Taylor & Francis
Online

Construction Management and Economics ›
Volume 24, 2006 - Issue 4

844 Views | 98 CrossRef citations to date | 0 Altmetric

Original Articles

Valuation of the minimum revenue guarantee and the option to abandon in BOT infrastructure projects

Yu-Lin Huang & Shih-Pei Chou

Pages 379-389 | Received 18 Oct 2004, Accepted 24 Oct 2005, Published online: 19 Mar 2010

Cite this article https://doi.org/10.1080/01446190500434997

Sample our
Economics, Finance,
Business & Industry Journals
>> Sign in here to start your access
to the latest two volumes for 14 days

Full Article Figures & data References Citations Metrics
Reprints & Permissions Read this article Share

Abstract

The real option approach is used to value the minimum revenue guarantee (MRG) and the option to abandon in Build-Operate-Transfer infrastructure projects. The option to abandon is formulated under an investment option held by the concessionaire at contract signing and to expire before construction commencement. MRG is formulated as a series of European style put options in a single option pricing model. When combined with the option to abandon in the pre-construction phase, MRG is reconstructed as a series of European style call options to develop a compound option pricing formula. The Taiwan High-Speed Rail Project is chosen as a numerical case to apply the formulas. The results show both MRG and the option to abandon can create values. When MRG and the option to abandon are combined, they will counteract each other and their values will thus be reduced. Increasing the MRG level will decrease the

value of the option to abandon, and, at a certain MRG level, the option to abandon will be rendered worthless.

Keywords:

BOT | infrastructure | real option | option to abandon | minimum revenue guarantee

Acknowledgements

The authors wish to thank the National Science Council for research grant under contract number NSC 93-2211-E-009-043.

Related Research Data

An option pricing-based model for evaluating the financial viability of privatized infrastructure projects
Source: Construction Management and Economics
The Nature of Option Interactions and the Valuation of Investments with Multiple Real Options
Source: Journal of Financial and Quantitative Analysis
The Pricing of Options and Corporate Liabilities
Source: Unknown Repository
A real options approach to valuing strategic flexibility in uncertain construction projects
Source: Construction Management and Economics
BLACK-SCHOLES REVISITED: SOME IMPORTANT DETAILS
Source: Financial Review
The valuation of compound options
Source: Journal of Financial Economics

Related research

People also read | Recommended articles | Cited by 98

Minimum revenue guarantees valuation in PPP projects under a mean reverting process >

Carlos Andrés Zapata Quimbayo et al.
Construction Management and Economics
Published online: 4 Oct 2018

Information for

Authors
R&D professionals
Editors
Librarians
Societies

Open access

Overview
Open journals
Open Select
Dove Medical Press
F1000Research

Opportunities

Reprints and e-prints
Advertising solutions
Accelerated publication
Corporate access solutions

Help and information

Help and contact
Newsroom
All journals
Books

Keep up to date

Register to receive personalised research and resources by email

Sign me up

Copyright © 2026 Informa UK Limited Privacy policy

Cookies Terms & conditions Accessibility

Registered in England & Wales No. 01072954
5 Howick Place | London | SW1P 1WG