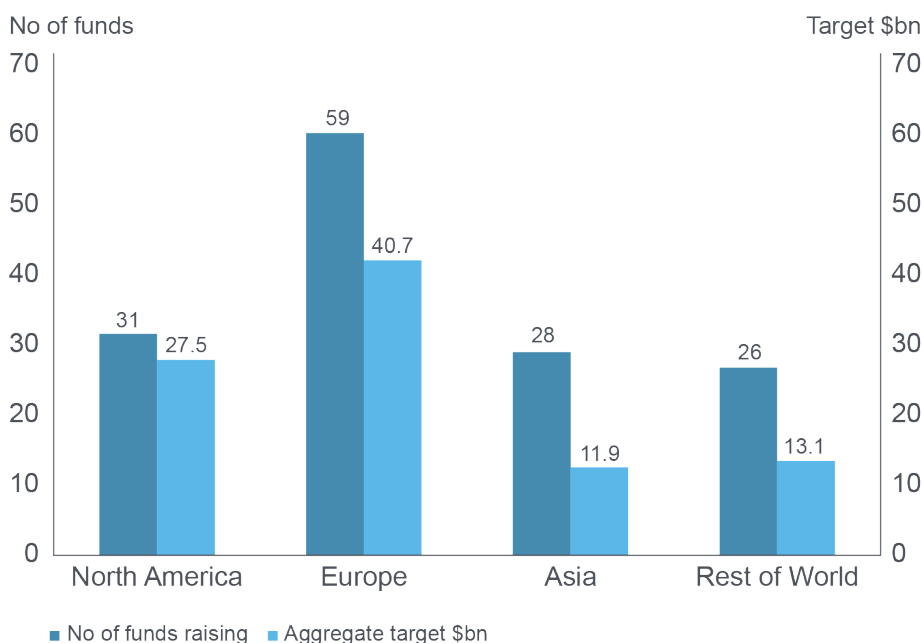
¹ Reserve Bank of Australia Bulletin, December 1999.

² All assets quoted in AUD unless otherwise stated.

³ Preqin is a data and information service provider for the private equity, real estate, hedge funds and infrastructure asset classes.

the market, targeting approximately \$94 billion in total capital commitments, as shown in Chart 1. The majority of global unlisted infrastructure funds have closed end structures with 10 – 15 year terms, compared to the open ended structures that are predominant in the Australian market. There is more detail on fund structures later in the paper.

Chart 1: Composition of Funds in the Market, by Primary Regional Focus



Source: 2012 Preqin Global Infrastructure Report

MARKET GROWTH

Australian institutional investors' appetite for global infrastructure has been moderate. Investors cite preference for open ended structures, limited track record and limited experience of global funds as reasons. The global managers that have been successful at raising funds in the Australian market have been niche managers with targeted strategies, for example funds targeting the US energy sector.

Australian institutional investors will increasingly need to consider how they access offshore infrastructure opportunities going forward. With super funds projected to reach \$5 trillion over the next fifteen-years⁴, the need to find suitable investment opportunities is vital if they are to maintain target weights to the sector and access the sector benefits that are highlighted in this paper. For example, a 5% allocation to infrastructure in an industry that has an approximate value of \$5 trillion, would imply a \$250 billion of investment dollars. This would equate to a significant increase to incremental investment from the current base.

Needless to say, there has been significant growth in the sector and based on current forecasts for growth of the Australian superannuation industry, it is expected to continue. It is on the back of this increasing need to find compelling opportunities in the infrastructure sector that we wanted to explore the asset class in more detail and provide some guidance for our clients in navigating this space.

⁴ ASFA Paper, Challenges of Financing Infrastructure, May 2011

SECTION 2: CHARACTERISTICS OF INFRASTRUCTURE

On the surface, one would actually be right to question the appeal of such investments. While it has long been argued that infrastructure offers a clear alignment with the liability stream of many investors; unlisted assets are highly illiquid, capital intensive, and are depreciating by nature. Furthermore, there is typically a high degree of political and regulatory risk. However, the benefits include the concessional arrangement of such assets. Despite the fact that some assets are handed back to the government after a period of time, concessions are usually extremely long, often lasting 99 years. Also there is a high degree of incentive to keep assets functioning and operational to benefit from the very stable, reliable and often protected income streams. It is for this reason that infrastructure offers risk, return and diversification characteristics distinct from other asset classes. Table 1 summarises the key characteristics of unlisted infrastructure.

Table 1: Characteristics of Infrastructure Investing

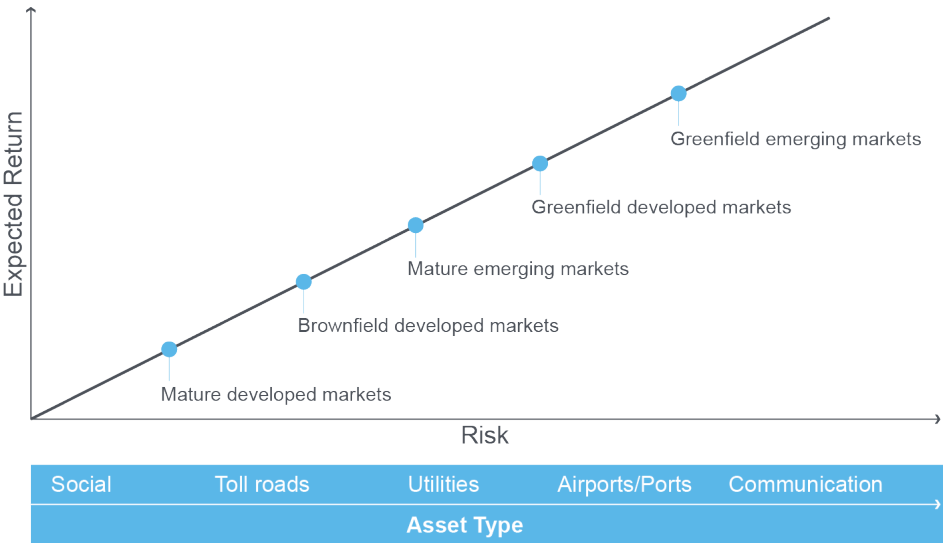
Characteristic	Advantages	Disadvantage
Long duration of investments	Most infrastructure assets have long, stable cash flows. Concessions for infrastructure tend to be long-term and over 25 years, often lasting 99 years.	Not all types of infrastructure are appropriate for duration matching.
The inflation relation	Revenues may be either explicitly linked to inflation and/or may offer inelastic demand patterns.	Some assets may only partially adjust for inflation. While cash flows may be linked to inflation there may be a material lag.
Diversification benefits	Stable return streams with low equity beta. Potential for high cash flow and growth component.	Illiquid. Capital intensive and depreciating assets. High fees, high costs of bidding for and closing deals.
Provision of essential services result in monopolistic market structures	Predictable cash flows. Higher credit ratings resulting in favourable borrowing costs (typical gearing levels for core infrastructure 30 – 45%) ⁵ . Limited business risks.	Regulatory uncertainty. Political risk. Patronage and construction risk for value add or greenfield investments.

