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Collar options to manage revenue risks in real toll public-private partnership transportation projects

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Abstract

The revenue risk is of great importance to ensure the success of a real toll public–private partnership (PPP) transportation project. Past research has proposed a revenue guarantee put option as an alternative way to quantify and potentially manage this risk. A practical, or commercial, limitation of this type of option is its requirement for an upfront premium payment, and a concessionaire is likely to shy away from additional monetary requirements. A collar option, which is a combination of a put and call option, not only overcomes this barrier but it also provides other benefits. Modifications to the basic collar's structure can redistribute downside losses and upside profits to fulfil stakeholders' needs and thus improve the effectiveness of risk management. The terms, applicability and limitations of a collar option are discussed, and a numerical example is developed to illustrate how to determine the strike prices of a collar option.

Keywords:

Infrastructure | public–private partnerships | real options | revenue risk | risk management

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