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Selling Vertically Differentiated Products under One Roof or Two? A Signaling Model of a Retailer's Roof Policies

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Abstract

Retail firms commonly offer products of different quality levels to serve different consumer segments. In doing so, some firms adopt a "one-roof policy," selling all of their products in one store, whereas others adopt a "two-roof policy" to better segment consumers, selling high-quality products in a high-end store and low-quality products in a separate, low-end store. Although roof policies are widely practiced and an important aspect of retail management, they are overlooked in the literature and thus not well understood. In this paper, we look at a multi-product retail firm and explore the implications of roof policy for its quality signaling strategies. In our model, the firm carries two vertically differentiated products to serve two consumer segments. We first demonstrate that when product quality is readily observable to consumers, a two-roof policy yields a greater profit than a one-roof policy if the benefit from segmentation outweighs the cost of an additional roof. Then, we assume that a proportion of consumers are uninformed about quality a priori. We show that under both policies, there exists an equilibrium in which the retailer uses both price and in-store services to signal quality. Surprisingly, now there are conditions under which a two-roof policy is outperformed by a one-roof policy, even if the cost of an additional roof is zero. This result sharply contrasts the conventional wisdom that segmentation is optimal as long as its associated marketing cost is low, and suggests the importance of quality information issues in roof policy decisions.

Keywords: Roof policy; Signaling; Retailing; Assortment

Introduction

Retail firms usually offer products of different quality to serve different consumer segments. In doing so, some firms adopt a "one-roof policy," by which all of their products are sold in one store/chain. Other firms adopt a "two-roof policy" to better segment the market, selling their high-quality products in a high-end store and their low-quality products in a separate, low-end store. Both policies are commonly observed in practice. For example, Buckle (in apparel), Conn's (in electronics and appliances), and Tiffany & Co. (in jewelry) adopt a one-roof policy. A typical Tiffany store serves very different consumer segments. Most Tiffany diamond rings are priced between $1,000 and $9,999, but there are also a number of rings priced bellow $500, and dozens of rings priced above $50,000 and even $1,000,000. Many other jewelers, in contrast, adopt a two-roof policy, serving different consumers through different stores. For instance, Sterling Jewelers uses "Kay Jewelers" to target price-conscious consumers and "Jared the Galleria of Jewelry" to target image-conscious customers. In the apparel industry, Matai Inc., an upscale apparel firm, adopts a two-roof policy, offering "Casanova Clothing Boutique" for young male professionals and "Privilege by Casanova" for more quality-sensitive customers. Similarly, Gap Inc. has retail brands such as "Banana Republic", "Gap", and "Old Navy", each developed to appeal to a specific consumer group.

A "roof" represents a retail firm's store/chain, and thus a roof policy reflects a retail firm's position and assortment strategies that affect store image, product and service quality. Although roof policies are a firm-level decision made by top managers that has a significant impact on performance, they have long been overlooked in the academic literature. Although there is a vast literature on product-level issues in the context of retailing (e.g., differences between product brands, whether to carry private

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labels, etc.), few studies have examined the firm-level position issue of whether a retail firm should have one or more retail brands/chains.

Conventional wisdom suggests that compared with a one-roof policy, a two-roof policy enables a retail firm to better segment heterogenous consumers and better serve their different needs, and thus a two-roof policy should be optimal if the benefit from segmentation outweighs the cost of an additional roof. Although simple and useful, this perspective does not seem to provide a sufficient explanation of various observations in reality. For instance, after May Department Stores company was acquired by Federated Department Stores, Inc., over 400 former May stores were consolidated and renamed as Macy's. In contrast, the stores and brand name of Gordon Jewelry were maintained after it was acquired by Zale Corp. Why do retailers adopt different roof policies when managing their retail operations? Do retailers from different retail sectors or product categories have different preferences toward a roof policy? Does a roof policy play other roles in addition to segmentation?

