SOLUTION OF THE BLACK-SCHOLES EQUATION VIA HEAT EQUATION FOR PRICING EUROPEAN OPTION

UNDERGRADUATE THESIS

Submitted as one of the requirements to obtain
Sarjana Aktuaria

By
Kislew Alveri Yehezkiel Himawan
021201900030

FACULTY OF BUSINESS
ACTUARIAL SCIENCE STUDY PROGRAM
CIKARANG
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ABSTRACT

The objective of the study is to obtain the Black-Scholes solution by transforming the Black-Scholes equation using heat equation and the usage of the solution to obtain the option price. The Black-Scholes equation will be transformed into the heat equation, and then use the heat fundamental equation to find the Black-Scholes solution. The Black-Scholes solution that were obtained will be used to find the theoretical price of the Black-Scholes European call and put option. This thesis uses the Research and Development method, that is a research approach that calls for the use of numbers throughout the research process, from data collection to data interpretation and result presentation.

Keywords: *Black-Scholes Equation, Heat Equation, European Option, Black-Scholes Solution*

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Kislew Alveri Yehezkiel Himawan

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES