# Vertical competition between manufacturers and retailers and upstream incentives to innovate and differentiate

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## Abstract

Vertical competition, namely competition between retailers' store brands (or private labels) and manufacturers' brands has become a crucial factor of change of the competitive environment in several industries, particularly in the grocery and food industries. Despite the growing literature on the determinants of the phenomenon, one topic area regarding the impact of vertical competition on the upstream incentives to adopt non-price strategies such as product innovation as well as horizontal and vertical product differentiation has so far received little attention. An idea often put forward is that the increasing bargaining power of retailers and higher vertical competitive pressures can have negative effects on such incentives by lowering manufacturers' profits. On the other hand, there is a significant empirical evidence supporting the view that non-price strategies of product innovation and differentiation continue to play a key role and remain a crucial source of competitive advantages for several manufacturers.

In this paper, we present a simple conceptual framework which allows us to focus on two hypotheses which interacting explain why the disincentive effects are not so obvious. The first hypothesis regards the existence of an inverse relationship between the strength of a given brand and the retail margin as suggested by Robert Steiner. Through a two-stage model in which manufacturers do not sell directly to final consumers and the retail industry is not perfectly competitive, Steiner argued persuasively that in such models leading brands in a product category yield lower retail margins than less strong brands. Retailers are forced to stock strong brands and therefore have relatively less bargaining power in negotiating wholesale prices. In addition, price competition among retailers is more intense on strong brands since consumers select these brands to form their perceptions of stores' price competitiveness and are ready to shift to lower price stores if retail price of these brands is not perceived as competitive. Thus, intensive intrabrand competitive pressures discipline retailers pricing policy on stronger manufacturer brands much more than on weaker brands. A key prediction of Steiner's two-stage model is that, since manufacturers' non-price strategies have a margin depressing impact which is additional to their direct demand-creating effect, manufacturers face greater incentives to invest in advertising and R&D.

The second central hypothesis in our framework is that in a world of asymmetric brands and intense vertical competition there is a further mechanism at work due to retailers' delisting decisions. Given that retailers have to make room for their store brands at the point of sale, they have to readjust their assortments delisting some manufacturer brands. Retailers would like delisting strong brands given that the retailer's margin on these brands is lower. The problem is that strong brands can contrast vertical pressures better than weaker brands and cannot be delisted. In making shelf-space decisions, rational retailers will recognise that they can delist only the brands whose brand loyalty is lower than their store loyalty. On the contrary, retailers cannot delist brands for which brand loyalty is greater than store loyalty. This implies that manufacturer brands operate in a two-region environment. We call these two regions, respectively, the 'delisting' and 'no-delisting' region and show that the demarcation point between them is given by the level of retailer's store loyalty.

By combining the Steiner's hypothesis with the mechanism of delisting, we argue that in a competitive environment characterized by vertical competition is at work a threshold effect which increases optimal

R&D and advertising expenditures. The intuition is that it is vital for manufacturers willing to remain sellers of branded products to keep brand loyalty of their brands at a level higher than retailer's store loyalty. And the only way to pursue this goal and avoid to be involved into the risk of being delisted is to boost brands. We also show that vertical competitive pressures are particularly strong on second-tier brands. A brief review of some recent patterns and stylised facts in the food industries and grocery channels consistent with these predictions conclude the paper.

**Keywords:** vertical competition, store brands, delisting, optimal advertising

## 1. Introduction

Large-scale retailing changes profoundly the relationships between manufacturers and retailers. In particular, the existence of private labels (or store brands) adds a new and important dimension to competition. Whenever in a category product, retailers launch their private labels, the competitive environment is characterized by the existence of vertical competition, namely the competition between retailers' private brands and manufacturers' brands. This competition has become increasingly relevant in several industries, particularly in the grocery and food industries. As a consequence, the phenomenon of private labels has received significant attention in the recent literatures of marketing, economics and strategic management.[1]

The literature on private labels has addressed several issues. Most studies have examined why retailers introduce private labels and their impact on the intensity of retail price competition (Cotterill and Putsis, 2000; Gabrielsen and Sørgard, 2000; Hoch and Banjeri, 1993; Mills, 1995, 1999; Narashiman and Wilcox, 1998; Bontems, Monier-Dilhan and Réquillart, 1999; Putsis, 1997; Putsis and Cotterill, 1999), their strategic positioning and market success (Sayman et al. 2002; Scott-Morton and Zettelmeyer 2001; Raju et al. 1995; Dhar and Hoch 1997), the consequences of store brands on retailer profitability (Ailawadi and Harlam 2002, Kadiyali et al. 2000).

There is also a growing literature addressing bargaining power between manufacturers and retailers in general and how, in particular, store brands contribute to increase buyer power and enable the retailer to get input price concessions (Katz, 1989; Vickers and Waterson, 1991; Berto Villas-Boas, 2002; Mills, 1995; Bomtems, Monier and Réquillart,1999; Chintagunta et al., 2002).

Despite the growing literature, the presence and development of store brands raise, however, some issues which remain relatively underexplored. One topic area which is still particularly underresearched regards the effect of the competitive interaction between private labels and national brands on the upstream incentives to adopt non-price strategies such as product innovation as well as horizontal and vertical product differentiation.

As a result, the issue remains characterized by different and conflicting views both at theoretical and empirical level. Some views emphasize the positive impact of private labels and buyer power for innovation and product quality. By contrast, other authors propend for less optimistic views. As suggested by Mills (1999), brand manufacturers can develop different counterstrategies in response to the development of private labels. Some of these strategies refer to short-term decisions (for example, price

[1] For a recent survey of the literature regarding the impact of private labels introduction and expansion, see Bergès-Sennou, Bontems and Réquillart (2004).

promotions), while others are more long-term. National brand producers can react to private labels by using a product differentiation strategy, or by developing new products. Similarly, Bazoche, Giraud-Héraud and Soler (2005) suggest that the creation of higher quality private label is not necessarily detrimental but can increase upstream incentives to innovate and improve quality.

The possibility that vertical competition can affect positively uptream incentives to adopt non-price strategies has been noted by Steiner (2004) who confirming a similar conjecture in Steiner (1987) writes: "[..in] a mixed regimen in which the leading national brands are effectively challenged by the private labels of the major retailers [...] creates an environment that retains most-all of the benefits of manufacturers' brand domination – frequent product innovation, scale economies at both stage and slim leading national brand retail margins" (p. 122).

But an idea often put forward is that the increasing bargaining power of retailers and higher vertical competitive pressures can have negative effects on such incentives by lowering manufacturers' profits and, as a consequence, making it even more difficult to finance advertising and R&D. Hence, the negative impact on the non-price strategies that these expenditures contribute to finance, namely product innovation, horizontal and vertical product differentiation. There is, indeed, growing concern about the consequences of buyer power. For instance, a report prepared for the European Commission suggests that when facing powerful buyers suppliers may "reduce investment in new products or product improvements, advertising and brand building" (European Commission, 1999). A recent Federal Trade Commission report suggests that consumers 'could be adversely affected by the exercise of buyer power in the long run, if prices to suppliers are reduced below the competitive level and if the suppliers respond by under-investing in innovation or production (FTC, 2001).

The aim of this paper is to improve our understanding of the consequences of vertical competition. Contrary to the view of a negative impact of buyer power and vertical competition on upstream incentives, we show that there are substantial and persistent incentives to adopt non-price strategies of innovation and differentiation. We do not develop a formal model. More simply, we provide a simple conceptual framework to illustrate how in a competitive environment characterized by the presence of vertical competition, manufacturers may face stronger incentives to adopt innovation and differentiation strategies than in an environment in which the only dimension of competition is horizontal.

We build on the two-stage approch developed by Steiner. A key finding of Steiner's analysis is that in a dual-stage model there is an inverse relationship between the strength of a brand and the retailer's margin, namely the difference between a brand's retail price and its wholesale (or factory) price. Leading brands yield lower retail margins than less strong brands. The implication is that manufacturers face greater incentives to invest in advertising and R&D to establish and increase brand's strength because, in addition to their direct demand-creating effect, the margin-depressing effect of these strategies leads to incresing returns to advertising and R&D expenditures.

