



**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

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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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TABLE OF CONTENT

PANEL OF EXAMINERS APPROVAL SHEET.....	ii
STATEMENT OF ORIGINALITY	iii
SCIENTIFIC PUBLICATION APPROVAL	iv
ADVISOR APPROVAL FOR JOURNAL/INSTITUTION'S REPOSITORYv	
PLAGIARISM RESULT / TURNITIN.....	vi
GPTZERO RESULT	vii
ABSTRACT	viii
ACKNOWLEDGEMENT	ix
TABLE OF CONTENT	x
LIST OF TABLES	xiii
LIST OF FIGURES	xiv
CHAPTER I INTRODUCTION.....	1
1.1 Research Background.....	1
1.2 Research Question.....	2
1.3 Research Objective.....	2
1.4 Research Scope and Limitations	2
1.5 Thesis Organizational	2
CHAPTER II LITERATURE REVIEW	4
2.1 Review of Literature	4
2.1.1 Option	4
2.1.2 Variables	12
2.1.3 Derivatives	13
2.1.4 Integrals	14
2.1.5 Ansatz	15

2.1.5 Dirac Delta Function.....	16
2.1.6 Heat Equation	16
2.1.7 Normal Distribution.....	18
2.1.8 Put-Call Parity.....	19
2.1.9 Volatility	19
2.1.10 The Black-Scholes Model.....	21
2.2 Previous Research	23
CHAPTER III RESEARCH METHODOLOGY	25
3.1 Research Method.....	25
3.2 Data Analysis Design.....	25
3.3 Research Flowchart.....	26
CHAPTER IV DATA ANALYSIS	28
4.1 Notation of Variables	28
4.2 Black-Scholes Solution (European Call Option)	28
4.3 Black-Scholes Solution (European Put Option).....	37
4.4 Proofing with Put-Call Parity.....	45
4.5 Simulation	46
4.5.1 Black-Scholes European Call Option	46
4.5.2 Black-Scholes European Put Option.....	50
4.6 Variable Effects on Option Price	52
4.6.1 Stock Price	52
4.6.2 Strike Price.....	54
4.6.3 Volatility	56
4.6.4 Time to Maturity	58
4.6.5 Interest Rate	60
CHAPTER V CONCLUSION	63

5.1 Conclusion	63
5.2 Recommendation.....	64
REFERENCE	65

LIST OF TABLES

Table 2.1 European option Vs American option.....	11
Table 4.1 Relative price from January 31st 2022 to January 27th 2023.....	47
Table 4.2 Return value from January 31st 2022 to January 27th 2023.....	48
Table 4.3 Summation of $R_t - R_{t2}$ from January 31st 2022 to January 27th 2023.....	48
Table 4.4 Call option prices with different stock prices	52
Table 4.5 Put option prices with different stock prices.....	53
Table 4.6 Call option price with different strike price	54
Table 4.7 Put option price with different strike price	55
Table 4.8 Call option price with different volatility	56
Table 4.9 Put option price with different volatility.....	57
Table 4.10 Call option price with different time to maturity	58
Table 4.11 Put option price with different time to maturity	59
Table 4.12 Call option price with different interest rate	60
Table 4.13 Put option price with different interest rate	61

LIST OF FIGURES

Figure 2.1 Call option price with certain strike price.....	5
Figure 2.2 Profit (loss) on buying a call option	6
Figure 2.3 Put option price with certain strike price.....	7
Figure 2.4 Profit (loss) on buying a put option	8
Figure 2.5 Heat equation parabolic PDE.....	17
Figure 2.6 Standard normal distribution function.....	19
Figure 3.1 Research flowchart	27
Figure 4.1 Call option prices with different stock prices	53
Figure 4.2 Put option price with different stock prices.....	54
Figure 4.3 Call option price with different strike price.....	55
Figure 4.4 Put option price with different strike price	56
Figure 4.5 Call option price with different volatility	57
Figure 4.6 Put option price with different volatility	58
Figure 4.7 Call option price with different time to maturity.....	59
Figure 4.8 Put option price with different time to maturity	60
Figure 4.9 Call option price with different interest rate.....	61
Figure 4.10 Put option price with different interest rate	62