⁵ Gearing levels may be materially higher for PPP projects (i.e., closer to 70-90%)

RISK AND RETURNS

Chart 2 highlights the broad risk and return parameters of infrastructure investments. In the bottom left quadrangle of the chart, mature and developed markets infrastructure (*core*) investment returns feature this stable, reliable and protected income stream referenced above, which is derived from tangible, long-lived assets with monopolistic like pricing power. Many are regulated and may feature income linked directly to inflation (although this may involve a material lag). At the other end of the spectrum, *opportunistic* strategies would include ‘greenfield’ or new-construction investments, and would generally be structured with higher risk exposures to the cash flow stream.

Chart 2: Risk/Return profile for infrastructure strategies

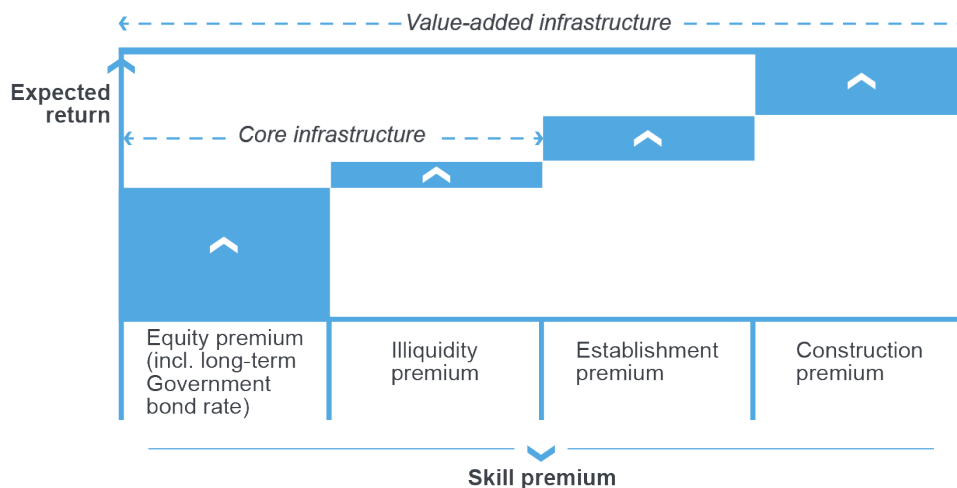


Source: Russell Investments

RISK PREMIA

Another way to depict the expected return and risk relationship is to consider the risk premium hierarchy for the infrastructure universe as set out in Chart 3. As we have established, core infrastructure provides stable and predictable revenues, and this suggests a moderate return premium over a reference long-term bond rate to reflect limited business risk and an illiquidity premium. With that said, we would expect that the core infrastructure specific equity risk premium to be lower than the broad equity market over the long-term given the lower risk. Value-added infrastructure would be expected to earn additional premiums related to the risk of establishing patronage and a construction premium. A skill premium can be expected across the core and value added spectrum given the unique capabilities required; from originating deals through to navigating complex regulatory environments.

Chart 3: Prospective Returns – Five risk premia



Source: Russell Investments

Given the nature of unlisted infrastructure returns, investors often question whether the categorisation of the asset class should be defensive or growth. The certainty around cash flow streams of many infrastructure assets supports a defensive categorisation. However, at Russell we consider unlisted infrastructure to be a growth asset. In our view, although the asset class may be more defensive than say, equities, it still requires a growing economy to deliver on its capital growth and income return objectives.

ASSET ALLOCATION

Given some of the advantages of infrastructure investments, namely the inflation linked stable income stream and the monopolistic pricing power asset owners possess, superannuation funds have been allocating to unlisted infrastructure within their balanced portfolios for a number of years. The rationale in terms of diversification is clear when looking at the correlation matrix in Table 2.

Table 2: Correlation Matrix – Unlisted Infrastructure and other asset classes over period 2002-2011

	Aus Unlisted Infrastructure	Global Listed Infrastructure	Aus Equity	Aus Bonds	Aus CPI Bonds	Commodities	Global Listed Property	Aus Unlisted Property
Aus Unlisted Infrastructure	1.00							
Global Listed Infrastructure	0.29	1.00						
Aus Equity	0.33	0.49	1.00					
Aus Bonds	-0.34	-0.51	-0.55	1.00				
Aus CPI Bonds	0.17	-0.28	-0.14	0.48	1.00			
Commodities	0.40	0.44	0.37	-0.72	-0.17	1.00		
Global Listed Property	0.06	0.34	0.71	-0.47	-0.03	0.35	1.00	
Aus Unlisted Property	0.54	0.57	0.33	-0.37	0.07	0.49	0.10	1.00

Source: Datastream, Russell Investments, Mercer. Data frequency is quarterly

Aus Unlisted infrastructure = Average return of eight Australian Unlisted Infrastructure Funds;

Global Listed Infrastructure = S&P Global Listed Infrastructure Hedged A\$;

Aus Equity = S&P/ASX 300;

Aus Bonds = UBS Australia Composite (All Maturities);

Aus CPI Bonds = UBS Australia Inflation (All Maturities);

Commodities = DJ UBS- Commodity Ind TR Index;

Global Listed Property = FTSE EPRA/NAREIT Developed Index;

Aus Unlisted Property = Average return of Mercer Australian Direct Property Universe

How much are Australian superannuation funds investing in unlisted infrastructure and how have these allocations changed over the years?

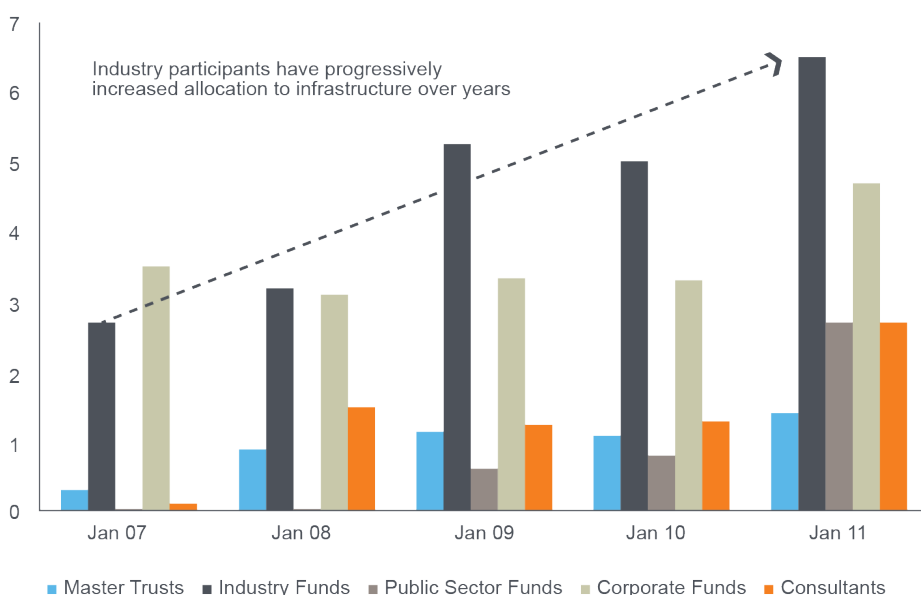
The June 2011 Chant West Survey suggests that industry superannuation funds lead the way with an average of 5% allocated to unlisted infrastructure. Corporate superannuation funds follow with a 2.4% average allocation. Public superannuation funds on average invest 2% in unlisted infrastructure. By and large, Master Trusts continue to have no allocation to unlisted infrastructure. The exceptions to this are AMP Future Directions and Russell Investments.

