(Form 1)

Kyoto University	Doctor of Economics	Name	Jose de Jesus Herrera‐Velasquez
Thesis Title	Three Essays on Conglomerate Mergers （コングロマリット合併をめぐる三つのエッセイ）		

(Thesis Summary)

This dissertation studies several models of conglomerate mergers. They are defined as mergers that are neither horizontal nor vertical. The effects of conglomerate mergers on competition are usually neglected by competition authorities like the European Commission.

This dissertation has four chapters, and Chapter 1 is an introduction.

Chapter 2 studies a model where oligopolistic firms in technologically related two markets consider conglomerate mergers in order to shift R&D capabilities. Each market is a duopolistic Cournot market. Initially, only the firms in one of the two markets have a cost‐reducing R&D technology. A conglomerate merger, a merger between firms in different markets, allows the firm in the other market to use the technology. The firms merge if and only if their total profits from the subsequent R&D competition and Cournot competition in the two markets increase by the merger. The author fully characterizes the equilibrium market outcomes and the underlying merger decisions. If the markets have similar sizes, in any equilibrium only one firm invests in each market. The total profits in this case are larger than the total profits when the merger is prohibited, because the firms can avoid R&D competition by a conglomerate merger. Interestingly, the asymmetric outcome sometimes attains larger consumer surplus than the case where no merger is allowed. This is because the consumers benefit from the R&D investments in both markets. Policy implications regarding conglomerate mergers are, therefore, intricate.

Chapter 3 explores the reciprocal effects between agency problems and market competition in a conglomerate. The model has a conglomerate which participates as the leader in two different Stackelberg markets. The conglomerate consists of headquarters and two division managers in charge of the markets. Headquarters allocates resources to the managers for their production. Headquarters does not know the true value of the demand in one of the markets, but the manager does. Headquarters can implement a contract mechanism to obtain a truthful report from the manager. The author completely characterizes the optimal contracts. If the resources are high enough, the first‐best outcome (without asymmetric information) is attained. A separating second‐best contract is optimal if the resources are low but not too low. If the market with uncertain demand is sufficiently large, this contract sometimes improves the ex‐ante welfare in comparison to a symmetric information benchmark. A pooling second‐best contract

is optimal if the resources are very low. This contract never improves the ex-ante welfare. The author also shows that at an intermediate level of substitutability of the products in the Stackelberg markets, the second-best contract is most likely to coincide with the first-best one, and any departure from that level toward either substitutability or complementarity makes the first-best outcome less likely to be attained.

Chapter 4 employs a discrete-time, infinite horizon model to analyze the diversifying and divesting behavior of a monopolist. The monopolist participates in its core market and can merge by acquiring another monopolistic firm in a new market. Thereafter, the firm in the core market may sell the new firm for a one-shot reward. The monopolist has a stock of capital which is used to reduce the cost of production. The monopolist can increase the capital stock by purchasing in an external capital market or by merging with the monopolist in the new market. The capital stock decreases by depreciation or with a separation. In this chapter, the author employs numerical analysis and finds an approximate solution. In the solution, the conglomerate acquires a firm and stays merged in periods where the demand of the new market remains high. Further, in periods where the demand of the new market is low, the conglomerate will merge and divest intermittently.

（Form 2）

（Thesis Evaluation Summary）

A central theme of this dissertation is to examine the behavior of the conglomerates, especially their merger decisions and resource allocations. Unlike more common mergers such as horizontal mergers and vertical mergers, the literature on the conglomerate mergers is small, and we do not know much as to how those mergers may affect competition. This dissertation contributes a lot to this literature, by providing results with rich policy implications.

The main contribution of this dissertation lies in Chapters 2 and 3. In Chapter 2, the author formulates a model where the firms in two markets compete not only in R&D investment and product quantity, but also in conglomerate merger decision. Since two pairs of firms simultaneously consider mergers, one pair's merger decision depends on the other pair's strategies. This feature makes equilibrium analysis complicated and causes multiple equilibria. It is thus remarkable that the author comes up with clean characterization of equilibrium behaviors. In particular, the author provides a novel insight about competitive effects of conglomerate mergers. Namely, while those mergers benefit the firms because they avoid excess R&D competition, the mergers sometimes benefit consumers, too, because the R&D investments in both markets reduce the cost and hence lowers the price. Consequently, the overall effects must be carefully examined. This insight is valuable from the antitrust authority's viewpoint.

The model in Chapter 3 concisely describes the agency problem the conglomerates may face in reality. Although the characterization of optimal contracts is somewhat routine, the author offers an interesting implication that the total surplus may be larger than the benchmark case without asymmetric information. This observation is also worth knowing from the regulator's perspective.

Chapter 4 addresses a dynamics of merger and divestment of a monopolist. The firm makes those decisions both for profits and for acquisition of capitals. Unlike the previous two chapters, this chapter resorts to numerical methods. The analysis in this chapter is still at a rudimentary stage, but it shows the author's capacity to work with various methods.

The dissertation has considerable substance but is also subject to some criticism. For example, the analysis in Chapter 2 shows that a conglomerate's optimal R&D investment decision is always a corner solution. Namely, it makes positive investments only in one market. This

feature apparently depends on a particular specification of the cost function. It is desirable to provide either justification of this type of behavior in reality or comparison with different formulations of costs. In Chapter 3, the model assumes the Stackelberg competition in the product markets, with the conglomerate being a leader. It is interesting to examine other competition models, including the one where the conglomerate is rather a Stackelberg follower. Further, the model in Chapter 4 takes the capital stock of the monopolist in the new market as constant, although it is natural that the capital stock is endogenously determined, reflecting past actions.

However, the author can address those critiques in his future research, and the overall contribution of this dissertation is significant.

Due to those evaluations, this dissertation is recognized as worthy of a doctoral degree in economics. This decision has been made after the thesis defense on February 2, 2023.