論文の内容の要旨

Essays in Imperfect Competition and Strategic Behavior

(不完全競争市場と企業の戦略的行動に関する研究)

広瀬浩介

The aim of this dissertation is to extend our understanding of imperfect competition and strategic behavior in some circumstances. Specifically, I focus on three topics in the field of industrial organization in this dissertation: multi-store paradox, corporate social responsibility (CSR), and mixed oligopoly. Regarding above topics, this dissertation consists of seven chapters except for Introduction. Chapter 2 and 3 study the multi-store paradox which is the theoretical problem in the field of industrial organization, in which firms do not establish multiple stores even when they can launch stores with low fixed costs and the competitors exist. I revisit this issue in line with the literature of both dynamic and static situations, respectively. In Chapter 4, 5, and 6, I investigate voluntary actions coming from CSR which is the notion whereby firms take into account not only their profits but also consumer and/or social benefit. Examples include the abatement activity to reduce emissions or adopting high-quality technologies which emit low emissions on production. The voluntary actions are highly controversial because firms maximizing own profit, which is one assumption of economics, do not have an incentive to take the costly activity just for consumers and social benefits. The typical explanations are the presence of green consumers which evaluate CSR activities or the threat of future regulation by regulatory authorities. I describe CSR from a different perspective. Chapter 7 and 8 deal with mixed oligopoly where a public and private firms coexist in the market. The mixed market has much attention from policymakers and economists since it sometimes provides different and considerable implications from private oligopoly. I mainly focus on first/second order advantage under imperfect competition, and reexamine the issue in the mixed market. Let me review the content of each chapter in more detail.

In Chapter 2, I revisit the multi-store paradox in line with the preemptive strategy of setting multiple stores (so-called Spatial Preemption) with one key modification: two incumbents establishing multiple stores. As Judd (1985)'s argument, in a standard case with one incumbent, it is not credible to launch multiple stores as an entry deterrence. I investigate the strategic entry deterrence in the presence of more than one incumbent, based on a location-then-price structure in

a variety of a circular city model. I show that the incumbents credibly deter entry by establishing multiple stores, while a monopolistic incumbent can not.

Chapter 3, titled "Payoff Interdependence and the Multi-Store Paradox" which is joint work with Toshihiro Matsumura, solves the multi-store paradox by introducing interdependent payoffs between the firms. We show that firms set up multiple stores unless the degree of payoff interdependence is low. We also show that multiple equilibria, namely intertwined and neighboring location equilibria, exist if the degree of payoff interdependence is intermediate.

In Chapter 4, titled "Environmental Corporate Social Responsibility as a Collusive Device" which is joint work with Sang-Ho Lee and Toshihiro Matsumura, we formulate a model in which whether environmental corporate social responsibility (ECSR) is adopted is chosen and then firms compete in the market. First, we consider emission cap commitment as ECSR. Under quantity competition, ECSR is adopted by the joint-profit-maximising industry association because it serves as a collusive device, although ECSR is not adopted if firms choose it independently. By contrast, under price competition, individual firms voluntarily adopt ECSR but the industry association chooses a higher level of ECSR. Next, we consider emission standard commitment (commitment to per-output emissions) and we find that it is less likely to restrict competition.

In Chapter 5, titled "Emission Cap Commitment versus Emission Intensity Commitment as Self-Regulation" which is joint work with Toshihiro Matsumura, we compare emission cap commitment that restricts total emissions and emission intensity commitment that restricts emissions per unit of output as measures of self-regulation. The monopolist chooses either emission cap commitment or emission intensity commitment and sets the target level under the constraint that the resulting emissions do not exceed the upper limit. We find that profit-maximizing firms choose emission cap commitment, although emission intensity commitment always yields greater consumer surplus. It is ambiguous whether emission intensity commitment or emission cap commitment yields greater welfare. We present two cases in which emission intensity commitment yields greater welfare. One is the most stringent target case (the target emission level is close to zero), and the other is the weakest target case (the target emission level is close to business-as-usual). Our result suggests that the incentive for adopting emission cap commitment is too large for profit-maximizing firms, and thus, governments should encourage the adoption of emission intensity commitment, especially to achieve a zero-emission society efficiently.

In Chapter 6, titled "Environmental Corporate Social Responsibility : A Note on the First-Mover Advantage under Price Competition" which is joint work with Sang-Ho Lee and Toshihiro

Matsumura, we consider a model in which two firms choose whether to adopt environmental corporate social responsibility policies and then face Stackelberg competition under price competition. We show that the first-mover has the advantage, which is in contrast to the second-mover advantage typically seen in standard price competition models.

In Chapter 7, titled "Comparing Welfare and Profit in Quantity and Price Competition within Stackelberg Mixed Duopolies" which is joint work with Toshihiro Matsumura, we compare welfare and profits under price and quantity competition in Stackelberg mixed duopolies. Under public leadership, price competition always yields greater profit and welfare than quantity competition. By contrast, under private leadership, the result depends on the nationality of the private firm. When the private firm is domestic (foreign), welfare is greater under quantity (price) competition. However, private firms always earn more under price competition. Introducing the nonnegative profit constraint affects welfare ranking but not profit ranking. These results indicate that profit ranking is fairly robust to the time structure in Stackelberg mixed duopolies, but welfare ranking is not.

Chapter 8, titled "Endogenous Timing in a Price-Setting Mixed Triopoly" which is joint work with Junichi Haraguchi, investigates endogenous order of moves in a price-setting mixed triopoly. Using the observable delay game, we show that a sequential move occurs in the mixed triopoly. Specifically, one private and a public firm set their prices at period 1 and the other private firm does at period 2 in equilibrium if goods are not significantly differentiated. This is in clear contrast to the mixed duopoly where a simultaneous move game is an unique equilibrium. We also consider a multi-period model and show that the sequential move game still emerges, while a hierarchical Stackelberg game in which the public firm, one private firm, and the other private move sequentially in order never appears in an equilibrium. This finding suggest that the sequential move game with multiple leaders prevails under price competition even when the public firm exists.