Allocations to infrastructure are significantly larger today compared to five years ago as shown in Chart 4. Back in 2006, according to Chant West Surveys,

industry funds had an allocation on average of only 1% to infrastructure, while corporate and public funds had allocations of 0.2% on average.

Anecdotal evidence suggests that the majority of current unlisted infrastructure exposure for domestic institutional investors is Australian infrastructure. However, given the demand and supply imbalance most of the new investment is likely to be offshore.

Chart 4: Average Strategic Asset Allocations for Balanced Growth Option



Source: CW Surveys

KEY CRITERIA FOR UNLISTED INFRASTRUCTURE FUND INVESTMENTS

When considering unlisted infrastructure managers, the elements of what defines an infrastructure investment should be clearly established and matched to the investment strategy. This is especially important with the unlisted infrastructure sector due to the relative illiquidity of the asset class. During the boom period prior to the onset of the global financial crisis, certain global unlisted infrastructure managers that failed to resist 'style drift' delivered investment performance and risks that were not aligned with the risk/return profile that investors had signed up for.

This is reminiscent of the experience in Australia in the late 1990's and early 2000's. However, this was also a function of the infancy of the asset class. As the 'privatisation wave' slowed, managers were looking to benefit from the strong market environment, and in some cases made investments that had tenuous links to infrastructure, such as baggage carts at airports, roadhouses attached to tollroads, sporting stadiums and timber plantations. Many of these managers that made early investment mistakes have continued on to build well constructed portfolios with consistent long-term return profiles. These early 'teething' problems can be a learning curve for managers who go on to strengthen their investment strategy; the 'scar tissue' providing them with the insight to better navigate the sector.

Russell would also encourage investors to place particular emphasis on the origination capabilities of the manager, the operational skill set of the team and ability of the key individuals to navigate the complex regulatory environment. Having awareness for the political and environmental landscape is also critical.

STRUCTURE OF INFRASTRUCTURE FUNDS

Unlisted infrastructure funds are commonly structured in the following two ways.

1 OPEN-END FUNDS

Open-end funds allow for the periodic entrance and exit of investors during the life of the fund, although there are often entrance and exit queues depending on the market cycle and market trends. It is the main type of fund available in Australia and can offer an attractive strategy and fund structure match for assessing core infrastructure.

In theory, open-end funds suit the long-life nature of infrastructure assets and would be positioned to avoid the situation where assets are forced into poorly timed sales due to the wind up of a fund. This leads to lower asset turnover than the typical closed-end fund.

There are only a limited number of open-end global infrastructure funds in the market. However, in recognition of the suitability of these structures given the long-life nature of infrastructure assets, we are increasingly seeing a hybrid structure emerge that allows funds to roll-over for another 5-7 years following a pre-determined period (typically 10 years), whilst providing a liquidity window for investors wanting to redeem.

2 CLOSED-END FUNDS

Closed-end funds raise capital at the inception of the fund and then remain closed to new investors until the fund is wound up. The fund will have a specified time frame in which it will invest the capital before returning all capital to investors at the end of the term of the fund (typically 10 years).

Closed-end funds are more prevalent outside Australia and tend to offer the opportunity to access higher risk strategies or more niche infrastructure opportunities. During the term of the fund, the investor does not have the ability to redeem their capital contribution. Rather, periodic distributions of cash flow and capital events (i.e. sale or refinancing) proceeds are the sources of liquidity.

The “lumpiness” of the cash flow stream associated with higher risk investment strategies are well matched to the closed end fund structure, which insulate the fund manager from the distractions posed by cash management aspects of offering liquidity to investors. That is, the fund manager can focus solely on selecting and managing the investments to drive value. However, one of the key drawbacks of the closed end fund structure is the semi-hard termination date (which typically can be extended for 1-2 years) that creates a potential situation where the sales of portfolio assets are vulnerable to the state of the market at the time. However, the incentive structure and “profit splits” associated with closed-end funds does put pressure on the managers to drive value during the investment hold period, supporting active management to deliver target returns.

PERFORMANCE EVALUATION FOR INFRASTRUCTURE

Unlike traditional fixed interest and equity asset classes where performance evaluation is a fairly straightforward process, performance evaluation of non-traded assets such as unlisted infrastructure can pose a number of challenges. The core problem centres on the fundamental traits and the idiosyncratic nature of these private assets. Not only are infrastructure returns publicly unavailable, but the performance data of these assets is relatively short. In addition, data collection on infrastructure is expensive relative to the size of

the market for such data. Finally, the risk/return tradeoff varies significantly by type of investment at different stages and hence no single return metric can adequately capture the whole infrastructure asset class or strategy. In light of these inherent limitations, there is no single broadly accepted index for use in performance evaluation. Consequently, infrastructure portfolios are typically measured against a fixed absolute rate of return or a fixed margin above an economic indicator that reflects the performance characteristics of infrastructure investments. The most common evaluation tools currently in use are⁶:

- **Absolute rate of return:** a nominal flat rate of return typically expressed as either a holding period return per annum or an internal rate of return (IRR) over a specified period.
- **Inflation plus margin:** effectively a real rate of return
- **Bond yield plus margin:** represents the 'opportunity cost' of not investing at the risk-free rate.
- **(Inflation-linked) bond index return plus margin:** captures the effects that changes in interest rates have on the capital values of infrastructure businesses.
- **Equity return plus margin:** reflects the 'opportunity cost' of not investing in the listed market plus a premium for asset and portfolio specific risks.

The above evaluation tools are unambiguous, measurable and specified in advance, however most cannot be passively replicated in one step and therefore fall short in terms of investability. Consequently, there is currently no industry standard benchmark for unlisted infrastructure which contains all the desired attributes of a meaningful benchmark. Hence, the choice of an appropriate evaluation tool for unlisted infrastructure boils down to comparing its relative merits (specifically, in terms of suitability) against others available.

With regard to the appropriateness of evaluation tools, it is important to note that this decision is made with reference to the specific performance objectives of the investor and the overall style of the fund. For example, an *Inflation plus margin* suits entities with the investment objective of achieving real or 'inflation protected' returns such as superannuation funds that are seeking to match assets with liabilities. However, there is no convincing evidence suggesting a high level of correlation between changes in CPI and unlisted infrastructure portfolio returns.

It can be argued, *Bond yield plus margin*, is more suited to mature-stage infrastructure portfolios where income dominates total return rather than growth portfolios. This is because mature-style portfolios are less volatile than growth portfolios supported by a more stable yield. Inflation linked *bond index return plus margin* is likely to suit growth-style portfolios rather than mature-style portfolios because the effects of interest rate changes will be more pronounced for growth style assets where the capital return component dominates total return.

Equity return plus margin is intuitively more appropriate for growth style infrastructure portfolios which are dominated by early-stage infrastructure businesses. These growth-style portfolios with medium-term investment horizons have risk levels comparable with the equity market and the majority of their total returns typically come from capital return as opposed to income return. However, the fact that infrastructure portfolio returns do not closely track

⁶ CFS, Infrastructure research note (March 2007), "A look at wholesale infrastructure fund benchmarks".

Australian equity market returns⁷ limits the effectiveness of this tool as a measure of relative performance.

