



UNIVERSITI PUTRA MALAYSIA

**MONETARY TRANSMISSION MECHANISMS IN
FIVE ASEAN COUNTRIES**

ZARINAH YUSOF

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**DOCTOR OF PHILOSOPHY
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FIVE ASEAN COUNTRIES**

By

ZARINAH YUSOF

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

August 2006



*Dedicated to my husband, Abdul Malek Che Ngah,
my lovely children, Hadi Haziq, Izzah Hazirah and Faiz Hakim,
and my parents, Yusof Omar and Timah Abu Kassim,
for endless patience, love, support and encouragement.
You are always in my heart.*



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

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Chairman: Associate Professor Azali Mohamed, PhD

Faculty: Economics and Management

This study examines monetary transmission mechanisms in ASEAN countries, namely Malaysia, Indonesia, the Philippines, Singapore and Thailand, for the period 1970:1-2002:4. Views diverge among economists on how monetary policy variable affects the economic activity. The traditional theory explains that money is more important. Via interest rate, money affects the economy. However, it has been challenged by some economists who believe that bank credit has a major role. In addition, in a highly internationalized economy and mobility of capital is rapid, changes in exchange rate have major impact on output and prices but the effects have always been left out. Using analysis of cointegration and vector error correction model (VECM), the study estimates both aggregate and sectoral output to examine the channels. The findings resolve the dispute. Money, bank credit, interest rate and exchange rate significantly affect economic activity and active channels. Further evidence finds that highly liquid money (M1) is more influential in Malaysia and the Philippines. Broad money (M2) is



more superior in Indonesia and Thailand. Singapore's well-developed financial market exhibits the importance of bank lending channel. Exchange rate is important particularly in Singapore and Malaysia's manufacturing sector. The Asian financial crisis in mid-1997 had significant impact on Malaysia and Thailand. Indonesia is more affected by the early 1980s financial reforms. Oil price shock in 1979-1981 has significant impact on the economy of Thailand. Only estimates on Malaysian sectoral output gave satisfactory results and were discussed. The findings found strong evidence that all the channels are important. The evidence highlights highly liquid money (M1) has stronger effects on the output of agricultural and manufacturing sectors. Broad money (M2) has greater impact on services output and credit is the main transmission mechanism in construction output. Notable finding is rapid modern sophisticated technological banking facilities have resulted in a fundamental change in the behavior of M1. All the channels are crucial and it is money that matters most.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

MEKANISME TRANSMISI MONETARI DI LIMA NEGARA ASEAN

Oleh

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Kajian ini menguji mekanisme transmisi monetari di negara ASEAN, iaitu Malaysia, Indonesia, Filipina, Singapura dan Thailand pada tahun 1970:1-2002:4. Terdapat perbezaan pandangan di kalangan ahli ekonomi mengenai bagaimana pembolehubah monetari mempengaruhi tingkat kegiatan ekonomi. Teori tradisional menerangkan bahawa wang adalah lebih penting. Melalui kadar bunga, wang mempengaruhi ekonomi. Walau bagaimanapun, pandangan ini ditentang oleh beberapa ahli ekonomi yang mempercayai bahawa kredit bank mempunyai peranan penting. Selain daripada itu, dalam ekonomi yang semakin diantarabangsa dan pergerakan modal adalah pesat, perubahan kadar pertukaran mempunyai kesan penting ke atas keluaran dan harga tetapi kesan tersebut sering diabaikan. Dengan menggunakan analisis kointegrasi dan model vector pembetulan ralat (VECM), kajian ini menganggar tingkat keluaran agregat dan sektor untuk menguji perantaraan tersebut. Keputusan ujian menyelesaikan konflik. Wang, kredit bank, kadar bunga dan kadar pertukaran mempengaruhi aktiviti ekonomi secara signifikan dan perantaraan yang aktif. Bukti seterusnya menunjukkan wang berkecairan tinggi (M1), lebih berpengaruh di Malaysia dan Filipina. Wang lebih lebih



luas (M2) lebih berkuasa di Indonesia dan Thailand. Singapura negara dengan pasaran wang yang maju menunjukkan kepentingan perantaraan kredit bank. Kadar pertukaran adalah penting terutamanya di Singapura dan sektor perkilangan Malaysia. Krisis kewangan Asian pada pertengahan 1997 mempunyai kesan signifikan ke atas Malaysia dan Thailand. Indonesia lebih dipengaruhi oleh reformasi kewangan di awal tahun 1980an. Kejutan harga minyak pada tahun 1979-1981 mempunyai kesan signifikan ke atas ekonomi Thailand. Hanya penganggaran keluaran sektor Malaysia sahaja memberikan keputusan yang memuaskan dan dibincangkan. Keputusan ujian menemui bukti kukuh iaitu semua perantaraan adalah penting. Bukti kajian menyorot kepada wang berkecairan tinggi (M1) mempunyai kesan yang lebih kukuh ke atas keluaran sektor pertanian dan perkilangan. Wang lebih luas (M2) mempunyai kesan yang lebih besar ke atas keluaran sektor perkhidmatan dan kredit adalah mekanisme transmisi utama dalam keluaran pembinaan. Penemuan istimewa kajian ini ialah pembangunan pesat teknologi perkhidmatan perbankan telah membawa kepada perubahan penting dalam gelagat M1. Kesemua perantaraan adalah penting dan wang adalah paling berperanan.

