International Journal of Computer Mathematics ›
Volume 97, 2020 - Issue 5

Original Articles

A stochastic local volatility technique for TARN options

Iñigo Arregui & Jonatan Ráfales

Pages 1133-1149 | Received 30 Jul 2018, Accepted 07 Apr 2019, Accepted author version posted online: 14 Apr 2019, Published online: 24 Apr 2019

Cite this article https://doi.org/10.1080/00207160.2019.1608357 Check for updates

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

ABSTRACT

Target Accumulation Redemption Notes (TARN) are financial derivatives which give their holders the right to receive periodic coupons until the accumulated sum of those ones reaches an agreed target. In this work, we solve a partial differential equations model for TARNs by a finite difference alternating directions method. We combine the numerical resolution with a stochastic local volatility technique and show the numerical results for a particular problem.

KEYWORDS:

Option pricing TARN stochastic local volatility partial differential equations model alternating directions scheme

2010 MATHEMATICS SUBJECT CLASSIFICATION:

65N06

Previous article View issue table of contents Next article

Acknowledgements

The authors are very grateful to both reviewers for their valuable comments and suggestions, which contributed to improve the manuscript. They also want to thank their colleague Carlos Vázquez for useful advise.

Disclosure statement

No potential conflict of interest was reported by the authors.

Additional information

Funding

First author is financially supported by Spanish Ministerio de Economía y Competitividad (grant MTM2016-76497-R) and Xunta de Galicia (grant ED431C2018/033, including FEDER funds).