For investors adopting an after-tax investment focus, choosing between evaluation tools also means favouring the ones which reflect the impact of tax on investment returns. Some approaches more readily accommodate after-tax considerations than others.

In addition to these common approaches, investors also have the following alternatives at their disposal.

- **Choice of equity, real estate, bond and private equity measures:** Infrastructure shares common traits with bonds, private equity and real estate. As a result, depending on the risk-return profile of the infrastructure investments, performance can be evaluated against a combination of these traditional and alternative asset classes.
- **Peer group of unlisted infrastructure funds:** This involves identifying and comparing against a range of peer portfolios with similar management style, investment horizon and approach to sector and geographic diversification as the selected portfolio. However, infrastructure investments are still relatively new and data collection has been sporadic. The absence of an established source of peer data and the often proprietary nature of such data limits the availability of a defined peer group for the purposes of relative performance measurement.
- **Listed infrastructure index or global equity index or blend of the two:** Investors could use the listed benchmarks as a proxy for unlisted infrastructure, correcting for volatility of returns, sectors and leverage ratios. However, the listed benchmarks are much more volatile than what would be expected from unlisted investments.

TRACK RECORD

Australian unlisted infrastructure managers have produced compelling returns over a 15 year period. Over the long-term the sector has produced returns superior to a bonds plus 4%, which (as cited earlier) is a common evaluation measure adopted. One-year numbers have rebounded from the crisis period, which is largely a result of strong returns from the airport sector, but this is also due to robust performance from the utilities, and in particular, the regulated utilities sector.

To assess the performance of unlisted infrastructure, an equally-weighted quarterly return series was constructed using eight wholesale infrastructure funds (with varying inception dates) domiciled in Australia. In Table 3 below, we show the average annualised performance achieved by these wholesale Australian portfolios over the 15 years to 31st December 2011. Additionally, we also list the capital growth and income components.

⁷ The pattern of annualised Australian equity returns over the past 10 years against the annualised returns of the Australian unlisted infrastructure portfolio shows that the infrastructure portfolio does not track Australian equity market returns. (Source: IRESS and CFS Research)

Table 3: Australian unlisted infrastructure manager returns to 31 December, 2011

	Gross Return (% p.a.)	Net Return (% p.a.)	Capital (% p.a.)	Income (% p.a.)
1 Year	13%	12%	6%	5%
3 Years	8%	7%	2%	5%
5 Years	8%	7%	2%	5%
7 Years	10%	8%	3%	5%
10 Years	11%	10%	4%	5%
15 Years	12%	11%	5%	5%

Source: Russell Investments

Note due to rounding, components of return may not add to total

Historical returns for this series averaged 12.0% on a gross of fees and tax basis over the 15 years to 31 December 2011. However, considering only two funds provide a longer dated history of 15 years, the average annualised return of 10% delivered by seven wholesale infrastructure funds over the medium-term (7 year) period may be a better representation of the unlisted infrastructure asset class. On balance, it is also noted that unlisted assets have generated a relatively stable and predictable income stream, as demonstrated by the consistent income yield of 5% over varied time periods.

SECTION 3: CHALLENGES FACING AUSTRALIAN INSTITUTIONAL INVESTORS

AIRPORT REGULATION

Russell has estimated that the size of assets under management of the Australian unlisted infrastructure manager universe to be approximately \$15 billion. A closer inspection of these managers shows a high exposure to airports within these funds. In fact, a recent roundtable conducted by the Australian Financial Review, quoted Perry Clausen, co-head of infrastructure at Colonial First State, as saying “The superannuation industry’s got... in excess of \$6 billion invested in Australian airports”. Airports have been a strong driver of returns for portfolios over the last few years. Melbourne Airport generated a return of 18.5% in FY 2010 and 16.2% in FY 2011 and Perth Airport returned 25.1% in FY 2010 and 25.2% in FY 2011⁸.

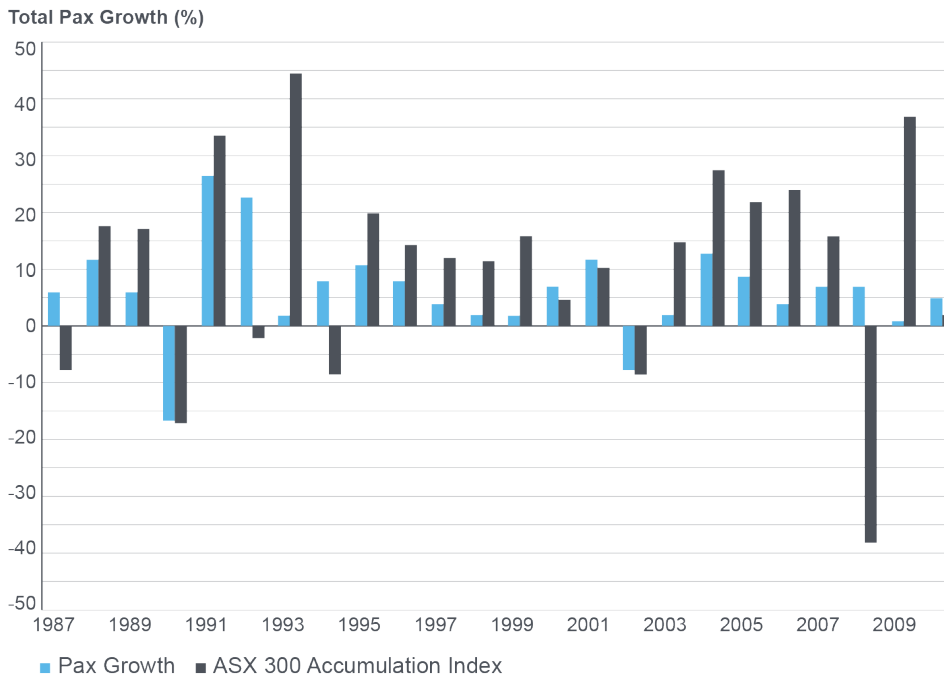
As a result of the significant allocation to airports held by a large proportion of the dominant unlisted infrastructure managers in Australia, airport regulation is an important factor when considering the future attractiveness and risk of the sector. Currently, the Australian airport sector is lightly regulated. The current system promotes commercial pricing negotiations between the airlines and airports; however it includes a provision for arbitration in relation to access charges, should commercial negotiations falter.

The Australian Competition & Consumer Commission (ACCC) has a price monitoring role in relation to aeronautical services and facilities, including car parking services. The ACCC in the past has raised concerns over the level of airport parking charges. The ACCC’s submission to the Productivity Commission’s inquiry into the economic regulation of airport services, dated October 2011, stated that “The Productivity Commission’s (PC’s) draft report finds that Brisbane, Melbourne, Perth and Sydney airports – and to a lesser extent Adelaide Airport – have ‘sufficient market power to be of policy concern’”. The outcome from the 2012 regulatory review is expected to be released in 2013 and in light of the PC’s draft determinations and the ACCC’s submission, Russell expects much more attention to be given to this area than in the past.

Aside from the regulation, although not unrelated, is the performance of the domestic airport sector going forward. The sector in Australia has a strong track record of long-term growth as highlighted in Chart 5, with only two years of negative passenger (Pax) growth over the last 25 years. This compares to six years of negative growth for Australian equities over the same period.

