

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

**FORECASTING STOCK PRICE IN HEALTHCARE SECTOR BY
USING GEOMETRIC BROWNIAN MOTION MODEL**

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IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS	ii
LIST OF TABLES	v
LIST OF FIGURES	vi
ABSTRACT.....	vii
CHAPTER 1: INTRODUCTION.....	1
1.1 BACKGROUND OF THE STUDY	1
1.2 PROBLEM STATEMENT	4
1.3 OBJECTIVES	4
1.4 SIGNIFICANCE AND BENEFITS OF THE STUDY	5
1.5 SCOPE AND LIMITATION OF THE STUDY	5
1.6 DEFINITION OF TERMS AND ABBREVIATION.....	6
1.7 SUMMARY.....	7
CHAPTER 2: LITERATURE REVIEW	8
2.1 STOCK MARKET	8
2.2 METHOD USED FOR STOCK FORECASTING.....	9
2.3 GEOMETRIC BROWNIAN MOTION (GBM) MODEL	11
2.4 SUMMARY.....	12
CHAPTER 3: METHODOLOGY AND IMPLEMENTATION.....	13
3.1 RESEARCH FLOWCHART.....	13
3.2 REVIEW THE LITERATURE OF THE FORECASTING PRICE STOCK	14
3.3 COLLECTING DATA	14
3.4 OBSERVE THE TREND OF DATA	16
3.5 STATE THE PROBLEM	20
3.6 STOCK PRICE FORECASTING.....	20
3.6.1 Rate of Return	20
3.6.2 Drift (μ).....	21
3.6.3 Volatility (σ)	21
3.6.4 Geometric Brownian Motion (GBM).....	22
3.7 VALIDATION.....	22
3.7.1 MEASUREMENT OF RELATIONSHIP.....	22
3.7.2 MEAN ABSOLUTE PERCENTAGE ERROR (MAPE)	23
3.7.3 PERCENTAGE INCREASE	24

3.7.4	TREYNOR'S INDEX.....	25
3.7.5	SHARPE'S INDEX	25
3.8	IMPLEMENTATION.....	26
3.8.1	CALCULATIONS	27
3.9	SUMMARY.....	29
CHAPTER 4: RESULT AND DISCUSSION.....		30
4.1	GRAPH OF FORECASTING PRICE VERSUS ACTUAL PRICE	30
4.2	VALIDATION.....	33
4.2.1	MAPE	33
4.3.1	MEASURE RELATIONSHIP	35
4.3.2	STOCKS PERFORMANCES.....	36
CHAPTER 5: CONCLUSION AND RECOMMENDATION		38
5.1	CONCLUSION.....	38
5.2	RECOMMENDATION	39
REFERENCES.....		40
APPENDICES.....		44
APPENDIX A.....		44
DATA OF STOCK PRICE.....		44
APPENDIX B		50
CALCULATING USING MICROSOFT EXCEL		50
APPENDIX C		55
FORECASTING PRICE VERSUS ACUAL PRICE		55
APPENDIX D.....		64
GRAPH FORECAST VERSUS ACTUAL		64

ABSTRACT

This study suggests using Geometric Brownian Motion (GBM) model to forecast closing prices for 10 stocks in Healthcare sector in Bursa Malaysia. The forecasted close prices can be used as a reference for investors to make their investments. Investments is a process of investing money for profit. However, selecting the right stock to invest in can be challenging, and the lack of certainty surrounding stock prices can reduce investor trust. Thus, forecasting future stock prices is so crucial. Since all investors want to make profit quickly, the duration of this study are 2 weeks forecast and 4 weeks forecast only. In this study, GBM model which consists of rate of return, drift and volatility are used to forecast the future stock price. The result shows that GBM model able to forecast accurately as early as 2 weeks of investment by using Mean Absolute Percentage Error (MAPE) and percentage increment of stock price. Moreover, this study also shows that KOSSAN is the best stock by using relationship measurement, Sharpe's and Treynor's index. These methods are used to gauge the relationship and performance of the stock price with the FBMKLCI index.

Keywords: GBM, forecast, Healthcare, stock, MAPE, investment, index