

**Comments Template on EIOPA-CP-15-003  
Discussion Paper on  
Infrastructure Investments by Insurers**

**Deadline  
26.April.2015  
23:59 CET**

Company name:	EDHEC-Risk Institute	
Disclosure of comments:	EIOPA will make all comments available on its website, except where respondents specifically request that their comments remain confidential.  Please indicate if your comments on this CP should be treated as confidential, by deleting the word Public in the column to the right and by inserting the word Confidential.	Public
<p>Please follow the instructions for filling in the template:</p> <ul style="list-style-type: none"> <li>⇒ <u>Do not change the numbering</u> in column "Reference".</li> <li>⇒ Please fill in your comment in the relevant row. If you have <u>no comment</u> on a paragraph, keep the row <u>empty</u>.</li> <li>⇒ Our IT tool does not allow processing of comments which do not refer to the specific paragraph numbers below. <ul style="list-style-type: none"> <li>○ If your comment refers to multiple paragraphs, please insert your comment at the first relevant paragraph and mention in your comment to which other paragraphs this also applies.</li> <li>○ If your comment refers to sub-bullets/sub-paragraphs, please indicate this in the comment itself.</li> </ul> </li> </ul> <p><b>Please send the completed template to <a href="mailto:CP-15-003@eiopa.europa.eu">CP-15-003@eiopa.europa.eu</a>, in MSWord Format, (our IT tool does not allow processing of any other formats).</b></p> <p>The paragraph numbers below correspond to Consultation Paper No. EIOPA-CP-15-003.</p>		
<b>Reference</b>	<b>Comment</b>	
Question 1		
Question 2		
Question 3		
Question 4		
Question 5	Yes, project finance is a specific form of corporate governance which has the particularity of leading	

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	to the creation of long-term securities with a focus on the predictability of cash flow distributions (debt service and dividends), which is exactly why insurers are interested in infrastructure investment in the first place. Project finance is a good reference asset for the purpose of capturing the expected behavior of the kind of infrastructure that insurers actually want to invest in.	
Question 6		
Question 7		
Question 8		
Question 9		
Question 10	Sectors do not determine the risk profile. Contracts, regulation and financial structuring do.	
Question 11		
Question 12		
Question 13		
Question 14		
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Question 16		
Question 17		
Question 18		
Question 19		
Question 20	In infrastructure project finance, construction risk is managed by contract and, on average, it is not statistically different from zero; see Blanc-Brude and Makovsek (2014) "How much construction risk do sponsors take in project finance?" forthcoming in Transportation Part A	
Question 21		
Question 22	If construction risk is diversifiable at the portfolio level then there is little need to create new mechanisms applicable to just a few projects.	
Question 23		
Question 24		

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Question 25		
Question 26		
Question 27	The debt service cover ratio (DSCRs) and its distribution (mean/variance) allow implementing a full scale structural credit risk model (Merton), as including a direct formulation of distance to default in line with the standard KMV model of credit risk. See Blanc-Brude, Ismail and Hasan (2014), Valuation and Performance of Unlisted Infrastructure Debt, EDHEC-Risk Institute Publication	
Question 28	The distribution of DSCRs in time is also a direct predictor of the conditional probability of default (see ref in Q27 of infrastructure projects. The required/average level of such ratios is not so much the issue as their volatility. Evidence suggests that projects with low DSCR vol tend to have low average DSCR as well. But to predict credit risk in project what really matters is to put them into DSCR volatility „buckets“	
Question 29	All funds in project finance are debt funds (especially in PPPs). The effective equity tranche is often just a few thousand euros. This would allow treating the entire financing structure under the debt category.	
Question 30		
Question 31		
Question 32		
Question 33		
Question 34		
Question 35		
Question 36	EDHEC-Risk Institute is currently in the process of collecting investor and bank cash flow data spanning 20 years and will have assembled a sample of 200 projects by July 2015. Beyond it will continue to grow this sample to 2,000 projects (1,700 currently identified as collectable by EDHEC) by 2017.	
Question 37	In Blanc-Brude and Hasan (2015) "Valuation of privately-held infrastructure equity investments" (EDHEC-Risk Publication, see also "Infrastructure Valuation, a book published by PEI media in April 2015) we describe a cash-flow based approach to price and re-price unlisted equity investment using a/ a model of expected cash flows in infra projects calibrated with available data and b/ a model of the term structure of investors' discount rates extracted from the value (price) of investments made	

