UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

FORECASTING MALAYSIA ECONOMIC GROWTH USING BOX JENKINS AND SOLOW GROWTH METHOD

(P51M22)

AMIERNURSI ADHA BIN MAZLAN (2019218336) MUHAMMAD HARITH BIN HALID (2019218958) NURUL 'IZZAH BINTI OTHMAN (2019219802)

Report submitted in partial fulfillment of the requirements for the degree of

Bachelor of Science (Hons.) Mathematics & Bachelor of Business Administration (Hons.) Business Economics

Faculty of Computer and Mathematical Science

JULY 2022

1

ACKNOWLEDGEMENTS

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

Firstly, I am grateful to Allah S.W.T for giving us the strength to complete this project successfully. This task had been done with all afford by group members even though a little bit problem was happened among us while doing this project. Luckily, all the problems can be settled down and we were able to adapt properly and wisely.

Furthermore, we would like to express my gratitude to our supervisor Puan Nor Aishah Binti Md Noh because without her guide our project cannot be done properly like this. She always gives us supports and guide to us how to do our assignment in purpose to produce a good outcome from research that been studied.

On the other hand, big thank also we address to our introduction to mathematical modelling's (MAT530) lecturer Associate Prof Dr Nur Azlina Binti Abd Aziz and our final year project's (MSP660) lecturer Dr Rossidah Binti Wan Abdul Aziz that always teach us and guide us to understand the things that we should know while studying the subject and in producing good project work.

Finally, thank to our beloved friend that always stick together and work hard to produce a good project with all afford and responsibility. Hope that all the afford will give a lot of benefits to us and to our group project. Million thank also we wish to all our classmate because they also help us in doing our group. They always give us ideas and comments on our project so that we can improve our project in many ways.

ABSTRACT

The term "Gross Domestic Product," or GDP, refers to the total monetary worth of all finished products and services produced (and marketed) inside a nation within a certain period (typically 1 year). The most often used indicator of economic activity is the GDP. Predicting Malaysia's economic progress has proven difficult because of the GDP's tendency to change. The exact metrics of a country's economic development are still up for discussion and are influenced by a variety of other economic factors. As a result, studies on the topic of GDP forecasting are increasingly often conducted by scholars. The main aim for this study is to find the best model either Box Jenkins Method or Solow Growth Method and use the best model to forecast next Malaysia's economic growth. For this study, different data set were used for each method. It is because each method using different set of attributes. The objective is to assess how well the Box Jenkins and Solow Growth models perform at predicting GDP as an indication of economic growth and to recommend the optimal time series model for doing so in Malaysia. At last, for Box Jenkins, we obtain that ARIMA(2,2,0) is the best model among those two model. The forecasting phases for those models are based on the error measurements, Mean Square Error (MSE) and Mean Absolute Percentage Error (MAPE).

Table of Contents

ACKNOWLEDGEMENTS	2
ABSTRACT	3
LIST OF FIGURES	6
LIST OF TABLES	7
LIST OF ABBREVIATION	8
CHAPTER 1: INTRODUCTION	9
1.0 INTRODUCTION	9
1.1 BACKGROUND OF THE STUDY	9
1.2 PROBLEM STATEMENT	11
1.3 OBJECTIVES	11
1.4 SCOPE AND LIMITATIONS	12
1.5 SIGNIFICANT OF STUDY	12
CHAPTER 2: LITERATURE REVIEW	13
2.0 INTRODUCTION	13
2.1 FORECASTING MALAYSIA'S ECONOMICS GROWTH	13
2.2 MATHEMATICAL AND STATISTICAL MODELS USED IN FORECASTI ECONOMICS GROWTH	
	16
ECONOMICS GROWTH	16 17
ECONOMICS GROWTH	16 17 19
ECONOMICS GROWTH	16 17 19 20
ECONOMICS GROWTH	16 17 19 20 20
ECONOMICS GROWTH	

4.1.1 MODEL FINALIZATION	29
4.1.2 MODEL FINAL IDENTIFICATION	
4.2 SOLOW GROWTH MODEL DETERMINATION	35
4.2.1 MODEL FINALIZATION	35
4.3 FORECASTING PHASES	
CHAPTER 5: CONCLUSION AND RECOMMENDATION	
REFERENCES	
APPENDIX	41