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Price promotions in emerging markets☆

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ABSTRACT

How should price promotion strategies be modified in an emerging market (e.g., India, China) compared to those employed in developed markets (e.g., USA, Canada)? Specifically, how should the presence of middle-class consumers with limited ability to pay, prevalent in an emerging market, influence the *depth* and *frequency* of price promotions offered by competing firms? Lay intuition suggests that firms should promote more frequently and offer deeper discounts in emerging markets, in order to effectively sell to limited income, middle-class consumers. We construct a theoretical model that investigates the effect of the middle-class segment on firms' price promotion strategies. Contrary to lay intuition, our analysis reveals precisely the opposite results. First, price promotions offered in an emerging market (with middle-class consumers) are shallower than those offered in a developed market (without middle-class consumers). Second, *relatively deep price promotions occur less frequently in an emerging market, compared to a developed market*. These theoretical findings are consistent with the empirical evidence we gathered from the supermarkets in India and in Canada.

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1. Introduction

More firms are paying increasing attention to emerging markets. Retail sales in China and India have grown by 76.3% and 76% respectively during 2005–2010, while growth has been slower at 12.4% and 10.6% in Canada and USA (EuroMonitor, 2011). However, many unique characteristics of emerging markets, particularly the presence of the rapidly growing segment of middle-class consumers, necessitate the reexamination of pricing strategies adopted in these markets. This paper investigates how should the limited ability to pay of middle-class consumers in emerging markets (e.g., India, China) influence price promotion strategies, compared to those employed in developed markets (e.g., USA, Canada). More specifically:

1. Should the magnitude of price promotions set by firms in an emerging market exceed the magnitude set in a developed market?
2. Should firms set deep promotions relatively more frequently in an emerging market, compared to a developed market?

Consider the Indian market as an example of an emerging market with middle-class consumers. Middle-class consumers are defined by the Asian Development Bank (2010) as consumers whose per capita consumption was \$2–\$20 per day in 2008. They constituted 5% of the Indian population in 2005 and are projected to rise to 41% by 2025 (McKinsey and Company, 2007). Despite having limited ability to pay at an individual level, such rapid expansion in their number means that they collectively have considerable purchasing power (Prahalad, 2009). This is consistent with the *Affluence Layers Based on Income* classification of the Indian market by the National Council of Applied Economic Research (See Bijapurkar, 2007, page 74), summarized in Table 1. The Indian consumer market contains aspirers, seekers and strivers, whose annual household income ranges between \$2000 and \$20,000 and who collectively account for approximately 28% of the market. In contrast, the rich consumers in this market earn over \$20,000 annually.

The limited ability-to-pay of the middle class, as outlined in Table 1, influences their purchase decisions and hence the firms' price promotion strategies. Lay intuition suggests that firms should promote more frequently and offer deeper discounts in emerging markets, in order to effectively sell to the middle class.

In this paper, we develop a theoretical model of multiple firms selling a product in an emerging market. Following Varian (1980), we assume that there are two types of consumers: loyals and switchers. The switchers are further separated into two segments — a rich segment, which has a high reservation price, and a middle-class segment, which has heterogeneous, limited ability to pay, consistent with Table 1. If a

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Table 1
Affluence layers based on income in India.
Source: NCAER.

	Segment	Annual income	Relative size
Poor	Deprived	<$2000	71%
Middle class	Aspirers	$2000–$4000	22%
Middle class	Seekers	$4000–$10,000	5%
Middle class	Strivers	$10,000–$20,000	1%
Rich	Near rich	$20,000–$40,000	<1%
Rich	Clear rich	$40,000–$100,000	<1%
Rich	Sheer rich	>$100,000	<1%

product is priced higher than the ability to pay off a given middle-class consumer, she cannot afford to purchase it. Our research contribution lies in investigating how the depth and frequency of price promotions set by firms in emerging markets are influenced by the presence of middle-class consumers with limited ability to pay. [1]

Our model analysis reveals that firms use mixed pricing strategies. We interpret them as occurrences of sales or price promotions, consistent with Varian (1980). For a large set of parameters of the model, the firms mix between two probability distributions — a high-price distribution designed to target the rich switchers and the low-price distribution designed to target the middle-class switchers. Similar to Chen and Zhang's (2011) search model with heterogeneous searchers, often there is a gap in prices between the high-price and the low-price distributions. Contrary to lay intuition, our analysis shows that the price promotions offered in an emerging market should be *shallower* than those offered in a developed market. Second, we find that *relatively deep* price promotions should occur *less frequently* in an emerging market, compared to a developed market.

