UNIVERSITI PUTRA MALAYSIA

Exchange Rate Shocks and The Effectiveness of Macroeconomic Policies in Malaysia

ALIASUDDIN

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Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia in Fulfilment of the Requirement for the Degree of Doctor of Philosophy

July 2009

UPM

Dedication

To my beloved late wife and late son
(They were missing in the tsunami that attacked Aceh on December 26, 2004)

To my lovely wife and daughter

To my beloved mother, late father, bothers and sisters

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the Degree of Doctor of Philosophy

Exchange Rate Shocks and the Effectiveness of Macroeconomic Policies in Malaysia

By

ALIASUDDIN

July 2009

Chairman : Professor Ahmad Zubaidi Baharumshah, PhD
Faculty : Economics and Management

The 1997–1998 financial crises had significantly affected the East Asian countries including Malaysia. The economic growth during the crises was very low and several quarters experienced negative growth compared to the pre–crisis period. The slower economic growth caused lower income and higher unemployment because producers tried to decrease their productions due to the lower demand during the crises. The government tried to stabilize the economy by implementing some policies such as higher interest rate as a monetary policy instrument. However, the policies were not so effective to stabilize the crises because the economy recovered only after two years.

Using quarterly data for the period 1980.1–2002.4, a structural vector autoregressive (SVAR) model is utilized in the study. There are eleven variables are used in the study, where five of them are exogenous variables, whereas others are endogenous ones. So, the structural equations in the study are saving deposit rate and hereafter denoted as saving interest rate, lending interest rate, government expenditure, foreign income, exchange rate, money demand, consumption, investment, exports, imports, and income. The SVAR is used because it can examine the exchange rate effects on the

macroeconomic variables as well as the role of monetary and fiscal policies on the exchange rate. The SVAR also produces two important tools, forecast error variance decomposition and impulse response function. Impulse response function is used to analyze the effects of exchange rate shocks on the macroeconomic variables and the effectiveness of macroeconomic policies, whereas forecast error variance decomposition is used to analyze the sources of fluctuations of macroeconomic variables.

The fluctuations of exchange rate are mainly influenced by own shocks and foreign income. Foreign income has important role because most of the exported goods are sold in the international market. There are two variables that influence the money demand, exchange rate and saving interest rate. This means that exchange rate has important role on the money demand. People consider the exchange rate in their money demand besides saving interest rate.

The fluctuations of investment are dominantly determined by exchange rate shocks and saving interest rate shocks. Again, the exchange rate is so important in the investment decision, although interest rate is an important factor. There are two shocks that determine the fluctuations of imports, exchange rate and saving interest rate. Saving interest rate has power to influence the imports because most of Malaysians use credit to buy goods and services. So, interest rate is very crucial in the demand for imported goods and services. The fluctuations of income are dominantly influenced by foreign income. This means that any fluctuation in the economic is caused by outside factor. Exchange rate fluctuation can be minimized by implementing monetary and fiscal

policies. However, the monetary and fiscal policies are not effective to stabilize the exchange rate fluctuations because the fluctuations come from outside of the economy.

Abstrak tesis yang dikemukakan kepada Senate Universiti Putra Malaysia untuk memenuhi keperluan Ijazah Doktor Falsafah

Kejutan–Kejutan Tukaran Wang Asing dan Keberkesanan Dasar–Dasar Makroekonomi di Malaysia

Oleh

ALIASUDDIN

July 2009

Pengurusi : Professor Ahmad Zubaidi Baharumshah, Ph.D.
Fakulti : Ekonomi dan Pengurusan

Krisis kewangan pada tahun 1997–1998 telah menjejaskan ekonomi di rantau Asia secara berkesan termasuk Malaysia. Pertumbuhan ekonomi semasa krisis kewangan tersebut adalah sangat rendah dan bahkan sebahagian adalah di bawah pasar kosong dibanding dengan period sebelum krisis tersebut. Pertumbuhan ekonomi yang rendah telah menyebabkan pendapatan yang rendah dan pengangguran yang tinggi kerana para pengeluar mengurangkan pengeluaran mereka karena kadar permintaan yang rendah semasa krisis. Kerajaan telah mencuba untuk menstabilkan ekonomi dengan melaksanakan dasar–dasar monetari seperti kadar faedah yang lebih tinggi. Walau bagaimana pun, kebijaksanaan tersebut tidak berkesan untuk menstabilkan krisis keuangan kerana ekonomi pulih sepenuhnya selepas dua tahun.

Menggunakan data suku tahunan dari period 1980.1–2002.4, model struktur vektor autoregresif (SVAR) diguna pakai dalam kajian ini. Ada sebelas pemboleh ubah–pemboleh ubah yang diguna pakai, di mana lima daripadanya adalah pemboleh ubah–pemboleh ubah eksogen, sedangkan yang lainnya iaitu pemboleh ubah–pemboleh ubah endogen. Sehingga, persamaan–persamaan struktur dalam kajian ini adalah kadar

faedah simpanan, kadar faedah pinjaman, perbelanjaan kerajaan, pendapatan asning, kadar tukaran wang asing, penggunaan, pelaburan, eksport, import, dan pendapatan. SVAR diguna pakai dalam kajian ini kerana ianya boleh menganalisis kesan–kesan tukaran wang asing kepada pemboleh ubah–pemboleh ubah makroekonomi dan juga peranan dasar monetari dan dasar fiskal kepada tukaran wang asing. SVAR juga menghasilkan dua alat penting iaitu penguraian kelainan ralat ramalan (FEVD) dan fungsi sambutan denyut (IRF) di mana IRF diguna pakai untuk mengkaji kesan–kesan kejutan–kejutan tukaran wang asing kepada pemboleh ubah–pemboleh ubah makroekonomi dan keberkesanan dasar–dasar makroekonomi, sedangkan FEVD diguna pakai untuk mengkaji punca–punca turun naik–turun naik pemboleh ubah–pemboleh ubah makroekonomi.

