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# Analyzing the effects of a brand introduction on competitive structure using a market share attraction model

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#### Abstract

The introduction of a new brand may change the competitive structure, which concerns the market shares and the marketing instrument elasticities. For example, the new brand can cause intensified price competition and possibly also influence the relative effectiveness of price promotions for the incumbent brands.

In this paper, we develop a methodology to statistically test for the various possible changes in the competitive structure, where we focus on weekly scanner data. We develop a market share attraction model with which we can handle a changing number of brands.

The usefulness of our approach is illustrated in a simulation experiment where its implementation is compared with various alternative methods. We further develop tests to infer whether there are competitive reactions to an entry. Our illustration to scanner data for the detergent category emphasizes the usefulness of our approach.

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#### 1. Introduction

The introduction of a new brand in an existing market can have a large impact on the competitive structure, which concerns the market shares, the marketing instrument elasticities (as established by consumer behavior) and the use of marketing mix instruments by brand managers. For example, such an introduction may trigger intensified price competition,

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thereby possibly also affecting the relative effectiveness of price promotions for the incumbent brands. There may also be consumer reactions which can lead to a change in the relative effectiveness of pricing strategies. Note that similar changes could occur if a brand is removed from the market. Naturally, the effects of a changing number of brands is not confined to price competition, as the same arguments would hold for any other marketing instrument like, e.g., display or distribution. Furthermore, after correcting for the effects of the marketing mix variables, the new brand may turn out to win share at the cost of only a few competitors, instead of drawing share proportionally from all incumbent brands.

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There are several studies of the effects of the entry of a new brand on the competitive structure. These studies can be broadly divided in two types of approaches. One approach takes a noncooperative game-theoretic view, while the other is predominantly based on empirical research using time series or panel data models.

The first type of studies take a normative viewpoint; that is, there is a focus on how one should respond to an entry in an optimal way. An example is Basuroy and Nguyen (1998), who derive the theoretical conditions under which a market share attraction model is appropriate for equilibrium analysis. Within the context of this model, these authors demonstrate that the entry of a new brand would establish price decreases, which would hold true for fixed and expanding markets. For fixed markets, they further show that incumbent brands would be inclined to lower marketing expenditures, while in expanding markets these expenditures would be set at lower levels. Other examples of similar approaches can be found in Cubbin and Domberger (1988), Gruca, Kumar, and Sudharshan (1992), Gruca, Sudharshan, and Kumar (2001) and Karnani (1985). A key feature of these studies is that there is usually no focus on empirical data. A notable exception is Shankar (1997) who studies the marketing mix reactions by pioneers to entry. In the studied market, the entry changes the competition from a monopoly to a duopoly, with as a consequence that in the duopoly market, different competitive games can be played. Shankar (1997) derives optimal responses to entry for each case and then uses empirical data to find the actual game played in a pharmaceutical market. Shankar (1997) concludes that the results found in, e.g., Gruca et al. (1992), only hold under certain competitive games, while it also has to be assumed that marketing mix elasticities are constant.

Good examples of the second type of research, which is more data based, are Bowman and Gatignon (1996) and Chintagunta (1999). This research is explicitly based on observed market situations. Bowman and Gatignon (1996) study the effect of the order of entry on market shares and the effectiveness of marketing instruments. They show that the order of entry negatively influences the effectiveness of promotion and that it lowers price sensitivity. The main

effects of the order of entry on own market share are found to be small, while in contrast, there are strong effects of the order of entry on the effectiveness of marketing efforts. Bowman and Gatignon (1996) do not consider the effects of an entrant on the incumbent brands, while it would not be unlikely that a brand introduction also affects the effectiveness of marketing mix variables of these other brands. Note that Bowman and Gatignon (1996) do assume dependence between marketing mix elasticities and the number of competitors, but they abstain from testing for changes in these elasticities, nor do they consider cross effects.

An example of a study that does consider changes in the marketing mix effectiveness of incumbent brands is Chintagunta (1999), where the effects of entry are studied in the context of an individual choice model. A random effect multinomial logit model is used where brand intercepts are modeled by brand locations in attribute space with householdspecific importance weights. A new brand introduces an additional brand position in the attribute space. As a consequence of this entry, several changes to the competitive structure may occur. First of all, locations of extant brands or importance weights may change, or both. It is suggested that a brand introduction has a substantial impact on the importance weights assigned to attributes. Only minor changes occur in brand positions and in the sensitivity to marketing activities. Chintagunta (1999) documents that, due to a new brand introduction, price sensitivity tends to increase while promotional sensitivity tends to decrease.

As can be understood from the discussion above, Bowman and Gatignon (1996) and Chintagunta (1999) only describe the demand side of the market. That is, these studies focus on the effects on elasticities, where these elasticities may change due to brand repositioning or changes in preference. The behavior on the supply side, by retailers and manufacturers, is not studied. An example of an empirical study, which does consider the effects of new entry on this side of the market is Robinson (1988). He presents an analysis of the reactions to an entrant in 115 different cases, where he shows that the most common reaction pattern to entry is no reaction or only a reaction with a single marketing instrument. However, as Basuroy and Nguyen (1998) suggest in a response to these

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