Faculty of Economics and Business

ECONOMIC UNCERTAINTY AND THE DEMAND FOR MONEY IN THAILAND

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ECONOMIC UNCERTAINTY AND THE DEMAND FOR MONEY IN THAILAND

CHONG MEI TEING

This project is submitted in partial fulfillment of the requirements for the degree of

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STATEMENT OF ORIGINALITY

The work described in this Final Year Project, entitled

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ABSTRACT

ECONOMIC UNCERTAINTY AND THE DEMAND FOR MONEY IN THAILAND

By

Chong Mei Teing

This study empirically examines the economic uncertainty and the demand for money in Thailand by utilising quarterly data covering the period of 1980Q1 to 2013Q4. Within the sample period, Thailand had gone through some critical times such as financial liberalisation, Asian financial crisis, tsunami, flood, and so on. These events indirectly inspiring the motive to unravel the demand for money in the past couple ten years when the variability of the economy was staggered. Several econometric techniques are employed in particular to test on the sample, include general autoregressive conditional heteroscedasticity model, unit root tests, cointegration test, and Granger causality test. Empirical results show that economic uncertainty index has well captured the heightened periods of economic uncertainty from the six constituents. Economic uncertainty is found to have stable long run relationship with M1 and M2. Despite using inflation targeting regime to maintain price stability, monetary targeting serves as an alternative way where the monetary aggregate M1 and M2 are deemed appropriate to be targeted.

ABSTRAK

PERGOLAKAN EKONOMI DAN PERMINTAAN WANG DI THAILAND

Daripada

Chong Mei Teing

Kajian ini mengkaji pergolakan ekonomi dan permintaan wang di Thailand dengan menggunakan data suku tahunan yang meliputi tempoh 1980Q1 hingga 2013Q4. Dalam tempoh tersebut, Thailand telah melalui banyak masa kesukaran seperti liberalisasi kewangan, krisis kewangan Asia, tsunami, kebanjiran, dan lain-lain lagi. Hal yang demikian memberi inspirasi untuk mengetahui keadaan permintaan wang di Thailand pada beberapa puluh tahun yang lalu apabila ekonominya mengalami pergolakan. Pendekatan ekonometri yang digunakan dalam kajian ini termasuklah ujian GARCH, ujian punca unit, ujian kopengamiran Johansen dan Juselius, dan ujian penyebab Granger. Hasil ujian empirikal menunjukkan bahawa indeks pergolakan ekonomi dipercayai menerapkan puncak-puncak kejadian berlaku dalam enam faktor dengan baik. Hubungan jangka panjang dalam model M1 dan M2 telah dibuktikan wujud and didapati stabil, tetapi pergolakan ekonomi mempunyai kesan yang jangka pendek terhadap model M1 sahaja. Selain daripada menggunakan sasaran inflasi untuk mengekalkan kestabilan harga, sasaran kewangan merupakan strategi alternatif di mana agregat kewangan M1 dan M2 didapati sesuai untuk digunakan.

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Comments from lecturers in their respective professionalism also enable me to discern something that I pay less attention on before, and consequently make appropriate refinements to get ahead in finishing my thesis.

At this moment, I would like to deliver gratefulness towards the support from my family and friends as writing this thesis is an arduous task and yet their solicitudes strengthen my mind to work hard.

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

Infinite demand on the most liquidity asset in the financial market- Money, is a fact that everyone cannot afford to become complacent. This asset has no frontier on its demand in everyone's life, as its usages are ranging from accustomed daily purchases to international transactions. In the fundamental of the demand for money, it demonstrates how much wealth that people would want to hold in liquid form. More often than not, it is brought by the changes on the income level, interest rates, and price level, as to name a few. These variations could be restricted into three motives for holding money, which are the transactions, the precautionary, and the speculative motives as in Keynesian economics[1].

As the name transaction implies, to get exchange of the things wanted such as in consumptions or business needs, everyone has a motive in holding cash. The convenience and globally accepted medium of exchange are the essence of money that meets people's needs. Whilst in precautionary motive, people tend to save or own an amount of money as a bulwark against unforeseen future or emergency conditions such as medical bills, unemployment and so on. Another desire in which people use to have is to hold money while waiting for interest rates to rise (in believing they could earn more when the opportunity cost of holding money increases in the future), or stock and bond prices to fall (they prefer to buy stock and bond in lower prices), or

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[1] For a detail discussion on Kyenesian Economics, see Brue and Grant (2013).

the general price level to drop. These situations where expectations about future come across in affecting money holding are so called speculative motive.

Classically, money demand functions were evaluated as relationships between real money balances, a scale variable (typically represented by real income), and the opportunity cost of holding money (usually proxied by savings deposit rates). Be it caused by the transformation of era or technological changes or financial innovation, this custom model, nevertheless, has been taken aback and its capacity to accurately measure the demand for money fades away. Economically sounds, the shocks of money demand could come from variety areas such as monetary and fiscal policies, financial markets, economic activities, etc.