⁸ Hastings Funds Management, Utilities Trust of Australia, Annual Report 2011

Chart 5: Annual Total Pax Growth of Major Australian Airports vs. S&P/ ASX 300 Accumulation Index



Source: BITRE, RBC, IFM

The airport sector performed relatively well through the global financial crisis, with airlines managing the down cycle through a range of initiatives including discounted ticket prices and reduced services for example. However, the resilience of the Australian airport sector is due to a number of other factors, including the diversity in revenue streams which includes aeronautical, car park services, trading (retail), property and security; and is also reflective of the economic environment in Australia. Although performance of the airports may slow with a further downturn in the Australian economy resulting in a slowdown in passenger growth, they have sound and sustainable capital structures. Those with near term debt maturities are well advanced and well positioned to roll-over and /or extend out debt maturities.

DIRECT INVESTING

Another challenge facing institutional investors is the impact from large superannuation funds, sovereign wealth funds and offshore pension plans (in particular those domiciled in Canada) investing directly (or co-investing) into this space. This desire to invest in direct assets may be to the detriment of the wholesale funds in the Australian market. Aside from one or two notable managers, the wholesale funds are not receiving the same level of capital support they once had, which makes it difficult to sustain continued growth, development and best practices for the wholesale market. Table 4 highlights the pros and cons of direct investing versus fund investing.

Table 4: Private Infrastructure Access

Characteristic	Advantages	Disadvantage
Direct Investment	Many attractive deals are completed by select 'big players' in consortiums. Potential to construct bespoke portfolio which better matches assets to liability structure of investor. Potential access to board seat of investee adds to control and influence over investment.	Appropriate governance structures required. Headline risk. Large allocation required. Single asset risk. Significant demands of managing direct investment.
Fund Investment	Increased diversification of assets. Fund investors benefit from sourcing, transaction, asset management and financing skills of manager. Less administration/ internal resources.	Higher fees. Likely to have single region or style bias.

Source: Russell Investments

POLITICAL ENVIRONMENT

Australia continues to face political turbulence both at state and federal level. This has translated to uncertainty, with a number of investors avoiding government processes unless the political situation is more consistent. Having said that, in its May 2011 Federal Budget, the Australian Government committed to strengthening Infrastructure Australia⁹ to drive long-term improvements in planning, financing and building infrastructure. Infrastructure Australia's budget was increased by 40% which is expected to give the group increased independence and financial autonomy.

The Chairman, Sir Rod Eddington, has indicated that productivity has slowed as a direct result of infrastructure shortfall and that government reforms to infrastructure planning and delivery were "frustratingly slow". Infrastructure Australia has now set up the Infrastructure Financing Working Group (IFWG) to identify new ways of financing infrastructure with the policy goal of developing practical ways to encourage additional private funding. The working group will consider a number of strategies to meet the policy goal, including encouraging superannuation funds to invest in infrastructure, updating guidelines on Public Private Partnerships and recycling Government assets to fund investment into new infrastructure. Whilst this initiative seems positive for the sector, there has yet to be any take up of the \$11.5 billion of investment opportunities that have been identified by the Federal Government as 'Priorities' and 'Ready to Proceed'.

⁹ Infrastructure Australia is a statutory body that advises governments, investors and infrastructure owners on a wide range of issues including: Australia's current and future infrastructure needs, mechanisms for financing infrastructure investments, and policy pricing and regulation.

GREENFIELD RISKS

Although infrastructure is typically characterised as having relatively inelastic demand and a low risk profile, infrastructure assets are not immune to failure. The mid to late part of the 2000's has been notable for some high profile infrastructure projects being funded on the basis of overly optimistic forecasts of usage. These include Sydney's Lane Cove and Cross City tunnels, the Brisbane and Sydney airport trains, Melbourne's Eastlink, Brisbane's RiverCity Motorway and the rail line connecting Adelaide and Darwin. There have been some criticisms in the past that the system of tendering for infrastructure projects institutionalises a winner's curse by encouraging overly-optimistic predictions by advisers and consultants who are incentivised to overstate projections to earn success fees, irrespective of whether or not the forecasted patronage materialises after construction.

These high profile failures have made it harder to attract private investment into new greenfield infrastructure projects. In addition, investors are now seeking to structure contracts such that more of the risk is being retained by Government. For example, the toll-free Victorian Peninsula Link road project has been structured under an availability fee model, whereby the Victorian government will make periodic payments to the successful consortium to construct and maintain the 25-kilometre Peninsula Link once it's operational, irrespective of traffic usage.

SECTION 4: PRACTICAL CONSIDERATIONS

DISCOUNT RATES AND VALUATIONS

The valuation of unlisted infrastructure investments will generally require assessment of their specific cash flows and investment terms by an independent valuer, with the valuation often based on comparable transaction parameters and/or a discounted cash flow (DCF) approach. As the name suggests, a DCF value is the summation of all future cash flows generated by an asset, where cash flows are adjusted for the time value of money and risk, as well as (usually) tax. For a given set of cash flows, the lower the discount rate the higher the valuation.

The underlying discount rate is typically derived from a capital asset pricing model and comprises the risk free rate, plus a risk premium, plus in some cases an arbitrary adjustment factor (sometimes referred to as an alpha factor). The risk free rate is usually based on the relevant long term government bond rate.

Under normal circumstances, the trend to lower bond rates in key countries such as the US, UK and even Australia would be expected to reduce the discount rate for assets located in those countries and, assuming no change in the risk profile, this would in turn bolster valuations. However anecdotal evidence suggests that valuers appear to be taking a conservative approach and either:

- Explicitly adjusting the risk free rate so that it does not reflect the extremely low current bond yields; or
- Adding an alpha factor to offset the reduction in long term bond yields.

Consequently there appears to be little evidence of valuations being systematically bolstered by the current term structure of long term bonds.

Best practice for valuation programs is usually an annual valuation supplemented by quarterly or semi-annual updates. The quarterly or semi-annual update valuations conducted by the independent valuer following an annual valuation should incorporate any updates to the valuation parameters and the annual valuation model to account for material information available since the previous valuation. This reduces the likelihood of material spikes occurring with the full annual valuation. Obviously this only applies where the benefit to an investor outweighs the additional cost of the more frequent valuations.

FEES

Many unlisted infrastructure funds have adopted a fee structure which comprises a base plus performance element. When unlisted infrastructure first rose to prominence in the late 1990's, 2% base and 20% performance fee structures were common. While performance fees of up to 20% are still common, base fees have generally materially reduced. The performance fee is often modelled on the private equity style 'waterfall' performance fee models where carried interest is applied to profits after capital has been returned to investors.

We consider appropriately structured performance fees can be an effective method for aligning the interest of the manager with those of investors. However, we believe there are two issues with performance fee structures for infrastructure investments. Firstly, the appropriate benchmark and secondly, performance fee structures are generally associated with asset classes where there is significant scope to add value.

While this is generally true of greenfield infrastructure, it is arguable as to whether a manager of core infrastructure which comprises assets that are mature, comparatively lower risk and subject to a greater degree of regulation, have material scope to add value for a performance fee to be appropriate. As such, assuming the benchmark issue is suitably addressed, we consider that the appropriateness of performance fee structures is dependent on the underlying nature of the infrastructure investments with the existence and scale of any performance fee reflecting the attached value enhancing opportunity.

