

**STUDY ON DEVELOPING A SINGLE CURRENCY AREA
FOR ASEAN-5 COUNTRIES**

**STUDI PEMBENTUKAN AREA MATA UANG TUNGGAL
PADA KAWASAN ASEAN-5**



By

**RAFIF FAIRUZTAMA
20200430028**

**INTERNATIONAL PROGRAM FOR ISLAMIC ECONOMICS
AND FINANCE (IPIEF)
DEPARTMENT OF ECONOMICS
FACULTY OF ECONOMICS AND BUSINESS
UNIVERSITAS MUHAMMADIYAH YOGYAKARTA
2024**

DECLARATION

Name: Rafif Fairuztama

Student Number: 20200430028

I hereby declare that this undergraduate thesis entitled: **“STUDY ON DEVELOPING A SINGLE CURRENCY AREA FOR ASEAN-5 COUNTRIES”** does not contain any content or work that has been previously submitted to obtain a bachelor's degree at any university. To the best of my knowledge, there are no other works or opinions that have been written or published by others, except for those that are properly referenced in the manuscript and listed in the bibliography. If any violation of intellectual right is later found in this manuscript, I agree to accept any relevant academic consequences.

Yogyakarta, September 21st 2024



Rafif Fairuztama

DEDICATION

All praise and gratitude are offered to Allah SWT, the Most Loving and Merciful, for His abundant grace, guidance, and blessings that have allowed me to complete this thesis successfully. With deep humility, I dedicate this thesis to:

1. My beloved parents, Mr. Irhana Yusuf and Mrs. Vopiana, for always providing me with unwavering love, support, and prayers. Their prayers and encouragement have been the primary motivators throughout the thesis writing process.
2. To Myself for always fighting and not giving up no matter the circumstances.
3. To my siblings, cousins, and closest friends, that always give prayers, endless encouragement and support.
4. Initial 211 for always giving me support and encouragement.
5. Zulu, Piki, Piko, Ken, and all my beloved cats, for always bringing up smile and joy to my face.

ACKNOWLEDGEMENT

All praise be to Allah SWT, who has provided ease, grace, and mercy in the writing of this thesis titled “**STUDY ON DEVELOPING A SINGLE CURRENCY AREA FOR ASEAN-5 COUNTRIES**”. This thesis is prepared to fulfill one of the requirements for obtaining a bachelor’s degree at the Faculty of Economics and Business, Universitas Muhammadiyah Yogyakarta. The completion of this thesis would not have been possible without the guidance and support of many individuals. Therefore, I would like to express my deepest gratitude to the following:

1. My parents, younger siblings, and the entire extended family, whose continual prayers and support have contributed significantly to my success and smooth progress at Universitas Muhammadiyah Yogyakarta.
2. Dr. Dimas Bagus Wiranatakusuma, S.E., M.Ec., CIB., CRM., CRP., CPF., AWP, as my supervisors, who have patiently guided, encouraged, and motivated me throughout the thesis-writing process.
3. Prof. Dr. Ir. Gunawan Budiyanto, M.P., IPM., as the Rector of Universitas Muhammadiyah Yogyakarta.
4. Prof. Rizal Yaya, S.E., M.Sc., Ph.D., Ak., CA., CRP., as the Dean of the Faculty of Economics and Business, Universitas Muhammadiyah Yogyakarta.
5. Prof. Dr. Endah Saptutyingsih, S.E., M.Si., as the Head of the Economics Study Program at Universitas Muhammadiyah Yogyakarta.
6. All parties who participated encouraged and assisted in the process of completing this thesis.

As a final word, I wish to express my profound appreciation to everyone who has supported me throughout this academic endeavor. Your steadfast encouragement and faith in my capabilities have been immensely

meaningful. I am truly grateful for your involvement in this pivotal stage of my academic and personal development. And I hope this thesis can be useful for potential readers in the future.

Yogyakarta, September 21st 2024

Author

A handwritten signature in black ink, appearing to be 'Rafif Fairuztama', written in a cursive style.

