CHAPTER II

LITERATURE REVIEW

CHAPTER 2

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2.1 INTRODUCTION

In this chapter, I will present a brief overview of the current literature that relates to VARs model based on monetary policy shocks and monetary variables. Studied reviewed are those that analyze the relationship between monetary policy and macroeconomic variables as well as empirical studies using VAR models. A summary of the empirical studies is presented in Table 2.1

2.2 The Relationship between Monetary Policy and Macroeconomic Variables

a) Monetary policy shocks and long term interest rates (Edelberg and Marshall, 1996)

Edelberg and Marshall (1996) studied the relationship between monetary policy and the long-term interest rates during the postwar period in the United States. They argued whether monetary policy will lead to high

long-term bond yields or monetary policy will increase long-term bond yields. By using Christiano-Eichenbaum-Evans (CEE) framework, Edelberg and Marshall investigated the behavior of long term yields. The results will be explained by using expectation hypothesis and fisher hypothesis.

The response predicted by the expectation hypothesis is less than 6 basis points and it was insignificant at the 5 percent marginal significance level. On the other hand, the Fisher hypothesis implies that a negative response of the longer maturity yields to a monetary contraction. However the estimated response of all yields to the monetary policy shocks is due to the shocks effect on expectations of future inflation. There is no evidence of an excessive response of long yields to monetary innovations. At the same time, changes in expected inflation do not appear to account for the observed response.

The collapse in bond prices during 1994 show the future inflation, but the extraordinary movement was largely due to the factor that are unrelated to the economic or policy variables included in the model. With the 1994 event, we found that the deviations from the general pattern but there is evidence in long yields which is the impact of sensitive material prices on both the federal funds rate and long yields which can be interpreted as relating monetary policy movements.

b) The Effects of Monetary Policy Shocks: Evidence from the flow funds (Christiano, Eichenbaum and Evans, 1996)

This paper investigates the impact of a monetary policy shocks on the US economy. By using the flow of funds data, it examines monetary policy shocks on the net fund raised by different sectors of the economy.

In measuring the shocks to monetary policy, some steps have been taken. In order to identify the component of Fed policy is not reactive to other variable, the effects of federal policy action was isolated. Thus the step such as identification of assumptions and assessing monetary policy shocks measures.Findings could be classified into three.

i. Effects of monetary policy shocks on various economy aggregate

ii. Effects of monetary policy shocks on broader economic aggregate

iii. Implication of policy measures for two price indices

c) **Identification and the effects of monetary policy shocks (Christiano, Eichenbaum and Evans, 1994)**

There are two strategies that Christian et. al. applied in measuring exogenous policy shocks. There are two as mentioned: 1) Identification assumption under Wald Casual Orderings and 2) Romer Index. The first, compared the Romer and Romer (1989) Index with VAR based policy shock measures and then solved for the price puzzle by the role of commodity prices.

Findings for the first, show that; by using Romer and Romer Index characterises monetary policy as "tight" or "contractionary", when the smoothed policy shocks is "loose" or "expansionary" when the index is negative. In contrast, VAR based policy shock measures is that monetary policy was expansion at the end of 1973-74 recession monetary policy until 1976, which means VAR also can identify periods of monetary expansion.

In term of price puzzle, there are some ways to confronting it, whereby emerged five interesting result in this article. Results for this article showed the effects on monetary variables as well.

a. For Romer and Romer index

- The increase in the federal fund is persistent
- Federal Reserve holdings of government securities fall after a contractionary policy shocks
- Total Reserve hold M1

b. VAR is based policy shock to demand rather than supply

- Policy shock measures reflect an unanticipated increase in the public demand for money
- The subsequent reduction in economy activity is due to the interest rates

2.3 Empirical studies by using VAR models

There are few studies which is using VAR as their framework.

Christopher A. Sims(1992) recently, studied attempts to solve identification problem informally, using the same intuitions that leads to study of response to reduced form innovations in multivariate models. Thus, Sims came out with the RBC-style model (1989) and does confront the impulse response evidence and indeed partly succeeds in matching it.