Building on this literature, we develop a theoretical framework that combines the two-stage approach developed by Steiner with the notion that in order to create shelf space for their brands, retailers have to delist some national brands. This allows us to show the existence of a further mechanism in addition to the one focused by Steiner, which

contributes to increase the incentives of upstream firms to reinforce innovation and differentiation strategies. The incentives to innovate and differentiate do not depend only on the margin depressing mechanism explored by Steiner (the Steiner effect) but also on the competitive reaction to the risk of being delisted (delisting effect). As a consequence of this risk, manufacturers face even stronger incentives to adopt non-price strategies of innovation and differentiation in comparison to those predicted by Steiner's analysis. This further mechanism is due to the fact that retailers need shelf space for stocking their private labels and they have to delist some manufacturer brands to obtain it given that shelf space is a scarce resource. The competition for retailer's shelf becomes much more intense.

This mechanism of delisting creates a threshold effect which increases optimal R&D and advertising expenditures. The intuition is that the incentives to innovate and differentiate are not only due to Steiner's effect but also to the threhold effect associated to the level of store loyalty.

We show that vertical competition may have positive effects on the incentives to adopt non-price strategies. With asymmetric firms (brands), an increase in intensity of vertical competition does not necessarily lead to higher or lower profits for all firms, but forces the firms willing to remain sellers of branded products to keep brand loyalty of their brands at a level higher than retailer' store loyalty. And the only way to pursue this goal and avoid to be involved into the risk of being delisted is to boost brands.

One further prediction of our framework is that retailers will be more likely to replace second-tier brands with private labels because retailers can and are strongly incentived to delist just secondary brands given that they obtain on these brands lower margin than on tertiary-tier or fringe brands.

We also show that the delisting effect becomes stronger over time to the extent that retailers develop stronger and stronger store brands. To the extent that consolidation, reputation, and store loyalty of retailers tend to increase, the level of brand loyalty which firms are forced to reach to avoid delisting increases as well. Thus, the interaction between the mechanism of delisting and the evolution of private labels determines a dynamic process which may finally involve even the strongest manufacturer brands. Finally, the risk of being delisted and replaced by private labels may become a real threat for market leaders themselves.

The rest of the paper is organized as follows. Section 2 gives a brief review of the relevant literature on store brands and vertical competition. Section 3 sets up the conceptual framework. In Section 4, we present some empirical evidence supporting our framework's predictions. Section 5 concludes.

## 2. Store brands and vertical competition: background and stylized facts

Store brands have received increased attention in recent years. Two key stylized facts are well-known and are increasingly confirmed by recent patterns. First, private label products are steadily increasing their market share and retailers are placing a growing emphasis on branding and marketing their private labels (Senauer and Venturini, 2005). These brands are the share leaders in several food product categories both in the United States and Europe. According to the 2005 report from ACNielsen (The

Power of Private Label, 2005), “private label items made up 17 percent of total value sales for the 12 months ending the first quarter of 2005, up from the 15 percent level of the previousACNielsen report in 2003. Private label sales increased 5 percent, more than double the 2 percent growth rate of manufacturer brands (Tarnowski, 2005).[2]
What’s more, private labels are still expected to grow although it is difficult to say whether their worldwide shares will reach those of countries as Switzerland, Germany or Great Britain, as well as it is difficult to say whether these high-share markets have reached their peak. At any rate, the key fact is that the quantitative dimension of the private label phenomenon is clearly absolutely impressive.
The second relevant stylized fact is that retailers are expanding their brands far beyond the initial traditional focus on low price and low quality. In addition to the increase in the share of private label sales, there is in fact also much evidence of a growing trend towards the development of high quality private labels. [3]
This trend confirms that private label positioning tends to change over time. Initially, private labels are weak brands, characterized by a low brand loyalty and without any innovative content, just a low price/lower quality alternative to manufacturers’ brands. But over time, their positioning and role change drastically. Today, private labels are increasingly able to provide the quality once exclusively associated with manufacturer brands and their quality standards continue to evolve. More recently, retailers have also begun to carry premium brands. According to a AcNielsen (2005), the growth of premium private label products is a steady trend. Higher quality premium private label, in fact, continue to entry and the price of private label products is now equal to (or even higher than) leading manufacturer brands in several product categories.

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[2] Europe remains the main market for private labels sales, with a 23 percent share. The top five store brands markets are all in Europe: Switzerland, at 45 percent; Germany, at 30 percent; Great Britain, at 28 percent; Spain, at 26 percent; and Belgium, at 25 percent. The emerging markets of Croatia, the Czech Republic, Hungary, Slovakia, and South Africa collectively saw the highest private label growth rate of 11 percent, Latin America and Asia Pacific also had small private label markets in terms of share, but didn't show the same double-digit growth rates as in the other emerging markets. North America had both a high share (16 percent), and a considerable growth rate (7 percent).

[3] Increasingly, store brands offer quality at least as good as that of the so called ‘big brands’. The perception that private label brands are a viable alternative to big-name brands is well documented by ACNielsen (2005) according to which 68 percent of consumers either slightly or strongly agreed with the statement "Private label brands are a good alternative to major brands. For American consumers, store brands are brands like any other brands. According to Private Label Manufacturing Association, a recent study by The Gallup Organization indicates that 75 percent of consumers defined store brands as "brands" and ascribed to them the same degree of positive product qualities and characteristics - such as guarantee of satisfaction, packaging, value, taste and performance - that they attribute to national brands. Moreover, more than 90 percent of all consumers polled were familiar with store brands, and 83 percent said that they purchase these products on a regular basis.

It is not difficult to explain the determinants of these stylised facts. There is indeed theoretical and empirical evidence on the benefits that private labels offer retailers. The literature documents that store brands typically carry higher retailer margins in comparison to those on manufacturers' brands contributing to increase retailers' profits (Mills, 1995; Ailawadi and Harlam, 2004; Narasimhan and Wilcox 1998).

Moreover, it is well-known that store brands enable retailers to strengthen their bargaining position vis-à-vis manufacturers of national brands. In general, the bargaining power of the retailer is believed to increase as a result of the adoption of store brands programs. Store brands may allow the retailer to negotiate lower wholesale prices on national brands leading to higher unit margins on the national brands (Mills 1995; Scott-Morton and Zettelmeyer 2001).

Last but not least, private labels may help retailers to differentiate their stores, creating store loyalty and protecting retailers from price competition, allowing potential benefits in terms of increased store traffic and store revenues. Retailers can use several instruments to differentiate their stores. They can increase and improve service, extend opening hours, enlarge assortments. But all these measures have a limit: they can be cancelled out by competing retailers. Store brands are an effective instrument of store differentiation just because, by definition, they are store specific (the other competing stores cannot carry them), and given that they are 'brands', they create repeated purchases with the result that repeated purchases of store brands contribute to develop store loyalty.

Even if the contribute of private labels to chain differentiation is not yet well documented, there is empirical evidence that store brands represent an effective way to create store loyalty (Brady, Brown and Hulit, 2003). Corstjens M. and R. Lal (2000), through a game theoretic analysis, show that quality store brands can be an instrument for retailers to generate store differentiation and store loyalty, making it more costly for consumers to switch stores. Recent empirical research suggests that store brands increase store image and store loyalty by improving store differentiation vis-à-vis other retailers .[4]

Despite the growing literature on the phenomenon of private labels, one topic area regarding the impact of vertical competition on the upstream incentives to innovate and differentiate has so far received little attention. An idea often put forward is that the increasing bargaining power of retailers and higher vertical competitive pressures can have negative effects on upstream incentives to adopt nonprice strategies such as product innovation as well as horizontal and vertical product differentiation

The argument is that buyer power lowers suppliers' profits inducing them to decrease R&D expenditures (see, for example, Dobson, 2005; and Noll, 2005). One further argument is that since technological appropriability conditions are very weak in the

