

My Account (/openid-connect/sams-sigma/login-redirect?prompt=login&openid_connect_destination=/content/ijderiv/25/4/71&custom_message=You%27ll%20need

Find topics, articles or authors...

Selected Topic: All topics

Options and the Gamma Knife

Ian Martin

The Journal of Derivatives Summer 2018, 25 (4) 71 - 79
DOI: 10.3905/jod.2018.25.4.071

- Download PDF
- Add to Favorites
- Share
- Labels
- Cite
- Alerts



The Journal of Derivatives Vol 25 Issue 4
(/content/ijderiv/25/4)
Volume 25, Issue 4
Summer 2018 (/content/ijderiv/25/4)
[Download issue PDF](#)

(/content/ijderiv/25/4)

Log in (/openid-connect/sams-sigma/login-redirect?prompt=login&openid_connect_destination=/content/ijderiv/25/4/71) to access this content or [Request a Demo \(/Request-Demo\)](#)



Log in (/openid-connect/sams-sigma/login-redirect?prompt=login&openid_connect_destination=/content/ijderiv/25/4/71)

[Request a Demo \(/Request-Demo\)](#)

Focus (/highwire_display/entity_view/node/43783/content_tabs)

- Article
- Authors

Abstract

Steve Ross, a towering figure in modern finance, died last spring. Since then, numerous memorials and special events have taken place, honoring his many achievements in economics and finance. This article takes a fresh look at one of Ross's earliest papers on options, in which he showed that they have the ability to "complete" an incomplete market. The example in that 1976 paper showed how a set of options with different strikes can subdivide the range for the possible future price of a given stock to create Arrow-Debreu securities, each of which pays off on the occurrence of a single future

Cookies Settings
Reject All
Accept All Cookies

stock price. In this article, the author reviews Ross's paper and shows how it leads to the Breeden-Litzenberger methodology for extracting the risk-neutral density from options market prices. He then extends Ross's one-stock model to the case with multiple risk factors and shows how options written on a single linear combination of their prices can still complete the higher dimensional market.

TOPICS: [Options \(https://www.pm-research.com/topic/options\)](https://www.pm-research.com/topic/options), [statistical methods \(https://www.pm-research.com/topic/statistical-methods\)](https://www.pm-research.com/topic/statistical-methods), [analysis of individual factors/risk premia \(https://www.pm-research.com/topic/analysis-individual-factorsrisk-premia\)](https://www.pm-research.com/topic/analysis-individual-factorsrisk-premia)

Download PDF

Add to Favorites

Share


Labels

Cite

Alerts

Previous (<https://www.pm-research.com/content/ijderiv/25/4/54>)

Next

Back to top 

Related Topics

Portfolio Management in Theory and Practice

Factor Investing

Quantitative Finance

Statistical Methods

Asset Classes

Equities

Derivatives

Options



By clicking "Accept All Cookies", you agree to the storing of cookies on your device to enhance site navigation, analyze site usage, and assist in our marketing efforts.

S&P Global

Nature risk is material.
And measurable.
Discover Essential Sustainability Intelligence >

Cookies Settings

 Sustainable1

Reject All

Accept All Cookies

Part of the With Intelligence Group

About  (/about-us)

Contact  (/contact-us)

 (https://twitter.com/PM_Research_)  (<https://www.linkedin.com/company/pmresearch/>)

Locations

New York

41 Madison Avenue
20th Floor
New York, NY 10010
646 931 9045

London

One London Wall
London, EC2Y 5EA
0207 139 1600

Hong Kong

21/F Cityplaza Three,
14 Taikoo Wan Road,
Taikoo

Explore our Research

By Topic

[Portfolio Management in Theory and Practice \(/topic/portfolio-management-theory-and-practice\)](/topic/portfolio-management-theory-and-practice/)

[Quantitative Finance \(/topic/quantitative-finance\)](/topic/quantitative-finance/)

[Economics and Financial History \(/topic/economics-and-financial-history\)](/topic/economics-and-financial-history/)

[Risk Management in Theory and Practice \(/topic/risk-management-theory-and-practice\)](/topic/risk-management-theory-and-practice/)

[Asset Classes \(/topic/asset-classes\)](/topic/asset-classes/)

[Regulation, Taxation, Governance, and Compliance \(/topic/regulation-taxation-governance-and-compliance\)](/topic/regulation-taxation-governance-and-compliance/)

By Journal

[Portfolio Management in Theory and Practice \(/content/iijjfds\)](/content/iijjfds/)

By clicking "Accept All Cookies", you consent to the storing of cookies on your device to enhance site navigation, analyze site usage, and assist in our marketing efforts.

[Financial Data Science \(/content/pmrfjdes\)](/content/pmrfjdes/)

[Impact & ESG Investing \(/content/pmrjesg\)](/content/pmrjesg/)

[Cookies Settings](#)

Reject All

Accept All Cookies

[Fixed Income \(/content/ijfixinc\)](#)

[Investing \(/content/ijinvest\)](#)

[Derivatives \(/content/ijderiv\)](#)

[Alternative Investments \(/content/ijaltinv\)](#)

[Retirement \(/content/ijretire\)](#)

[Wealth Management \(/content/ijwealthmgmt\)](#)

[Beta Investment Strategies \(/content/ijindinv\)](#)

[Structured Finance \(/content/ijstrfin\)](#)

[Trading \(/content/ijtrade\)](#)

[Private Equity \(/content/ijpriveq\)](#)

[Practical Applications \(/pa-reports\)](#)

© 2023 With Intelligence Ltd (<https://withintelligence.com/>) | All material subject to strictly enforced copyright laws.

[Cookies \(https://www.pageantmedia.com/cookies/\)](https://www.pageantmedia.com/cookies/)

[Code of ethics \(/code-of-ethics\)](#)

[Terms & conditions \(https://www.pageantmedia.com/terms/\)](https://www.pageantmedia.com/terms/)

[Privacy policy \(https://withintelligence.com/privacy/\)](https://withintelligence.com/privacy/)

By clicking "Accept All Cookies", you agree to the storing of cookies on your device to enhance site navigation, analyze site usage, and assist in our marketing efforts.

[Cookies Settings](#)

Reject All

Accept All Cookies