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**MONEY SUPPLY PROCESS
IN MALAYSIA**

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MONEY SUPPLY PROCESS
IN MALAYSIA

By

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but I would like to thank them for sharing companionship during my stress as a graduate student.

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GLOSSARY

The Glossary presents a detailed description of the variables used in this study.

ASDR = Bank Negara Malaysia's allocation of Special Drawing Rights in millions of RM

APTR = Average personal tax rate

B = Monetary base of Narrow Money Supply in millions of RM

BS = Sources of the monetary base of Narrow Money Supply in millions of RM

BU = Uses of the monetary base of Narrow Money Supply in millions of RM

BLR = Base lending rate in per cent per annum

BNM = Bank Negara Malaysia

BODP = Number of commercial bank offices deflated by population

BOMP = Number of commercial bank offices per million population

CAP = Capital of Bank Negara Malaysia in millions of RM

CBMC = Commercial banks' holdings of money at call in Malaysia in millions of RM

CBTA = Commercial banks' total assets in millions of RM

CC = Currency in circulation in millions of RM

CCBN = Currency in circulation as defined in the "balance sheet" (statement of assets and liabilities) of Bank Negara Malaysia in millions of RM

CLB = Clearing balances of commercial banks with Bank Negara Malaysia in millions of RM

CPI = Consumer Price Index

c = Ratio of currency in circulation to demand deposits of private sector with commercial banks, that is, currency ratio

DCFM = Deposits of commercial banks, finance companies and merchant banks with Bank Negara Malaysia in millions of RM

DCN = Deposits of commercial banks with Bank Negara Malaysia in millions of RM

DDPC = Demand deposits of private sector with commercial banks in millions of RM

DDPN = Demand deposits of private sector with Bank Negara Malaysia in millions of RM

DDR (DISR) = Domestic discount rate in per cent per annum (discount rate in per cent per annum)

DFGN = Deposits of the Federal Government with Bank Negara Malaysia in millions of RM

DFMN = Deposits of finance companies and merchant banks with Bank Negara Malaysia in millions of RM

DIR (INTR) = Domestic interest rate (interest rate)

DISR (DDR) = Discount rate in per cent per annum (Domestic discount rate in per cent per annum)

DOFN = Deposits of other financial institutions with Bank Negara Malaysia in millions of RM. Refer [4.9] for details

DSGN = Deposits of State Governments with Bank Negara Malaysia in millions of RM

DY(Y) = Domestic income (Income)

EXR = Exchange rate defined as Ringgit Malaysia per unit of foreign currency

EXUS = Exchange rate defined as Ringgit Malaysia per United States dollar

e = Ratio of excess reserves of commercial banks to demand deposits of the private sector with commercial banks, that is, excess reserve ratio

FD12 = Interest rate on twelve month fixed deposits with commercial banks in per cent per annum

FGTE = Federal Government total expenditure in millions of RM

FGTR = Federal Government total revenue in millions of RM

FIR = Foreign interest rate

FSGS = Bank Negara Malaysia's holdings of Federal (and State) Government securities in millions of RM

FY = Foreign income

GDBN = Government deposits with Bank Negara Malaysia in millions of RM

GDCB = Total deposits (demand, saving and fixed deposits) of the public sector with commercial banks, that is, Government deposits with commercial banks in millions of RM

GEXP = Government expenditure

GFE = Bank Negara Malaysia's holdings of gold and foreign exchange in millions of RM

GNP = Gross national product in millions of RM

GR = General reserve of Bank Negara Malaysia in millions of RM

GREV = Government revenue

GSBN = Bank Negara Malaysia's holdings of Government securities in millions of RM

g = Ratio of Government deposits with commercial banks to demand deposits of the private sector with commercial banks, that is, Government deposit ratio

HSDR = Bank Negara Malaysia's holdings of Special Drawing Rights in millions of RM

IBR = Inter bank rate

IBRC = Inter bank rate on seven day call money in per cent per annum

IMF = International Monetary Fund

IMFR = International Monetary Fund reserve tranche position of Bank Negara Malaysia in millions of RM

INTR (DIR) = Interest rate (Domestic interest rate)

IRBN = International reserves of Bank Negara Malaysia in millions of RM

IRMS = Interest rate on marketable securities

ISFD = Interest rate on saving and fixed deposits with commercial banks

k   = Money multiplier of Narrow Money Supply

M1   = Narrow Money Supply in millions of RM

M2   = Private Sector Liquidity in millions of RM

M3   = Broad Money in millions of RM

NCBO = Number of commercial bank offices at end of year

NLGN = Net lending to Government by Bank Negara Malaysia in millions of RM

n   = Ratio of demand deposits of private sector with Bank Negara Malaysia to demand deposits of private sector with commercial banks, that is, Bank Negara Malaysia demand deposit ratio