[4] Corstjens and Lal (2000) empirical findings indicate that store brand penetration and the resulting differentiation lead to increased consumer loyalty for the four major grocery chains in the UK. Sloot and Verhoef (2004) have suggested that store brands are associated with higher store loyalty though other researchers argue that heavy users of store brands are loyal to store brands in general, not necessarily to the store brand of a particular retailer (Ailawadi and Harlam, 2004). For the growing importance of retail branding and its ability to influence customer perceptions and drive store choice and loyalty, see Ailawadi and Keller (2004).

food industry, if private labels are successful in quickly imitating new products, then they can reduce rents and incentives to innovation. (Galizzi and Venturini, 2005).
Berges- Sennou et al. (2004) have pointed out that the development of private labels could change the share of profits within vertical structures. A decrease of manufacturers' profits of the upstream producers could lead to less innovation. This mechanism is reinforced by the strategy of retailers who develop 'me- too'‘products, a strategy which can be seen as a substantial free- riding on research and development of new products"
Buyer power may force food manufacturers to reduce investment in new products or product improvements, advertising and brand building and as we have seen above, this view is supported by official reports of the European Commission and the Federal Trade Commission.
Significant recent advances in the analysis of buyer power have, however provided a different view. There is now a small but growing theoretical literature which examines formally the impact of buyer power on the incentives to innovate. Interestingly, Inderst and Wey (2002) show that incentives for product improvement may actually increase with more concentrated buyers. Inderst and Shaffer (2004) developed a model in which retail mergers increase buyer power leading to a reduction in product variety and social welfare. More recently, Inderst and Wey (2005), using the axiomatic approach to bargaining theory show that the presence of buyer power need not necessarily reduce suppliers incentives to innovate. To the contrary, it may increase upstream firms incentives. This model, however, does not consider the existence of private labels and delisting decisions along the lines developed by the above framework.
Weiss and Wittkopp (2003, 2005) find that buyer power reduces upstream incentives to introduce new products in a sample of German food manufacturers. But, interestingly, the authors also find that the negative effect of retailer's buyer power is mitigated if manufacturers also have some market power. In their data, firms with a large market share introduce a significantly higher number of product innovations.
The theoretical literature on competition and innovation is not clear about the effects of competitive pressure on a firm's incentive to invest in product innovations. Indeed, competition may have both negative and positive effects on innovation incentives. Recent research has focused on the crucial importance of the assumption about the degree of firms (brands) heterogeneity. A clear theoretical prediction is that a rise in competitive pressure reduces each firm's profit level and makes it less attractive to introduce a new product in an industry with symmetric firms. However, the realism of the symmetry assumption may be questioned and with asymmetric firms the outcome may be different. For example, Boone (2000) argued that a negative impact on innovation is less likely in models with asymmetric firms in which the source of asymmetry regards not only efficiency levels but also the firm's positioning in the product space. With his words, "if firms invest to explicitly position their products [...] then a rise in pressure may make it profitable to move further away from the industry standard" (p. 564). Boone (2001) shows that when firms are not symmetric, an increase in intensity of competition does not necessarily lead to higher or lower profits for all firms, but forces only the least efficient firms out of the market.
In summary, recent theoretical developments provide useful insights about the impact of buyer power on upstream incentives. Interestingly, this literature does not support the hypothesis of necessarily negative effects but suggest that the issue may be more

complex. This literature emphasize the importance of two key analytical features: an approach based on bargaining theory and the assumption of asymmetric firms. One problem is that the works are not well designed to fully explore the specific nature of buyer power in the vertical relationships between food manufacturers and retailers. As a consequence, they do not providee an appropriate framework to analyse the specific mechanisms at work in a competitive environment characterized by vertical competition.

In whar follows, we develop a framework explicitly designed to capture the main mechanisms operating in the context of vertical relationships between manufacturers and retailers, after the entry and qualitative development of store brands.

## 3. A two- stage framework with delisting

In this section, we investigate how store brands leading to higher buyer power and vertical competitive pressure may indeed not reduce upstream incentives to product quality and innovation. A key hypothesis in our framework is that manufacturer brands are asymmetric. Let us imagine a world of asymmetric firms, with different resources and capabilities to develop new products and brand policies. But it may also be useful, as we will see, to assume that firms have portfolios of heterogeneous brands in relation to their strength, for example, in terms of brand equity, loyalty, innovative content and degree of differentiation. Given the nature of our framework, we do not go into details of specific non- price strategies. We consider all non- price decisions (product innovation and differentiation) which can affect the strength of a brand and we measure this strength through the notion of brand loyalty.

### 3.1 The Steiner's curve

More than two decades ago, Robert Steiner developed a dual- stage paradigm to examine vertical relationships between manufacturers and retailers in consumer goods industries to take into account that, contrary to the implicit assumption of what he called the single- stage approach, which was then and in some way still is the standard approach in economics textbooks, manufacturers do not sell direcly to final consumers and the retail industry is not perfectly competitive.[5]

A key prediction of Steiner's approach is the existence of an empirical regularity between the retailer's margin - namely the difference between a brand's retail price and its factory price - and the strength of a brand. This margin is not fixed and equal among competing brands but reveals a negative association with brand strength. The stronger the brand, the lower is the retailer's optimal markup over factory price.[6]

[5] Economic research has often oversimplified the vertical relationships between manufacturers and retailers by assuming that retailers are neutral and unable to affect upstream behavior. Hence, the importance of Steiner's approach. For a recent review and assessment of Steiner's approach, see Gundlach and Foer (2004) as well as the papers collected in the Winter 2004 issue of the Antitrust Bulletin.

[6] Alfred Marshall (1920) had already pointed out this relationship. For a review of the empirical evidence supporting the existence of a significant inverse association between brand advertising and retail margins, see also Farris and Albion (1980) and

The reason is that retailers are forced to stock strong brands and therefore have relatively less bargaining power in negotiating their wholesale prices with manufacturers. In addition, retailers' markups on these brands are strongly influenced by the intensity of price competition among retailers (intrabrand competition). This competitive pressure is more intense on strong brands since consumers select these brands to form their perceptions of stores' price competitiveness and are ready to shift to lower price stores if retail price of these brands is not perceived as competitive. Thus, intensive intrabrand competitive pressures discipline retailers' price decisions on strong manufacturer brands. With Steiner's words, " when consumers are more disposed to switch stores within brand than brands within store, the manufacturer dominates his retailers, and vice versa when consumers are more inclined to switch brands within store" (Steiner, 1984). Thus, while strong brands force retailers to compete vigorously with each other and to retail at a small margin, weaker and fringe brands do not face similar competitive price pressures.[7]

While Steiner did not developed a formal model, his ideas contributed to the development of an important stream of analytical models. Recently, Lal and Narasimhan (1996) examined the stategic impact of brand advertising on margins utilizing a game-theoretic model. Their results show that under some conditions a manufacturer's advertising can lower the retail margin confirming Steiner's hypothesis. Similar results are reached by other recent works (Sethuraman and Tellis, 2000; Ailawadi and Harlam, 2004).

To develop our framework, we begin with the hypothesis of an inverse relationship between the strength of a brand and the retailer's margin. It is easy to understand the implications of the Steiner's analysis for the upstream incentives to invest in non-price strategies. The margin-depressing effect has key implications for the level of advertising and R&D expenditures to build brands. To the extent that manufacturer advertising and R&D affect not only final demand, but also margins at the retail level (as well as the brand's retail penetration and retailer's support to the brand) the effectiveness of advertising and R&D will be higher than in a single-stage model. In other words, if the margin depressing impact of nonprice strategies is additional to their direct demand-creating effect, manufacturers face greater incentives to invest in advertising and R&D to establish and maintain strong brands.

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Albion (1983).

[7] It is important to note that according to the theory of derived demand, prices and margins at the retail and wholesale (factory) level are necessarily perfectly correlated for both view of advertising. In other words, if advertising leads to increased market power through product differentiation, both wholesale and retail prices increase and both manufacturers and retailers get higher margins. Alternatively, if advertising does not lead to higher differentiation and brand loyalty but spreads information and increases price elasticity, then both wholesale and retail prices decrease resulting in lower margins at both levels. By contrast, according to the Steiner's approach it is possible that a manufacturer's advertising can have opposite effects on wholesale price elasticity and retail price elasticity so that margins can move in opposite directions.