Unsurprisingly the traditional money demand functions were destabilised especially when liberalisation of financial system had been implemented corresponding with the hit of globalisation during 1980s. As concerning in Asian countries, deregulating rates of interest, contracting credit controls, boosting financial system's competitiveness and competence, fortifying supervisory framework as well as encouraging the growth and consolidation of financial markets were the upswings made to the financial market structure. These advancements have altered the channels of monetary policy, and seemingly affected the relationship between money demand and economic activity.

Despite the pull of financial innovation to the money demand functions, it is augmented in this study that economic uncertainty could also attribute to decisions on the level of money holding. Uncertainty unlike risk, it could never be expected or quantified by anyone through any methods, so it might not go as script. Applying into an economy, any uncertainty happens could bring large or small, and positive or negative impacts. Thus, the power of economic uncertainty to affect the demand for money could not be neglected. Commonly, there are six main sources of economic uncertainty which consist of level of economic activity, stock market uncertainty, disputable inflationary environment, exchange rate sputter, long-term interest rates and short-term interest rates. General uncertainty in the economy could impose certain effects on the quantity of money that economic agents (households, finished-goods-producing firms, continuum of intermediate-goods producing, and monetary authorities) are willing to hold (Atta-Mensah, 2004).

1.1 Discussion on Relevant Issues

According to Dekle and Pradhan (1997), the conventional money demand equation is expressed as following:

$$\frac{M}{P} = a + bY + ci + \varepsilon_t$$

where *M/P* is the demand of real money balances as a function of scale variable, *Y* is level of real income, *i* is an opportunity cost variable (usually is the rate of interest), and ε is an error term. As stated before, this traditional function is insufficient to capture the factors affecting money demand and thus should somehow be developed by considering other variables as one of the factors, such as the financial liberalisation and economic uncertainty that have been receiving concerns in recent years by researchers.

Despite that, most of the reviews adopted and remained the Cagan (1956) specification of the demand function[2] as a hypothesis, which used the inflation rate instead of interest rate in modeling. Inflation uncertainty increases the precautionary demand for money due to the lower predictability of future prices. But inflation uncertainty also increases the risk of holding money as an asset, which causes agents to reduce the quantity of money in their portfolios. In theoretical, the effect of inflation uncertainty on money demand is still ambiguous (Higgins and Majin, 2009).

Chowdhury (1997) asserted that regulations on interest rates and limited availability of alternative financial assets raise doubts about the appropriateness of standard interest rate measures. But the author did not explain why controls on rates should *ipso facto* limit their appropriateness, or investigate his doubts empirically. He suggested instead that the inflation rate 'reflects the opportunity cost of holding money much more adequately than interest rates', but he did not actually use it in estimation.

Exchange rate is another worth-mentioned variable to be considered in the money demand model. Bahmani (2013) pointed out the first of many studies that introduced the idea of including the exchange rate as another determinant of the demand for money in the money demand function was by Robert Mundell in 1963. Many studies emphasized that the demand for money depends not only on the interest rate and income, but also on the exchange rate.

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[2] Cagan's model of hyperinflation consists of two equations, one which describes individuals' demand for money and another which describes the evolution of inflation expectations over time.

The inclusion of exchange rate is feasible as when domestic currency depreciates, foreign currency appreciates, and the domestic currency value of foreign assets held by domestic residents rises. This causes the demand for money to increase because of the domestic perception of an increase in wealth. On the other hand, Bahmani-Oskooee and Pourheydarian (1990) argued when domestic currency depreciates, this can most certainly cause market participants to expect further depreciation, causing the public to demand less domestic currency and more foreign currency. Thus, rather than raising the demand for money, a depreciation could have a negative impact on the demand for domestic currency. The end result depends on the strength of the wealth effect versus the expectation effect.

1.2 Problem Statement

Globalisation *a priori* intensifies the financial innovations and developments in most of the countries, which Thailand is not excluded. At the time where financial market experienced deregulation or liberalisation, the custom demand function for money dulled in its meaning. As so to investigate the money demand in Thailand that has had financial system liberalised, considering only a scale variable (often proxied by income) and an opportunity cost of holding money are no more sufficient to determine its real money balances.

In other words, the effects of income and interest rates toward the demand for money would still be measured. The income of the Thai economy indeed has been experiencing changes as resulted from the prolonged political turmoil, but the consequences brought to economic uncertainty, which affects the money demand is to be under investigation in this study. While the interest rates in Thailand have been exposing to financial deregulation and thus it is changing from time to time. The corollary of such a revolutionary change on money demand is yet to be proven in this study as well.

Due to the fact that Thailand was heavily deregulated in its financial system, the inclusion of financial liberalisation is no way precluded from the investigation. The extent of financial liberalisation in ASEAN-4 (Indonesia, Malaysia, Singapore, and Thailand) has been considerably greater than many other developing countries. *A priori*, it would be surprising if the structural changes in financial markets and the associated rapid growth did not affect the relation between money, economic activity, and inflation.

