

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

Broad Section A



Title of Project : Central Bank Communication Design

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Keyword : Macroeconomics, game theory, central banks, monetary policy, transparency, credibility, attention

【Purpose and Background of the Research】

Central banking is undergoing a major shift from secretiveness to active information disclosure. However, there is no academic consensus on the best way for central banks to communicate with the private sector, so that individual central banks have had to use trial and error, leading to economic instability as epitomized by the global economic crisis following the Lehman shock. Against this background, the aim of this research project is to empirically examine whether central bank communication has been able to gain the attention of and credibility with consumers, businesses, and investors, and if not, why this is the case. Moreover, using macroeconomic and game theory, we aim to construct models in which, under a setting in which the acquisition and processing of information is costly, the type of information that people obtain (what they pay attention to) and its accuracy (how much attention they pay) is endogenously determined, in order to examine the determinants of public attention to messages from central banks. Based on the theoretical and empirical results, we then aim to design a central bank communication system that helps to raise economic welfare.

【Research Methods】

The work to examine central bank communication is organized into four groups. The Theoretical Models Group conducts model analyses using both macroeconomic and game theory. The Survey Group examines the response of consumers and businesses to central bank signals and the causes of such response (or lack of it). The Unstructured Data Group explores the current state of central bank-private sector communication using textual information such as policy decision documents and governor speeches released by central banks. The Case Study Group will conduct case studies on information transmission focusing on communication by the Bank of Japan from 2000 onward.

The topic of this research is communication between the central bank and the private sector,

and communication takes the form of documents, speeches, and statements, so that it is necessary to convert such unstructured data into a manageable form to analyze it. Specifically, we will construct three types of datasets consisting of (1) written information released by central banks, (2) central bank-related written information released by economic news agencies such as Bloomberg, (3) and central bank-related written information released by financial institutions, and apply text mining techniques such as LDA (Latent Dirichlet Allocation) to them.

【Expected Research Achievements and Scientific Significance】

As the first country worldwide to grapple with the zero lower bound on nominal interest rates and the attendant policy challenges, Japan has been forced to undertake much trial and error in central bank communication. Using Japan's experience as a rich case study, this research project seeks to gain universal academic insights on central bank communication in order to share them worldwide. A famous example where academic insights have led to real-world institutional changes is central bank independence, and the aim of this project is to make a similar contribution to central bank transparency.

【Publications Relevant to the Project】

- [1] “Novel and Topical Business News and Their Impact on Stock Market Activity,” T. Watanabe, T. Mizuno, T. Ohnishi, EPJ Data Science (2017) 6: 26.
- [2] “Characterizing Social Value of Information,” T. Ui, Y. Yoshizawa, Journal of Economic Theory (2015) 158: 507–535.

【Term of Project】 FY2018-2022

【Budget Allocation】 144,500 Thousand Yen

【Homepage Address and Other Contact Information】

<http://www.centralbank.e.u-tokyo.ac.jp/en/>