Steiner (1987) developed this analysis utilizing the notion of advertising response function, the relationships between sales and advertising input and assuming the presence of a threshold level.[8]. The existence of a threshold level in the sales-advertising relationship is generally supported by empirical evidence. It means that beneath a certain level there is essentially no sales response. In other words, some positive amount of advertising is necessary before any sales impact can be detected. More precisely, the advertising response function is S-shaped, convex in advertising up to an inflection point after which it is concave.[9]

Formally, the advertising response function may be expressed in terms of the advertising elasticity, defined as the proportionate rate of change in sales with respect to advertising and it is therefore immediate derive the implications for the optimal advertising expenditure. Dorfman and Steiner defined the standard approach according to which the joint optimum of price (P) and advertising expenditure (A) in the case of a monopolist is given by equality of the ratio of advertising-to-sales A/S (advertising intensity) with the ratio of the advertising elasticity of demand, $e_A$, to the absolute price elasticity of demand, $e_P$: $A/S = e_A/e_P$, where $S = PQ$, and Q denotes the output level.

On the basis of the condition of Dorfman and Steiner, the optimal advertising intensity depends on how increases in advertising affect the firm's cost and demand.The condition simply states that more advertising will be undertaken the more profitable it is.

If the advertising response function is S-shaped, the marginal returns to advertising are increasing for some initial region and the advertising elasticity is greater the longer the region of increasing returns to advertsing. Since advertising expenditures are key determinants of the strength of a brand and affect the brand's retail penetration and support, as well as the retailer's margin, these three "dual stage effects" increase the advertising effectiveness. Therefore, in a dual-stage model there is a mechanism at work leading to extend the region of incresing returns to advertising (and R&D). Therefore, advertising elasticities and advertising intensities are

$$(e_A)_d > (e_A)_s \Rightarrow (A^*/S)_d > (A^*/S)_s \qquad (1)$$

where *d* refer to dual-stage and *s* the single-stage model. In other words in a dual-stage model, the shape and position of the manufacturer's response function to non-price strategies is different from that in the single-stage one. The eA/eP ratio characterizing optimal advertising intensity in the DS condition is increased by a factor determined by the margin-depressing impact of advertising. As a result, on the basis of the Dorfman-Steiner condition, a dual-stage model implies higher optimal advertising and R&D expenditures (Steiner, 1973; Albion, 1983; Steiner, 1993). The

[8] Following Steiner, here we only focus on advertising but clearly the same analysis can be extended to the determinants of all the expenditures contributing to the strengh of a brand, for example R&D and other marketing expenditures.

[9] The S-shaped advertising response function is a common assumptiom in the advertising literature. Several economist (see Comanor and Wilson, 1974; Porter, 1976; Arndt and Simon,1983) claim that there are initial increasing returns to scale for advertising.

intuition is that the margin depressing impact of non-price strategies, as well as their impact on retail penetration and support are additional to their direct demand-creating effect. These 'dual-stage effects' increase advertising effectiveness leading to higher advertising (and R&D) expenditures.

### 3.2 Vertical competition and delisting decisions

The Steiner effect is an important result of Steiner's two-stage analysis. It provides a crucial building block for our framework. However, as we show in this section, it understates the true effectiveness of advertising and R&D expenditure in a context of vertical competition. In fact, a drawback of the Steiner model is that it neglects the implications of retailers' delisting decisions. Steiner considers the impact of store brands exclusively as a determinant of retailer's bargaining power. As a consequences, his approach is unable to take account of the full impact of vertical competition on upstream non-price strategies.[10]

In what follows, we investigate the impact of delisting decisions on the optimal A/S ratio. We show that vertical competition with delisting implies an even higher optimal advertising intensity then that predicted by the Steiner effect.

Before exploring this aspect, we focus on the nature of delisting decisions. Retailers's delisting decisions are a new phenomenon of increasing relevance. According to Prime Consulting Group (2001) delisting is defined as "the removal or discontinuation of a product from stores and warehouses as a retailer originated decision strictly related to the introduction of private labels" (p. 4). In a competitive environment where private labels conquer significant market shares shelf space allocated to store brands has clearly to increase. This means that, analytically, one cannot neglect the fact that shelf space is a scarce resource. To make room for their brands retailers have to decide to delist some manufacturer brands. Whenever a retailer decide to introduce a store brand, it needs to decide which national brand to take off the shelf in favor of the store brand. The consequence is that competition for retailer's shelf becomes much more intense. For this reason, in today's retailing environment, brand delistings is a common practice. Due to the growth of private labels, the shelf-space allocated to private labels is reaching vast dimensions.[11]

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[10] In this regard, it is interesting to note that Steiner uses a definition of vertical competition which is different from the notion we adopt here. He refers to vertical competition exclusively in terms of bargaining power. By 'vertical competition', we mean a more focused notion defined as the competition between manufacturers and retailers brands.

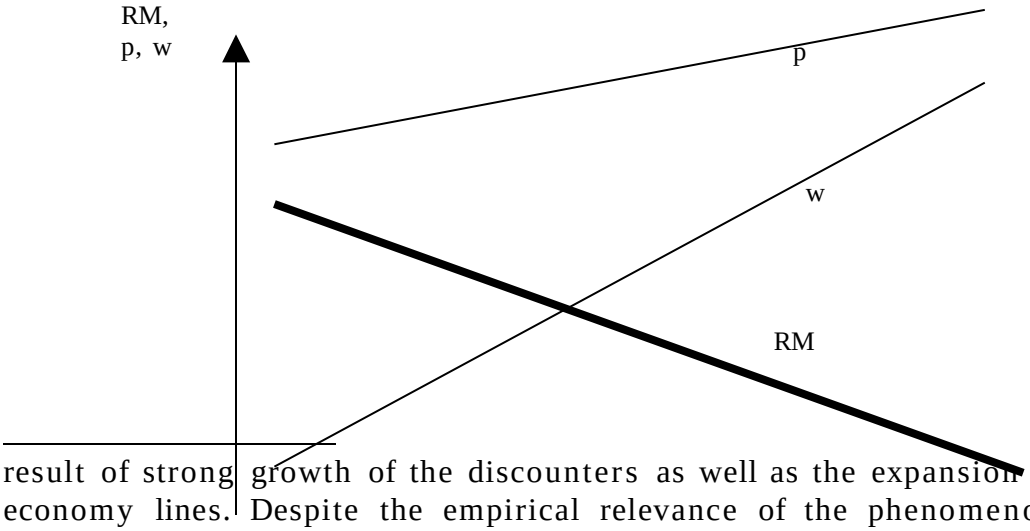
[11] There is evidence that, in recent years, retailers have been readjusting their assortments delisting manufacturer brands as the market share of store brands increased. For example, Euromonitor signal that in 2003 Rewe, Austria's largest grocery retailer, to strengthen its private label sales increased the shelf space for its private label range. To do that Rewe streamlined its pet food portfolio, delisting a number of branded products (www.euromonitor.com/pet Food and Pet Care products in Austria). PLMA revealed that Auchan's hypermarket division has sent a letter to manufacturers confirming that it will greatly reduce the number of branded products in its stores next year. Auchan said the large reduction of brands in its stores is the

This leads to a topic issue. Consider a retailer who decides to introduce (or increase the share of) its private labels. The question we seek to address regards the implications of this decision for retailer's assortment. Retailers face a complicated choice in this regard. To make room for their store brands at the point of sale, they have to readjust their assortments delisting some manufacturer brands. Retailers have to choose which brands to delist. Retailers typically offer an heterogeneous assortment of manufacturer brands, with brand of different strength and degree of brand loyalty and equity. Strong brands enjoy higher perceived quality, brand preference, and brand awareness than do weak brands. That enables retailers to charge higher prices for stronger brands (Keller 2002; Aillawadi, Lehman, and Neslin 2003, Sloot and Verhoef (2004).

But the strength of a brand not only affect retailer's pricing policy but also does matter for delisting decisions. Consumers react differently to a delisting of a high-equity brand than they do to a delisting of a low-equity brand. Consumers of high-equity brands tend to be more committed to their brand which makes a negative reaction to a brand delisting more likely (Sloot and Verhoef, 2004).

