

Momentum Conference 2015

Risks and Returns in Infrastructure Investing

3 December, 2015

Workshop A5

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Investment Routes

Typically, larger investors with on average \$66bn under management, have dedicated in-house teams which invest directly into infrastructure.

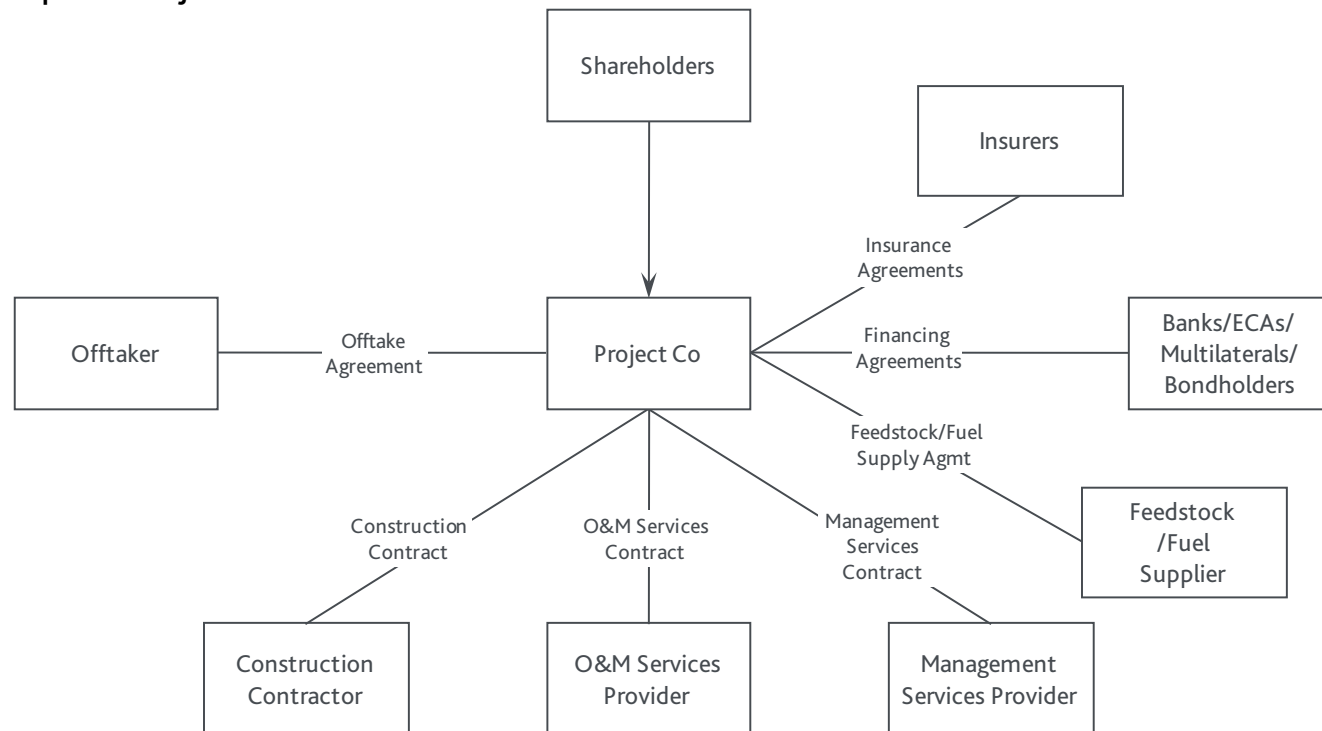
Even smaller investors are able to invest directly but then using a co-mingled co-mingled platform. For example, one pension fund, with EUR 18.5bn in AUM, worked together with project developers which provided both the equity finance and infrastructure expertise, and commercial banks which provided loan financing. A special purpose vehicle was used to bring together all the parties in the project.

