

論文内容の要旨

論文題目 : Vertical Structure and Competition Policy Essays on Exclusive Dealing
and License Contract

(和訳 : 垂直構造と競争政策 排他的取引とライセンス契約に関する考察)

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Introduction

Until 1980's, the economic analysis of competition policy focused on a vertical structure consisted with manufacturers and buyers, who are consumers themselves. Recently, downstream firms or distributors are considered explicitly in-between manufacturers and consumers. The recent research on the manufacturer-distributor structure conveys important implications for competition policy. Furthermore, over the last few decades, distributors or platforms, which connect upstream manufacturers and consumers are playing important roles in many industries, with the rapid progress in information technology and with globalization in many markets. Such trend enhances the revision of regulations and theoretical analysis.

We can observe a variety of vertical structures in the real world: regarding contractual arrangement between upstream and downstream firms, such as pricing scheme (which includes not only wholesale pricing but also license pricing), resale price maintenance, slotting allowance, quantity discounts, franchising contract: regarding organizational structure, such as vertical separation, and vertical integration. We can find numerous issues on these variant of vertical structure and competition policy that remain to be examined. In this dissertation, we try to investigate in two of them: exclusive dealing contract and licensing contract.

Exclusive Dealing Contract

In Chapter 2, 3, and 4, we investigate exclusive dealing contract and its effect on entry and competition. Whether or not exclusive dealing contracts prevent

competition or entry is one of the main issues in the economic literature on vertical restraints. There are two aspects of exclusive dealing contract: the anti-competitive aspect and pro-competitive aspect. In this thesis, we focus on the former one.

First, we briefly consider the anti-competitive aspect of exclusive dealing contracts and the economic literature on this topic. As a starting point, we should refer the Chicago Critique that suggests any exclusive contract made with anti-competitive intention would never be profitable for the party who initiates the exclusive contract. Chicago School shows that in order to induce all distributors to sign the exclusive dealing contracts the incumbent manufacturer should offer compensation to each distributor. The accumulated amount of compensation is always exceeds the monopoly profit that the incumbent may obtain when it can deter the entrant. This argument implies that if exclusive dealing contracts are observed at work, these contracts should increase welfare, so that the contracts are profitable. The Chicago School claims that any intervention on such exclusive dealing contracts harms competition.

In recent years, however, many economic researchers have shown that the Chicago Critique is a special case. Accumulated economic research contributes to clarify the criteria for judgment whether exclusive contracts are anti-competitive or pro-competitive. This phenomenon is observed in the reports of U.S. Antitrust Modernization Commission.

As some examples in the real world suggest exclusive dealing contract may be motivated by the desire to restore a market power of an incumbent that is threatened by an entrant. Such exclusionary contract is employed so that it reduces the entrant's expected profit, and ultimately it induces a potential entrant to give up entry. In other words, exclusive dealing contracts signed by two parties have negative externality on other parties. Moreover, the externality makes it profitable to sign the exclusive dealing contracts. This is the anti-competitive aspect of exclusive dealing contracts. Following Whinston (2006), we classify anti-competitive exclusive dealing into two groups of models: first-mover model and competing for exclusivity model.

Recently, exclusive dealing contracts offered by manufacturers to distributors, not final consumers, are considered in the literature. It is shown that in the slightly differentiated market, the incumbent manufacturer can make all distributors accept the exclusive dealing contract by offering zero-amount of

compensation. This is the competitive effect of downstream market. Since the competition among distributors is severe, the benefit of rejecting the exclusive dealing contract is very low, even if a distributor becomes the only one free distributor and purchases the entrant's inputs. This means that though the mechanism of effect of the exclusive dealing contract changes when buyers are distributors, not consumers, the result remains unchanged: the efficient entry is deterred by exclusive dealing contract.

