TABLE OF CONTENTS

AUTHENTICATION PAGE ..... **i**

STATEMENT PAGE ..... **ii**

FOREWORD ..... **iii**

ABSTRACT ..... **v**

TABLE OF CONTENTS ..... **vi**

LIST TABLE ..... **ix**

LIST OF FIGURES ..... **x**

CHAPTER 1 INTRODUCTION **1**

1.1 Overview of Research Objects 1

1.2 Research Background 2

1.3 The Problem Statement 9

1.4 Research Purposes 9

1.5 Benefits of Research 9

1.5.1 Academic Benefits 10

1.5.2 Practical Benefits 10

1.6 Scope of Research 10

1.7 Writing System 10

CHAPTER 2 LITERATURE REVIEW **13**

2.1 Foundation Theories and Previous Research Findings 13

2.1.1 Investment 13

2.1.2 Investors 14

2.1.3 Forecasting 15

2.1.4 Macroeconomics 15

2.2 Previous Research 22
2.3 Conceptual Framework 29
CHAPTER 3 RESEARCH METHOD 31
3.1 Characteristic of Research 31
3.2 Operational Variables 31
3.3 Research Stages 34
3.4 Population and Sample 35
3.4.1 Population 35
3.4.2 Sample 35
3.5 Data Collection Tools 35
3.5.1 Types of data 35
3.5.2 Data Source 35
3.6 Data Analysis Technique 36
3.6.1 Data Design 36
3.6.2 Stock Price Prediction with Long Short-Term Memory Network 37
3.6.2.1 Training Process 38
3.6.2.2 Exploratory Data Analysis 39
3.6.2.3 Testing Process 40
3.6.2.4 Calculation of Performance Value 40
CHAPTER 4 RESEARCH RESULT AND DISCUSSION 41
4.1 Data analysis 41
4.1.1 Data Characteristics 41
4.1.2 Exploratory Data Analysis 42
4.1.3 *Stock Return* of Index LQ45 46
4.2 Long Short-Term Memory (LSTM) Model Analysis 46

4.2.1 LSTM Parameter Determination 47
4.2.2 Learning Outcomes from LSTM 48
4.3 Finding Discussion 51
CHAPTER 5 CONCLUSION AND RECOMMENDATION 53
5.1 Conclusion 53
5.2 Recommendation 54
5.2.1 Academic Benefits 54
5.2.2 Practical Benefits 54
REFERENCE 56