

Strategic alliances, joint investments, and market structure

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Abstract

This paper examines strategic alliances (SAs) involving joint investments in and sharing of production capacity. We consider a situation where market entry is limited by the availability of an essential production capacity. New capacity becomes sequentially available, and the incumbent firms may form a strategic alliance in order to jointly invest in it. In this setting, SAs may influence competition in the product market by affecting market entry. We characterize the evolution of the market structure. We also show that SAs need not be anticompetitive. That is, banning SAs may lead to a more concentrated market structure than what would otherwise be the case.

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1. Introduction

Even firms that compete fiercely in the product market are often able to cooperate outside it through strategic alliances (SAs).¹ Important examples of strategic alliances are research joint ventures, joint investments in and sharing of plants and equipment, joint investments in exploration for natural resources, and sharing of licenses to produce or sell a new product.

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¹ See, for instance, [Chen and Ross \(2000\)](#) and [Morasch \(2000\)](#). Following [Morasch \(2000\)](#), we define strategic alliances as arrangements that allow firms operating in the same product market to cooperate outside it in order to influence incentives in the future.

The concern that has been raised in connection with strategic alliances is their possible influence on competition in the product market. For instance, in the airline industry, SAs involving sharing of terminal space or landing slots have been suspected to have anticompetitive effects. Many of these SAs have received attention from antitrust agencies.² The impact of SAs on competition in the product market has been theoretically analyzed in several papers. For instance, [Cabral \(2000\)](#) and [Martin \(1995\)](#) show that cooperation in R&D may facilitate collusive behavior in the product market and thereby reduce competition.³ [Chen and Ross \(2000\)](#) show how strategic alliances involving capacity sharing may reduce competition by inducing an entrant to enter the market without investing in new production capacity. [Morasch \(2000\)](#) analyzes the influence of intermediate good production joint ventures on competition. In his model, SAs reduce competition in the product market unless several alliances are formed.

A common feature of this literature is that the number of firms in the market is taken as given.⁴ However, if SAs influence profits of the incumbents, they should also influence the incentives to enter the market. This may have a large impact on competition. In this paper, we analyze how SAs affect market structure in a dynamic setting where threat of entry leads incumbents to form SAs.

We build on the literature on preemptive investment. Within this literature, [Lewis \(1983\)](#), [Krishna \(1993, 1999\)](#), and [Rodriguez \(2002\)](#) are the most closely related to our analysis. These papers consider a situation where market entry is limited by the availability of an essential production capacity. New capacity becomes sequentially available and is auctioned to an entrant or an incumbent. We use this framework to analyze strategic alliances. When new capacity becomes available the firms in the market may jointly acquire and share it while remaining otherwise independent. This is what we will call here a strategic alliance.⁵

We will first describe how the market structure and the price of new capacity evolve in the presence of SAs. When firms do not take future profits into account, the incumbents always buy new capacity units that become available. Thus, in a static set-up, SAs may only have anticompetitive effects. We then characterize the situation without SAs and show by means

² For examples of policy responses that SAs in airline industry have induced, see [Chen and Ross \(2000\)](#) and references therein.

³ A more general point was made by [Bernheim and Whinston \(1990\)](#) who show that multimarket contacts may facilitate cooperation among firms.

⁴ In [Chen and Ross \(2000\)](#), there is a (single) potential entrant. However, the possibility to form a strategic alliance only affects its investment decision, not the entry decision itself.

⁵ Our main departure from this literature is that we consider the effects of cooperative behavior among the incumbents. However, the results in [Rodriguez \(2002\)](#) should be discussed in this connection. Rodriguez presents a thorough analysis of the case of non-cooperative behavior among incumbents with a symmetric market game. When each incumbent has an incentive to acquire a new capacity unit alone, given that the other firm does not buy it, multiple equilibria arise and Rodriguez uses a publicly observable correlation device to select a unique (symmetric) equilibrium. Two incumbent firms then share the expected cost of entry preemption by both buying new capacity with an equal probability. This is different from the type of coordination we attribute to SAs, since we see SAs as a way for the incumbents to jointly buy new capacity units even in a situation where a single incumbent would not have an incentive to do so. This has potentially much larger effects on the market structure. We also depart from the previous literature in that we consider an infinite-horizon model with interim profits. Previous work has considered a two-stage setting, where first all capacity units are sold sequentially and then production takes place ([Krishna, 1993](#) also briefly considers the case with two production periods). Our set-up seems more natural in some cases, for instance, when the capacity units are interpreted as licenses to new innovations.

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