To illustrate the intuition for these results, we compare the effectiveness of a relatively deep price promotion (for example, a 20% discount) in a developed market with that in an emerging market. The emerging market has a share of middle-class consumers with a limited ability to pay, while the middle class is absent in the developed market. Even at 80% of the original price, a significant fraction of the middle class cannot afford the product. Therefore, the impact of such a promotion decreases as the proportion of the middle class increases and/or their ability to pay decreases. The firm ends up using a deep price promotion to largely target rich consumers who are willing to pay higher prices. In essence, while a 20% promotion is profitable if it has a chance of reaching all consumers, it becomes less effective if it cannot reach a fraction of the middle class. As a result, firms in the emerging market substitute away from deep promotions. Instead, they set relatively shallow promotions that target rich consumers. The dual impact of this shift in promotional strategy is that it leads to a decrease in the frequency of deep promotions as well as a decrease in the average depth of price promotions set in the emerging market.

We conclude the paper by examining the frequency and depth of price promotions offered on four categories (shampoos, toothpastes, detergents, chocolates) by a set of retailers located in India (Big Bazaar, Easy Day, Reliance Fresh, Sabka Bazaar) and by a set of North American retailers (Wal-Mart, Provigo, IGA, Loblaws, Metro) over a common 8-week period in 2010. We find empirical evidence consistent with two important theoretical findings: the retailers in an emerging market (with middle-class consumers) should offer shallower promotions and should offer deep promotions less frequently, as compared to the retailers in a developed market (without middle-class consumers).[2]

[1] In order to make a sharp comparison between the developed and emerging markets, we assume that there are no middle-class consumers in the developed market as all switchers have a high reservation price. Our results are qualitatively the same if we allow for the presence of the middle-class segment in the developed market and assume that it is smaller than that in the emerging market.

[2] We are unable to test a third theoretical finding: an increase in the relative size of the middle class or an increase in their ability to pay will decrease the depth of price promotions and reduce the frequency of deep promotions.

2. Related literature

Our paper is the first to combine two bodies of knowledge—the vast literature on price promotions and the nascent literature on emerging markets. To the best of our knowledge, there have not been any attempts to document and explain how firms set price promotions in emerging markets. We contribute to the theoretical literature on price promotions that model sales as an outcome of a mixed-strategy price equilibrium. This approach dates back to Varian (1980), who showed that firms use price promotions in an attempt to discriminate between loyal (uninformed about prices) and switching (informed about prices) consumers. Subsequent research extended this idea to study asymmetry in segment sizes and tastes (Narasimhan, 1988; Raju et al., 1990); sequential choice of promotion depth and frequency (Rao, 1991); interaction between manufacturers and retailers (Lal and Villas-Boas, 1996, 1998; Lal et al., 1996); online markets (Baye and Morgan, 2001); and heterogeneity in the preferences of the switching cohort (Sinitsyn, 2008a, 2008b, 2009).

Consistent with past research, we construct a model in which each firm has a share of loyal consumers while the remaining consumers are switchers. The novel feature of our model is that there is heterogeneity in the reservation prices within the segment of switchers. Examining this type of heterogeneity is a contribution to the extant literature on price promotions, which allowed for heterogeneity in the sizes of loyal segments (Kocas and Kiyak, 2006; Narasimhan, 1988; Sinitsyn, 2008b), brand preferences of the switchers (Raju et al., 1990; Rao, 1991; Sinitsyn, 2008a, 2009), and consumer search behavior (Chen and Zhang, 2011; Stahl, 1989, 1996). The demand structure in our model closely matches the situation in emerging markets, where a sizable portion of middle-class consumers has limited and heterogeneous ability to pay. The equilibrium in our model involves firms using a mixture of two price distributions with a possible gap between them. Similar equilibrium structure is present in the recent paper by Chen and Zhang (2011), who modify Stahl's (1989) search model to allow for global searchers, who employ sequential search with recall, and for local searchers, who search only once. Using the terminology from the search literature, our model has a segment of local searchers (loyals) and a segment of searchers with zero search cost (switchers), some of which have heterogeneous reservation prices.

The empirical field evidence in our paper contributes to the empirical literature on price promotions that examines the implications of Varian (1980) and Stahl's (1989) price dispersion models in different markets and product categories such as coffee and saltine crackers (Villas-Boas, 1995); prescription drugs (Sorensen, 2000); multiple packaged-good categories (Rao et al., 1995); and online markets (Baye and Morgan, 2009; Kocas and Kiyak, 2006).

Further, our paper contributes to the nascent literature on emerging markets, specifically the literature that studies the effect of the presence of consumers with limited ability to pay. The presence of these consumers in emerging markets leads to high-quality firms offering smaller quantity discounts than low-quality firms, while this trend is reversed in developed markets (Desai et al., 2009). Additionally, an increase in the low-valuation consumers can lead to the firms offering more differentiated products, which in turn would increase their profits (Amaldos and Shin, 2011). We add to this literature by focusing on a different dimension of firms' strategic interactions—optimal price promotion strategies.

3. Model and analysis

We begin by modeling a developed market (DM), which is representative of markets in countries such as the USA and Canada. We characterize the optimal price promotion strategy in this market. We subsequently extend the analysis to an emerging market (EM). Unlike the DM, the EM has a segment of middle-class consumers with limited ability to pay for the firms' products. This is representative of markets in countries like

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