### 3.3 The Framework

In the following analysis, we incorporate retailers' delisting decisions into a two-stage model. We consider a two-stage framework where a common retailer sells multiple brands produced by different manufacturers. There are N manufacturers and each one offers one or more brands so that the total number of brands is M > N. It is assumed that advertising as well as R&D expenditures have a positive impact on brand equity and loyalty. Brands are asymmetric and there is a metric allowing a ranking of brands by brand loyalty. This brand rank is shown on the horizontal axis. To keep the analysis as simple as possible, we assume that manufacturers do not compete in prices in the retail stage. Each manufacturer is assumed to decide advertising and R&D level while wholesale price for its brand is negotiated with the retailer. The retailer sets the retail prices.




result of strong growth of the discounters as well as the expansion of private label and economy lines. Despite the empirical relevance of the phenomenon of delisting, the issue is still absolutely underresearched. For a first attempt to modelling a retailer's delisting decisions, see Scott Morton and Zettelmeyer (2004).

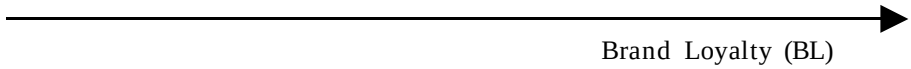



Fig. 1 Retailer's margin as a function of brand loyalty

The 'Steiner curve', as an inverse relationship between the retailer's margin and the strength of a brand (measured by its degree of brand loyalty), is the first building block of our framework and is depicted in Fig. 1) where RM = p – w is the retailer's margin. The retailer receives the margin p- w per unit of sales. Manufacturer's brand advertising exerts a margin depressing effect. Accordingly, retailers sell the leading advertised brands at narrower margins. As indicated previously, this permits manufacturer to enjoy increasing returns to advertising in the dual- stage advertising/sales response.

Suppose now that the retailer is active in launching and selling private labels. The retailer tries to keep its customers loyal to its stores and to this purpose launches private label programs. Following Scott Morton and Zettelmeyer (2004), we assume that the retailer's shelf space is a limited and scarce resource. Clearly, the retailer needs shelf space for stocking its private labels. To obtain it, the retailer has to delist some manufacturers' brands.

Strong brands, and firms with a portfolio of strong brands, are able to face vertical pressures better than weak brands. The reason is that in making shelf- space decisions, the retailer will rank manufacturers' brands in relation to their strength (e.g. brand loyalty) and will compare the brand loyalty (BL) of each brand to the retailer's own store loyalty (SL).

Retailers would like delisting strong brands given that the retailer's margin on these brands is lower. The problem is that strong brands can contrast vertical pressures better than weaker brands and cannot be delisted. In making shelf- space decisions, rational retailers will recognise that they can delist only the brands whose brand loyalty is lower than their store loyalty. On the contrary, retailers cannot delist brands for which brand loyalty is greater than store loyalty. This implies that manufacturer brands operate in a two- region environment. We refer to these two regions, respectively, as the 'listing region' (L), and the 'delisting region' (D). The demarcation point between them is given by the level of retailer's store loyalty (Fig. 2).

The retailer can delist brands whose brand loyalty is lower than retailer's store loyalty. This possibility arises because, in the case of 'weak' brands, consumers are more likely to switch brands within the store than to switch the store. Thus, retailers can delist these brands since that has only a minor impact on their sales. Hence, a manufacturer's brand characterized by BL < SL risks to be delisted. On the contrary, retailers cannot delist brands for which BL > SL because of losing sales caused by consumers who remaining loyal to their preferred brands go and by them in competing stores. The switching behavior of consumers and their propensity to switch stores is affected by the strength of a brand. This means that it is vital for manufacturers willing to remain sellers of branded products to build and maintain brands strong enough. Precisely, they have to keep BL of their brands at a level higher

than retailer's SL. And the only way to pursue this goal and avoid to be involved into the risk of delisting is to boost brands through greater investments in advertising and R&D. By building brand equity, manufacturers can strengthen their brand to such a level that retailers would have difficulty delisting it. Thus brand equity determines not only the price-premium that consumers are willing to pay and the manufacturer's bargaining power when negotiating buying conditions with retailers, but also the retailer's delisting decisions.

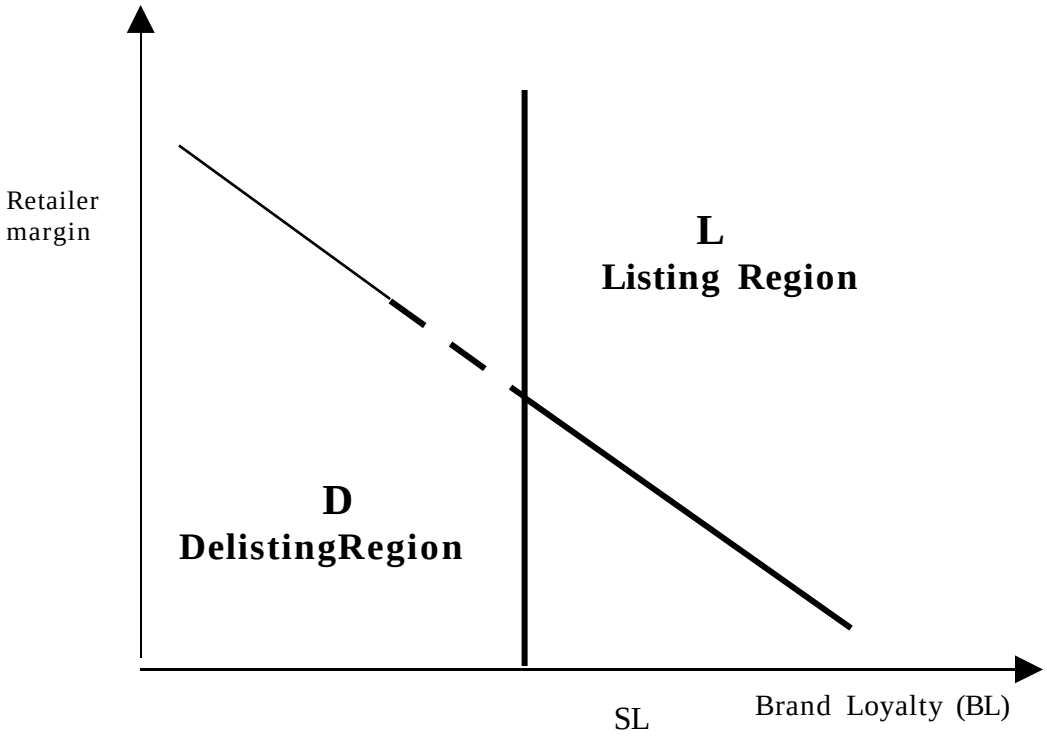



Fig. 2 The Steiner's curve and the delisting mechanism

The main point of Figure 2 is that the mechanism of delisting and the existence of two distinct regions, in only one of which advertising is effective implies the existence of a strong threshold effect in addition to the 'dual-stage' effects identified by Steiner.
As we have seen above, it is well established that advertising threshold levels influence the shape of the advertising response function, and thereby affect the optimal advertising expenditure. In a world with delisting, for a sufficiently high store loyalty, in addition to the margin-depressing effect captured through the Steiner curve, there is a further factor at work affecting advertising and R&D effectiveness.
Conceptually, the level of store loyalty defines the minimum level of brand loyalty required by retailers to list a brand and therefore it determine the minimum level of advertising and R&D one manufacturer has to undertake to maintain its brand in the listing region. This means that delisting creates a *threshold effect*, a level of brand

loyalty beneath which it is impossible for the manufacturer to have sale response to non-price strategies expenditurers. The existence of delisting means that higher advertising and R&D expenditures increases the probability of surpassing the threshold and allow the firm (brand) to operate in the no-delisting region. A specific store loyalty threshold. works as an all-or nothing divide. Being above the critical threshold of store loyalty is crucial if a brand manufacturer intends to continue to operate as such. This minimum level of brand loyalty implies that advertising and R&D could be useless and unprofitable below the 'threshold level' identified by the level of store loyalty which therefore determines the minimum level of advertising and R&D investment to build a brand that could be listed.