Direct Investment		Indirect Investment	
Average AUM	Average Fund Size	Average AUM	Average Fund Size
\$66bn	\$700mn	\$36bn	\$355bn

Special Purpose Vehicle: Project Company Structure

Typical company structure of an infrastructure project. Institutional investors with a nimbleness of providing financing solutions, (in terms of timing and draw-down of financing) could provide alternative sources of financing.

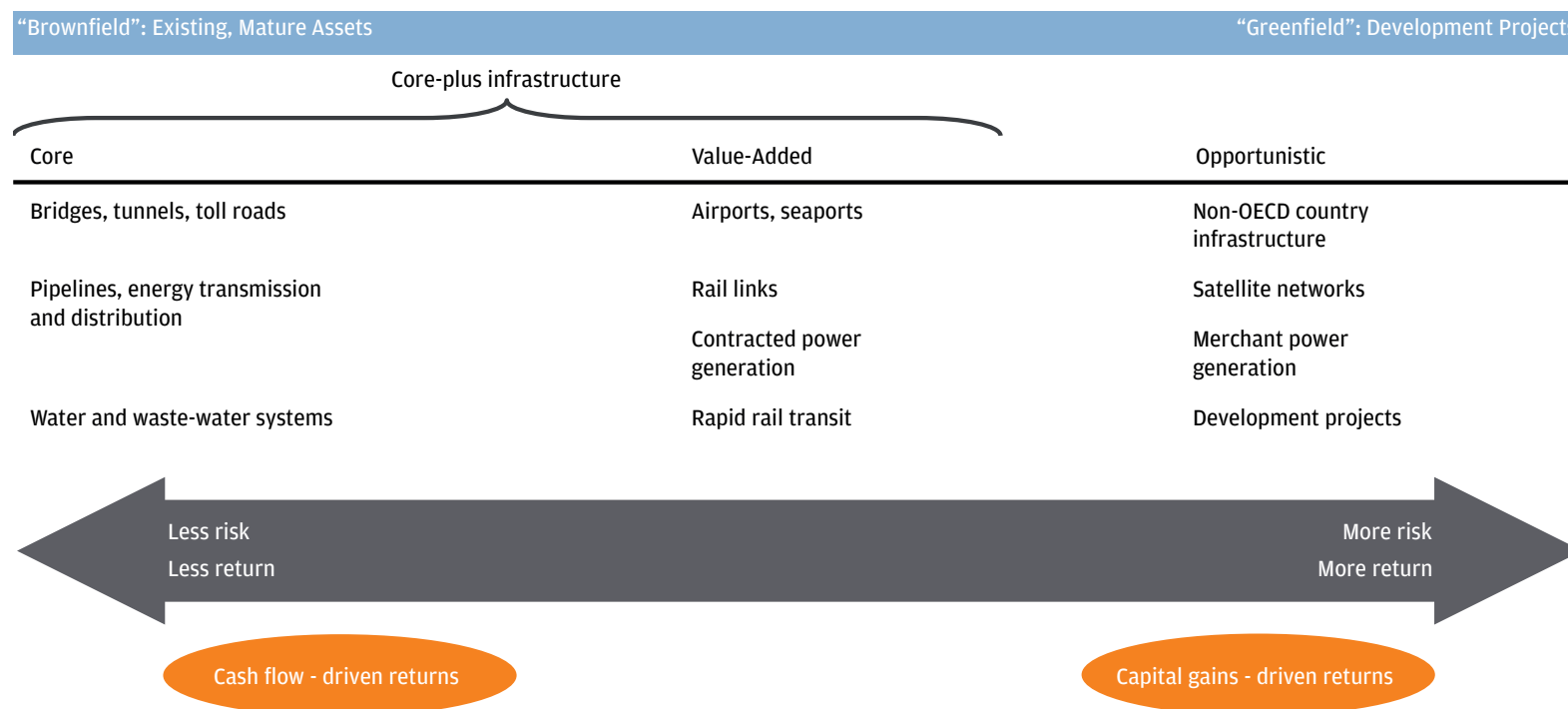
Simplified Project Structure



Risk Return Characteristics

Investing in infrastructure presents with many possibilities of achieving varying levels of risk and return, and which may depend on your organisation's level of expertise in the underlying asset class.