For example, a base fee only structure for mature core infrastructure with the scale of a performance fee rising in proportion with the proportion of greenfield opportunity.

For further discussion on the applicability of performance fee structures in relation to infrastructure, refer to the Appendix.

TAXES

For investors with an after-tax investment focus, the tax treatment of infrastructure is a relevant consideration. Taxation of infrastructure is very project-specific and dependent upon the structure used.

Some infrastructure projects have to date suffered from inherent tax inefficiencies relating to the ability of the investors to benefit from early-stage tax losses due to the failure of the 'continuity of ownership test' and 'same business test' in tax law. The Federal Government has sought to remove this impediment by announcing in the 2011-12 Federal Budget that certain new Infrastructure Australia-approved projects will be exempt from these tests. The same package of reforms will help preserve the real value of early-stage tax losses incurred in infrastructure investments by indexing them to the 10-year bond rate for each year the losses are carried forward.

The Government has consulted with industry in relation to these reforms and is expected to introduce tax reform legislation into Parliament early this year.

LOW CARBON ECONOMY

One of the key upcoming economic developments that will alter the Australian infrastructure landscape is the almost inevitable transition to a low carbon economy. Those sectors within the industry that are carbon emissions intensive may find themselves in a position where they have to implement drastic changes to the way they operate. As it currently stands, Australia is in the process of implementing a carbon tax.

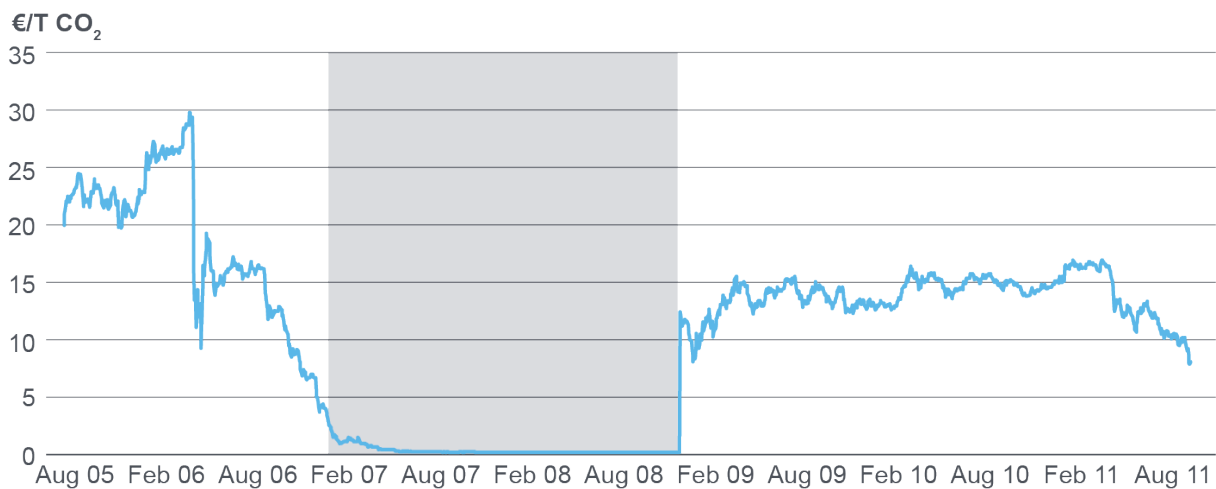
Legislation is currently being drafted to enable a greenhouse gas pricing scheme. What's being proposed is a two step transition:

1. Introduce a carbon tax (fixed price on carbon emissions) that will be imposed on major emitters.
2. This will then be replaced by a cap-and-trade emissions trading scheme (ETS). Companies can then buy or sell carbon credits that collectively bind all companies to an overall emissions limit. If domestic demand exceeds market supply, then credits can be imported from global markets or gained by investing in emissions reduction technology.

This will provide economic incentives for reducing carbon emissions and allocate resources most efficiently to those companies that are most effective at emissions reduction.

Since 2005 the United Kingdom and most of the European Union already participate in an ETS. Australia will be able to capitalise on the valuable lessons out of Europe's experience with their ETS. The European ETS has not been as successful and has not lead to the structural change that was intended. The main reason is the carbon price has not reached a sufficient level to incentivise the industry to restructure. It has been estimated that it must reach at least EUR30 per tonne of CO₂-e in order for this to occur. Chart 6 shows how the over allocation of emissions allowances during 2007-2008 drove the price of carbon credits down towards zero and illustrates the difficulty in predicting future emissions.

Chart 6 – Price of Carbon EUR/T CO₂-e



Source: European Energy Exchange

IMPACT OF A CARBON PRICE ON THE INFRASTRUCTURE SECTOR

The impact of introducing a carbon price (whether fixed or set by market forces) is hard to forecast. However, Table 5 sets out the likely effects.

Table 5 – Likely effects of a carbon price on the infrastructure Sector

Economic Effect	Likely impact on infrastructure	Rationale
Higher energy prices, construction costs and a short term increase in price inflation	Higher inflation will flow through to CPI-linked infrastructure investments. Higher construction costs will drive up the cost of new infrastructure projects.	Emitters, where possible, will pass on the cost of carbon emissions onto the end consumer. Manufacturers of basic construction materials may be adversely affected.
Reduced discretionary spending	Decrease in tourism traffic will impact tourism-related infrastructure such as airports.	Higher energy prices will increase the cost of living and hence reduce spending on leisure activities (such as travel).
Increased use of public transport	Growing demand for public transport infrastructure as well as increased strain on current infrastructure.	Higher fuel costs will encourage individuals to use public transport more often.
Increase awareness of the “green” credentials of companies and buildings	May be a catalyst for a wave of change and focus attention on emissions from infrastructure, penalising those that don’t take action.	Greater awareness will put public pressure on companies that aren’t implementing green initiatives.

Source: Russell Investments

Modelling by the Australian Treasury estimates that the infrastructure sector most likely to be affected is the electricity generation sector. Electricity generation contributes approximately a third of all emissions in Australia. Hence it is estimated that the sector is expected to achieve the largest level of abatement (20 million tonnes of CO₂-e by 2020) mainly through the combination of investments in non-hydro renewable energy and demand-side initiatives that improve energy efficiency and waste reduction. Table 6 shows the Treasury estimates of forecasted growth under two scenarios – base case and worst case, which represents prohibitively high costs of importing carbon permits.

Table 6- Scenario analysis on infrastructure sectors

Australian Treasury Modelling	Growth from 2010	
	Base Case	Worst Case
Electricity: coal-fired	-9%	-41%
Electricity: gas-fired	26%	112%
Electricity: hydro	-1%	-2%
Electricity: other renewable	521%	600 %
Electricity supply	12%	7%
Gas supply	27%	31%
Water supply	20%	19%
Road transport: passenger	23%	21%
Road transport: freight	38%	38%
Rail transport: passenger	10%	11%
Rail transport: freight	61%	61%
Water transport	31%	32%
Air transport	9%	10%
Communication	56%	55%

Source: Australian Treasury

Table 6 would suggest that the electricity generation sector provides the main opportunities for ETS-related investment as a result of the expected restructuring in the industry. In light of this, Russell highlights three key considerations:

1. Non-Hydro renewable energy infrastructure is forecast to grow considerably in order to offset the reduction in electricity generated from brown coal and other emissions intensive fuels.
2. Growth in renewable energy output must be matched with an equivalent investment in transmissions infrastructure. This is because many renewable energy resources are located in remote locations.
3. Increase in reliance on renewable energy will also lead to a need to increase gas-fired peaking plant capacity to account for periods when renewable energy generation is not available.

