

CHAPTER 1

INTRODUCTION

“A man that uses credit card, without an increase in his monthly income¹, which indirectly means there is no increase output in the economy, is it possible for an economy to fulfill the excess wants?” Recently, with the vigorous competition of signing up credit cards potential holders, we see an increasing in the percentage of population using credit cards in the Malaysian society. What is then, the impact on the economy?

The initial proposal of the research was to study the effects of credit card on inflation. But due to insufficient data on credit cards information over the years, it is difficult to access to the data². By using monetary aggregates, this research does not depart much from the proposal. Money aggregates especially *M1* can still reflect the behaviour of credit card as nowadays credit card has become the third form of currency besides coins and cash. As said by an article in Business Korea (Dec 1999), “Who would have known that plastic would replace coins and bills. But it seems inevitable that soon credit cards will become indispensable items...the third form of currency.”(p.85). Since there is insufficient data to analyse the effects of credit cards to the economy, this research has focused on the effects of narrow money, *M1* (as a proxy³ of the effects of credit card) to the economy.

Narrow money is one of the important elements in the economy. Most frequently, it is thought that narrow money is the strength or force that underlies the purchasing power of the society and therefore influences the economic variables such as inflation and the growth of output. Thus it is the role of policy makers to pay attention on the directional⁴ relationship between money and inflation, and money and

¹ Assuming income is paid in accordance to productivity

² There are only nine years' of annual data till 2000

³ The attribute of credit cards which is liquid, and being used more frequently nowadays to replace cash and coins

⁴ Unidirectional or bi-directional

growth of output. Policy makers will also need to measure the strength of money towards the changes in these economic variables. These are so that policy makers can use $M1$ as an instrument to target output or inflation. Therefore this research will focus on the topic of “The Effects of Narrow Money on the Malaysian Economy”.

1.1 Objectives

This paper aims to find the effects of narrow money towards the economy especially the strengths and directions of the relationship between narrow money and inflation, and narrow money and output. This research will focus on:

- To find the relationship between monetary aggregates ($M1$) and inflation and $M1$ and growth in output in the Malaysia context.
- To find the relationship between currency in circulation (CU) and inflation and CU and output in the Malaysia context.
- To find the relationship between demand deposits (DD) and inflation and DD and output in the Malaysian context.

Thus in this research, $M1$, CU and DD will be the independent variable, while inflation and output will be the dependent variable.

This study intends to look at the role of narrow money if its impact has dwindled over the years. Besides, this paper intends to find out the elasticity or responsiveness of changes in price level with respect to changes in $M1$. Indirectly this measures the strengths of changes in $M1$ that affects the changes in the price level. This paper will also look into if narrow money is a leading⁵ variable or a lagging⁶ variable. Looking into the relationship between $M1$ and inflation is important, nevertheless, a study will have to look further into the directions of this relationship if

⁵ If the peaks and troughs of a variable occur before the peaks and troughs of another variable, the former variable is said to be a leading variable.

⁶ If the peaks and troughs of a variable occur after the peaks and troughs of another variable, the former variable is said to be a lagging variable.

it is unidirectional or bi-directional. This study aims to examine not only the relationship between *M1* and the Total *CPI* but propose to explore the relationship of *M1* and the individual components of *CPI*.

There have also been researches done on the relationship between money and output. Instead of only finding out the relationship of money and the total output of Malaysia, this research aims to study the relationship of *M1* with each industry of the Index of Industrial Production. It is believed that monetary policy does not only impact on output as a whole but also has impact on the various industries that make up the total output of a country. Another two analysis will also be carried out to test if the impact of *M1* on growth of output has declined and if it takes lag periods for changes in *M1* to affect the growth of output. The Granger-Causality test will also be carried out to find the directions of relationship between *M1* and output.

The same as the former analysis on *M1* and inflation, and *M1* and output, *M1* will be further broken down into currency in circulation and demand deposits to observe its individual effects on inflation as well as growth in output. A comparison will be made between *M1*, *CU* and *DD* on their individual impact on inflation and growth in output.

If narrow money and inflation and narrow money and output in the Malaysian context are found to have directional or unidirectional relationship, then proper monetary policy can be structured to regulate narrow money. As mentioned before, the fact that credit card has similar nature as the narrow money, it might probably create the same effects on the economy and therefore proper steps need to be incorporated in the monetary policy on regulating the amount of cards being issued every year. Thus this research can only use *M1* as a proxy of credit card to gauge the effects of credit card on the Malaysian economy. And if results show that the importance of narrow money has decreased, this might also infer that credit cards are playing an increasing role in the economy.