In other words, from the point of view of a manufacturer, it is not enough to have a brand somewhere along the X-axis. It is also necessary to make sure that the brand surpasses the critical threshold of store loyalty to be positioned in the no-delisting region. Hence, the incentive to build a stronger brand enjoys double benefits in terms of higher retail margins and lower risk of delisting.

Focusing again on advertising for simplicity as in the (1) above, the existence of a threshold level due to delisting implies that, at a sufficiently high level of store loyalty, there is a larger region of advertising increasing returns, hence a greater advertising effectiveness and optimal advertising intensity than in the Steiner's model. Therefore, we obtain:

$$(A^*/S)_{dd} > (A^*/S)_{d} > (A^*/S)_{s} \qquad (2)$$

where $(A^*/S)_{dd}$ is the advertising intensity in a dual-stage framework with delisting.

In other words, the effectiveness of advertising and R&D is even higher in a two-stage framework with delisting since non-price strategies of innovation and differentiation not only allow to obtain the Steiner effect of a lower retailer's margin but they also allow the manufacturer brand access to retailer's shelf space. The ideas of Figures 1 and 2 can thus be summarized in the following proposition:

**Proposition 1:** *Vertical competition with delisting decisions creates a further mechanism in addition to the margin-depressing effect (the 'Steiner effect'), leading to even greater upstream incentives to adopt non-price strategies of innovation and differentiation.*

But Figure 2 makes an additional point. One key consequence of this mechanism is that retailers looking for room to allocate their private labels will be more likely to replace lower-tier brands with private labels. In other words, leading brands will continue to be stocked by retailers as a consequence of their nature of must-have brands, but retailers will be more likely to replace lower-tier brands.

Retailers are then motivated to substitute secondary brands the brands with lowest margin in the delisting region. Less well-known manufacturer's brand, or tertiary brands, are relatively in a safer position given that the retailer's margin on these brands is higher than that of secondary brands.

Thus, we have the following proposition:

**Proposition 2:** *Rational retailers optimizing shelf-space allocation will be more likely to replace second-tier manufacturer brands with private labels because these brands can be delisted and the margins retailers obtain on secondary brands are lower than those on tertiary-tier or fringe brands.*

What happens if over time the higher quality of store brands results in an increase of store loyalty? A well defined stylized fact, as we have seen in section 2, is that private label positioning tends to change over time. Today private labels are increasingly able to provide the quality once exclusively associated with higher quality premium brands. As a consequence, they are more likely to compete with the market leader as well. This notion of store brand evolution has relevant implications which our framework allows to analyse very easily.

The consequences of a higher level of store loyalty are illustrated in Fig. 3. The initial equilibrium is given by point A. An increase in the degree of store loyalty, for example as a consequence of more sophisticated store brands, which is illustrated by a shift outward of the line from SL to SL', changes

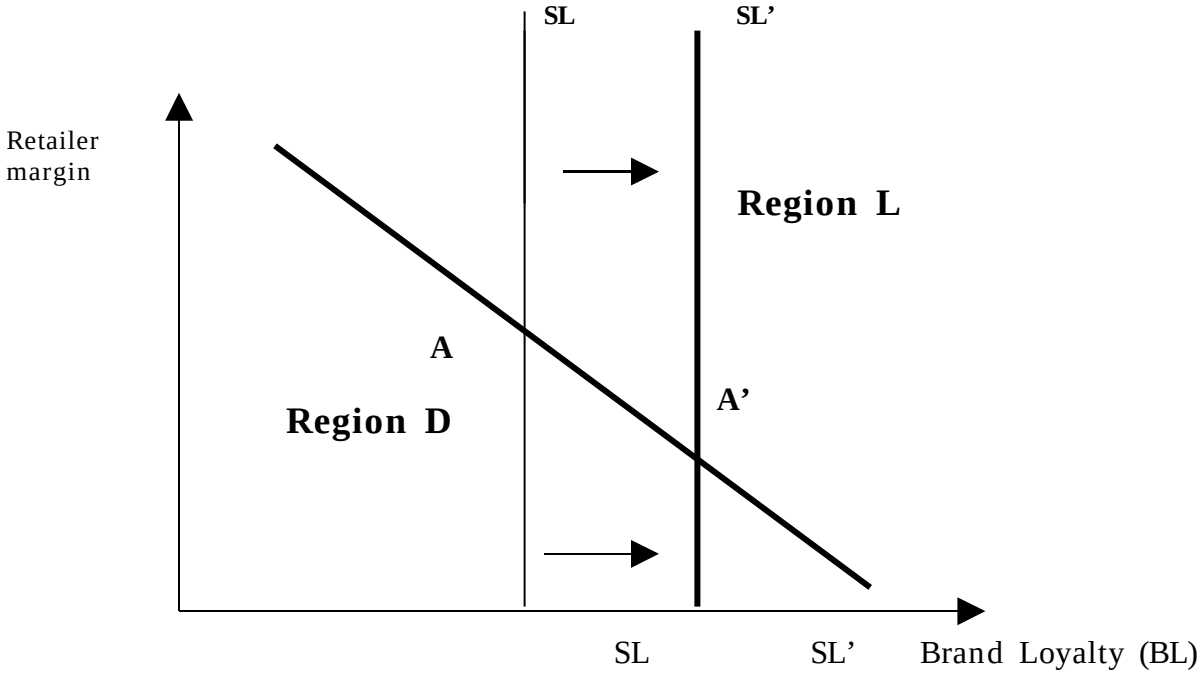



Fig. 3 The delisting mechanism
and the increase of store loyalty

the equilibrium into A'. As a consequence, the region of delisting (region D) become larger whereas region L narrows. The new equilibrium implies that a certain number of

brands that where previously protected by the risk of delisting are now involved in delisting decisions. This means that the delisting effect tend to become stronger over time. To the extent that retailers boost their non-price strategies and develop stronger and stronger store brands. In other words, if over time SL increases, then the level of BL to avoid delisting increases as well.

Thus, the interaction between the mechanism of delisting and the evolution of private labels determines a dynamic process which may finally involve the entire ranking of brands in the likelihood of delisting. To the extent that consolidation, reputation, and store loyalty of retailers tend to increase, even the number two and three in each category may find themselves pushed off the shelf. Brands which are not leading are increasingly confronted with the risk of being delisted and replaced by private labels. As vertical competitive pressures grow, even major food manufacturers may face the risk of delisting. Finally, store brands may become a threat for market leaders themselves. Thus, we have the following proposition:

**Proposition 3:** *To the extent that store loyalty increases, even the strongest brands in each category (i.e. the number two and three) are confronted with the risk of being delisted and replaced by private labels.*

## 4. Empirical evidence and managerial implications

This section examines some empirical patterns and evidence supporting the key predictions of the above framework. The first prediction of our conceptual framework is that vertical competition increases upstream incentives to adopt non-price strategies. In such competitive environments, product innovation and differentiation become more and more crucial strategies.

This prediction is well supported by Boston Consulting Group's advice to manufacturers in front of the rise of private labels. In fact, the advice is to invest in brands with advertising, promotion, and merchandising and push a steady stream of new products to create an appropriate level of brand loyalty. As noted by Brady et al. (2003), this advice is based on the evidence that private label development is negatively affected by investments in innovation brand equity so that building a brand with strong customer loyalty as well as continuous innovation is one of the best defenses against private labels (Brady, Brown and Hulit, 2003).

