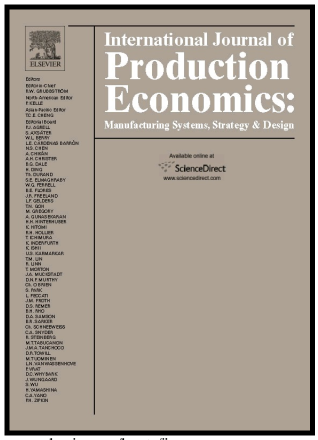

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Supply Chain Contracting for Vertically Differentiated Products

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Abstract

We study a supply chain where the supplier sells a family of vertically differentiated products with varying quality levels through a network of distributors to end consumers who have heterogeneous valuations for quality. With traditional wholesale pricing, it has been shown that the supplier does not share the same incentives as the distributors to sell higher quality products and as a result their economics are not well aligned.

To analyze this problem, we consider the simplistic case in which the product family consists of two products with high and low quality. After arguing for the two kinds of distortions caused by the firm's status-quo wholesale pricing, we show that some of the earlier contracts studied for one product can be designed to achieve supply chain coordination for this setting with two vertically differentiated products; similarly, we propose a completely new (bundling) contract that is easy to communicate within the supply chain and show that an existing contract (ASP) currently in use in the industry does not necessarily align the incentives and achieve coordination. Because manufacturers generally have a network of distributors, we then extend our results to the case of Cournot competition. We first characterize the emerging equilibrium and then analyze a similar set of coordinating mechanisms. We show that the efficiency of the wholesale pricing contract improves as the number of competitors increases which means competition eliminates not just the well-known double marginalization, but also the vertical double marginalization-a distortion and source of inefficiency specific to this environment.

Keywords: Channel Coordination; Supply Chain Contracting; Vertical Differentiation