

IAQF & Thalesians Seminar Series

Options Portfolio Selection



A Talk by
Paolo Guasoni



Advancing the Field of Quantitative Finance Formerly the IAFE

What is the IAQF?

The International Association for Quantitative Finance (IAQF) is the not-for-profit, professional society dedicated to fostering the profession of quantitative finance by providing platforms to discuss cutting-edge and pivotal Issues in the field. Founded in 1992, the IAQF is composed of individual academics and practitioners from banks, broker dealers, hedge funds, pension funds, asset managers, technology firms, regulators, accounting, consulting and law firms, and universities across the globe.

Through frank discussions of current policy issues, sponsoring programs to educate the financial community and recognizing the outstanding achievements in the field, the IAQF acts as a beacon for the development of quantitative finance. Throughout its history, the IAQF's pre-eminent leadership has positioned us to respond with savvy to the evolving needs of the financial engineering community. The IAQF's programs- from our area-specific committees to our monthly panel discussions to the Financial Engineer of the Year Award - are designed to provide our membership with uniquely valuable activities to enhance their work in the field and opportunities to network and socialize with their colleagues.

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ABSTRACT

We develop a new method to optimize portfolios of options in a market where European calls and puts are available with many exercise prices for each of several potentially correlated underlying assets. We identify the combination of asset-specific option payoffs that maximizes the Sharpe ratio of the overall portfolio: such payoffs are the unique solution to a system of integral equations, which reduce to a linear matrix equation under suitable representations of the underlying probabilities. Even when implied volatilities are all higher than historical volatilities, it can be optimal to sell options on some assets while buying options on others, as hedging demand outweighs demand for asset-specific returns.

BIO

Paolo Guasoni holds the Stokes Chair in Financial Mathematics at Dublin City University since 2009 and specializes in Mathematical Finance. His research investigates the effects of market frictions, incentives, and preferences, in portfolio choice and asset pricing, and has appeared in the Journal of Financial Economics, Finance and Stochastics, Mathematical Finance, and Annals of Applied Probability. He has attracted funding by the European Research Council, the National Science Foundation, Science Foundation Ireland, and the European Commission. He serves as Associate Editor for Finance and Stochastics, Mathematical Finance, SIAM Journal in Financial Mathematics, Applied Mathematical Finance, and the European Journal of Finance.