

# Unlisted infrastructure: a proven performer

## Infrastructure research note

August 2010

- Unlisted infrastructure has existed as a recognised investment option in Australia for over a decade and a half.
- Investors are attracted to its low volatility, yield-oriented returns, inflation-hedging and diversification potential.
- Importantly, unlisted infrastructure performed respectably through the global financial crisis, fulfilling its defensive role.
- Over different time periods, unlisted infrastructure has delivered more consistent risk-adjusted returns than a selection of the major asset classes.
- The low return correlations between unlisted infrastructure and other asset classes, coupled with different risk exposures, provide significant portfolio diversification benefits.

### Introduction

The purpose of this note is to assess the performance of unlisted infrastructure in an Australian context. Unlisted infrastructure funds, which invest in assets such as toll-roads, utilities and airports, have existed for over a decade and a half in Australia, making it one of the most mature infrastructure markets in the world. Significantly, this period includes the recent global financial crisis, which was uncharted territory for many asset classes, including infrastructure.

Armed with this performance data, we also seek to provide some insight into the benefits and risks of adding an unlisted infrastructure allocation to a balanced portfolio.

### Unlisted infrastructure as an asset class

In Australia, unlisted infrastructure has existed as an asset class for the last decade and a half, with its growing popularity driven by:

- population ageing, and a preference for **yield-oriented** investments over those driven by capital gains,
- a desire for greater portfolio **diversification**, evidenced by the rise of 'alternative' asset classes such as infrastructure, private equity, hedge funds, and commodities,
- the **low volatility** of the asset class (driven by both the stable nature of the underlying assets, as well as the appraisal-based valuation method also used in direct property) relative to listed markets.

Unlisted infrastructure is also viewed as a good investment to protect against the long term impact of inflation. It is often categorised in a portfolio alongside direct property as 'real assets'. This is because the allowable prices or revenue for many regulated infrastructure assets is explicitly linked to movements in price indices, such as the consumer price index (CPI). Unregulated infrastructure assets may also withstand rises in inflation by virtue of their monopolistic position and pricing power.

The linkage of unlisted infrastructure returns to inflation is not evident over short time periods. Indeed, quarterly return correlations between Australian unlisted infrastructure funds and CPI are, in fact, negative<sup>1</sup>. While it may be tempting to conclude that the asset class is, in fact, a poor inflation hedge, this view does not take into account the following points:

- Regulatory resets, which are a major driver of infrastructure returns, typically occur on an infrequent basis (e.g. annually). This creates a lag which can distort the correlation with inflation indices, which may be published quarterly (e.g. Australia) or monthly (most other advanced economies).
- Due to their long-duration cash flows, infrastructure valuations are somewhat sensitive to changes in long-term bond yields. This increases the correlation between infrastructure and fixed income returns (which largely reflect expected, rather than current inflation), potentially counteracting the correlation with current inflation.
- Australian unlisted infrastructure funds are heavily invested offshore, making their returns less correlated with domestic inflation movements.

<sup>1</sup> From December 1995 to June 2010, the correlation between Australian unlisted infrastructure returns and CPI movements was -0.3

For investors focused on long-term capital growth and return, infrastructure remains an attractive asset class, providing inflation-linked yields with the potential for additional capital gains.

Investors seeking exposure to unlisted infrastructure will also need to be comfortable with the risks associated with the asset class. Unlisted infrastructure funds typically do not hold a large number of assets in their portfolio, leading to a potentially higher level of **concentration risk** than for other asset classes.

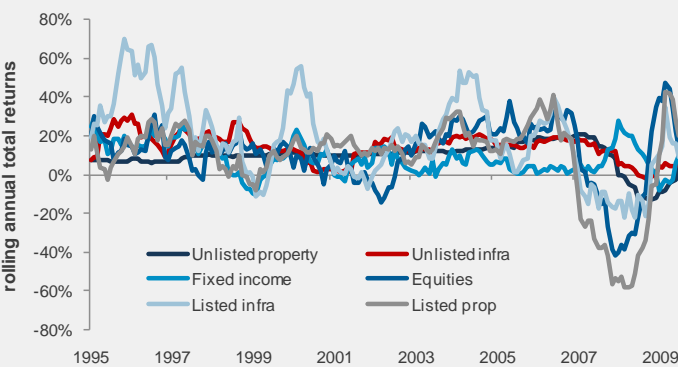
However there exists considerable diversity among infrastructure assets across different subsectors, regions and regulatory jurisdictions. By constructing portfolios consisting of assets with different drivers and characteristics, skilled fund managers are still able to minimise concentration risk, and achieve a meaningful level of diversification.