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I certify that an Examination Committee has met on 28 August 2006 to conduct the final examination of Zarinah bt Yusof on her Doctor of Philosophy thesis entitled "Monetary Transmission Mechanisms in Five ASEAN Countries" in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.

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LIST OF ABBREVIATIONS

CPI	Consumer Price Index
LIBOR	London Interbank Offer Rate
OLS	Ordinary Least Squares
2SLS	Two-Stage Least Squares
IV	Instrumental Variable
GNP	Gross National Product
GDP	Gross Domestic Product
IMF	International Monetary Fund
RM	Ringgit Malaysia
BLR	Base Lending Rate
PAKTO	Financial Liberalization Policy of October 1988
IBRA	Indonesian Bank Restructuring Agency
ANMU	Asset Management Unit
Rp	Rupiah
CIA	Central Intelligence Agency
NBFIs	Non-Bank Financial Institutions
MSE	Manila Stock Exchange
MkSE	Makati Stock Exchange
PSE	Philippines Stock Exchange
ASEAN	Association of South East Asian Nations
CLOB	Central Limit Order Book
MAS	Monetary Authority of Singapore



BNM	Bank Negara Malaysia
BOT	Bank of Thailand
BI	Bank Indonesia
VAR	Vector Autoregression
VECM	Vector Error Correction Model
ECM	Error Correction Model
ECT	Error Correction Term
PECM	Parsimonious Error Correction Model
M1	Highly Liquid Money (Narrow Money Definition)
M2	Broad Money
M3	Broad Money (M1+M2)
UK	the United Kingdom
US	the United States
BSP	Bangko ng Sentral Pilipinas
ACUS	Asian Currency Units
ADM	Asian Dollar Market
BCC	Board of Commissions of Currency
MNCs	Multinational Companies
BIBF	Bangkok International Banking Facility
ATMS	Automated Teller Machines
DF	Dickey-Fuller
ADF	Augmented Dickey-Fuller
KPSS	Kwiatkowski-Phillips-Schmidt-Shin



PP	Phillips-Perron
JJ	Johansen-Juselius
AIC	Akaike Information Criterion
SBC	Schwartz-Bayesian Criterion
LM	Lagrange Multiplier
RESET	Regression Specification Error Test
CUSUM	Cumulative Sum
CUSUMSQ	Cumulative Sum of Squares



CHAPTER 1

OVERVIEW OF THE STUDY

1.1 Introduction

Monetary transmission mechanism is one of the macroeconomic issues that has received considerable attention in recent years, particularly with the advent of globalization, industrialization and financial liberalization. The way changes in monetary policy affect the economy has always been the interest of economists and policy makers. The collapse of Bretton Woods in 1971 and the world-wide inflationary in the 1970s bring much closer attention to the monetary policy in all countries. Whether it is anticipated or unanticipated, money has a significant impact on major economic variables (Shelley and Wallace, 1998; Gauger and Enders, 1989; Gauger, 1988; Ahmad, 1987). Thus, the influence of money on income and prices makes it a very important variable to control inflation and stabilize output. It paves the way for economic recovery from recession and fosters sustainable long-term economic growth.⁴

Understanding how the mechanism works can enhance efficient policy making.

Unlike fiscal policy, monetary policy affects investment, output, employment and inflation indirectly via some channels. Through these channels, monetary authorities affect and responded to key economic variables such as inflation, unemployment,

⁴ Monetary restraint has greater effect on output than monetary expansion (De Long and Summers, 1988; Cover, 1992 and Karas, 1996).



growth and external balances. The channels act as an indicator of major macroeconomic variables in policy making. Appropriate assessment of the channels leads to efficient policy making. It is important to know which financial aggregates are important as it helps policy makers to interpret movements in the financial market more precisely and subsequently lead to a better choice of policy instruments and targets. Inappropriate indicators lead to a wrong policy recommendations and worsen the situation.

According to the conventional theory, monetary policy works through the interest rate variable. That is when money is tightened, interest rate increases. At higher interest rate, the cost of capital increases discouraging investment and depressing output. The mechanism is sometimes referred to as ‘money view’ and is explained in the simple IS-LM framework in most macroeconomics textbooks. Monetary authorities use the interest rate as their intermediate target to achieve ultimate targets such as low inflation and high output growth. In practice, the choice is made between interest rate and monetary aggregates (M1, M2, and M3). The emphasis placed on the variables depends largely on the predictability movements in the variables which are closely linked to final objectives. Generally, the traditional theory of monetary transmission mechanism talks about the importance of money supply and the interest rate mechanism in influencing the real sector.

However, changes in output may be directly caused by the availability of bank credit (Bernanke, 1986; Bernanke and Blinder, 1988; Brunner and Meltzer, 1988; Kashyap *et al.*, 1993; Kashyap and Stein, 1994). Through this channel, monetary policy could