Using theoretical models, this paper demonstrates how a retail firm can use a roof policy and its associated strategies to reveal product quality information to consumers. This new perspective, complementing the conventional segmentation point of view, contributes to a more complete understanding of retail firms' roof policies. The existing theoretical literature has examined price, advertising, product warranty and brand name as tools a manufacturer can use to signal quality. It has also been shown that retailers can use money-back-guarantees and their reputation to signal quality. This paper adds to the second stream of literature by exploring the signaling role of a roof policy. To highlight this role, we focus on situations where products are not well branded, so brand names (of either the retail firm or the manufacturer of the product) do not signal quality. This assumption is plausible in many situations. In general, a well-branded name is often unavailable to small start-up firms or exporters. As remarked by Chu and Chu (1994), "a manufacturer cannot signal quality by umbrella branding if it does not have an established brand name. Nor can a manufacturer advertise heavily to signal quality if it does not have sufficient capital to do so because of an imperfect capital market." In the context of retailing, many different products have marked quality difference, even when they share the same brand name. This implies that brand names are only an imperfect quality indicator. For example, most products in electronics stores are well-known brands (e.g., Samsung cellphones, Nikon cameras). However, because these brands generally offer a wide range of models with different quality levels, consumers may have to use signals other than the brand name to infer the quality for a specific model. Likewise, although diamond rings in Tiffany stores carry the same brand name, their cut, clarity and color can be very difficult for consumers to evaluate, despite of the third-party certificates provided there. Hence, even at well-known jewellers, "fine jewelry is often one of a kind, so you can't shop for the best deal the way you would for a television or vacuum" (Consumer Reports Money Adviser 2013). Moreover, many retail firms are exploring the global market, and thus their brands that are well known by one market may not be recognized by others.

In these cases, we argue that a roof policy can be employed to reveal product quality information to otherwise uninformed consumers. As an example, Chow Sang Sang is a premier jewelry retailer in Greater China. It adopts a two-roof policy in Hong Kong and Taiwan, where it has two reputed retail brands/chains, "Chow Sang Sang" and "Emphasis". In contrast, it adopts a one-roof policy in P.R. China, with "Chow Sang Sang" only. We argue that one of the compelling reasons for this behavior is to signal quality: the jeweller may find quality signaling a more prominent issue in a developing country where the market is less developed and consumers are less informed. Consequently, in the Mainland China market it forgoes the benefit from segmentation for more efficient signaling facilitated by a one-roof policy.

We consider a market in which a retail firm carries two vertically differentiated products (i.e., a low-quality product and a high-quality product) and serves two consumer segments (i.e., a price-sensitive segment and a price-insensitive segment). We start with a complete information model in which product quality is known to consumers. Our analysis confirms the conventional wisdom that a two-roof policy will be preferred if the benefit from segmentation more than offsets the associated cost. This intuition is, however, upended in our signaling models in which product quality is not readily observable to all consumers. In such markets, uninformed consumers may use signals to infer product quality, which in turn motivates a high-quality firm to signal. We show that under both one- and two-roof policies, there is a separating (signaling) equilibrium in which the firm uses both a high level of in-store services and a high product price to signal a high quality. Due to the firm's signaling efforts, the benefits and costs associated with one- and two-roof policies are more subtle than those under complete information. We elucidate the conditions under which a one-roof policy facilitates more efficient signaling and results in greater profit than a two-roof policy, even if the latter incurs no additional roof cost. Thus, in sharp contrast to the conventional wisdom that segmentation is optimal as long as its costs are low, our result suggests that when making a roof policy decision, in addition to segmentation, top managers may also need to consider its implications for consumers' perceptions of product quality in their stores.

There are two driving forces behind the above result. First, many in-store services such as faster checkout lines and more friendly salespeople are not discriminative. Thus, providing a high level of such services is less efficient under a one-roof policy (i.e., in a single store that serves both high- and low-end consumers) than under a two-roof policy (i.e., providing a high level of these services in a high-end store and a low level in a low-end store). However, it is this inefficiency in service provision that effectively deters a low-quality retailer from mimicking, thus facilitating a separating equilibrium. The second driving force is also related to deterrence of mimicking behavior by a low-quality retailer. When a low-quality retailer "mislabels" a low-quality product as high quality and exploits uninformed consumers with a high price while selling a correctly labeled low-quality product at a low price, some informed consumers will be disgruntled and leave the store without making any purchase. Obviously, the loss of sales from these consumers