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The Monetary Policy and Exchange Rate Policy of China

Abstract

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Unlike the other countries, China as a developing country, from the transformation of a planned economy, its monetary policy and exchange rate policy have many characteristics. In this doctoral dissertation, both China's monetary policy and exchange rate policy will be discussed in detail from three aspects: monetary policy rule, the effectiveness of monetary policy and the sterilization of foreign reserves. The relationship of monetary policy and exchange rate policy is investigated by analyzing the sterilization of foreign reveres.

In Chapter1, a detailed literature review is shown for the following subjects. (1) The Survey of Monetary Policy (Policy Rule)--Up until August 2012, there has been in China 235 papers related to the Taylor Rule, but only 15 papers on the McCallum rule. It shows that Chinese economists have paid a lot more attention to the Taylor rule than to the McCallum rule even though there are some problems concerning applying the Taylor rule to China, for instance that the interest rate is decided not by the market but by the PBC. (2)The Survey of Monetary Policy (Effectiveness)--There is not as many papers about Chinese monetary policy as Japanese monetary policy. Prior work has examined money demand in China including tests for causality between money and prices and money and output. (3)The Survey of the Relationship between Exchange Rate Policy and Monetary Policy--Aizenman and Glick (2009) indicated that the sterilization coefficients began rising from roughly 0.6 in 2000 to almost 1.5 in 2006, and then fell to 0.7, which means that China may have reached limits to the extent of its ability to sterilize its massive reserve inflows. However, Wu (2009) stated that the monetary sterilization in China is incomplete, only 0.35 are sterilized for a yuan of foreign exchange reserve that flows into China.

Using both GMM and SVAR, Chapter 2 tackles an important problem in recent Chinese monetary policy: whether the policy is better captured by the Taylor rule or the McCallum rule. The estimations suggest that the McCallum rule is more active than the Taylor rule in China. Furthermore, GMM model gives the formula to predict m2 giving inflation, output, and nominal exchange rate targets, which can nicely track the behavior of actual m2. In order to get more accurate results and to grasp the nuances of the economic variables, monthly data are used. Chapter 2 also includes a comprehensive literature review on Chinese monetary policy rule.

Chapter 3 aims to provide an analysis on the effectiveness of the monetary policy in China during the past two decades by using the time-varying parameter structural vector Autoregression (TVP-VAR) with stochastic volatility. The TVP-VAR model, combined with stochastic volatility, enables us to capture structural changes in underlying structure of the Chinese economy in a flexible and robust manner. The Markov chain Monte Carlo method is

employed for the estimation of the TVP-VAR models with stochastic volatility. The effectiveness of the monetary policy is explored from three perspectives: inflation, output and real effective exchange rate in this paper. We come to a conclusion that money supply policy is not effective as inflation rate, economic growth and exchange rate do not respond to money supply shocks. One of the reasons is that there is no trade off between inflation and economic growth in China. The Phillips Curve in China is a vertical curve which suggests that economic growth does not react to the money supply shocks. This paper is the first attempt to use TVP-VAR model to analyze Chinese monetary policy.

In Chapter 4, it is suggested that China has been stockpiling international reserves at an extremely rapid pace since the late1990s and has surpassed Japan to become the largest reserve holder in the world. Chapter 4 undertakes an empirical investigation to assess the extent of de facto sterilization using monthly data between December 1999 and October 2013. We find that China has not been able to successfully sterilize a large portion of these reserve increases. Additionally, by using TVP-VAR model and GMM, the empirical results demonstrate that the sterilization coefficient is affected by inflation rate and exchange rate, but not by output growth rate. PBC only adjusted sterilization coefficients when inflation rate is high and exchange rate is depreciating.

In brief, this dissertation suggests that China's monetary policy can be traced by McCallum rule; China's monetary policy is not an effective policy, as there is no trade-off between inflation and economic growth; the sterilization of foreign reserves is not sufficient, and the sterilization coefficient is only affected by inflation rate and exchange rate.