

# Researchers solve long-standing financial puzzle

February 6 2008

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UQ Business School academic Dr Jamie Alcock and graduate Trent Carmichael have solved a financial problem that has puzzled researchers for more than 10 years.

Posed in 1996 by Professor Michael Stutzer, of Leeds School of Business at The University of Colorado in the US, the problem challenged the world's finance scholars and practitioners to come up with a nonparametric method of pricing American options in the mid nineties.

Dr Alcock said it had taken over a decade to solve the problem.

“A nonparametric method is one that doesn't make any assumptions about the statistical distribution of underlying stock prices,” Dr Alcock said.

“Most methods used to price stock and derivatives do rely on a model of stock price movements – so if the model doesn't reflect what actually happens, the pricing method can become useless.

“Nonparametric methods make no assumptions, instead letting the data speak for itself.”

UQ Business School graduate Trent Carmichael, who was UQ's Graduate of the Year in 2006, worked with Dr Alcock on the project.

Mr Carmichael said the new method did not require observed option prices, only stock prices.

“Our method is unique among nonparametric methods because, thanks to using only stock prices, it works even when the options are not traded securities,” Mr Carmichael said.

“Our method can be applied to real options, credit risk models and executive stock options.”

A paper co-authored by Alcock and Carmichael describing the method won the ASX / SFE Best Derivatives Paper at the 2007 Australian Banking and Finance Conference. The paper will be published in the *Journal of Futures Markets* later this year.

Source: University of Queensland

Citation: Researchers solve long-standing financial puzzle (2008, February 6) retrieved 1 May 2024 from <https://phys.org/news/2008-02-long-standing-financial-puzzle.html>

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