OABN = Other assets of Bank Negara Malaysia in millions of RM. Refer [4.10] for details

ODBN = Other deposits with Bank Negara Malaysia in millions of RM. Refer [4.9] for details

OLBN = Other liabilities of Bank Negara Malaysia in millions of RM. Refer [4.9] for details

ONAN = Other net assets of Bank Negara Malaysia in millions of RM. Refer [4.27] for details

PIT   = Personal income taxes in millions of RM

POPM = Population in millions (mid year estimate)

pdkc = Partial derivative of the money multiplier of Narrow Money Supply with respect to the currency ratio

RE   = Excess reserves of commercial banks in millions of RM

RS   = Statutory (required) reserves of commercial banks with Bank Negara Malaysia in millions of RM

RT	=	Total reserves of commercial banks in millions of RM
RCPI	=	Rate of change of Consumer Price Index in per cent
RDIF	=	Ratio of domestic interest rate to foreign interest rate
RGDP	=	Real gross domestic product measured in millions of Ringgit Malaysia in terms of 1985 prices
RINF	=	Rate of inflation
RM	=	Ringgit Malaysia, the unit of currency in Malaysia
RMCA	=	Ratio of commercial banks' holdings of money at call in Malaysia in millions of Ringgit Malaysia to commercial banks' total assets in millions of Ringgit Malaysia.
r	=	Ratio of statutory (required) reserves of commercial banks with Bank Negara Malaysia in millions of RM to total deposits (demand, saving and fixed deposits) of the private and public sectors with commercial banks in millions of RM, that is, statutory (required) reserve ratio of commercial banks.
SFDP	=	Saving and fixed deposits of the private sector with commercial banks in millions of RM
TABN	=	Total assets of Bank Negara Malaysia in millions of RM
TB12	=	Discount rate on twelve month Treasury bills in per cent per annum
TLBN	=	Total liabilities of Bank Negara Malaysia in millions of RM
TODC	=	Total deposits (demand, saving and fixed deposits) of the private and public sector with commercial banks in millions of RM
TOLN	=	Total of all other liabilities of Bank Negara Malaysia in millions of RM. Refer [4.25] for details
t	=	Ratio of saving and fixed deposits of the private sector with commercial banks in millions of RM to demand deposits of the private sector with commercial banks in millions of RM, that is, time-deposit ratio
USDR	=	United States discount rate in per cent per annum

USRP =   United States real gross domestic product measured in
          billions of United States dollars in terms of 1985 prices

VC   =   Vault cash of commercial banks in millions of RM

Y(DY) =   Income (Domestic income)

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MONEY SUPPLY PROCESS
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Chairman: Professor Mohammed bin Yusoff, Ph.D.

Faculty :   Economics and Management

The aim of this study is to examine and understand the money supply process in Malaysia since an understanding of this process is very useful not only to monetary authorities but also to all others who regard money as an important economic variable.

A theoretical "monetary base-money multiplier" model of Narrow Money Supply (M1) is formulated that expresses Narrow Money Supply as the product of the monetary base and the money multiplier. In turn, the monetary base is stated in terms of its uses and sources while the money multiplier is expressed in terms of several component ratios, namely, the currency ratio, Bank Negara Malaysia demand deposit ratio, time deposit ratio, Government deposit ratio, statutory (required) reserve ratio and the excess reserve ratio. According to this model, the money supply process in Malaysia is

influenced jointly by the policy decisions of Bank Negara Malaysia together with the portfolio decisions of commercial banks and the non-bank private sector and the decisions of the Government with respect to the maintenance of its deposits with Bank Negara Malaysia and the commercial banks.

An empirical "monetary base-money multiplier" model of the monetary aggregate is formulated. In this model, the monetary base and each of the component ratios of the money multiplier are regressed on the economic and institutional variables that are hypothesized to affect them, respectively. The behavioural decision of the non-bank private sector represented by the currency ratio, Bank Negara Malaysia demand deposit ratio and the time deposit ratio is found to be influenced by the average personal tax rate, interest rates and the number of commercial bank offices deflated by population. The results indicate that income determines the behavioural decision of commercial banks which is reflected by their excess reserve ratio. The behavioural decision of Bank Negara Malaysia and the decision of the Government with respect to the maintenance of its deposits with the former, represented by the monetary base, are believed to be affected by the exchange rate, foreign income, Government expenditure and the ratio of domestic interest rate to foreign interest rate.

