THE DETERMINANT OF EXCHANGE RATE REGIME, TIMING OF REGIME SWITCH AND THE COST OF ABANDONMENT

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UNIVERSITI MALAYSIA SABAH
2016

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THESIS SUBMITTED IN FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY OF FINANCE AND BANKING

FACULTY OF BUSINESS, ECONOMICS AND ACCOUNTANCY
UNIVERSITI MALAYSIA SABAH
2016

DECLARATION

I hereby declare that the work in this thesis is my own except for the quotations, equations and summaries, which have been duly acknowledged.

12th January 2016

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DEGREE : **DOCTOR OF PHILOSOPHY (FINANCE AND BANKING)**

VIVA DATE : **6 SEPTEMBER 2016**

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ACKNOWLEDGEMENT

It is pleasure to acknowledge individuals who have played an important role in the development of this study. It is grateful and thankful that this research can be completed in time and successful.

First of all, I would like to take this opportunity to show my appreciation to my supervisors, Prof. Dr. Amran Ahmed and Assoc. Prof. Dr. Caroline Geetha Arokiadasan, for their guidance, advice and efforts in assisting me to complete my thesis. They have been a centre of motivation and guidance for me. I am thankful for their continuous support, cooperation and patient. I would like to show my sincere appreciation for their unremitting assistance.

I would also like to express my deep and sincere appreciation towards my family especially my wife, Yi Jie and my son, Joe, who had accompanied me throughout the journey. Without her support, I may not be able to continue the journey. Her continuous support, love and trust have extended me every step of my life.

Finally, I am grateful to my friends especially, K.J. and Chua, who are constantly giving me ideas and give me strength to carry on my thesis. Their generosity and kindness are always remembered. Thank you.

Sam Yet Huat

23 Jan 2016

ABSTRACT

The debate over the justification of regime switch on 2005 which involves the abandonment of fixed exchange rate regime in Malaysia has yet to be resolved. Furthermore, the effect of regime switch in Malaysia has yet to be widely examined under the empirical theory and methodology. Thus, a series of econometric methods were proposed in this study to examine the suitability of the exchange rate regime which is implementing in the context of Malaysia and ASEAN countries. First, multinomial model was carried out to examine the determinant of exchange rate regime in the context of ASEAN based on; (i) Optimum Currency Area theory; (ii), financial development view; and (iii), social-political view. Then, the threshold cointegration was taking place as the main empirical specification. Proxy of dependent variable was calculated based on the Frankel-Wei model (2008) as the index of flexibility of exchange rate regime in a country. Threshold values which were obtained from the threshold cointegration would be able to explain the suitable timing for regime switch to take place. Furthermore, Classification and Regression Tree method were employed to examine the regime switch timing at the context of ASEAN region. Last but not least, the cost of abandon from fixed exchange rate regime in Malaysia was examined through comparing the exchange rate pass through effect before and after the regime switch takes place. This study had employed two new variables which were, unanticipated money supply and unemployment rate. Besides, the findings from the study supported the theory of Optimum Currency Area. The proposed sequence of empirical methodology provided guideline for policy maker on how to make a decision on determining a suitable exchange rate regime in a nation.

