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

Broad Section A

Title of Project： **Risk Management of Comprehensive Monetary/Fiscal Policy: From Financial Crises to International Relations and Natural Disasters**

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Keyword：Monetary/fiscal policy, risk management,

【Purpose and Background of the Research】

In October 2019, the consumption tax rate was increased from 8% to 10% mostly for the purposes of fiscal consolidation and social security reform. Nevertheless, in order to achieve the former purpose, it is essential to curb the expansion of government debt. Since 1964, Japan's government debt has been on an expansionary trend for more than half a century, and is currently at 220% of GDP, a level that stands out among developed countries. This is even higher than the level at the end of World War II.

The Bank of Japan's extensive easing policy is currently underpinning this debt expansion, and monetary and fiscal policies are now inextricably linked. Historically, excessive monetary easing has created bubbles, and the bursting of these bubbles has triggered financial crises and financial collapses.

A possible reason for the repetition of these tragedies is that the risks of bubble bursting and financial collapse are not directly observable, and there is disagreement about the existence of these risks. In addition, the standard approach in current economics (especially the dynamic stochastic general equilibrium approach in standard macroeconomics) assumes that social structure does not change over time (stationarity) and that the structure of the model's solution (equilibrium) also does not change over time (recurrence), so that risks that deviate significantly from the trend in a society with time-varying structure cannot be analyzed.

【Research Methods】

In contrast to the standard dynamic stochastic general equilibrium approach, agent-based models used in computational social science and other fields do not have these limitations, but they have rarely been used in economics because the behavior of economic agents is generally not based on optimization and expectations about the future. This has improved in recent years, and models have begun to emerge that assume economic agents that learn from past data and act in anticipation of the future, but this type of learning works only when social structure remains unchanged. In this study, we aim to model economic agents that can predict the future at a realistic level, and construct an agent-based model that consists of economic agents that can act in a rational way even in the face of structural changes such as low birthrates and the growing presence of foreign workers, and conduct a realistic policy analysis.

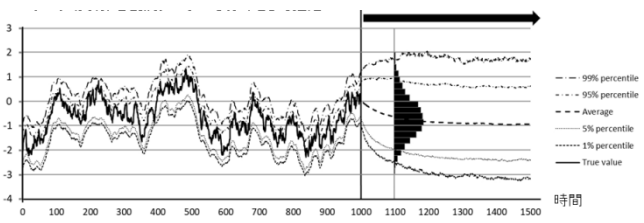

Fig. 1 Risk estimation and forecasting

【Expected Research Achievements and Scientific Significance】

The dynamic stochastic general equilibrium approach has been developed mainly in the United States, but it is also the mainstream approach in macroeconomics in Japan. This approach is considered to be at the forefront of not only macroeconomics but also economics as a whole. However, it is not suitable for estimating the risks of deviating from the trend in an economy where social structure changes over time, nor is it suitable for analyzing the problems caused by the structural changes that Japan is currently facing. This study is likely to be appreciated internationally for presenting possible solutions to practical problems that have been largely neglected in macroeconomics.

【Publications Relevant to the Project】

· Masahiko Shibamoto, Wataru Takahashi, and Takashi Kamihigashi, "Japan's Monetary Policy: A Literature Review and Empirical Assessment," RIEB Discussion Paper DP2020-15, 2020.
· Lise Clain-Chamosset-Yvrard and Takashi Kamihigashi, "International Transmission of Bubble Crashes in a Two-Country Overlapping Generations Model," Journal of Mathematical Economics 68, 115-126, 2017.

【Term of Project】 FY2020- 2024

【Budget Allocation】 146,400 Thousand Yen

【Homepage Address and Other Contact Information】

https://www.rieb.kobe-u.ac.jp/project/risk/index.html