Several recent works have documented that product innovation is one of the strongest competitive weapons against private label for manufacturers (Galizzi and Venturini, 2005; Ball. 2004a; Floricel and Miller, 2003; McTaggard, 2004). An explicit link between vertical competition and pressure to innovate is pointed out by Ball et al. (2004) who write: "Marketers of everything from pet food to to soft drinks feel pressure to innovate, for a variety of reasons. Powerful retailers [...] are quicker than ever to pull a lagging product off their shelves, sometimes substituting their own private-label version". Cullen and Whelan (1997) find that "the rate of new product introductions by dominant brands increased over the period 1988 to 1993 [..and this] not only reflect a firms's ability to innovate but also reflect a strategy to dominate shelf space"

It should also be noted that our framework is consistent with the increasing emphasis on product innovation in food manufacturing. Food markets are increasingly

characterized by relevant flows of innovative products. For example, Rogers (2000) noted that the number of new products introductions in the U. S. rose from 4,540 to 12,400 items in the period 1983- 1997. In a recent study based on a large survey of 3500 European food manufacturing firms undertaken in 1996- 7, Traill and Meulemberg (2002) found that according to a score for top ten sources of competitive advantage, 'new product development' (NPD) resulted the third most important source of competitive advantage, immediately after 'high quality product' and 'efficiency in production'. The survey also shows that manufacturers interviewed expected an increasing importance of product innovation in the next five years. In fact, NPD was expexted to become the second most important source of competitive advantage after 'high quality product'.

While this evidence cannot be considered a rigorous test of our prediction, it provides strong indications that despite the increasing concentration and bargaining power of retailers, food manufacturers are not less oriented to innovate. On the contrary, the focus on innovation may be even stronger. [12]

There is also evidence that second- tier brands face the strongest vertical competitive pressure (our second prediction). The fact that secondary brands are particularly vulnerable in an environment of vertical competition and that store brands harm seriously second- tier manufacturer brands, is supported by several empirical results. For example, Cullen and Whelan (1997) provide empirical findings supporting this prediction in their analysis of fast moving consumer goods (FMCG) industries in Ireland. They find that the competitive position of leader brands improved considerably over the period 1982- 1993, while many second tier mass market brands have become 'trapped' in an accelerating downward spiral in market share. The development of high quality store brands resulted particularly damaging to the third, fourth and fifth brands in each market.

They also find that while total advertising expenditure increased significantly over the period, fewer brands were actually spending on traditional mass- market advertising methods. In particular, manufacturer advertising concentration increased since dominant brands advertised more intensely while the advertising levels of trapped brands declined.

The reason why several second- tier brands result so vulnerable is easy to understand in the context of our framework. These brands are forced to reduce their advertising expenditure levels just when an escalation of commitment to advertising would be necessary in order to avoid delisting.

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[12] Vertical pressures leading to higher R&D, marketing and advertising costs mean that vertical competition can become a significant source of endogenous sunk costs for the food industry with far reaching implications for firm's size and market structure. It may determine higher levels of market concentration given that higher levels of output may be needed to amortize increased endogenous fixed costs. Larger firms are able to spread these endogenous fixed costs over more units of output enjoing larger scale conomies at the firm level (Galizzi and Venturini, 1996). This hypothesis seems supported by recent structural changes in the U.S. and EU where food industries have been characterized by processes of consolidation and concentration (Gilpin and Traill, 1999; Cotterill, 2000; Rogers, 2001).

On the basis of these empirical results, Cullen and Whelan (1997) argued that there is a future only for Euro- or global brands, while national brand manufacturers with brands ranked third or fourth in FMCG markets are faced with the prospect of continuous share erosion or the choice to specialise either as niche brands or possibly as private label suppliers.

Similarly, Dobson et al. (2002) pointed out that "the leading suppliers appear better able to resist retailer pressure to reduce prices. In contrast smaller producers, either producing secondary brands or own-label products are less able to resist such pressures and transfer prices appear much closer to competitive levels. The same authors refer to the risk of being delisted as a typical risk of powerless suppliers.

The differential impact of store brands in relation to the manufacturer brand's strength is confirmed by the literature on price effects of private labels. Several works in this stream of literature indeed show that while premium-tier national brands are relatively insulated from store brands entry, consumers of lower-priced national brands are more likely to switch to store brands (Blattberg and Wisniewski 1989, Sethuraman et al. 1999). In particular, and more consistently with our prediction, store brands are more more likely to compete with second-tier brands than with premium-tier national brands (Dhar and Hoch, 1997; Hoch and Lodish, 2003). Pauwels and Srinivisan (2004) indicate that manufacturers' premium brands do not directly compete with store brands, but instead focus on serving their core quality-conscious consumer segments by investing in product innovations. In contrast, store brands harm second-tier manufacturers brands because consumers of these brands are more likely to switch to store brands. They also find that that premium national brands maintain their sales level whereas second price-tier brands lose market share to the store brand.

Market access is becoming particularly difficult for second-tier brands which tend to become squeezed between the brands characterized by high brand loyalty and tertiary brands (Harrison, 2000). Few claims illustrate these patterns and the mechanisms at work as the following words by Niall FitzGerald, then cochairman of Unilever: "I don't see Wal-Mart as a threat. I see Wal-Mart as a positive opportunity, just as I see Tesco and Carrefour as an opportunity. They're a positive opportunity for the relatively small number of people who have the big brands (...)What the Wal-Marts, Tescos and Carrefours need are big brands that drive traffic. What they don't need are the secondary brands, the No. 3, 4, 5 and 6. You have to be positioned with the leading brands in each category the consumers demand or the dominant brands in a niche category"(Ball, 2004b, p. A7).

The increasing intensity of vertical competition and, as a consequence, the need to have a portfolio of strong brands in order to maintain an appropriate bargaining power with retailers explain why even major manufacturers have increasingly adopted in recent years refocusing strategies to reinforce their core brands eliminating less successful ones. Indeed, in the U. S., food manufacturers tend to concentrate on their core activities and to consolidate their positions in markets and product categories where they currently hold a strong position (Cotterill, 2000; Rogers, 2001).

Similar patterns can be observed in Europe where there is evidence that most brands fail to achieve the necessary brand loyalty. Recent estimates indicate that no fewer than 75 per cent of all European brands are under pressure. More or less, this means

that only the 25 percent of European brands have sufficient critical mass to sustain appropriate marketing efforts (Jones, McLaughlin and van Ossel, 2002).

According to the Private Label Manufacturers' Association (PLMA) "Leading manufacturer brands are struggling to maintain their market share positions and profitability in Europe in the face of growing private label competition. There is evidence that several firms have adopted refocusing strategies by reducing the number of brands in their portfolio. For example, in recent years Unilever has adopted a drastic restructuring of its portfolio by selling or eliminating 1,200 brands, reducing the number of brands in portfolio to 400. The purpose was an effort to become more focused, lean and competitive. As noted by the CEO, in the absence of this strategy "[if we]were still trundling around with 1,600 brands as the retail continues to consolidate, we would be dead in the water" (Ball, 2004b). ConAgra Foods Inc. unveiled a turnaround strategy oriented to simplify the portfolio and that includes boosting annual marketing spending focusing on brands with the highest potential (Lloyd, 2006).

Industry analysts emphasize that "Anything but the top brands can end up on the bottom shelf. The big food companies don't want to be in categories where they are relegated to the worst display, and they are finding they can't always manage the vast array of brands they have collected. So they are selling [...] Nestlé merger-and-acquisitions team was more focused on divestitures of small business than acquisitions. Food-company executives are now talking about to "simplify" their portfolios [...] What really matters is how big you are in a particular category, and being a star in one aisle doesn't guarantee respect in another" (Ellison, 2004).

The existence of specific difficulties for secondary brands may also explain the difficulties of medium-sized manufacturers. Rogers (2001) found that: "[In the U. S. food industry t]he 100 largest food and tobacco processors accounted for about 75% of the value-added in 1997, almost doubling their share since 1954. The top 100 is itself skewed toward the very large, with the top 20 firms accounting for over 50% of total value-added in 1997, more than doubling its 1967 share (...). The remaining 80 firms among the top 100 firms actually lost share over the last 30 years. The sector is best described by a big-small model, where extremely large firms control leading positions in most markets and smaller companies, including startups, operate in a competitive fringe trying to serve a particular market niche or develop a new idea ..."(pp. 5-6).