Rafif Fairuztama

TABLE OF CONTENT

DECLARATION	IV
MOTTO.....	V
DEDICATION	VI
ABSTRACT	VII
INTISARI.....	VIII
ACKNOWLEDGEMENT	IX
TABLE OF CONTENT	XI
LIST OF TABLES.....	XIV
LIST OF FIGURES.....	XVI
LIST OF APPENDIXES	XVI
CHAPTER I INTRODUCTION	1
A. Background of Research	1
B. Limitations of the Research	29
C. Research Questions	29
D. Research Objectives	30
E. Research Benefits.....	30
1. Theoretical Significance.....	30
2. Practical Significance.....	31
CHAPTER II LITERATURE REVIEW.....	28
A. Theoretical Framework	28
1. Economic Integration	28
2. Optimum Currency Area (OCA).....	39
3. Economics Resilience Theory	49
B. Conceptual Framework	51
1. Early Warning System Method	51
2. Currency Exchange Rate.....	52
3. Gross Domestic Product.....	53

4.	Inflation Rate	55
5.	Overnight Interest Rate	57
6.	Total Reserve minus Gold.....	59
C.	Previous Studies.....	61
D.	Research Framework	79
CHAPTER III RESEARCH METHODOLOGY		75
A.	Object of Research	75
B.	Types of Data	75
C.	Data Collecting Techniques	85
D.	Definition of Research Operational Variables	86
E.	Techniques of Data Analysis.....	89
1.	Determining Currency Anchor and Developing OCA criteria.....	90
a.	Signal Extraction using Early Warning Systems (EWS)	90
b.	Data Integration.....	101
2.	Future analysis using Autoregressive Integrated Moving Average (ARIMA) Models	104
CHAPTER IV GENERAL DESCRIPTION		107
A.	Overview of the Research object.....	107
1.	Indonesia	107
2.	Malaysia	119
3.	Singapore	121
4.	Thailand	125
5.	Philippines.....	128
B.	Overview of Research Variables	131
1.	Fiat Currency and Exchange Rates	131
CHAPTER V RESULT AND DISCUSSION		142
A.	Result Analysis.....	142
1.	Determining Currency Anchor.....	142
2.	Defining the Criteria for OCA Formation in ASEAN-5	158
3.	Determining The Feasible Countries to form Single Currency in ASEAN-5 196	
a.	ARIMA Forecasting Result Analysis.....	200

b. ARIMA Result Integration Into EWS	208
CHAPTER VI CONCLUSION, RESEARCH LIMITATION, AND	
RECOMMENDATION	221
A. Conclusion	221
B. Research Limitations.....	229
C. Recommendation	231
REFERENCES	233
APPENDIX	243

LIST OF TABLES

1. 1. European Union Country	2
1. 2. ASEAN Countries Economic Performance	17
2. 1. The most productive publisher	67
2. 2. The Most Cited Documents	68
2. 3. Frequency of Method used in past Literature	70
2. 4. List of Calculation model used in past Literature	70
2. 5. Theoretical Findings	77
2. 6. Empirical Findings	78
3. 1. Exchange Rate.....	86
3. 2. Random Index Value.....	97
3. 3. DEMATEL Criteria and Granger Causality.	98
3. 4. Signaling Threshold.	99
3. 5. Heatmap Visualization	101
4. 1. Indonesia Economic Overview	116
4. 2. Malaysia Economic Overview	119
4. 3. Singapore Economic Overview	122
4. 4. Thailand Economic Overview.....	126
4. 5. Philippines Economic Overview.....	129
5. 1. Result of Combined Exchange Rate Strength (ASEAN-5 Data).....	150
5. 2. Signaling Accuracy of Exchange Rate (ASEAN-5 Data).....	154
5. 3. The Utilization of Matrix Crisis-Signal Framework.....	156
5. 4. ASEAN-5 Currency Strength against USD	160
5. 5. ASEAN-5 Currency Signal against USD.....	161
5. 6. ASEAN-5 Currency Strength against GBP	164
5. 7. ASEAN-5 Currency Signal against GBP.....	165
5. 8. ASEAN-5 Currency Strength against JPY.....	167
5. 9. ASEAN-5 Currency Signal against JPY	168
5. 10. ASEAN-5 Currency Strength against CNY.....	170
5. 11. ASEAN-5 Currency Signal against CNY	171
5. 12. ASEAN-5 Currency Strength Assessment Result	174
5. 13. ASEAN-5 GDP Performance Result	176
5. 14. ASEAN-5 GDP Signaling Result	176
5. 15. ASEAN-5 Inflation Performance Result.....	179
5. 16. ASEAN-5 Inflation Signaling Result.....	179