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Abstrak tesis yang dikemukakan kepada Senat Universiti Pertanian Malaysia sebagai memenuhi sebahagian daripada syarat-syarat untuk mendapatkan Ijazah Master Sains.

PROSES PENAWARAN WANG
DI MALAYSIA

Oleh

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OKTOBER 1994

Pengerusi : Profesor Mohammed bin Yusoff, Ph.D.

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    Matlamat kajian ini adalah untuk memahami proses penawaran wang di Malaysia kerana pefahaman mengenai proses ini sangat berguna bukan sahaja kepada pihak berkuasa kewangan tetapi juga kepada semua pihak lain yang menganggap wang sebagai suatu pembolehubah ekonomi yang penting.

    Teori model "pengganda-wang asas" yang menyatakan Penawaran Wang Sempit sebagai hasil darab wang asas dan pengganda, dibentuk. Wang asas pula dinyatakan dari segi kegunaan serta sumbernya, manakala pengganda pula dinyatakan dari segi nisbah-nisbah komponen, iaitu nisbah ketunaian, nisbah deposit semasa Bank Negara Malaysia, nisbah deposit berjangka, nisbah deposit kerajaan, nisbah rizab berkanun (nisbah rizab yang diperlukan) dan nisbah rizab lebihan. Mengikut model ini, proses penawaran wang di Malaysia dipengaruhi

oleh keputusan dasar Bank Negara Malaysia, keputusan portfolio bank-bank perdagangan dan sektor swasta bukan-bank serta keputusan Kerajaan mengenai pengurusan depositnya dengan Bank Negara Malaysia dan bank-bank perdagangan.

Suatu model agregat kewangan empirikal "pengganda - wang asas" juga dibentuk. Berdasarkan model ini, wang asas dan tiap-tiap nisbah komponen pengganda diregresikan dengan pembolehubah-pembolehubah ekonomi dan institusi yang dijangka mempengaruhinya. Perlakuan sektor swasta bukan-bank yang diwakili oleh nisbah ketunaian, nisbah deposit semasa Bank Negara Malaysia dan nisbah deposit berjangka didapati dipengaruhi oleh kadar pencukaian perseorangan purata, kadar bunga dan bilangan pejabat bank perdagangan yang telah dideflasikan dengan jumlah penduduk. Hasil kajian ini menunjukkan pendapatan menentukan perlakuan bank-bank perdagangan yang dicerminkan oleh nisbah rizab lebihan. Perlakuan Bank Negara Malaysia dan perlakuan kerajaan mengenai pengurusan depositnya dengan Bank Negara Malaysia, yang diwakili oleh wang asas, dipercayai ditentukan oleh kadar pertukaran, pendapatan asing, perbelanjaan Kerajaan dan nisbah kadar bunga tempatan kepada kadar bunga asing.

CHAPTER I

INTRODUCTION

Background

There is a widespread belief today that changes in money supply influence spending. The basis of this belief is the Quantity Theory of Money which considers the quantity of money prevailing in an economy at any one time, that is, the money supply or money stock, and the rate of change of the quantity of money, that is, the money supply growth, as important determinants of the performance of an economy. The quantity of money is thought to affect aggregate spending or demand which in turn influences the productive potential of the economy, the level of employment, output and prices and hence the level of economic welfare of each member of the national society.

If aggregate spending on goods and services is smaller than the economy's ability to produce, then unemployment will be high and per capita output will be below its potential. Such conditions imply that economic well-being is not being maximized. More output could be produced with the population sharing the larger output. On the other hand, if aggregate spending is greater than the economy's capacity to produce, then inflation results. High inflation, particularly during a period of full employment, are generally undesirable. This is because it redistributes purchasing power from fixed income groups to those whose money incomes rise faster than prices. Another reason

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is that debtors gain real purchasing power at the expense of creditors. Moreover, persistent inflation discourages saving, encourages speculation and may lower growth of real output.

Such conditions mean that maximising economic welfare calls for controlling growth in aggregate spending consistent with the growth in the nation's productive potential. Control of growth in aggregate spending is carried out through government stabilisation policies which create an environment conducive to a high level of employment with reasonable price stability, thus improving the economic welfare of the nation's citizens. These policies raise or limit increases in aggregate spending to an amount consistent with increases in the nation's productive potential. Growth in the nation's resources and technological progress provide the basis for increasing output. There are two main types of government economic stabilisation policies, namely the fiscal policy and monetary policy. The former refers to the changes in spending and taxation plans of the central government while the latter refers to the changes in money supply, credit and the level of interest rates. This study concentrates on the money supply process in Malaysia.