SUMMARY

Australian infrastructure managers have produced compelling returns for investors over the last 15 years. Investment in unlisted infrastructure funds have generally made a positive contribution to the diversification of portfolios, and delivered relatively stable and predictable income yields. However, the universe of 'institutional grade' managers in Australia is thin, and even these groups have suffered notable investment failures in the past. The trend towards direct investing by the large superannuation funds and offshore investors solves some of the perceived issues around investing through co-mingled pools, but comes with its own fresh set of challenges for the sector.

In addition to the ever present risks such as changes in regulation and the political environment, another significant challenge in Australia is the onset of a carbon tax. Transitioning to a low carbon economy will see large changes in the Australian economy. This will be most pronounced in the electricity generation sector and Russell Investments believes this will be a key area of opportunity for infrastructure investment in the medium term. We believe infrastructure will continue to have a place in multi-asset portfolios but the key for success in infrastructure investing is to understand the specific characteristics of the underlying assets and to assess the most appropriate options for access in order to achieve exposure to the desired attributes that investors have enjoyed over the last 15 years.

APPENDIX: PERFORMANCE FEES

BACKGROUND

Originally domiciled in private equity and hedge funds, the application of performance fees has been extended to be included in numerous other types of managed funds, including unlisted infrastructure investments. In the past, unlisted infrastructure managers commonly applied the “two and twenty” structure, whereby a manager would charge 2% of assets under management and a performance fee of 20%. While performance fees of up to 20% are still common for infrastructure, base fees have generally reduced materially in recent years. Notwithstanding, a number of typically larger pension funds across the globe have opted to take a direct stake in infrastructure assets, to in part address the fee structures for infrastructure managers.

Inherently, there is a trade-off between base management fees and the incentives provided by performance fees. The greater the confidence a manager has of outperforming their benchmark, the more likely they are to skew their remuneration toward performance fees, with a lower base fee. In this Appendix, we discuss the suitability and use of incentive fee structures for this asset class.

STRUCTURING PERFORMANCE FEES

Performance fees are generally defined as the payment made to the investment manager for generating positive excess returns. Specifically, these fees are paid when returns exceed a pre-specified benchmark, ideally one which is broadly applicable to investments of that particular asset class. An international equities mandate would most likely adopt a benchmark such as the MSCI World, or Russell Global Large Cap Index, while a fixed income manager may adopt the Barclays Global Aggregate benchmark. In their purest form, performance fee structures are intended to align the interests of the manager and the investor. Although a myriad of different incarnations of performance fee calculation methodologies are employed across the manager universe, typically, performance fees are calculated on some function of excess returns of a fund above a benchmark.

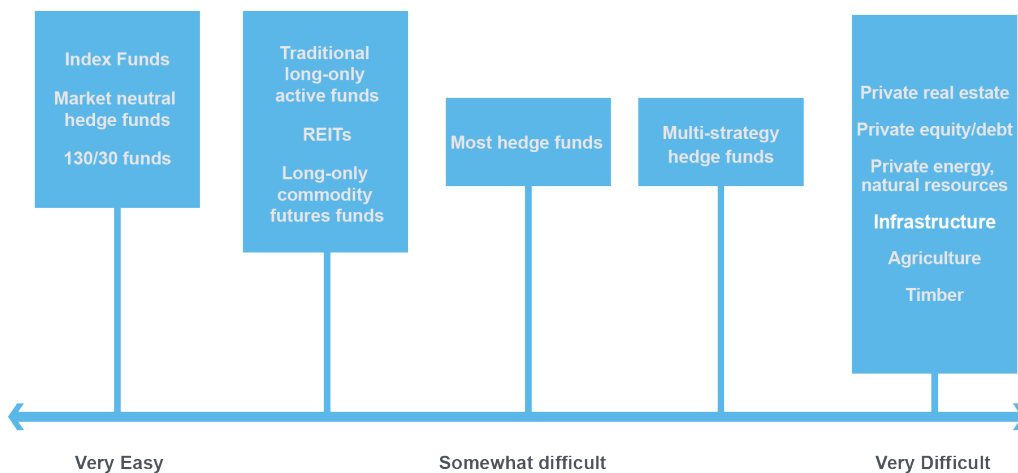
In managed investments, the concept of active and passive management, and the separation of an investment return into its constituent components of alpha (excess return over the market index) and beta (the return of the underlying market index), is an important, if not contentious issue, particularly in regard to fees payable to the manager. In recent times, investors have been able to obtain a beta return in a number of asset classes at very low cost, through the use of exchange traded funds (ETFs), index funds, futures and swaps. Theoretically then, the provision of fees should primarily be as compensation for the alpha that an investment manager is able to generate, rather than the beta that the manager is able to participate in “just by being there”. We elaborate on this concept of separation of investment alpha and beta in more detail below, in particular the issues pertinent to direct infrastructure investments, where the line separating these two constituents can sometimes be blurred.

SEPARATING ALPHA FROM BETA

The thesis for the existence of performance fees revolves around the notion that performance fees should be paid from the excess performance that an *active* strategy has generated. However, this notion requires the clear separation of the alpha return from the beta return of an investment.

For most liquid and listed assets, it is relatively easy to separate the beta (correlated to the market) and the alpha (uncorrelated to the market, specific to the manager) components. However, as we move across the continuum of investable assets, from listed into the unlisted space (as depicted in Chart 7), the dichotomy between the alpha and the beta return becomes increasingly obscured. This effect results in an increased probability of a performance fee structure misallocating alpha fees to a beta return, an undesirable outcome for an investor, given that alpha fees are typically significantly higher than beta fees.

Chart 7: Separating Alpha and Beta – Degree of Difficulty



Source: Adapted from Siegel, Waring and Scanlan, *Journal of Portfolio Management* (2009)

BENCHMARK ISSUES

An important criterion for suitability of a benchmark for an investable asset class is that it should reflect the broad set of investments in that particular asset class. Benchmarks of some common investable asset classes may be price weighted (Dow Jones Industrial Average), market capitalisation weighted (Barclays Capital Aggregate Bond) or equally weighted (MSCI World Equal Weighted Index). In each case the underlying asset class is broadly representative of the *universe of investable assets in that class*.

In the unlisted space, however this is more problematic. The major recognised listed infrastructure indices such as the S&P Global Infrastructure Index and the UBS Global Infrastructure & Utilities Index, typically have a low correlation with unlisted infrastructure returns and consequently are not used by managers of unlisted infrastructure. Alternative benchmarks are equally problematic. For example, Table 7 shows a sample of funds currently available to institutional investors and their respective benchmarks. We would consider these benchmarks to be largely *unrepresentative* of the universe of representative investable assets in the asset class. Modelling at Russell has indicated that the expected correlation between unlisted infrastructure and government bond yields is less than 20% over a 5 year period. Furthermore, several of the funds in question use fixed income benchmarks that are intuitively unsuitable. For example, an unexpected rise in the inflation rate would lead to an unchanged real return on a core infrastructure investment. However, a bond benchmark would yield lower returns as interest rates rise, enabling a manager to seemingly outperform their benchmark and claim performance fees, albeit falsely. It is important to consider the accuracy by which a benchmark can apportion returns to its alpha and beta constituents, especially in the instances where incentives are concerned.