Finally, it is interesting to note that there is also empirical support for Proposition 3, namely that over time, because on the increasing level of store loyalty, an increasing number of brands, even the strongest ones, face intense vertical pressures and the risk of delisting. For example, Brady, Brown e Hulit (2003) noted that in countries and categories where vertical competition is more developed, even brands in number one or two position face the risk of delisting. There is indeed evidence that where vertical competition is more intense, even brands in number one or two position face this risk. Steiner (2004) quoting Berlinski (1997), pointed out that, over time, it will be possible to see only two offerings per category on the shelf – the national brand leader and the store brand. There will be no space available for the second or third brand player in the category".

It is important to note that a scenario in which retailers carry a private label plus a national brand plus a local brand would mean the final collapse of second-tier brands.

This could lead to the fear that while the leading firms face greater incentives to innovate and differentiate in a world of vertical competition with delisting, the result might be a reduction of dynamic efficiency given the decreasing number of leading brand manufacturers. In fact, the collapse of second- tier brands implies that only the leader would survive.[13]

However, in this regard, a countervailing factor is at work. The fact is that private labels themselves tend to become an increasingly important vehicle of product innovation and quality products. Retailers themselves, in other words, are increasingly involved in the process of food product innovation and differentiation. Given their size, resources and capabilities, retailers are increasingly able to play several strategic functions. They tend to externalize several functions such as production and logistics, but internalize the functions related to innovation such as product development, design and quality management, marketing and branding (Dawson, 2001). The reason is that retailers are in a unique position to obtain precious data on customer preferences and purchasing patterns at the point of sale and these data give them access to information that can be utilized to directly initiate aspects of NPD and build innovation networks as shown by Cox, Mowatt and Prevezer (2003).

Traill and Muelemberg (2002) find that private level suppliers introduce a large number of new products. Their survey data show that private level suppliers introduced the largest number of new products even if these new products are not highly innovative. Particularly in fresh foods, private label products have taken the lead in addressing the major consumer trends and needs. For example, there is evidence that ready meals and organic food are now dominated by private label products and product innovation increasingly comes from private labels (Jones, McLaughlin and van Ossel, 2002).

In sum, the empirical evidence examined, although often rather anecdotal and/or mainly based on industry analysts' findings, tends to support the predictions of the framework here developed. The framework predicts that upstream suppliers face greater pressures to innovate and differentiate and that these pressures are endogenous to the strategic role played by retailers. These predictions are consistent with the empirical patterns observed. It is imp Their most robust empirical results

[13] In trhis sense, our framework provides a simple context to focus on a specific version of the idea developed in the strategic management literature according to which it may be a serious strategic error for a firm to become 'stuck in the middle'. The concept has been developed by Porter who argued that firms must choose between either a differentiation or a cost leadership strategy. A firm which remains 'stuck in the middle' between these two strategies will result unable to achieve competitive advantage (Porter, 1985, 1990). One criticism of the hypothesis was that firms can often combine low cost with differentiation. Indeed, there is empirical evidence that successful firms have both very low production costs and a reputation for high quality

Our framework show that a specific version of this hypothesis might be particularly appropriate in the context of a competive environment characterized by vertical competition, in the sense that in this environment firms have to avoid for their brands a future of secondary brands 'stuck in the middle' if they wish to survive as brand sellers.

regards the positive correlation between brand- name prices and the share of private-label goods. But indeed, this is clearly predicted by the hypothesis of upgrading and increasing vertical diffentiation so that this evidence support one of the stylized fact predicted by our framework.

ortant to note that these empirical patterns are substantially similar what Ward et al. (2002) refer to as the "conventional industry wisdom", namely the idea that brand manufacturers "defend their brands against private- label products by lowering their prices, engaging in additional promotional activities, and increasingly differentiating their products [..and that] the second- tier national brands [are] particularly hard hit [by the growth of private labels]". Ward et al. (2002), however, introduce a caveat about this conventional wisdom arguing that these facts fail a more rigorous empirical test. Their empirical results show that many of these stylized facts are not corrently true. In particular, they find that larger private- label share leads to higher brand- name prices, there is a pronounced downward trend in promotional activities and that differentiation does not increase with vertical competition.

Clearly, this last result would not support our prediction. However, the measure of differentiation they use – the number of items per firm – does not seem a good proxy for true differentiation.

Their most robust empirical result regards the positive correlation between manufacturer brand prices and the share of private- label goods. But indeed, this is clearly predicted by the hypothesis of upgrading and increasing vertical diffentiation as a consequence of vertical competition. In fact, there is now increasing empirical evidence supporting the hypothesis that premium- tier national brands could build on their strength by introducing high- end product varieties, which increases average brand price (Pauwels and Srinivasan, 2004; Gruca et al. 2001; Hauser and Shugan, 1983). Similar findings are provided by Bontems et al. (2005) who examined the changes in national brand product characteristics induced by the development of private labels. They distinguish between three types of private labels (low price, "me-too" and high quality private labels. Their results indicate that the effect of private label expansion is different according to the type of the private label. Interestingly, they show that the increase in national brand prices is partly explained by the strategy of product differentiation developed by manufacturers to reposition national brands. More precisely, they find that an increase in private label market share incentives suppliers to changes the characteristics of their products and the increase in national brand prices is explained by the channges in product repositioning.

Indeed, Ward et al. (2002) point out that the simplest way to explain price increases in response to private- label entry is that brand manufacturers may raise the quality of their goods when faced with private- label entry. But this means that it is possible to read their empirical findings as supporting an aspect of the 'conventional wisdom' which is also one of the key predictions of our framework.

## 5. Summary and Concluding Remarks

Retailing concentration and the development of store brands are profoundly changing vertical relationships between food manufacturers and retailers. We have examined the consequences of vertical competition between manufacturers' brands and retailers'

store brands by incorporating the notion of delisting as a distinct and further source of increasing returns to non- price strategies of product differentiation and innovation. In our conceptual framework, a retailer's private label competes with asymmetric national manufacturers brands. The strength of a manufacturer brand plays a key role in affecting the retailer's margin and its delisting decisions.

We started from the Steiner's hypothesis of a negative relationship between the strength of national brands and the retailer's margin. However, while Steiner focused only on the margin depressing effect, the key intuition provided by our framework is that the effectiveness of advertising and R&D is even higher in a two- stage framework with delisting since non- price strategies of innovation and differentiation not only allow the manufacturer the benefit of a lower retailer's margin but also a greater probability of avoiding delinsting. Thus, vertical competitition and retailers' delisting decisions create a further mechanism, in addition to the margin depressing effect (the 'Steiner effect'), leading to even greater incentives to adopt non- price strategies. This 'delisting effect' increases the effectiveness of advertising and R&D expenditure.

The intuition is that it is vital for manufacturers willing to remain sellers of branded products to keep brand loyalty of their brands at a level higher than retailer' store loyalty. And the only way to pursue this goal and avoid to be involved into the risk of being delisted is to boost brands.

We also show that the risk of being delisted is higher for second- tier brands. Retailers have strong incentives to replace secondary brands with private labels so that these brands face intense vertical competitive pressures.

The framework developed is useful to organizing and interpreting several empirical patterns. The evidence provided by recent empirical works is consistent with the framework's predictions.

The mechanisms examined are still waiting for more formal theoretical and empirical analyses. More systematic efforts in this direction is needed. But there are good theoretical and empirical reasons for concluding that vertical competition affects positively food product innovation and differentiation contributing to explain the increasing relevance of non- price strategies in the food industry.

But our framework highlights several areas which deserve more exploration. Both theoretical and empirical.research is needed to examine formally the issues here provided at an intermediate formal level. One area that might benefit from more exploration, for instance, regards the trends towards high quality store brands. A further important topic is the impact of retailers' private label programs on store loyalty. The empirical research about the the role of store brands in building store loyalty is clearly a topic issue. An important step for further research would be to extend the analysis of welfare implications. Our framework does not support the hypothesis that large- scale retailing, buyer power and store brands lead to negative impacts on upstream incentives. This does not imply that retail concentration might not lead to negative implications for social welfare. But the channel leading to social loss might have more to do with static efficiency loss due to retail prices and retailers market power in local markets rather than with negative consequences of the retail industry's concentration on upstream dynamic efficiency. In any case, the overall impact of vertical competition on social welfare still needs to be analysed and should represent a crucial area of research in the next years.

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