MARKET RISK AND MONETARY DYNAMICS

Xiaolou Yang, Department of Accounting and Finance, Youngstown State University, OH, U.S.A.

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ABSTRACT

Monetary policy making has to incorporate various sources of uncertainties. Ignorance of this consideration in the monetary model causes a gap between the promise of theory and the reality of practice. This study investigates the various effects of economic risks and uncertainties on monetary policy making. In particularly, I show that without accounting for the economics uncertainties, the traditional theoretical model could generate a serious distorted macroeconomic outcomes, and consequently resulting inefficient policy and rules. On the other hand, when these uncertainties are taken into account, the model shows a cautionary effect and are less sensitive to the shocks of the economy. Moreover, this study illustrate the effect of the cautionary effect associated with the uncertainty and, when future uncertainties increases, the trade-off between “caution” and “intensity”.

Keywords: risk, monetary dinamics,

1. INTRODUCTION

A traditional implicit assumption of policy assessment is that policymakers observe the current state of the economy without uncertainty and then adjust the policy based on current available information. In reality, however, decisions are based upoin considerable amount uncertainties and risks about the economy. For example, exogenous shocks like oil prices changes, or multiplicative uncertainty etc. In those cases, policy is made with partial information.

In this paper, I use an economic model of U.S. economy to evaluate different policy rules in order to evaluate the degree of monetary policy reactions to the fluctuations cased by inflation and aggregate economic condition.

First, I start with a benchmark model assuming the policymaker can predict all model parameters promptly and accurately. Then I develop a parallel experiment in which the policymakers face an economy with various uncertainties. By comparing the results of these alternative models, I show strong evidence of various impacts of future uncertainties on optimal monetary policy design.

The general model with uncertainty leads to a cautious behavior associated with model parameter uncertainty. Mercado (2002) analyzes the trade-off between “caution” and “intensity” in control variable in a one-state and one-control case with a single uncertain parameter, and concludes that the trade-off is based on the sequences of the uncertainties. For example, if the degree of uncertainties are the same in current and future period, the caution effect will prevail over intensity.

Mercado and Kendrick (2000) analyze a one-state and two-control model , they show that given a rise in future uncertainty, the use of at least control will increase in the first period, and the trade-off between caution and intensity is based on the relative magnitude of those controls’ first-period weighted variances. In this study I extend the work by Mercado (2002) and examine if the result holds when there are multiple sources of uncertainty.

I use the deterministic model in Ball (1999) as a benchmark model and I develop a stochastic model incorporating various sources of economic uncertainties. The model performance is tested by Monte Carlo simulation. The experiment results show that (1) there is a cautious effect associated with model