ABSTRAK

PENENTU REJIM KADAR PERTUKARAN, MASA MENUKAR REJIM DAN KOS PENUKARAN REJIM KADAR PERTUKARAN

Malaysia telah menarik diri daripada rejim kadar pertukaran tetap pada tahun 2005, tetapi, justifikasi tentang penukaran ini masih menjadi tumpuan di kalangan penyelidik. Walau bagaimanapun, kesan penukaran rejim ini masih belum dikaji secara meluas di dalam konteks Malaysia. Oleh itu, kajian ini telah mencadangkan satu siri kaedah ekonometrik untuk menyelidik kesesuaian rejim kadar pertukaran yang sedang dilaksanakan oleh Malaysia dan negara-negara ASEAN. *"Multinomial Model"* digunakan untuk mengkaji penentu yang mempengaruhi pemilihan rejim kadar pertukaran dalam konteks ASEAN yang berdasarkan kepada (i) Teori *"Optimum Currency Area"*; (ii) pembangunan sektor kewangan; dan (iii) sosial-politik. *"Threshold Cointegration"* digunakan sebagai spesifikasi empirikal utama dalam kajian ini. Penggangaran indeks fleksibiliti untuk rejim kadar pertukaran di sesebuah negara adalah berdasarkan kepada model oleh Frankel-Wei (2008) sebagai proksi kepada klasifikasi rejim kadar pertukaran. Nilai *"threshold"* yang diperolehi dari analisa *"Threshold Cointegration"* digunakan untuk menerangkan masa yang sesuai untuk menukar rejim kadar penukaran. Kaedah *"Classification and Regression Tree"* digunakan untuk mengkaji masa penentuan yang sesuai bagi penukaran rejim kadar penukaran di rantau ASEAN. Akhirnya, kos peninggalan dari rejim kadar pertukaran tetap di Malaysia akan diperkisa melalui perbandingan *"exchange rate pass through effect"* sebelum dan selepas penukaran rejim kadar pertukaran. Kajian ini telah menggunakan dua penentu yang baru iaitu, *"unanticipated money supply"* dan kadar pengangguran. Keputusan yang diperolehi menunjukkan kualiti pihak berkuasa serta pihak kerajaan adalah penting untuk memilih rejim yang sesuai, Selain daripada itu, keputusan kajian ini juga menyokong teori *"Optimum Currency Area"* dengan secara amnya. Akhirnya, metodologi yang dicadangkan dalam kajian ini boleh digunakan sebagai suatu cara semasa menentukan rejim kadar penukaran di sesebuah Negara.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ADF	-	Augmented Dickey Fuller
AMLA	-	Anti Money Laundering Act
ANOVA	-	Analysis of Variance
BNM	-	Bank Negara Malaysia
CART	-	Classification and Regression Tree
CDF	-	Cumulative Distribution Function
CMP 1	-	Capital Master Plan 1
CPI	-	Corruption Perception Index
Crdt	-	Financial Development
CUSUM	-	Cumulative Sum of Equation Errors
EU	-	European Union
FED	-	Federal Reserve Bank
FSMP	-	Financial Sector Master Plan
GDP	-	Gross Domestic Product
GeoA	-	Geographical Concentration of Trade towards Advanced Countries
GeoD	-	Geographical Concentration of Trade towards Developing Countries
GMM	-	Generalized Method of Moment
GST	-	Goods and Services Tax
IFS	-	International Financial Statistic
I.I.A.	-	Independence and Irrelevant Alternatives
IMF	-	International Monetary Fund

IRF	-	Impulse Response Functions
KFG Model	-	Krugman-Flood-Garber Model
Kaopen	-	Capital Mobility, KAOPEN Index
LPM	-	Linear Probability Model
LYS3	-	Levy-Yeyati and Sturzenegger (2005) Exchange Rate Regime Classification
MSVECM	-	Markov-Switching Vector Error Correction Model
OCA	-	Optimal Currency Area
OECD	-	Organization for Economic Co-operation and Development
OLS	-	Ordinary Least Square
Open	-	Trade Openness
OPR	-	Overnight Policy Rate
PEMANDU	-	The Performance Management and Delivery Unit
PP	-	Philips Perron
QUEST	-	Quick, Unbiased and Efficient Statistical Tree
RM	-	Ringgit Malaysia
RRC	-	Reinhart and Rogoff (2004) Coarser Exchange Rate Regime Classification
SC	-	Securities Commission
SETAR	-	Self-exciting Threshold Autoregressive Model
SMEs	-	Small and Medium Enterprises
Stru	-	Export Structure
UMS1	-	Unanticipated Money Supply of M1
UMS2	-	Unanticipated Money Supply of M2
Une	-	Unemployment Rate

TARSC	-	Closed-loop Threshold Autoregressive Model
TARSO	-	Open-loop Threshold Autoregressive Model
TOT	-	Term of trade Shock
TVECM	-	Threshold Vector Error Correction Model
VAR	-	Vector Autoregressive
VECM	-	Vector Error Correction Model

LIST OF APPENDIX

CHAPTER 1

INTRODUCTION

Exchange rate is defined as the price of a country's currency in terms of the other nation's currency (Rosa, 1991; Rosa, 1996 and Walmsley, 1992;). Exchange rate can be distinguished into nominal exchange rate and real exchange rate.

Nominal exchange rate is the summation of exchange rate and the relative price or inflation rate of a nation. However, real exchange rate can be obtained through the differences between domestic prices and foreign price. Rosa (1991), Rosa (1996) and Walmsley (1992) explained that the foreign exchange market is an international network of foreign exchange dealers that trade the paper currencies and contracts with each others. Numerous dealers mostly are coming from commercial banks and investment banks around the world. In the foreign exchange market, dealers can offer or entertain the bidding from other dealers. It is similar to the market everywhere except the product itself, which is currency. As the domestic money which managed the flows of currency in one country then, the international foreign exchange mark*et al.*.lows the exchanges to be made and settled between countries. From these selling and buying activities, the exchange rates will be influenced. In reality, the actual prices between stay confidential, however; the published exchange rates will be provided by the dealers through electronic systems, like Bloomberg, Reuters, Telerate and Knight-Ridder are not confidential. Rosa (1996) claimed that, these information are similar to the actual trading prices under the normal market transaction.

