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研究課題名(和文) Competition among Big and Small Firms: Theoretical Analysis and Policy Implications

研究課題名(英文) Competition among Big and Small Firms: Theoretical Analysis and Policy Implications

研究代表者

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研究成果の概要(和文)：1.雑誌論文(計3件) Is a Big Entrant a Threat to Incumbents? The Role of Demand Substitutability in Competition among the Big and the Small. Journal of Industrial Economics 66(1), 30-65. (with Makoto Hanazono);  
2.国際学会の口頭発表(計3件)：Asia Pacific Industrial Organisation Conference 2016, 2017;東北大学地域科学ワークショップ, 2017.

研究成果の概要(英文)：1. I have published three papers in refereed journals. In particular, the paper entitled "Is a Big Entrant a Threat to Incumbents? The Role of Demand Substitutability in Competition among the Big and the Small" has been accepted for publication in the Journal of Industrial Economics, a field top journal of industrial economics.  
2. Oral presentation in international conferences and workshops: (1) Asia-Pacific Industrial Organisation Conference, 2016.12.12, Melbourne, Australia;(2) Regional Science Workshop, 2017.3.3, Tohoku University;(3) "Asia Pacific Industrial Organisation Conference (APIOC) 2017, 2017/12/14-16, University of Auckland, Auckland, New Zealand

研究分野：Industrial Organization

キーワード：market structure big firms small firms competition policy

## 1 . 研究開始当初の背景

The markets featured with the coexistence of a few big firms and a host of small firms prevail in many industries. Such markets share the following characteristics:

- (i) With a large market share, a big firm has significant market impacts;
- (ii) A small firm is negligible compared to big firms, but enjoys some market power by differentiation;
- (iii) The aggregate market share occupied by small firms is considerable, so the aggregate behavior of small firms plays a non-negligible role in the market.

How can we characterize this particular market structure? How do big and small firms interact? Are the current policies on firms' behavior legitimate in terms of welfare in such markets? These questions are worth investigation to predict firms' behavior and amend relevant policies in such a mixed market structure.

Existing literature largely assumes that the market consists of only big firms (oligopoly) or small firms (monopolistic competition). However, the market with the coexistence of the big and the small is in nature different from them.

There are several strands of literature that partially address this mixed market structure, such as the dominant firm model and the Stackelberg model. However, these models have some weaknesses to describe the mixed market structure.

This project aims to theoretically characterize the market with big and small firms, through which we can explain empirical evidence on this market structure and examine related competition policies.

## 2 . 研究の目的

The purpose of this project is to investigate firms' behavior and competition policies in the mixed market structure with big and small firms. Specifically, I work on three issues.

I attempt to establish a comprehensive and flexible theoretical framework to characterize the mixed market structure.

I investigate the entry policy on firms' behavior and welfare in the mixed

market.

I examine the impact of merger on the market structure and welfare and provide policy implications.

## 3 . 研究の方法

First, to establish a theoretical framework to characterize the mixed market structure, I start from a tractable utility function based on Ottaviano, Tabuchi and Thisse (2002). I also employ the idea raised by Shimomura and Thisse (2012), which, to the best of my knowledge, is the first work characterizing the high skewness of firm distribution in size.

Second, I compare the results of my model with Shimomura and Thisse (2012) and the models that examine other market structures, such as oligopoly, monopolistic competition and the dominant firm model. To solve the model, I mainly employ game theory, partial equilibrium and general equilibrium analysis.

Third, I conduct the comparative static analysis to examine how competition policies change firms' behavior, the market structure and social welfare.

Regarding the entry policy, I observe that a big firm's entry generates contrasting impacts on incumbent firms across different industries featured with the mixed market structure. I try to address the distinction by allowing for richer substitutability across big and small firms.

Regarding the antitrust policy, merger efficiencies and barriers to entry after merger are two important factors determining the welfare consequences of merger. Based on recent merger cases, I examine how the mixed market structure affects the role of merger efficiency and post-merger entry.

## 4 . 研究成果

### **Establishment of the theoretical framework.**

I establish a tractable and flexible theoretical framework to characterize the market with big and small firms, where big and small firms are polarized in size and have different strategic behaviors. Based on a quasi-linear utility, this framework best fits industries while allowing for

asymmetric across big and small firms in several respects. Based on this framework, I examine the impact of a large firm's entry and merger.

**The entry policy:** “Is a Big Entrant a Threat to Incumbents? The Role of Demand Substitutability in Competition among the Big and the Small.”

In this work, we establish a model of market competition between large and small firms and investigate the way in which demand substitutability affects how the entry of big firms impacts incumbents. we focus on the relative strength of two opposing effects of entry on large incumbent firms' demand: the direct substitution effect among large firms (negative) and the indirect feedback effect through the change in small firms' aggregated behavior (positive). If the substitutability between large and small firms is sufficiently high, the indirect effect dominates the direct effect and large incumbents' equilibrium prices and profits increase. We show that welfare effects are ambiguous, which calls for careful assessment when regulating large firms' entry.

**The antitrust policy:** “Horizontal Merger of Big Firms with Product Choice in the Presence of Small Firms.”

In this work, we examine how a bilateral merger between multi-product large firms with the endogenous choice on product range affects the market structure and consumer welfare. In the presence of single product small firms, we show that low merger efficiencies in the form of a moderate marginal cost synergy for the merging firms (insider), which lead to the shrinkage of the insider's product range, are beneficial to consumer welfare. By contrast, high merger efficiencies, which induce the expansion of the insider's product range, are detrimental to consumer welfare. Our findings suggest that high merger efficiencies may be anti-competitive in the market with large and small firms.

#### References:

Shimomura, K. I., Thisse, J. F. (2012). “Competition among the big and the small.” *The RAND Journal of Economics*, 43(2): 329-347.

Ottaviano, G., Tabuchi, T., Thisse, J. F. (2002). “Agglomeration and trade revisited.” *International Economic Review*, 43(2): 409-435.

5 . 主な発表論文等  
(研究代表者、研究分担者及び連携研究者には下線)

[雑誌論文](計 3 件)

Lijun Pan, and Makoto Hanazono, 2018. “Is a Big Entrant a Threat to Incumbents? The Role of Demand Substitutability in Competition among the Big and the Small.” *The Journal of Industrial Economics* 66(1), 30-65. (査読あり)

Lijun Pan, 2017. “Endogenous Choice on Advertising Pricing of Media Platforms: Lump-sum Fee vs. Proportional Fee.” *Hitotsubashi Journal of Economics*, 58 (1), 21-40. (査読あり)

Lijun Pan, 2017. “Pricing of Media Platforms with Vertical Differentiation.” *Economic Computation & Economic Cybernetics Studies & Research*, 51(1), 249-262. (査読あり)

[学会発表](計 3 件)

Lijun Pan (speaker), Makoto Hanazono, “Is a Big Entrant a Threat to Incumbents? The Role of Demand Substitutability in Competition among the Big and the Small.” Asia-Pacific Industrial Organisation Conference, 2016.12.12, Melbourne, Australia

Lijun Pan (speaker), Makoto Hanazono, “Is a Big Entrant a Threat to Incumbents? The Role of Demand Substitutability in Competition among the Big and the Small.” Regional Science Workshop, 2017.3.3, Tohoku University

Lijun Pan (speaker), “Horizontal Merger of Big Firms with Product Choice in the Presence of Small Firms.” Asia-Pacific Industrial Organisation Conference, 2017.12.15, Auckland, New Zealand

[図書](計 0 件)

[産業財産権]

出願状況(計 0 件)

取得状況(計 0 件)

〔その他〕

None.

6. 研究組織

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