Exhibit 1: Infrastructure risk-return characteristics by maturity and sector



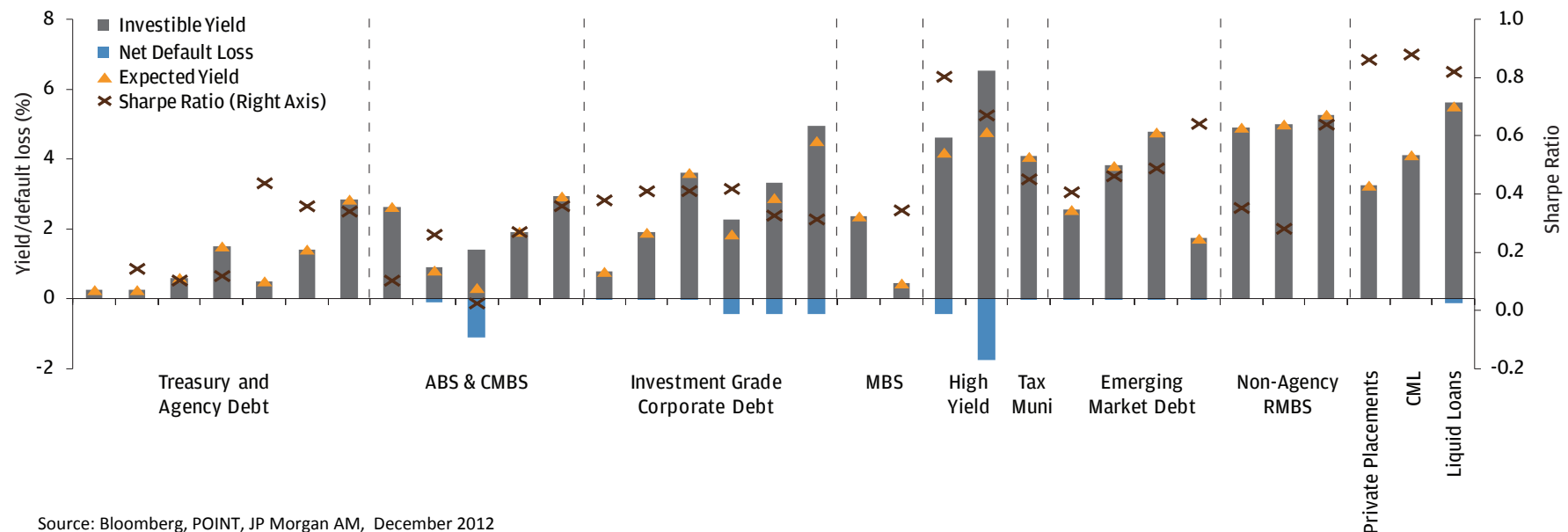
Source: JPM AM & Milliman, “Infrastructure Investment for insurance companies under Solvency II” , September 2011.

Credit Investments

- Illustrative examples of returns across a broad range of credit strategies and asset classes, yield/default loss, and Sharpe Ratio.
- For example, the \$ amount outstanding in the private placement market is significantly larger than that of the publicly traded debt market, and infrastructure projects use private placement debt.

Investors can find higher potential returns across a broad range of credit strategies and real assets.