Rosa (1991), Rosa (1996) and Walmsley (1992) claimed that under the spot market, a trader can buy in any currency, say, US Dollar, with other currency, say, Ringgit Malaysia. A rate is given by the investment bank like 0.3030 to 0.3125 will be used to determine the price of US Dollar In term of Ringgit Malaysia. The

investment bank sells US Dollar at 0.3030 and buys at 0.3125. This means, if the trader wants to buy 10,000 US Dollar, then he has to pay RM 33,003.30 to the investment bank in two business days in order to receive 10,000 US Dollar. These actions involve cash movements into each other accounts. For the forward market, Rosa (1991) and Rosa (1996) claimed that, the trading activities are similar to the spot market; however, the date of settlement has been prolonged to any future agreeable date. The cash will only be transferred to each other's account until the agreeable date. The agreeable date ranges from 1-month, 2-month, 3-month, 6-month, 9-month, 12-month or even more depending on the conversation between traders and their counterparts. Different forward market has different exchange rate. As exchange rate goes up, the particular country could gain the advantage to purchase more items with the same amount of money. If the exchange rate goes down, the country would need to pay a premium to the same amount of goods purchased from foreign countries.

Exchange rate is a monetary variable that influences a country's trade competitiveness. This can be further explained using the portfolio balance effect and the cash flow orientation effect. According to the portfolio balance effect, when money supply increases, interest rate would decrease. A decline in interest rate will further reduce inflow of capital into the nation. This would reduce the demand for local currency, thus leading to a decline in exchange rate. In contrast, the cash flow orientation theory claims that a decline in exchange rate makes local products cheaper than foreign goods. It increases the demand for local goods and eventually increases the demand for local currency. In the long run, the value of local currency would eventually appreciate. Therefore, exchange rate also influences the country's capital account and current account in the balance of payment. According to Exchange rate can influence a country's flow of resources, impose strong pressure or influence toward capital account as well as current account in the balance of payment and even inflation. Meanwhile, according to the monetary transmission channel, changes in the money supply in a country will influence the interest rate that eventually manipulates the exchange rate of a nation. Assume that money supply increases in a country, excess money supply will reduce the rate of interest. A decline in the rate of interest will increase the investment in the form

of inflow of capital into the nation thus declining the inflow and creating a deficit in the capital account. Decline in the inflow of capital into the nation will lead to a decrease in the demand for the nation's currency resulting in a fall in the country's exchange rate. Empirically, it is already proven that volatility of exchange rate has negatively correlated with the foreign direct investments and international traders (Sharifi-Renani and Mirfatah, 2012). Volatility exchange rate is influenced by the exchange rate regime that implemented in the country. Thus, exchange rate regime plays a significant role in determining the direction of domestic economic.

Thus, policy makers impose different exchange rate regime according to their countries' goals, needs and policies. With the proper exchange rate regime, policy maker fulfill the domestic objectives in order to create a sustainable economic development. According to IMF (2006), three main exchange rate regimes are being practiced around the world which are, floating exchange rate regime, managed float exchange rate regime and fixed exchange rate regime. In the fixed exchange rate regime, the value of the exchange rate is determined by the monetary authorities in the nation. It can be undervalued or overvalued. To undervalue the currency, the monetary authorities sell their country's currency and buy the currency of a foreign nation. In order to overvalue the currency, the monetary authorities buy their own country's currency and sell foreign currency in the money market. In order to buy and sell the currency, the nation should have a substantial amount of reserve. A substantial amount of reserve in the country shows a surplus in its trade balance. As for the floating exchange rate regime, central bank allows the nominal exchange rates to float according to the demand and supply of the currency in the money market. Substantial reserve fund is also required to fix the exchange rate regime which becomes an optional requirement in the floating exchange rate. The floating exchange rate regime is preferable for country that wants to gather more capital from the international investors. However, the risk of being attacked by speculators and the inflow of hot money will also increase. For managed float exchange rate regime or "dirty floating" exchange rate regime, central bank will interfere in the money market in order to achieve its objectives and needs in the short run, as well as, when it is needed in the long run.