Problem Statement

In the context of the Quantity Theory of Money, money supply is directly related or linked to aggregate spending. According to this relationship, increases in money supply will increase aggregate spending and vice versa. Assuming the income velocity of circulation is stable or predictable, then aggregate spending can be controlled by controlling money supply. For example, Anderson-Jordon (1968)

reported evidence that changes in money supply have a large, fast and predictable effect on the nominal value of economic activity, that is, aggregate spending. However to be able to control money supply, the monetary authority which is usually the central bank, must understand the mechanism by which money supply is determined. The money supply process does not simply refer to the printing of currency notes or to the mere implementation of monetary policy by the monetary authority but to a more complicated mechanism; that controlling money supply is not quite as simple as is generally postulated by basic macroeconomic texts because the monetary authority generally does not have perfect or complete control over money supply.

Indeed Burger (1971, preface; pp.v) stated that:

"A thorough understanding of the money supply is equally important both for economists and non-economists .... changes in the growth rate of money have an important influence on economic activity. The trend and fluctuations in the growth rate of money affect the prices we pay for goods and services, the level of unemployment, and the level of market interest rates. Therefore, a clear blueprint of the money supply process is essential so that monetary policymakers can understand how their policy actions affect the money supply process; so economists can advise the policymakers on the most efficient way of controlling money supply; and so other individuals can evaluate the responsibility of the monetary authorities for the growth of money and how they carry it out."

Evidence from the study by Mohammed (1985) shows that the growth of money supply is closely associated with the trends of inflationary pressure and that the effect of the rise in money supply is felt in the subsequent year, that is, inflation is preceded by excessive growth in money supply with about one year lag. According to Bank Negara Malaysia Annual Report (1993; pp 80), preliminary results from a causality study (by the Bank) showed that in the period 1970-92,

M1 and M2 seem to lead inflation. The report also states that tests conducted by the Bank to examine the correlation between M3 and inflation showed that they were highly and positively correlated (pp 86). In its Fourth Edition of Money and Banking in Malaysia (1994, pp 414-415), the Bank asserts that there exists a stable relationship between M3 on one hand and prices and output on the other.

The major findings of the study by Mohammed (1993) are that both the anticipated and unanticipated money growth affect real output implying that money is not neutral.

Table 1 below shows the relationship between money supply growth and inflation in Malaysia during the period 1972-1991.

Table 1: Money Supply (M1) Growth and Inflation in Malaysia, 1972-1991

Year	Money Supply Growth (%)	Inflation Rate (%)
1972	28.06	3.15
1973	37.55	10.02
1974	8.56	16.02
1975	7.23	4.40
1976	20.88	2.53
1977	16.55	4.69
1978	18.20	4.79
1979	17.17	3.56
1980	15.01	6.44
1981	12.83	9.20
1982	13.27	5.58
1983	7.65	3.63
1984	-0.56	3.51
1985	1.66	0.40
1986	2.78	0.55
1987	12.97	0.79
1988	13.13	2.49
1989	19.10	2.80
1990	14.07	3.02
1991	10.98	4.30

Source: Economics Department, Bank Negara Malaysia, Money and Banking in Malaysia, Fourth Edition, 1994.

considerable importance to economists and other analysts who view money as a strategic economic variable. Thus, the main objective of this study is to examine and understand the money supply process in Malaysia. Specifically, the objectives are to examine the structure of the Malaysian monetary system; to formulate and analyse the money multiplier and to identify in detail the factors affecting the money multiplier.

The hypothesis is that money supply is determined by policy decisions of the central bank; portfolio decisions of the commercial banks and the non-bank private sector and the decisions of the government with respect to the maintenance of its deposits with the central bank and the commercial banks. In addition, it is hypothesized that these decisions, in turn, are determined by economic and institutional factors such as income (including foreign income), interest rate (including foreign interest rate), number of commercial bank offices deflated by population, government expenditure and government revenue. This hypothesis is tested by formulating a model of money supply for Malaysia and by identifying the determinants of the money supply of Malaysia.

Organisation of the Study

A brief outline of this study follows. Chapter II provides a description of the Malaysia monetary system. A presentation on the Malaysian monetary institutions, their functions and their statement of assets and liabilities is a prerequisite to a better understanding of the environment and condition under which the money supply process takes place. The three official measures of Malaysian money supply