



## TABLE OF CONTENTS

TITLE PAGE .....	i
APPROVAL SHEET .....	ii
DECLARATION OF ACADEMIC INTEGRITY .....	iii
ACKNOWLEDGEMENTS.....	iv
TABLE OF CONTENTS .....	v
LIST OF FIGURES .....	vii
LIST OF TABLES .....	viii
LIST OF ABBREVIATIONS.....	ix
ABSTRACT .....	x
<i>INTISARI</i> .....	xi
CHAPTER 1. INTRODUCTION .....	1
1.1 Background .....	1
1.2 Problem Statement .....	2
1.3 Research Question .....	3
1.4 Research Objectives.....	3
1.5 Importance of Undertaking the Study.....	4
1.6 Research Limitation .....	4
1.7 Originality .....	5
CHAPTER 2. LITERATURE REVIEW .....	8
2.1 Air Traffic Forecasting Methods.....	8
2.2 Econometric Demand Modelling.....	9
2.3 Air Traffic Forecasting Analysis.....	12
CHAPTER 3. THEORITICAL BACKGROUND .....	14
3.1 Variables of Demand Forecasting.....	14
3.2 How to Analysis Data .....	18
3.2.1 Time Series Data.....	18
3.2.2 Panel Data .....	20
CHAPTER 4. RESEARCH METHOD .....	22
4.1 Research Design.....	22



4.2 Research Data .....	23
4.2.1 Time Series Data.....	23
4.2.2 Panel Data .....	27
4.4 Research Tools.....	31
4.4 Research Flowchart.....	32
CHAPTER 5. RESULT AND DISCUSSION.....	33
5.1 Time Series Regression models .....	36
5.2 Panel Data Regression Model.....	48
5.3 Comparison With Another Method (Linear Time-series Trend Projection).....	59
5.3 Forecasting.....	61
CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS.....	66
6.1 Conclusions.....	66
6.2 Recommendations.....	67
REFERENCES .....	68
APPENDICES	



## LIST OF FIGURES

Figure 1. 1 Indonesia map.....	1
Figure 4. 1 Number of passengers from different sources.....	24
Figure 4. 2 Number of GDP per capita (constant) .....	25
Figure 4. 3 Total population of Indonesia.....	25
Figure 4. 4 Officially exchange rate (IDR-USD).....	26
Figure 4. 5 Growth rate annually (%) .....	27
Figure 4. 6 Location of 18 airport on Indonesia map.....	27
Figure 4. 7 Number of passenger of Angkasa Pura II airport (West Indonesia).....	28
Figure 4. 8 Number of passenger of Angkasa Pura I airport (East Indonesia) .....	29
Figure 4. 9 Growth rate annually of number of passengers (%) .....	30
Figure 4. 10 Growth rate annually of GDP per capita (%) .....	30
Figure 4. 11 Growth rate annually of total population for each province (%).....	31
Figure 5. 1 Scatter diagram of exchange rate, GDP and population to total passenger year 1970-2014.....	36
Figure 5. 2 Scatter diagram passengers, GDP and population the year 2001–2014 ..	49
Figure 5. 3 Pattern of number of passenger between actual, econometric and time-series trend .....	60
Figure 5. 4 GDP forecasting .....	62
Figure 5. 5 Number of air traffic (forecasting) .....	63



## LIST OF TABLES

Tabel 1. 1 Summary of key econometrics modelling papers .....	5
Table 3. 1 Performances of forecasting methods of airport demand .....	18
Table 4. 1 Name the airport and location .....	22
Table 5. 1 Statistics descriptive variables time series .....	34
Table 5. 2 Descriptive statistics variable panel data used .....	35
Table 5. 3 Output partial correlation .....	37
Table 5. 4 Possible regression model affecting number of passengers .....	38
Table 5. 5 Summary of test results ramsey reset various models that may affect the number of passengers (PASS) .....	39
Table 5. 6 Model with AIC .....	40
Table 5. 7 Results of multicollinearity test for third regression model .....	41
Table 5. 8 Results of multicollinearity test regression model 4 .....	42
Table 5. 9 Results kolmogorov-smirnov test regression model 4 .....	43
Table 5. 10 Results of breusch-pagan test for regression model 4 .....	44
Table 5. 11 Durbin-Watson test results regression model 4 .....	44
Table 5. 12 Prais-Winsten regression model (model regression 5) .....	45
Table 5. 13 Output of Chow test .....	50
Table 5. 14 Output Hausman test .....	51
Table 5. 15 Output <i>Breusch and Lagrangian Multiplier test</i> .....	51
Table 5. 16 Output model <i>Fixed Effect</i> .....	52
Table 5. 17 Test results multicollinearity model <i>Fixed Effect</i> .....	53
Table 5. 18 Output Wald test model <i>Fixed Effect</i> .....	54
Table 5. 19 Output <i>Wooldridge Test</i> model <i>Fixed Effect</i> .....	54
Table 5. 20 Output model <i>Fixed Effect</i> with GLS .....	55
Table 5. 21 Output model <i>Fixed Effect</i> with GLS .....	58
Table 5. 22 Comparison between econometric and time-series trend model .....	59
Table 5. 22 East Asia and Pacific country forecast (real GDP growth) .....	62
Table 5. 23 Forecasting number of passenger (Low, Medium and High scenario) ...	63