13 Trade promotions*

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Abstract

Trade promotions are price incentives given by manufacturers of products and services to their intermediaries such as a dealer, distributor and retailer as part of their overall marketing strategy. In this chapter past research on trade promotion is examined and issues relating to the rationale behind these, the potential impact on the channel partners and managerial aspects of implementation are discussed. Key research issues for researchers working in this area are highlighted.

1. Introduction

In many B2C markets manufacturers distribute their products and services through a set of intermediaries. These are retailers, distributors and brokers. See Figure 13.1. Whether there is only a retailer between the manufacturer and consumer or multiple layers of channel members might depend on the size of the retailer and other factors. Manufacturers use multiple instruments to promote their products to their customers (retailers) and consumers (end users) to stimulate demand and grow. Promotional instruments directed at consumers include advertising, consumer promotions such as coupons, contests, special packages and other incentives. Incentives directed at the trade are trade promotions, category management initiatives such as assistance with planograms, merchandising support, demand forecasts, inventory support etc. Trade promotions are incentives given by a manufacturer of products and services to its supply chain partners, distributors/dealers/retailers, to promote its products to the ultimate end users. Trade promotion spending has been averaging around 14 percent of sales over the last 15 years or so (AC Nielsen Co., 2004). A similar report by AC Nielsen in 2004 states that 53 percent of manufacturers and retailers report 'a measurable increase' in trade promotion spending, while 35 percent and 36 percent of manufacturers and retailers respectively are satisfied with the value they get out of trade promotions. An Accenture report on 'Capturing and sustaining value opportunities in trade promotion' (2001) reports that while advertising, consumer promotion and trade promotion account for 23 percent of sales in 2005, trade promotion alone accounts for 13 percent of sales, quite consistent with the AC Nielsen report. Whether trade promotions are effective in delivering the stated goals for the manufacturers is debatable. The above-cited Accenture report, for example, claims that while CPG (consumer packaged goods) manufacturers spent in excess of $25 billion on trade promotion in 2005, the incremental revenue was only $2–4 billion, suggesting that, at the aggregate, trade promotions lost money for the manufacturers. Citing a Forrester Research report, Inforte Corp. claims in its report that in 2002 manufacturers spent $80 billion on trade promotion with an annual growth rate of 5–8 percent (Inforte

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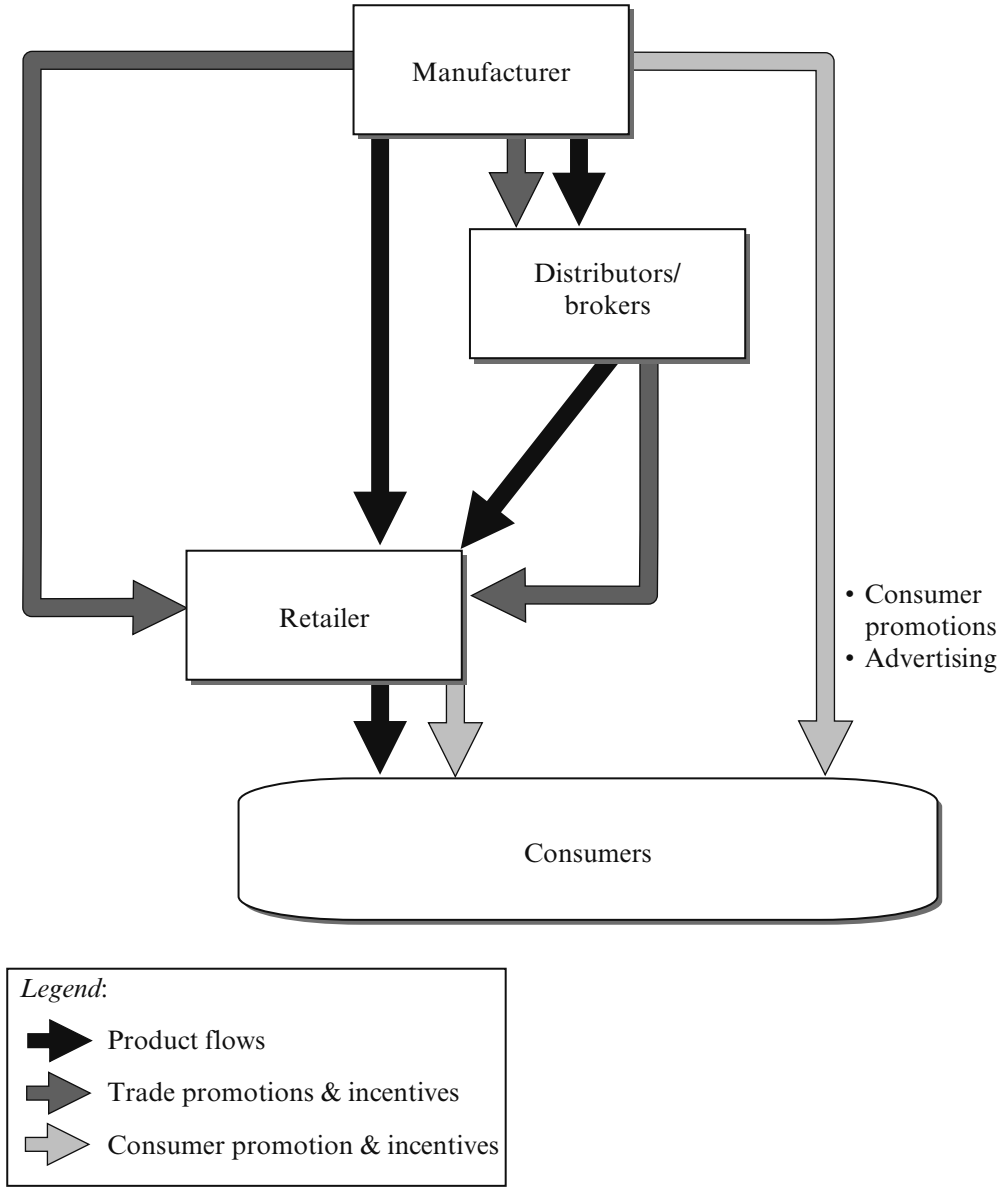