The existing literature summarized above examines the cases where the incumbent manufacturer faces a potential efficient entrant. On the other hand, Chapter 2, 3 and 4 consider the case where an incumbent distributor offers exclusive dealing contracts to manufacturers in order to prevent an efficient entrant distributor. Such distributor's foreclosure activity is realistic and important for considering competition policies. The European Commission is working for a revise of Block Exemption Regulation and Guidelines on supply and distribution agreements (vertical restraints) concerning the increased buyer power of large retailers. According to the proposed revised regulation, 'the Commission proposes that for a vertical agreement to benefit from the block exemption, not only the supplier's market share (as is currently the case) but also the buyer's market share should not exceed 30%.' It implies the European Commission is now concerning that distributors would soften competition by restricting supplier's deal.

In Chapter 2, we consider a situation in which an incumbent distributor tries to deter an entry of efficient distributor by exclusive dealing contracts with manufacturers. The existing models where an incumbent manufacturer offers exclusive dealing contracts show that the incumbent manufacturer can make all distributors sign the exclusive contracts with zero up-front payment when the competition among distributors is intense. In contrast, we show that in order to make all manufacturers sign the exclusive dealing contracts, the incumbent should offer a certain amount of up-front payment. Furthermore, the incumbent distributor cannot exclude an efficient entrant distributor when competition among manufacturers is intense, i.e., when the number of manufactures large. Especially when the wholesale contract is in the two-part tariff form, the entry always occurs at the equilibrium. Our result shows that which sector of the market initiates the exclusive dealing contracts matters.

In Chapter 3, we generalize the decision process of wholesale price and show that the bargaining power of distributors crucially determines whether exclusion

of an efficient entrant distributor occurs or not. We introduce bargaining model between the distributors and manufacturers, when they decide wholesale prices. The traditional literature focusing solely on exclusive dealing contracts offered by incumbent manufacturers derives multiple equilibria in price competition models with homogenous goods. In contrast, our model generates unique equilibrium, wherein an efficient entrant must be excluded as long as distributors have sufficient bargaining power. We also introduce an entrant in the manufacturing side, and show that the upstream entry may promote exclusion of the efficient entry by an exclusive dealing contract.

In Chapter 4, we examine the effects of exclusive dealing contracts offered by an incumbent distributor to an incumbent manufacturer with entrants in both manufacturing and distribution sectors. It is well-known that a potential entry threat is welfare increasing under homogenous price competition, even though the potential entrant is less productive. This paper reexamines this intuition by employing the model above. We show that the entry threat of a less-productive manufacturer is welfare decreasing when there is an exclusive dealing contract between the incumbent manufacturer and distributor. The exclusive dealing contract offered by the incumbent distributor is a key element. In the existing literature, an exclusive dealing contract functions not only as an entry-deterrence device but also as a rent-extraction device by setting an appropriate level of liquidation damage. Hence, even in our model, without an entrant in the manufacturing sector, an efficient transaction (incumbent manufacturer trades with the entrant distributor) is realized even under the exclusive dealing contract. With the possibility of entry into the manufacturing sector, however, this mechanism does not function properly. If the cost of the new manufacturer is uncertain, the incumbent distributor cannot set an appropriate level of liquidation damage to extract all rents realized by the efficient players. Thus, there is a possibility that the inefficient entrant in the manufacturing sector replaces the efficient incumbent and trades with the new efficient distributor. This trade decreases the total welfare.

Licensing Contract

Once a firm succeeds to develop innovative technology, it will be secured by patent. There are two ways to exploit the value of patent: the patent holder can use the patent exclusively: the patent holder can sell and transfer its technology

to other firms under licensing.

In the literature regarding patent licensing, the vertical structure is consisted as follows: the upstream firm is a license holder and the downstream firm is a licensee. We investigate the contractual arrangement between a license holder and a licensee and try to incorporate issues of entry in this thesis.

An upstream firm, i.e., a license holder gains profit through licensing of its patent. The commonly used schemes are unit royalty, a fixed fee, or a combination of a fixed fee and unit royalty. A license holder chooses an optimal scheme that maximizes his profit. There are two types of vertical organization of a license holder: one is a license holder that is an independent research laboratory that has no production facility; the other is a license holder that produces and competes in the market as well. The former is called outsider (or external) license holders, and the latter is called insider (or incumbent) license holders.