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	<p>at one point in time and the distribution of expected cash flows as per point a. This approach allows tracking the implied required returns of investors in a given type of project (cash flow process) through time. When it is implemented (after EDHEC has built a database of cash flows to calibrate the model) this approach can track the change in market prices of unlisted investments. Note that the same approach is applicable to private debt securities.</p>	
<p>Question 38</p>	<p>We attach a working paper which summarises the performance of different listed proxies for "infrastructure" :</p> <ul style="list-style-type: none"> <li>- Listed infrastructure indices</li> <li>- A rule-based selection of "infrastructure" stocks by SIC code and percentage of revenues generated from the infrastructure sector</li> <li>- A small portfolio of stocks corresponding to a large basket of PFI project in the UK and the rest of the OECD</li> </ul> <p>We compare their performance and extreme risk profile (Drawdown, VaR etc) to the MSCI World Index (the index of reference in Solvency-2) for the global portfolios (first two cases) and to the FTSE All Shares in the PFI case.</p> <p>The results are very clear:</p> <ol style="list-style-type: none"> <li>1) There is no such thing as a listed infrastructure asset class, since the first two approaches only lead to higher or similar risk profiles than broad market indices (i.e. a leveraged version of the market index). Performance and drawdown in listed infrastructure indices are driven by leverage and concentration in such market-cap weighted indices. This result is relevant to the question of defining infrastructure investments. Clearly, holding a basket of utilities stocks is not good a guarantee of low correlation with the market or limited VaR.</li> </ol> <p>The PFI portfolio captures a completely different effect: the risk profile of a series of long-term investments made into contractual structures by which a firms commits to delivering a public infrastructure according to a pre-agreed output specification in exchange for a commitment to pay a regular income stream from the public sector. Holding a basket of such investments is found to correspond to a much lower risk profile than that of the market, including at the worst moment of GFC. This is because project financing creates a specific and unique form of corporate governance in which the firm, its owners and its managers, are heavily constrained in terms of what they can do with the free cash flow of the firm. Utilities, even though they benefit from stable revenues are "just" firms that can be managed in many different ways by different managers at different points in time.</p>	

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	For instance, European utilities went through a phase of international expansion in the 1990s, which resulted in the accumulation of much debt and riskier investments in emerging market projects. Likewise, further leveraging the balance sheet of utilities in the 2000s in Europe completely changed their risk profile. With project finance, these changes in the trajectory of the firm's risk profile are not possible.	
Question 39	Yes, attached with working paper mentioned in Q38.	
Question 40	This is probably the case but the size and determinants of that segment are not documented yet. It could be a type of project that is highly correlated with the business cycle, e.g. private infrastructure project service industrial parks. Even so such infrastructure would typically be financed on the back of contractual promises to purchase its output. It is the impact of the business cycle on counterparty risk that would be the most significant e.g. gas pipelines in the US with private off-takers.	
Question 41	Yes, the PFI portfolio mentioned in Q38, which can be considered a proxy of underlying project equity has a a low correlation (22pc) with the market in a price return basis and no correlation with the market on a total return basis. This is due to the payout ratio of such assets (which is similar to that of private investments) i.e. most of the returns accrues from dividends and dividends are stable leading to the absence of correlation.	
Question 42	EDHEC is preparing a new study using individual issue data from Thomson Reuters, which we will circulate in due course.	
Question 43	There is evidence (provided in the attached paper) that segmenting the market by industrial sectors, in particular by "infrastructure" sector, does not lead to any differentiation of performance (if anything it creates concentrated portfolios that underperform the market). This suggests that looking for evidence of a difference in risk profile of "infrastructure corporates" whether in the equity or debt space will be inconclusive.	
Question 44	See Q43	
Question 45	EDHEC is preparing a new study using individual loan spread data from Thomson Reuters, which we will circulate in due course.	
Question 46	As long as infrastructure can be identified as part of a clear liability hedging strategy then it is unlikely to be disposed of, but even in this context some assets may need to be sold (the liability duration does not have to match that of every infrastructure investment made by an insurer).	

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Question 47	Infrastructure debt has a "tail" i.e. even post maturity, it is very likely that the business would still be able to service some level of debt. As a consequence, creditors protect themselves from long-term uncertainty by securing the right to "capture the tail" in the event of default or any serious short-term difficulties with the company. SMEs do not have that luxury, if they fail, they often cannot recover. See Blanc-Brude and Hasan, 2014, "The valuation and performance of unlisted infrastructure debt", EDHEC-Risk Institute Publication, for a formal analysis.	
Question 48	Counter-party risk is not the only risk found in infrastructure projects, especially with long horizons. A project that has been over-leveraged for example may have a perfectly good counter party but will still fail. Spreads price risks across the board and provide a more intuitive and quantitative framework.	
Question 49		
Question 50		
Question 51		
Question 52		
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Question 54		
Question 55		
Question 56		
Question 57	EDHEC is preparing a standardized data collection template that has already been discussed at the IIWG of the G20. A new version will be published in May 2015.	
Question 58	Improved data collection and, crucially, improved transparency. The costs should be limited as long as the data required already exists and is already the object of monitoring by investors and creditors (which is the starting point of the EDHEC data collection template and pricing models for infrastructure).	
Question 59		
Question 60		