Figure 13.1 Manufacturer–consumer link in a supply chain

Corp., 2005). A recent Booz Allen Hamilton report states that 'manufacturers are so focused in generating additional volume that the overall efficiency of their trade investment is low', and goes on to claim that manufacturers lose a third of the money spent on trade promotions (Booz Allen Hamilton, 2003). This report also states that trade promotion is the second-largest item in the profit and loss account next only to COGS (cost of goods sold). While in nominal terms the money spent has been increasing, as a percentage

of sales, at least in CPG, it has been in a narrow range between 13 and 15 percent. From these industry studies reported in the popular press and research reports by various agencies it seems clear that trade promotion is an important marketing mix variable, CPG manufacturers predominantly use it, these promotions take different forms, and their efficiency in delivering the stated goals of the manufacturers is debatable.

In this chapter I summarize the extant academic literature on trade promotions and identify key research issues relevant to academics and practitioners. The reminder of the chapter is organized as follows. In Section 2, I provide some background on the types and forms of incentives that manufacturers provide to the trade. In Section 3, I examine analytical and empirical literature on retailer behavior relating to such practices and manufacturers' incentives to offer trade promotions. In Section 4, I discuss issues that pertain to the evaluation of the efficacy and profitability of trade promotions. In Section 5, I discuss literature on the role of trade promotion as part of the marketing mix. I conclude the chapter with a discussion of key issues.

2. Types of trade incentives and objectives of trade promotions

If we define trade incentives as broadly any money or allowance provided to the trade, then these incentives take many forms. Blattberg and Neslin (1990) list several different types of trade incentives for durable and non-durable products. Among the main ones are:

1. *Slotting and renewable allowances* These are payments made to the trade for stocking a manufacturer's product, often on a per SKU (stock-keeping unit) per store basis. While stocking fee or allowance is normally associated with new products, renewable allowances are sometimes paid on existing products as well.
2. *Display or feature allowance* Money paid for setting up special displays of a manufacturer's product or advertising the product.
3. *Co-op advertising allowances*, where the manufacturer lets the retailer participate in a manufacturer's advertising or pays part of the cost.
4. *Off-invoice allowance* Here the manufacturer sells a product, as many units as the retailer desires, at a lower price than given on a regular list price. Such a promotion may last anywhere from one to several weeks.
5. *Scanback allowance* Here the manufacturer reimburses the retailer an amount on every unit sold over a specified period. Thus, while off-invoice is a price reduction on every unit bought, scan-back allowance is on every unit sold by the retailer over a specified period.
6. *Free goods* Usually a case free for every n cases bought by the retailer. For all practical purposes this is almost like an off-invoice promotion but forces the retailer to buy n cases before he can get the price reduction.
7. *Volume discounts*, based on the past year's purchases.

These incentives are usually accompanied by certain 'requirements' that retailers have to meet. For example, cigarette manufacturers pay promotion money depending on facings, types of display, in-store advertising etc. (Bloom, 2001). The extent of these promotions varies depending on the type of retail outlet, such as supermarkets, drug stores, mass merchandisers/discounters, convenience stores and warehouse clubs, and type

of categories, such as CPG, cigarettes and drugs. Similarly, slotting allowances would require a minimum level of facings, inventory support and so on. Unfortunately there is very little systematic documentation of these and their trends over time. As stated in the Introduction, the level of these promotions has increased over time. Thus, while there are many types of trade incentives, the term 'trade promotions' as used in marketing refers to per unit reduction in wholesale price, and for most of the remainder of this chapter I review and consider research that focuses on this type of incentive.