In the model of outsider license holder, an independent research laboratory or technology intensive venture company, invents a cost-reducing innovation and sells a license of the technology. Licensees have production facilities and can access obsolete technology. Thus, if a downstream firm cannot buy a license of new technology, it competes in the market with its own technology. In this case, the patent has no value without licensing. In outsider license holder model, the value of a patent and the optimal licensing scheme has been a great concern of economists. They have focused the optimal license scheme and the relationship between the optimal scheme and competitiveness of the market. Licensing schemes are a unit royalty scheme, fixed fee scheme, and auction.

On the other hand, in the model of the insider license holder which is a vertically integrated license holder, the optimal license strategy becomes more complex. First of all, the incentive of insider license holders to sell its license to rivals is not clear very much. Since downstream competition destroys industry profit, the value of patent license may decrease. In other words, the literature on insider license holders investigates how license can raise the industry profit. Recently, several articles develop analysis on license schemes in the more complicated vertical structure, such as strategic delegation, a pure licensee that has no technology, and endogenously determined structure which a license holder becomes an insider or outsider.

Obviously, in both cases of the outsider, and insider license holder, the licensing schemes affect on competition in the retail market. Thus, some of licensing

schemes or conditions, such as exclusivity of license and discriminatory license, are controversial from the antitrust authority's perspective. In many countries, antitrust authorities issue guideline of licensing contracts. However, intellectual property rights should be protected in order to provide incentive of R&D investment, even if such protection ensures a license holder to obtain monopoly profit. When patent is protected properly, a firm has incentive to invest to develop a new technology. There is a trade-off between ex ante efficiency and ex post efficiency.

There are two legal approaches regarding this trade-off: one is the optimal design of patent law: the other is the intervention on patent law by competition policy. We focus on the latter approach. It has been arguable whether or not policymakers should regulate licensing schemes. In many countries, the balance between patent protection and competition policy is discussed.

In Chapter 5 and 6, we investigate the relation between licensing scheme and competition policy. In Chapter 5, we investigate the optimal license scheme with an outsider license holder, when the number of licensees is determined endogenously. We consider free entry of licensee and derive the optimal licensing scheme for a license holder. It is shown that regardless of the number of licensees, the license holder can obtain monopoly profit. Thus, if licensees are under free entry, then any regulation on licensing is unnecessary. In our model, we generalize license scheme and demand function: a two-part tariff scheme, i.e., a combination of a fixed fee and a unit royalty and general demand function. We show that if the marginal cost of production is constant, then a fixed fee is sufficient for the license holder to obtain monopoly profit. Moreover, under free entry of licensees, the license holder can obtain monopoly profit with any combination of a positive fixed fee and a unit royalty, which satisfies a certain condition. Furthermore, as a discussion we consider the case where a fixed fee is regulated to a certain level. We show that the optimal unit royalty makes the license holder obtain monopoly profit even in this case. Our result suggests that if licensees are in the market under free entry, the license holder does not have to offer exclusive license contracts or discriminatory royalty in order to maximize its profit.

In Chapter 6, we examine a case where an outsider license holder and an independent licensee who has no alternative technology. If the old license holder is vertically integrated, it may deter the efficient entry of its rival. Furthermore, we consider a case where the old license holder spins off its manufacturing

division as a subsidiary. In that case the old license holder may deter the innovative entrant more easily than when it is integrated. This is because the old license holder discriminates license contracts between its subsidiary and the outside independent licensee. In addition, the contract for the subsidiary is known by its competitor, the independent licensee. Then, the incumbent offer subsidy to its subsidiary and make it look competitive. Such contract works as a commitment device. Our result has an implication to these arguments on whether discriminatory license contracts are legal or illegal. Particularly, we consider that patent law may protect intellectual property that is obsolete as well. It may lead the result wherein patent licensing contracts prevent an efficient entry or make it difficult.