In this study, economic uncertainty is a suggestive factor in affecting the demand function for money. Through investigating the background of the Thai economy with a fine-tooth comb, the economic activities, external shocks, monetary policy uncertainty, stock market, bond market, and political unrest have the ability to lead the Thai economy to be uncertain and thus err on the side of caution to include economic uncertainty in studying the model of money demand in Thailand particularly. The inclusion of economic uncertainty has been expanding in recent literatures where researchers renew effort to uncover the stable relationships in the money demand equation.

While fastidious in choosing appropriate factors affecting the demand for money in Thailand, a few research questions arose as follows:

(i) Is economic uncertainty index to be computed in this study effective or able to capture the volatilities of all the six components concerned?

(ii) Do the inclusions of financial liberalisation and economic uncertainty help to explain the changes in long run money demand of Thailand?

(iii)Is the function of money demand stable in Thailand?

1.3 Objectives of the Study

The demand for money has long been studied since the past decade or two. In recent years researchers start to consider the economic uncertainty (in the countries they researched on respectively) in their model or function of money demand. In this study corresponding with the investigation on economic uncertainty and the demand for money which takes Thailand as research target, the objectives are intrinsically being split into general and specific. The general focus of this study is to show that the economic uncertainty is a cardinal factor in affecting the money demand functions.

Meanwhile, the specific purposes of this study are as follows:

(i) To determine the effectiveness of the economic uncertainty index in capturing the volatilities of all the six constituents.

(ii) To investigate the long run relationship of the function of money demand with the involving of financial liberalisation and economic uncertainty.

(iii) To examine the stability of the money demand function in Thailand.

1.4 Significance of the Study

The changes brought by globalisation and financial developments towards a country, more appropriately, towards an economy, do not tolerate any ignorance. The growth in financial system has the power to monopoly the competitiveness of the country. In this sense, almost all aspects in financial market such as interest rate, credits, banking, etc. would be adjusted and specified from time to time. Money holders in financial market will definitely behave according to the movements of any assets in concern. Therefore, the influence of financial innovations on the demand for money among people is superior. This statement always holds true for the situation in Thailand that had heavily experienced financial developments and deregulation in its economy. In this realisation, therefore this study captures the financial liberalisation factor into the specification of money demand for Thailand.

The investigation on economic uncertainty and the demand for money could raise the consciousness on economic activity in affecting the money demand in financial market, in this study is referring to the conditions in Thailand. As economic developments have been changing from time to time, current economic activities as well as the rendering of economic services must have great differential from the past. Technology advancement has though minimized the boundaries of countries, *de facto*, exposing the countries to more risk or uncertainty, the same does to its economic activities. In capturing the functions of money demand, it is vital to include economic uncertainty as one of the variables in the study.

Although some researchers were inspired by Atta-Mensah since 2004 to start using economic uncertainty index as one of the factors to determine the demand function for money, they did not take much economic components into considerations. For example, Bahmani-Oskooee and Xi (2011), Bahmani-Oskooee and Xi (2014) used only country's income as the measure for economic uncertainty. Instead on just one factor, this study makes use six elements to compute the economic uncertainty index so that it is more comprehensive.

It is strongly believed that this study is the first to include both financial liberalisation and economic uncertainty factors together in a money demand model in wish it could better explain the demand for money condition in Thailand. This study also expects to produce better and useful insights on the appropriateness to insert the two determinants in a model of money demand.

1.5 Scope of the Study

This study intends to examine the way the uncertainties in economic could impose effect on the demand for money, as referred to Thailand in this study. Quarterly data from 1981:1 to 2013:4 have been chosen to survey on this topic. The structure of this project is arranged as: Chapter 2 Background of the Study, Chapter 3 Literature Review, Chapter 4 Methodology, Chapter 5 Findings and Discussion, and ended with Chapter 6 Conclusion.

CHAPTER TWO

BACKGROUND OF THE STUDY

2.0 Introduction

The model of money demand has to be modified and justified according to the situations in a specific country so as to obtain a reliable analysis and thus, a comprehensive exploration on the historical background is a must in every research. Recognised as Siam until 1939, Thailand is the only Southeast Asia country that never been taken over by a European power (The World Fact Book, 2014). Before empirically testing on the function of money demand of this strong country, the historical background of each component related is analysed to have a deep recognition on its conditions particularly.

2.1 The Demand for Money in Thailand

Strictly in economic term, the overall level of prices adjusts to the level at which the demand for money equals to the supply in long run. To put it simple, the quantity of money demanded that people want to hold will exactly balance the quantity of money supplied by government at the equilibrium price level. Hence, in order to analyse the situation of money demand in Thailand, one can actually look at its money supply. In general, money supply reflects the total amount of money that being injected for circulation in an economy at a given time, and this tool is only designated for the government.