2.1 Strategic objectives of trade promotions

There are several objectives of trade promotion. I list the major ones below.

1. *Liquidating excess inventory* When demand and supply are out of sync, a firm may be saddled with excess inventory in the supply chain and needs to get rid of it. Common examples are seasonal items such as snow throwers and lawn mowers, and end-of season model clearances in apparel, certain electronic items and automobiles.
2. *Introducing new product* Trade promotions provide a discount from a reference price to convey to consumers and the trade that the product is sold at an introductory discount. If the retailers in turn choose to pass through some or the entire discount, this could stimulate initial trial.
3. *Stimulate demand* If there are segments of consumers that would react differently to retail promotions, then trade promotions can be an effective tool to reach them.
4. *Competitive response* In response to trade promotions offered by competing manufacturers, a firm may choose to offer trade promotions. Of course this begs the question as to why the other manufacturers offered trade promotions to start with.

2.2 Trade promotion as part of the overall pricing strategy

In marketing their products to the ultimate end users through a set of intermediaries (see Figure 13.1), manufacturers use the entire marketing mix to gain acceptance of their products by the trade and to penetrate the end user market. Conditional on product quality, assortment, flavors or product line, and branding, the marketing mix used to achieve these objectives is price, advertising, and consumer and trade promotions. Thus the role of trade promotions needs to be understood in the larger context of brand competition, supply chain power and brand equity or brand strength. There is clearly a tradeoff between using more of one type of promotion versus another or advertising or a lower price.

In the early 1990s, for example, P&G made a strategic choice to streamline their product offerings by reducing the massive amount of trade and consumer incentives and adopting an EDLP strategy for many of their products. Similarly, recent empirical evidence suggests that slotting allowance, a form of trade incentive offered by firms to gain distribution for new products, has been on the rise. If the result of a trade promotion is to stimulate demand by encouraging retailers to promote the product in turn, a natural question that must be asked and answered is 'Why are these promotions temporary and why not set a low "regular" price rather than periodically providing discounts to the trade?' Thus firms should strategically choose the level of importance and amount of money spent on trade promotion as a part of their overall mix, and not in isolation or as an afterthought. This means that the strategic objectives of trade promotion should be

understood and the allocation to trade promotion should be made in conjunction with the regular price. We revisit this issue in the final section.

3. Retail response to manufacturers' promotions

Before I offer plausible reasons why manufacturers may want to give promotions to the trade, it is instructive to examine how a retailer might respond and the documented evidence in support of this. Almost the entire academic literature considers only price-off promotions, i.e. either off-invoice or scanback promotions, and I shall therefore confine myself to these types of promotion.

When a manufacturer offers a price-off incentive, what would be the response of the retailer in terms of the retail price he charges? By this we mean what is the impact of a trade promotion on the retail price of the promoted product and perhaps even other products in the category? Most retailers are multiproduct retailers. A retailer also competes with other retailers in his trading area. If we assume that retailers want to maximize the total store profit, then a retailer's response to a manufacturer's promotion would depend on a host of factors that include the brand strength of the promoted product, its ability to attract consumers, the available substitutes and complements and the margins on these, the potential action of other retailers etc. From an analytical point of view it is worthwhile to characterize the role of these drivers and reconcile these with the empirical facts. We start with the empirical papers.

3.1 Empirical facts and documented evidence

The empirical literature on retail response has addressed two issues. What is the rate of retail pass-through and what are some factors that affect this? By pass-through we mean the percentage of money that is received from a manufacturer that is passed through to the ultimate consumers, or, more specifically, the change in the retail price due to a change in the wholesale price. Thus 100 percent pass-through means that every penny that is received via a wholesale price reduction is reflected as a penny reduction in the retail price.

Chevalier and Curhan (1976) examined over 990 trade promotions received by a single grocery chain and found that the chain supported only about one-third of the products with any kind of promotional support in the form of a price cut, display or feature advertising. Over 45 percent of the products for which the chain got trade promotions did not receive any retail support. But, conditional on promoting through a price reduction, the average retail pass-through rate was 126 percent. Moreover, the authors found that the sales movement of the brand had a significant impact on the retail support while package size, rank of a product in its category or the amount of money received had no predictable impact. Somewhat contrary to this, Walters (1989), using data from two grocery chains, found that the size of the incentive has a positive effect on the level of retail support. In addition he found that sales volume (consistent with Chevalier and Curhan), compliance requirements (such as manufacturer-paid feature or display support) and price elasticity of the brand affect positively the level of retail support. Armstrong (1991) also documents that across many categories pass-through rates vary, and can be greater than 100 percent.