Naik turun–naik turun tukarang wang asing ditentukan oleh kejutan-kejutan sendiri dan kejutan-kejutan pendapatan asing. Pendapatan wang asing mempunyai peranan memandangkan sebahagian daripada keluaran adalah dijual di pasaran antara bangsa. Ada dua pemboleh ubah–pemboleh ubah yang mempengaruh permintaan uang, tukaran wang asing dan kadar faedah simpanan. Ini bermakna tukaran wang asing mempunyai peranan penting dalam permintaan wang. Rakyat mengambil kira kadara tukaran wang asing dalam permintaan wang selain kadar faedah simpanan.

Turun naik–turun naik pelabuaran terutamanya ditentukan oleh kejutan–kejutan tukaran wang asing dan kadar faedah simpanan. Sekali lagi, tukaran wang asing adalah penting dalam keputusan pelaburan, meskipun faktor kadar faedah juga penting. Ada dua kejutan–kejutan yang menentukan turun naik–turun naik import, tukaran wang asing dan

kadar faedah simpanan. Kadar faedah simpanan mempunyai kuasa karena kebanyakan rakyat Malaysia membeli barangan–barangan dan perhikmatan secara kredit. Dengan ini, kadar faedah begitu penting dalam permintaan barangan–barangan import dan perhikmatan–perhikamatan. Turun naik–turun naik pendapatan dominannya dipengaruh oleh pendapatan asing. Ini mempunyai makna bahawa tiap–tiap naik turun –naik turun dalam ekonomi adalah disebabkan oleh faktor luaran. Dengan ini, dasar–dasar monetari dan fiskal adalah tidak berkesan untuk menstabilkan turun naik–turun naik tukaran wang asing kerana punca turun naik –turn naik tersebut adalah dari luaran.

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LIST OF ABBREVIATIONS

AD	Aggregate Demand
ADT	Augmented Dickey Fuller
AIC	Akaike Information Criteria
BNM	Bank Negara Malaysia
C	Consumption
CPI	Consumer Price Index
ER	Exchange Rate
FC	Foreign Currency
FDI	Foreign Direct Investment
FEVD	Forecast Error Variance Decomposition
FFR	Federal Fund Rate
G–7	Group 7
GARCH	Generalized Autoregressive Conditional Heteroscedasticity
GDP	Gross Domestic Product
GE	Government Expenditure
GIR	Generalized Impulse Response
I	Investment
i.i.d.	identically independently distributed
IP	Industrial Production
IPI	Industrial Production Index
IRF	Impulse Response Function
IS	Equilibrium in Goods Market

IS–LM	Equilibrium in Goods and Money Markets
LC	Local Currency
LM	Equilibrium in Money Market/Liquidity Preference
M	Import
M0	Currency/Very Narrow Money
M1	Narrow Money
M2	Broad Money
MA	Moving Average
MARMA	Multivariate Moving Average
MD	Money Demand
MS	Money Supply
MSC	Multimedia Super Corridor
MYR	Malaysian Ringgit
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares
O–R	Obstfeld and Rogoff
PC	Commodity Price
PE	Expected Price
PF	Foreign Price
PP	Phillips Perron
RATS	Regression Analysis of Time Series
RBC	Real Business Cycle
RL	Lending Interest Rate
RS	Saving Interest Rate

SBC	Schwartz Bayesian Criteria
SIC	Standardized Industrial Code
SMA	Structural Moving Average
SVAR	Structural Vector Autoregressive
UIP	Uncovered Interest Parity
US	United States
USD	US Dollar
VAR	Vector Autoregressive
VEC	Vector Error Correction
VECM	Vector Error Correction Model
WPO	World Price Oil
X	Export
Y	Income/Output/Production
YF	Foreign Income

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Efforts have been made by the government of Malaysia to implement sustainable and consistent development policies in order to achieve the highest economic performances. The significant policies have been started since the late 1970s. The policies include low interest rate, flexible exchange rate, deregulations of international capital flows, enhancing competition and efficiency in the banking system, and modernizing the open market operation and capital markets. The policy was directed to liberalizing the domestic interest rate with the aim of mobilizing efficiently the domestic sources of funds. Meanwhile, lifting controls on credit allows the banking sector to be more responsive to the market forces. Lifting restrictions on international capital flows allows foreign investor to participate more efficiently in domestic industrial activities.

The policies continued through the 1980s by modernizing the financial system such as transforming the banking system and the credit market, and the capital and money markets. The policies were aimed at increasing the competition in the financial system and at the same time provided a flexible means for managing liquidity through open market operation. The government continues with efforts to strengthen the financial system with a view to creating a more competitive and resilient financial sector.