5. 17. ASEAN-5 Overnight Interest Rate Performance Result	182
5. 18. ASEAN-5 Overnight Interest Rate Signaling Result	183
5. 19. ASEAN-5 Total Reserve Minus Gold Performance Result	185
5. 20. ASEAN-5 Total Reserve Minus Gold Signaling Result	186
5. 21. ASEAN-5 Macroeconomics Strength Assessment Result	189
5. 22. ASEAN-5 Macroeconomics Strength Assessment Result	191
5. 23. ASEAN-5 Macroeconomics Strength Result	191
5. 24. ASEAN-5's Currency and Macroeconomic Integration Result	193
5. 25. Optimum Currency Area Operational Resilience Result	194
5. 26. Summary of Qualified ASEAN-5 Country	197
5. 27. Forecast vs Actual data against USD	200
5. 28. Forecast vs Actual data against GBP	202
5. 29. Forecast vs Actual data against JPY	204
5. 30. Forecast vs Actual data against CNY	206

LIST OF FIGURES

1. 1. Trade performance of ASEAN countries from 1960-2023.....	14
2. 1. Mundell-Fleming Fixed Exchange Rate Model.....	43
2. 2. Mundell-Fleming Flexible Exchange Rate Model.....	44
2. 3. The Optimum Currency Area Theoretical Framework.....	48
2. 4. The conceptual correlation between GDP and OCA.....	55
2. 5. The conceptual correlation between Inflation and OCA.....	57
2. 6. The conceptual correlation between OIR and OCA.....	59
2. 7. The conceptual correlation between Reserve and OCA.....	60
2. 8. PRISMA and SLR Outlines.....	63
2. 9. VOS viewer network linkage bibliographical results.....	73
2. 10. VOS viewer overlay visualization.....	74
2. 11. VOS viewer density visualization.....	76
2. 12. Research Framework.....	80
4. 1. ASEAN-5 country exchange rate performance against USD.....	136
4. 2. ASEAN-5 country exchange rate performance against GBP.....	140
4. 3. ASEAN-5 country exchange rate performance against CNY.....	143
4. 4. ASEAN-5 country exchange rate performance against JPY.....	147
5. 1. Thailand Projected 2024 Performance against USD.....	210
5. 2. Thailand Projected 2024 Performance Against GBP.....	211
5. 3. Thailand Projected 2024 Performance against JPY.....	212
5. 4. Thailand Projected 2024 Performance against CNY.....	214
5. 5. Singapore Projected 2024 Performance against USD.....	215
5. 6. Singapore Projected 2024 Performance against GBP.....	217
5. 7. Singapore Projected 2024 Performance against GBP.....	218
5. 8. Singapore Projected 2024 Performance against CNY.....	219
5. 9. Philippines Projected 2024 Performance against USD.....	220
5. 10. Philippines Projected 2024 Performance against GBP.....	222
5. 11. Philippines Projected 2024 Performance against JPY.....	223
5. 12. Philippines Projected 2024 Performance against CNY.....	224

LIST OF APPENDIXES

APPENDIX 1: Data	243
APPENDIX 2: Signaling Result	264
APPENDIX 3: Arima Forecasting Graph.....	267