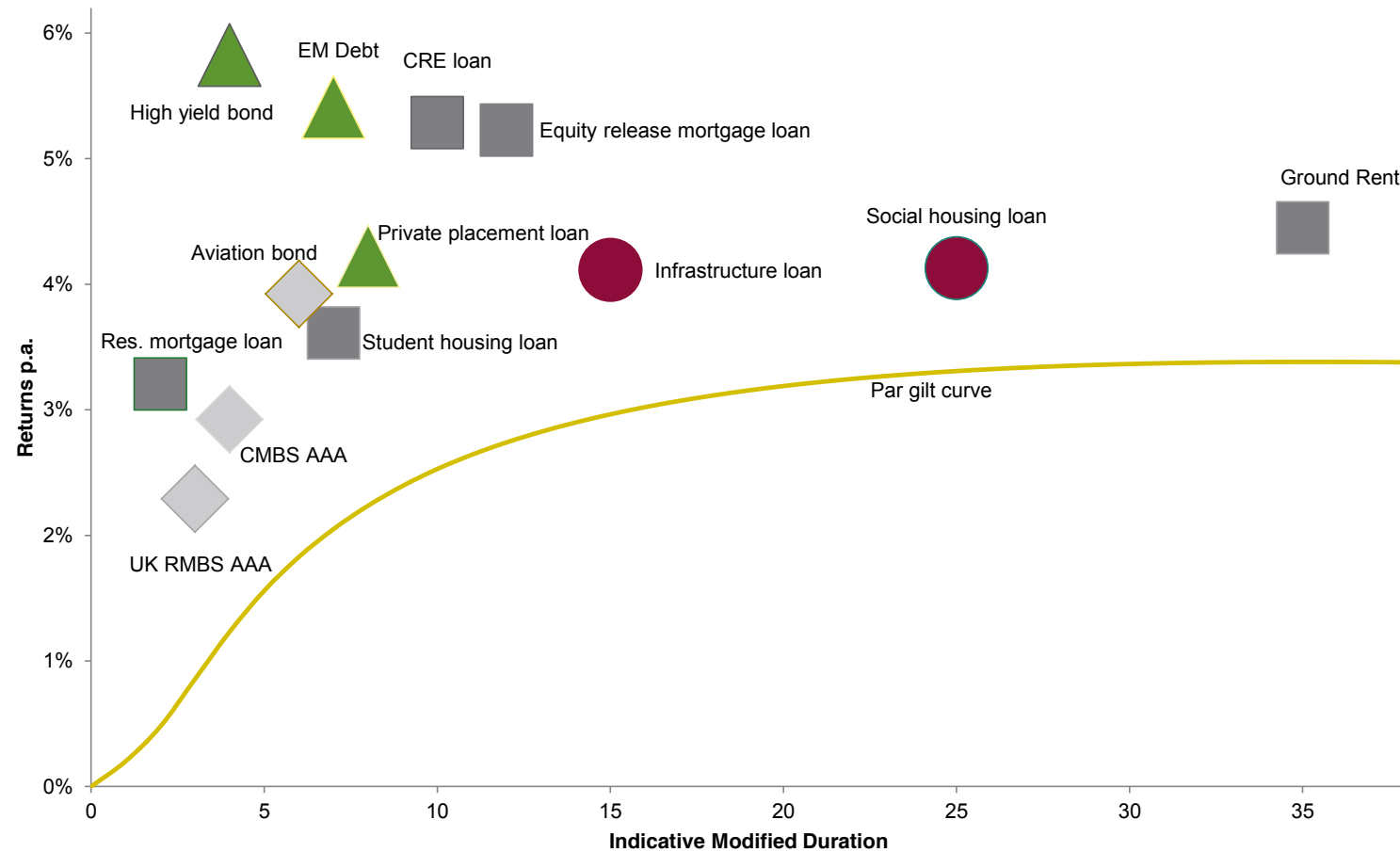
EXHIBIT 6: 2013 PROJECTED ASSET CLASS YIELDS



Source: Bloomberg, POINT, JP Morgan AM, December 2012

Illustrative Fixed Income Returns

Graph below illustrates fixed income returns.



