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A theory of hub-and-spoke collusion[☆]

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A B S T R A C T

We develop a model of hub-and-spoke collusion between a manufacturer and two retailers. Demand is stochastic, and collusion between retailers is difficult; the best collusive equilibrium is inefficient (Rotemberg and Saloner (1986)). In the hub-and-spoke collusive agreement, retailers transmit their information about the state of demand to the supplier. The supplier uses this information to adjust the wholesale price. By organizing the collusion, the supplier increases profits of the vertical chain. We show that, surprisingly, this type of collusive agreement can under some conditions improve consumer welfare.

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1. Introduction

Collusive conduct can endanger the benefits of competitive markets and be harmful to consumer welfare. Competition authorities distinguish agreements between competitors on the same market (horizontal agreements) and those between suppliers and retailers (vertical agreements). If horizontal agreements are generally prohibited, the analysis of vertical agreements is less clear-cut. Competition law prohibits some vertical restrictions, but, in general, views vertical agreements as less harmful to competition than horizontal agreements.

Recently, competition authorities have investigated cases of collusive conduct, that cannot clearly be classified as either horizontal or vertical agreements. The so-called hub-and-spoke collusion generally involves retail competitors and their common supplier(s). For instance, retailers may share sensitive information not directly but through a common supplier (this practice is also called A to B to C information exchange). The common supplier can also help retailers to coordinate price increases or serve as a category captain to organize marketing decisions. Competition authorities have analyzed these collusive practices quite extensively and have also prosecuted hub-and-spoke collusion in a number of jurisdictions, including the United States and the United Kingdom (see Odudu, 2011; Sahuguet and Walckiers, 2014, for a recent review of the case law).

For instance, in its Hasbro decision, the OFT found that Hasbro entered into illegal agreements with distributors Argos and Littlewoods. The infringement not only comprised vertical agreements between Hasbro and the distributors, but also a horizontal component, between Hasbro, Argos, and Littlewoods. After Argos and Littlewoods challenged the findings of the OFT, in 2006, the Court of Appeal confirmed the horizontal nature of the trilateral concerted practice between Hasbro and the retailers.[2]

Incentives to participate in hub-and-spoke collusion are not well understood. Odudu (2011) argues that:

> The additional challenge [...] in the hub-and-spoke context is to explain why [the supplier] is involved (and thus liable) in the indirect information disclosure. It has been argued that [the supplier] has no incentive to police [the retailers'] horizontal arrangement and strong incentives to do just the opposite.

At first sight, an undertaking with some degree of market power would fight any attempt of downstream retailers to cooperate in order to increase their margins. A Chicago School type of argument would argue that there is only one monopoly profit, and that

[2] In another recent case, the Belgian Competition Authority has sanctioned 18 companies that took part in coordinated increases of consumer prices for drugstore, perfumery and hygiene products (DPH products) for a total of 174 millions euros. Actors of the retail sector as well as suppliers of the DPH products were sanctioned. As mentioned in the press release, the collusive scheme clearly shares the characteristics of hub and spoke collusion: "The facts considered in the decision show that the core of the infringement was at the retail level, with suppliers acting as intermediaries and facilitators, each of them exclusively for their respective products. However, as part of these coordinated price increases, no direct contact between the distributors were identified, nor contacts between the various suppliers involved." In this example, there was more than one supplier involved.