Another key risk associated with unlisted investments, and one highlighted by the recent global financial crisis, is **illiquidity**. In Australia, the relatively steep fall in listed asset values automatically created overweight positions in unlisted asset classes that investors found difficult to reduce as they sought to rebalance their portfolios. Following the subsequent improvement in market conditions, investors are now beginning to reallocate capital to the asset class.

### Unlisted infrastructure performance

As Figure 1 reveals, Australian unlisted infrastructure has delivered relatively stable returns over the last decade and a half. While returns inevitably softened during the global financial crisis, unlisted infrastructure returns were less volatile than the other asset classes shown, fulfilling its defensive role.

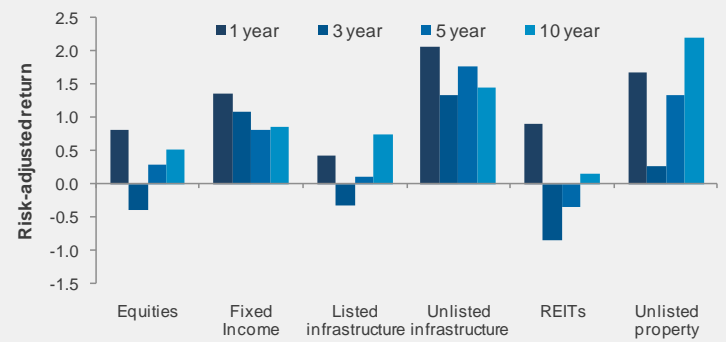
**Figure 1: Total returns for selected asset classes**  
Monthly data to June 2010



Source: Mercer, UBS and CFS Research

Indeed, on a risk-adjusted basis (returns divided by standard deviation of returns), unlisted infrastructure has delivered consistent performance across different time periods, as highlighted in Figure 2.

**Figure 2: Risk-return comparison of asset classes**  
Data ending June 2010

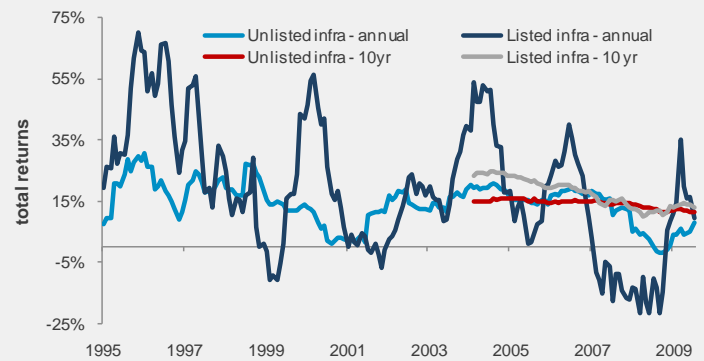


Source: IRESS, Mercer, UBS and CFS Research

### Comparing listed and unlisted infrastructure

Theoretically, an asset should generate the same return over the long-term, regardless of whether it is listed or unlisted. Figure 3 reinforces this, showing that returns for listed and unlisted infrastructure are indeed reasonably close. Over the decade to June 2010, listed infrastructure delivered a CAGR of 11.2%, versus 11.1% for unlisted infrastructure.

**Figure 3: Listed versus unlisted infrastructure returns**  
Data ending June 2010



Source: Mercer, UBS and CFS Research

Given the similarity in long-term returns, the allocation decision between listed and unlisted infrastructure is governed by the primary motivation for infrastructure exposure. If, for example, an investor is seeking to reduce the amount of listed market volatility in a portfolio, then unlisted infrastructure is the obvious choice. However, liquidity is also an important consideration and one which must be managed at the portfolio level. Depending on their overall requirements or preferences, an investor may choose to allocate some capital to listed infrastructure to maintain a certain level of liquidity.