Source: Non-Traditional Investments, Key Considerations for Insurers, IFoA Working Party publication, 2015

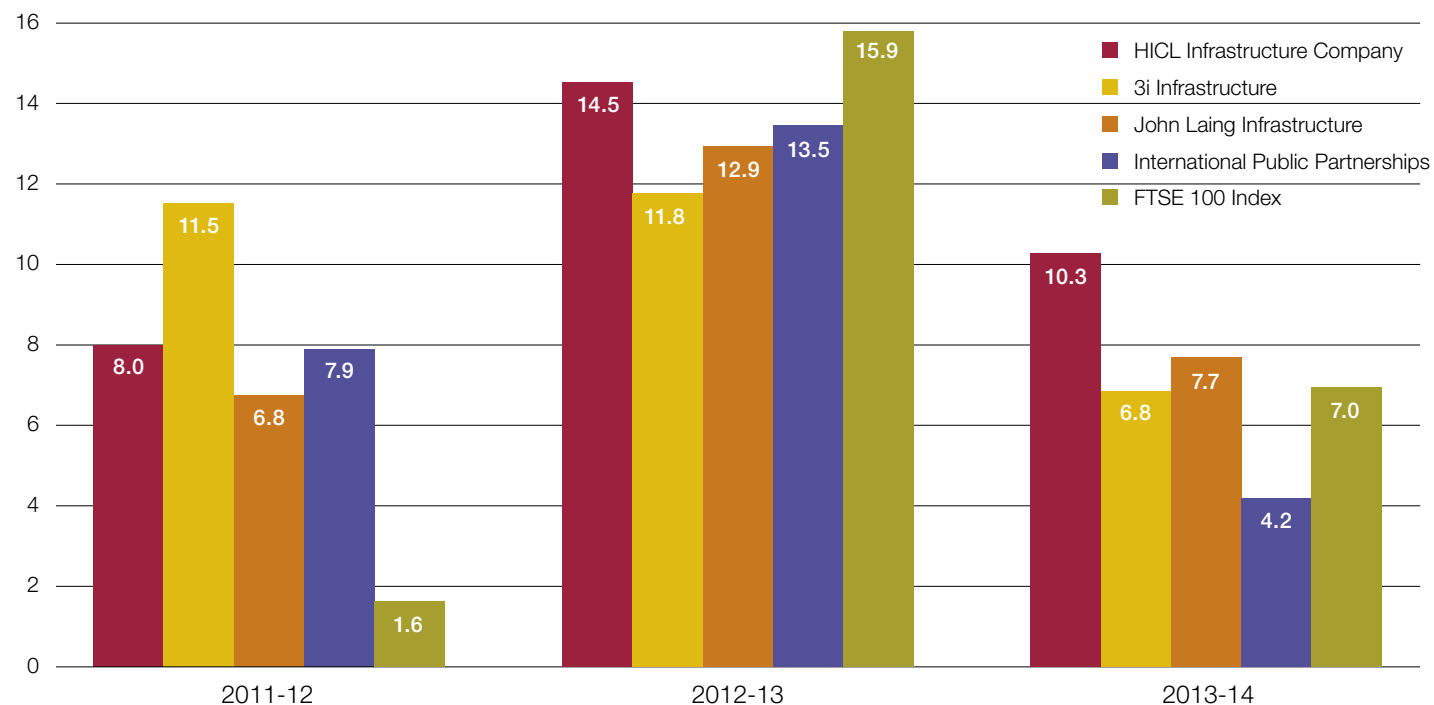
Equity Returns

- Direct investment in the equity capital structure could provide higher expected returns, but with a higher standard formula SCR (solvency capital requirement) under Solvency II.
- Anecdotally, equity investment in renewable energy projects have generated returns of above 10% at an estimated discount rate of 5%.
- Indirect investment via either listed or unlisted equity funds tend to have a higher correlation with the equity markets.

Listed Infrastructure Funds Equity Returns

- Four infrastructure funds, listed on the London Stock Exchange, collectively have an interest in 68 PFI SPVs, as per HM Treasury's PFI Database.
- Total shareholder return for the four listed infrastructure funds has ranged between 4.2% to 15.9% in the period 2011 to 2014. Return consists of both price appreciation and dividend re-investment.
- Comparatively, the *expected* return to investors at point of signature of PFI contracts were between 12% - 15%.

