

[Joint research]

## Oligopoly and Networks

### Joint investigators

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### Foreword

This joint study was conducted over a three-year period from FY2020 to FY2023. Originally, the study period was two years, from FY2020 to FY2022, but due to the Covid-19 impact, the study period was extended by one year to three years.

The purpose of this study is to focus on strategic behavior and networks by oligopolistic firms, and to examine their basic subjects through game theory, mechanism design, and empirical analysis, and to identify policy implications based on these results. Based on the expertise of each researcher, theoretical, actual situation analysis, and empirical analysis studies were conducted.

Yokoi's paper is on the higher concentration of the U.S. food retail market and the strategic actions taken by these firms. Since retailing is an industry that emphasizes economies of scale, the strategy has been to physically expand by increasing the number of stores and expanding sales areas, but with the development of e-commerce around the 2000s, the strategy has changed to one that aims to expand spatial networks by selling via Internet. This indicates that the strategy has shifted to one that aims to expand the spatial network of sales via online. The study then revealed that a small number of top-selling companies, which account for more than half of the industry's sales, have invested more in building extensive E-Commerce-enabled networks and have achieved greater success.

In Tezuka's paper, the recent market structure of the coastal shipping market in Japan is focused. The coastal shipping (hereafter CS) in Japan is responsible for domestic ship transportation, and forms a domestic shipping network. The CS market in Japan had been under a long period of economic regulations such as entry/exit regulations. However, the regulatory reform for CS market has enacted since 2005, which intends to promote competition and market restructurings, and to improve market performance. There are some issues such as policies regarding the market structure of CS in recent years and methods for evaluating policies. To address these issues, focusing on the market structure and investment in CS market, and providing some comments from the point of the economic efficiency, the existence of economies of scale in the market, and evaluate market performance of current CS market qualitatively were confirmed and executed.

Kobayashi's paper studies competition and conjectures in a differentiated product duopoly with network effects. It analyzes a game in which duopolistic firms undertake Cournot competition in a differentiated product industry where there are network externalities. Kobayashi shows that there exists an equilibrium with consistent conjectural

variations for the game and that the value of consistent conjectural variations is negative. The results imply that the equilibrium outcome with consistent conjectural variations is more competitive than the Nash equilibrium outcome. Kobayashi also shows that the difference in equilibrium quantities increases with the degree of compatibility of the two network products.

Kwon's paper estimates markups of Japanese firms using DBJ database of individual firm's financial statements from 1970 to 2018. The paper documents that markup in Japanese firms has been increasing persistently since 1993. The paper also shows that the dispersion of markups across different firms is very large. In addition, the paper finds that the degree of rising markups in Japanese firms align closely with TFP level.

Finally, we would like to acknowledge the Research Institute of Economic Sciences for generously providing us with the opportunity to conduct this study and for the one-year research deferral for the Covid-19 disaster. All of us would appreciate this opportunity and sincerely continue to devote ourselves to our research.