Alternatively, an investor may simply be investing in infrastructure on a thematic basis, in which case their capital allocation could be split equally between listed and unlisted infrastructure.

A final consideration is whether the allocation is a strategic or tactical one. Due to the illiquid nature of unlisted infrastructure, allocations to this asset class are generally strategic in nature (in other words, a long term core holding). On the other hand, as Figure 3 highlights, the more cyclical performance of listed infrastructure provides more 'market-timing' opportunities.

## Unlisted infrastructure in a portfolio

Table 1 displays correlation coefficients among major Australian asset classes for the ten years ending June 2010, based on monthly total return data. As can be seen, unlisted infrastructure returns have very low correlation to equities, fixed income and listed property. Correlations with unlisted property and listed infrastructure are somewhat higher, but still below 0.5.

**Table 1: Correlation matrix: Australian asset classes**

Monthly nominal total returns 10 years ending Jun 2010						
	Equities	FI	U-P	A-REITs	L-INF	U-INF
Equities	1	-0.27	0.00	0.62	0.45	<b>0.10</b>
Fixed Income		1	-0.08	-0.05	0.00	<b>0.03</b>
U-P			1	0.04	0.02	<b>0.48</b>
A-REITs				1	0.35	<b>0.10</b>
L-INF					1	<b>0.24</b>
U-INF						1

Source: IRESS, Mercers, MSCI, JPM and CFS Research

Using 10 years of historical performance data for Australian asset classes, we have modelled the diversification benefit unlisted infrastructure provides in a portfolio. Table 2 shows that adding unlisted infrastructure to the base portfolio P1 improves expected returns, and can reduce volatility regardless of whether the allocation is made at the expense of equities (P2), fixed income (P3), or both (P4).

On closer inspection, the results suggest that if infrastructure is added at the expense of equities (P2 versus P1, or P4 versus P3), then the primary benefit to a portfolio is in the form of risk reduction, rather than as a return booster. On the other hand, the impact of increasing infrastructure exposure by reducing fixed income exposure is generally (i) more marginal, and (ii) skewed more toward return-enhancement than risk-reduction.

**Table 2: Performance comparison of model portfolios**

Data to June 2010

	P1	P2	P3	P4
Equities	40%	35%	40%	35%
Fixed Income	50%	50%	45%	45%
Unlisted property	5%	5%	5%	5%
REITs	2.5%	2.5%	2.5%	2.5%
Listed infra	2.5%	2.5%	2.5%	2.5%
<b>Unlisted infra</b>	<b>0%</b>	<b>5%</b>	<b>5%</b>	<b>10%</b>
Return	6.95%	7.04%	7.06%	7.15%
Stdev	6.27%	5.79%	6.19%	5.71%
Return/risk	1.11	1.21	1.14	1.25

In addition to the quantifiable benefits of including infrastructure in a portfolio suggested by the above analysis, there are diversification benefits stemming from the qualitative differences between infrastructure investments and other asset classes that are not as easily quantifiable.<sup>2</sup>

Consider the different mix of risk exposures that an infrastructure allocation brings. Relative to property, for example, infrastructure assets such as utilities may be less correlated to economic conditions (i.e. have lower 'beta'), but have higher regulatory and political risk.

## Conclusion

**Table 3: Features of unlisted infrastructure**

Advantages	Disadvantages
Low volatility	Concentration risk
Attractive yields, with potential for capital gains	Illiquidity
Access to unique monopoly assets, often regulated	Less accessible to smaller investors
Strong risk-adjusted performance	
Diversification from low correlation with other asset classes	
Long-term inflation hedging potential	

As Table 3 highlights, while investors in unlisted infrastructure need to factor in attendant risks such as illiquidity and concentration risk, there are also compelling reasons to include infrastructure in a portfolio. With lower volatility than equities and other listed asset classes, the potential for higher long-term returns than fixed income, and idiosyncratic qualities differentiating it from other real assets such as property; unlisted infrastructure adds versatility, consistent performance and robustness to a portfolio.

<sup>2</sup> For more information on this topic, please refer to an earlier CFS GAM research paper: *Evaluating infrastructure from a property perspective: the case for a diversified real asset allocation* (November 2009); available at [www.cfsgam.com.au/Research.aspx](http://www.cfsgam.com.au/Research.aspx)

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