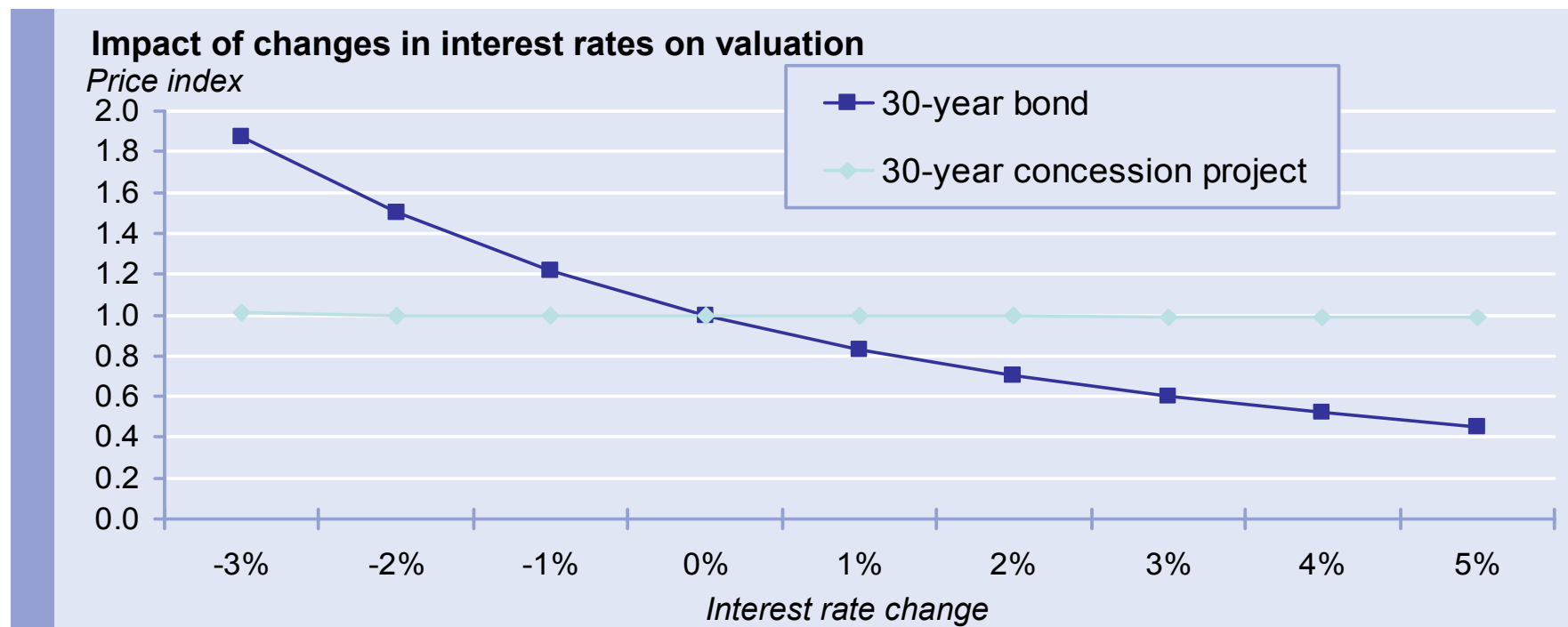
Total shareholder return (%)



Source: Bloomberg, HM Treasury's PFI Database, which contains 728 projects; National Audit Office report "The Choice of Finance for Capital Investment".

Infrastructure an interest-rate hedge

- Changes in the value of infrastructure assets to the value of a long-term fixed-rate bond in response to changes in interest rates have been compared
 - A 30-yr bond shows duration of approximately 15, i.e., a 1% change in yield will result in a 15% change in price
- Contrary to a fixed coupon bond, infrastructure assets with cash flows that adjust for inflation will have a duration
- Approaching zero or even negative duration, allowing them to maintain (or increase in) value
- Factors other than interest rate changes influence the value of infrastructure investments



Source: JP Morgan AM; The Actuarial Profession's "Investment Strategy for Pension Actuaries Seminar", 2008