

## 【Grant-in-Aid for Scientific Research(S)】

### Humanities and Social Sciences (Social sciences )



#### Title of Project : Understanding Persistent Deflation in Japan

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Research Area : Economics

Keyword : Macroeconomics, deflation, monetary policy

#### 【Purpose and Background of the Research】

The Japanese economy has been in a liquidity trap over the last ten years. Since the mid-1990s, the Bank of Japan has cut the policy rate several times until the rate finally reached the zero lower bound in 2001. At the same time, consumer price inflation has been below zero since the mid-1990s, indicating the presence of persistent deflation.

Importantly, similar phenomena are now beginning to take shape in the United States and European countries. The purpose of this project is to understand the mechanisms behind the liquidity trap, with a special focus on the interaction between problems in the monetary side of the economy, such as deflation and the zero interest rate, and in the real side of the economy, such as low productivity growth. We will conduct cross country analyses with the Japanese economy as the benchmark.

#### 【Research Methods】

This project consists of three stages: fact finding, model validation, and counterfactual simulation. In the fact finding stage, we will compare episodes of deflation that occurred in the past. Specifically, we will collect data regarding these episodes of deflation to conduct a comparative panel analysis. Next, in the model validation stage, we will consider the following six hypotheses for persistent deflation in Japan: (1) the “bad luck” hypothesis (i.e., Japan’s economy happened to be hit by multiple adverse shocks); (2) self-fulfilling expectations for the price level and/or the exchange rate; (3) deleveraging; (4) debt deflation à la Irving Fisher; (5) the Balassa-Samuelson effect; and (6) a shortage of inside money. Finally, in the counterfactual simulation stage, we will use the model(s) chosen in the second stage to quantitatively compare various policy options, including ones which have not actually been adopted by central banks, in terms of their costs and benefits.

#### 【Expected Research Achievements and Scientific Significance】

There are two strands of research regarding the interaction between problems in the monetary and real sides of the economy. The first is based on the idea that a decline in the natural rate of interest below zero causes a liquidity trap, which goes back to Lawrence Klein in the 1940s and was revived more recently by Krugman (1998). Recent papers based on this idea include Jung, Teranishi, and Watanabe (2005), which characterizes the optimal policy response to a negative natural rate of interest. However, in these papers, the natural rate of interest is assumed to be an exogenous variable, so that it is next to impossible for them to consider the interaction between problems in the real and monetary sides of the economy. In this project, we will depart from previous studies by considering an environment in which the natural rate of interest is endogenously determined reflecting, for example, productivity growth, frictions in financial markets, and demographic changes. The second strand of research emphasizes the role of self-fulfilling deflationary expectations as a cause of the liquidity trap. In this project, we will conduct a survey on inflation expectations among households and firms to test whether deflation was driven by expectations.

#### 【Publications Relevant to the Project】

- [1] “Closely Competing Firms and Price Adjustment: Some Findings from an Online Marketplace,” T. Mizuno, M. Nirei, T. Watanabe, *Scandinavian Journal of Economics*, Volume 112, Issue 4, 673-696, December 2010.
- [2] “Monetary and Fiscal Policy in a Liquidity Trap: The Japanese Experience 1999-2004,” M. Iwamura, T. Kudo, T. Watanabe, in T. Ito and A. Rose (eds.) *Monetary Policy with Very Low Inflation in the Pacific Rim*, NBER-EASE Volume 15, 233-273, 2006.

【Term of Project】 FY2012-2016

【Budget Allocation】 152,000 Thousand Yen

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