Table 7: Sample of managers and their fund benchmarks

Fund	Base + Recoverable Fee (basis points)	Benchmark	Performance Fee
Fund A	150	8%	20%
Fund B	150		20%
Fund C	120	10-yr Aus Govt Bond Yield + 3.25%	15%
Fund D	100	CPI + 7%	20%
Fund E	75*	10-yr Aus Govt Bond Yield + 4%	10%
Fund F	50	10%	None
Fund G	43.5	10%	None
Fund H	100-175	12%	10% of net profits
Fund I	100-175	8%	20%
Fund J	150-200	10-12%	None
Fund K	150	8%	20%
Fund L	100	8%	10%

Source: Russell Investments

* Base fee depends on the size of the Fund and the current average management expense ratio is 75 basis points.

IS USING A PRIVATE EQUITY-STYLE FEE MODEL APPROPRIATE?

Empirically, the performance fee structure has been most successful and most appropriate in a setting that involves risk assets, such as hedge funds and private equity investments. Listed equity investments may also fall into this basket, under certain mandates. A key principle that underpins this scenario is that an *incentivised fee structure encourages risk taking behaviour by investment managers*. This occurs because of the option-like payoff structure for investment managers – if they are lagging the benchmark severely during a point in time (“out of the money”), no disincentive exists to curb losses. Instead, an *incentive* exists to engage in even riskier behaviour to recoup losses, as there is no little to penalty for further exacerbation of the losses incurred to date.

Infrastructure (and particularly core infrastructure) is largely viewed as a more defensive investment than the aforementioned asset classes. Commonly used in institutional portfolios as an inflation hedge, and largely uncorrelated with each of the other listed and unlisted asset classes, a risky investment is generally not the premise behind investing in unlisted infrastructure. Thus, performance fee structures applied to core infrastructure investments may not be consistent with the investment objective in place for the manager.

HOW ARE MANAGERS GENERATING ALPHA?

In traditional unlisted investment portfolios, the excess return or value added by the manager pertains to improvements to the investment to enhance resale value. For example, an unlisted real estate manager may refurbish an office building, or a buyout manager may restructure an organisation, so that it operates more efficiently. While there may be capacity to add significant value with greenfield infrastructure, there is little scope however for a manager of a *core* mature unlisted infrastructure asset to add value to the investment, over

and above the routine maintenance tasks necessary to keep the investment viable, and the cash flow stream steady.

An alternative way of adding value/generating alpha is by way of *market timing*. The traditional listed equity manager's value proposition is largely market timing. Determining the intrinsic value of an investment as well as identifying a market valuation extreme and positioning accordingly is a highly skilled and difficult craft. This avenue of alpha generation is possible for a core infrastructure manager, but much more difficult in an environment where consensus valuations are unavailable (due to the unlisted nature of the underlying investments), the liquidity of the investment is very low, and the timeframe of the investment is very long (in comparison to more traditional listed equity investments).

Another consideration is whether alpha is generated when an investment manager is able to invest in assets that an investor otherwise would not be able to access. A large majority of institutional portfolios would not be able to fund the significant requirements to manage a private infrastructure investment. Is the access that managers provide to deal flow an alpha proposition? Academic thought leaders in this space, Siegel et al, contend that this is simply a beta strategy and the high fee commanded for access to the beta return should not be mistaken for alpha.

SUMMARY

We consider appropriately structured performance fees can be an effective method for aligning the interest of the manager with those of investors. However, in the absence of a measurable beta and hence alpha for infrastructure, the concept of what constitutes excess performance is problematic. That said, assuming the benchmark issue is suitably addressed, performance fee structures are generally associated with asset classes where there is significant scope to add value. While this is generally true of greenfield infrastructure, it is arguable as to whether a manager of core infrastructure which comprises assets which are mature, comparatively lower risk and subject to a greater degree of regulation, has material scope to add value for a performance fee to be appropriate. Hence, we believe the appropriateness of performance fee structures for infrastructure is dependent on the underlying nature of the infrastructure investment with the existence and scale of any performance fee reflecting the scope for value enhancing activity. For example, a base fee only structure for mature core infrastructure, with the scale of a performance fee rising in line with the proportion of greenfield opportunity.

RELATED READINGS

Babson, Adam, and Tamara Larsen (August 2011). "Structuring a private infrastructure portfolio" Russell Research.

Huffman, Abigail (September 2011). "Asset Class: Unlisted Infrastructure" Russell Research (Viewpoint).

Osborn, John and Leola Ross (February 2007). "Infrastructure Part I: Why is Infrastructure a Concrete Investment?" Russell Research.

Osborn, John and Leola Ross (September 2007). "Infrastructure Part II: Building Infrastructure into a Portfolio" Russell Research.

Pereira, Rob (June 2007). "Infrastructure: Asset Class Strategy for Australian Investors" Russell Research.

Disclaimer

This document is issued by Russell Investment Management Pty Ltd ABN53 068 338 974, AFS Licence 247185 (RIM). It provides general information for wholesale investors only and has not prepared having regard to your objectives, financial situation or needs. Before making an investment decision, you need to consider whether this information is appropriate to your objectives, financial situation or needs. This information has been compiled from sources considered to be reliable, but is not guaranteed. Past performance is not a reliable indicator of future performance.

Nothing contained in this material is intended to constitute legal, tax, securities, or investment advice, nor an opinion regarding the appropriateness of any investment, nor a solicitation of any type. Copyright © 2012 Russell Investments. All rights reserved. This material is proprietary and may not be reproduced, transferred, or distributed in any form without prior written permission from RIM.

First used: March 2012

R_RPT_RES_AusAndInfra_V1F_1203

MKT/4430/0212

ABOUT RUSSELL INVESTMENTS

Russell is a global asset manager with core capabilities that extend across capital markets research, manager research, portfolio construction, portfolio implementation and indexes. Clients get the best from Russell when these capabilities come together. Russell combines this expertise to deliver multi asset solutions that are outcome-oriented to meet the unique needs of Australian institutional investors, financial advisers and individuals.

At the heart of Russell lies a vision – a world where everybody is intelligently invested. Russell works toward improving financial security for people every day, by helping investors of all sizes make better decisions using the best thinking from around the world.

Russell has more than A\$135 billion in assets under management (as of 31/12/11) and works with 2,300 institutional clients, over 580 independent distribution partners and millions of individual investors globally. Through its Australian Member Administration Centre, Russell provides leading administration and member services to over 370,000 individuals.

Founded in 1936, Russell is headquartered in Seattle, Washington, USA and has offices in Amsterdam, Auckland, Chicago, London, Melbourne, Milan, New York, Paris, San Francisco, Beijing, Seoul, Singapore, Sydney, Tokyo and Toronto.

For more information about Russell visit www.russell.com/au or follow us on twitter @RussellInvestAU.