1.2 Data Collection

Secondary data will be collected from the Bank Negara Malaysia Quarterly Report for the past years. *M1* will be used to represent the quantity of money. Monthly data of the money supply *M1* will be collected. It will use the past twenty five-year's data (1975 – 2000) for the analysis. *M1* comprises of currency in circulation (cash and coins) and also demand deposits of private sector.

The most commonly used indicator for inflation is the Consumer Price Index (*CPI*). The Consumer Price Index is computed based on a basket of goods that comprises of 9 items:

- Food (*FD*);
- Beverages and tobacco (*BEV*);
- Clothing and footwear (*CL*);
- Gross rent, fuel and power (*GR*);
- Furniture furnishings and household equipment (*FURN*);
- Medical care and health expenses (*MED*);
- Transport and communications (*TPT*);
- Recreation, entertainment, education and cultural services (*RCR*) and
- Miscellaneous goods and services (*MISC*).

Consumers basically consume these various types of goods as a necessity and the *CPI* measures most of these consumables⁷ in its basket of commodities. Monthly data of *CPI* will be used in this study using the past twenty five-year's data (1975 – 2000) for the analysis using the year 1990 as the base year.

⁷ Consumables are goods, especially food, or services that people buy regularly because they are quickly used and need to be replaced quite often.

The third type of data will be the real output data. Monthly real Gross Domestic Product (GDP) or monthly real Gross National Product (GNP) would be a suitable data representing the real output. Unfortunately, monthly data of neither GDP nor GNP in Malaysia are published. Thus, the Index of Industrial Production (*IIP*) will be used as a proxy of GDP. The simple correlation between GDP and Index of Industrial Production ($IIP_{1990=100}$) is 0.9863 in Malaysia (see Azali and Matthews, 1999), the *IIP* covers 52 major industries selected from 310 commodities (see BNM Quarterly Bulletin, 1995, p. P-99). Thus it seems reasonable to use *IIP* as a replacement of the output of the country. Monthly data of *IIP* will be used in this study using the past twenty five-year's data (1975 - 2000) for the analysis using the year 1990 as the base year. The *IIP* comprises of the following 17 industries⁸:

- Mining (*MN*)
- Electricity (*EL*)
- Manufacturing (*MF*)
- Processing of Agricultural Products (*PA*)
- Food (*FD*)
- Beverages (*BEV*)
- Tobacco Products (*TB*)
- Textiles (*TX*)
- Wood and Wood Products (*WP*)
- Rubber Products (*RP*)
- Chemical and Chemical Products (*CM*)
- Products of Petroleum and Coal (*PC*)
- Non-Metallic Mineral Products (*NM*)
- Basic Metals (*BM*)
- Fabricated/ Metal Products (*MP*)
- Electronic and Electrical Products (*EP*)
- Transport Equipment (*TPT*)

⁸ 17 industries excluding paper and paper products industry as the data over the 25 years is inconsistent

1.3 Theoretical Framework

The data will be processed and analysed using statistic software like Eviews. Econometric equations will be modeled to reflect the relationships between narrow money and inflation and narrow money and output. The estimation of the econometric equations will be using models like:

- Ordinary Least Squares model to test the relationships between $M1$ and inflation and $M1$ and output.
- A rolling regression will also be carried out to find out if the impact of $M1$ on inflation and the impact of $M1$ on growth of output has dwindled over the years.
- Distributed Lag model will be used to examine the lag periods that $M1$ takes to affect inflation and growth of output. It will also be used to compare the impacts of $M1$ to the inflation rate of various components of CPI and also to test the impact of $M1$ to the output of various industries of IIP . This Distributed-Lag model will compare the elasticity or the responsiveness of the changes in inflation rate of each component of CPI with respect to change in $M1$ and also the elasticity or responsiveness of growth in output for each industry of IIP with respect to change in $M1$. This model is also meant to test if narrow money is a leading or a lagging variable.
- Granger Causality test will be used to analyse on the relationship to see if the relationship of $M1$ and inflation and $M1$ with output is unidirectional or bi-directional.

The above framework will also be applied to the analysis of CU and DD on inflation and growth of output.

1.4 General Outline

The next chapter will be the literature review, to review some of the past studies and research done by economist for the same subject or related field as this research proposal. A discussion of an a priori view of the relationship between narrow money and inflation, and narrow money and output will be done.

Chapter 3 will be on an empirical model that can be used to examine the relationship between the money growth, $M1$ and inflation. Several models will also be computed to test money growth on the inflation rate of the individual component of goods used in the construction of CPI . The same analysis will be carried out on $M1$ and output, GDP and its individual components.

Chapter 4 will be testing on the relationship between currency in circulation and inflation, and currency in circulation and output.

Chapter 5 will discuss on the relationship between demand deposits and inflation, and demand deposits and output.

The final chapter is the conclusion, and some remarks on the weaknesses of this study and ways to improve it.