This study using VAR was estimated for data from France, Germany, Japan UK and US with six variables. Each equation with 14 lags 14957:1 and 1964:1 and ended 1990/91.

Sims showed the results of the impulse response as stated below:

a) The innovation in interest rates- negative response of monetary policy and output. Thus the explanation for this finding is interest rate represents monetary policy shocks and monetary contractionary generates declining in income.

b) Responses of prices to interest rate shock some consistency; they are all initially positive. Does not fit so easily into monetary/ISLM interpretation.

c) Money innovations showing commodity prices to interest rate innovations are all sustained and negative except Japan.

d) Responses currencies value to interest rate innovations raises the value of domestic currency, other being equal.

In conclusion, while certain patterns in data consistent with effective monetary policy are strikingly similar across countries, others, particularly the tendency of interest rate increases to predict high inflation, is harder to reconcile with effective momentary policy.

The article written by Mansor Ibrahim, showed the real effects of monetary policy by evaluating whether monetary policy shocks have distributional consequences. Innovations in the interbank rate are represented of responses of eight sector output to monetary policy shocks.

In line with existing studies, this paper employs a VAR framework. From the estimated VAR, Mansor generates impulse response functions and variance decompositions as a basis for making inferences. This article show evidence that some sectors are affected more by monetary tightening while other sectors do not seem to react to the increase in the interest rate. The sectors sensitive to the changes

of interest rates seems to be the driving force behind the aggregate fluctuations. These sectors are manufacturing, construction and finance, insurance, and real estate.

These results contend about the credit view of sectors that are affected most by monetary tightening are those which are heavily dependent on bank loans.

Bagliano and Favero (1998) in their article studied the information from financial markets and VAR measures of monetary policy. By using VAR framework, they argued on two types of economy consisting of close (US) and open economy (US and Germany). The exogenous measure of monetary policy shocks are derived from financial market information. Result shows that the main features of the monetary policy transmission mechanism in Germany, explicitly addresses the issue between Germany policy interest rate and the US dollar-Dmark exchange rate.

Most of the literature on VARs has dealt with how to identify the monetary shock appropriately, but Cochrane (1995) highlighted that the VAR literature does not discuss the fact that a VAR system estimated the policy shocks only in the case where a shock is followed by the customary further policy action.

2.4 Empirical Regularities

Numerous studies estimated the response of macro economic variables to monetary policy shocks using data of many countries as mentioned above. These and other studies have several empirical regularities, which are often termed "puzzles". Following Grilli and Roubini (1996), the puzzles are such as:

a) The liquidity puzzle – where monetary shock is identified with innovations in monetary aggregates. Such innovations appear to be associated with increases rather than decreases in nominal interest rates.

b) The price puzzle – when monetary policy shocks are identified with innovations in interest rates. The output and money supply responses are correct as a contractionary increase in interest rates which is associated with a fall in the money supply and the level of economic activity. However, the response of the price level is wrong as the monetary tightening is associated with a persistent increase in the price level rather than a decrease.

c) The exchange rate puzzle – is a positive innovation in interest rates in the United States which is associated with an impact appreciation of the US dollar relative to the other G-7 currencies, such monetary contractions in the other G-7 countries are often associated with an impact depreciation of their currency value as relative to the US dollar.

d) The forward discount bias puzzle – If uncovered interest parity holds, a positive innovation in domestic interest rates relative to foreign ones, should be associated with a persistent depreciation of the domestic currency after the impact appreciation. However, data show that a positive interest differential is associated with persistent appreciation of the domestic currency for periods up to two years after the initial monetary policy shock.

These empirical studies (as stated above) relates to the regularities of puzzle which may merely reflect the lack of a direct measure of inflation expectation (M,Kahn et.al). Thus, for this study we are using data from financial market in order to be inflation observable.

2.5 Conclusion

In this chapter, we reviewed literature reviews for this study from various authors.