More recently Besanko et al. (2005) examined own-brand and cross-brand retail pass-through using data from a supermarket chain in 11 categories and 78 products. They estimate a reduced-form model of the following form:

$$P\{i\} = f(c\{i\}, c\{-i\}, \delta) \tag{13.1}$$

where $P\{i\}$ is the retail price of brand i, $c\{i\}$ is the wholesale price of brand i, $c\{-i\}$ is a vector of wholesale prices of all other brands in the category and δ is a vector of exogenous shift variables. They estimate the above model using liner, log linear and a flexible polynomial specification. The estimates of interest are the marginal change in $P\{i\}$ with respect to a small change in $c\{i\}$ and $c\{-i\}$, that is own- and cross-brand pass-through. They estimate (13.1) for each product, using the three specifications mentioned, by pooling data across different price zones of the chain and including shift variables to control for interzone heterogeneity. They report that nearly 70 percent of the estimates of pass-through are significant and positive. This pass-through rate varies significantly across categories with beer and detergent getting larger pass-through than categories such as toothpaste and paper towel. The range is quite large, with average pass-through rate of 22 percent in toothpaste to over 550 percent in beer. The pass-through rate on own brand is on average more than 60 percent in most of the categories they examined. They find the cross-brand pass-through to be positive and negative. They find that market share, and a brand's importance or contribution to the category profit positively influence pass-through. Moreover, a large brand's promotion is less likely to generate cross-brand pass-through on smaller brands than the other way around.

The data used by Besanko et al. come from a chain where the recorded wholesale price is not the actual wholesale price but rather is an 'average acquisition cost' (see Peltzman, 2000) that is based on a weighted average of past prices and past inventory. Thus it is not the strategic choice variable of the manufacturer. This leads to a potential bias towards overstating the pass-through effect and the size of the bias is unknown. Meza and Sudhir (2006) claim that in the presence of forward buying by a retailer, using this acquisition cost measure as a proxy for true wholesale price leads to less of a bias than not using the inventory data at all. McAlister (2005) takes issue with Besanko et al.'s methodology and conclusions. She argues that a typical retailer carrying around 30 000 SKUS will be unable to optimize as the model claims; manufacturers would rationally withhold trade promotion support if they know that their brands' retail prices can fluctuate depending on their competitors' promotions; variability of promotional deals masks the true wholesale prices; measurement errors exist in accounting for promotions etc. Conducting a more detailed analysis of the detergent data Besanko et al. used, McAlister offers further support for the view that the significance of cross-brand promotions is overstated.

Meza and Sudhir (2006) criticize earlier empirical studies for the methodology used to uncover the pass-through rate. Since a typical grocery product category is subjected to seasonal demand shocks, retail prices could be adjusting to these shocks independent of any wholesale price fluctuations and therefore this needs to be accounted for in determining pass-through rates. Starting with a random utility model at the individual level and aggregating to the store-level demand for a brand, they estimate store-level market share equations using the same database as Besanko et al. However, they estimate using only two categories: tuna, which was used by Besanko et al., and beer, which was not used by Besanko et al. By estimating a demand model with data from 94 stores over 400 weeks they infer the pass-through rates and show that loss leaders receive a higher pass-through than other products, and that this rate is lower during periods of high demand.

To summarize, the empirical literature documents the following:

- Not all trade promotions are reflected in retail promotions or pass-through.
- There is considerable variation in this pass-through across brands and across categories.
- The pass-through rates can be more than 100 percent and often, in some categories, substantially more.
- A brand's market share and sales volume affect positively the rate of pass-through.
- There is some evidence that the cross-brand pass-through and a smaller brands trade promotion might lead to pass-through on a larger brand. But more analysis is needed to establish this more convincingly. Similarly, certain categories, due to their importance in attracting store traffic, could potentially receive a higher pass-through.

Thus, while we have evidence on the variability of pass-through, a more systematic analysis of the behavior of wholesale prices and retail prices needs to be conducted to make accurate inferences about the impact of wholesale prices on retail prices. This means that we need econometric models grounded in theory that simultaneously account for the behavior of wholesale and retail prices so that we can make inferences about the impact of the former on the latter. Notwithstanding my admonition, how can these tentative 'facts' be reconciled with optimal behavior of market players? To assess this, we turn to the analytical literature.

3.2 Analytical models of retail response to trade promotions

Tyagi (1999) characterized the optimal response of a single-product monopoly retailer faced with a trade promotion, i.e. reduction in the wholesale price. The retailer is a Stackelberg follower in pricing, and takes the wholesale price as given and sets the retail price. He showed that if the retail demand function is concave or quasi concave, the pass-through rate is <100 percent and if convex, such as a constant elasticity demand function, then the pass-through rate is greater than 100 percent. His paper thus offers support for >100 percent pass-through based purely on the shape of the demand function. Kumar et al. (2001), in their attempt to explain the empirical facts, consider a single manufacturer–retailer dyad selling a single product. The elements of their model are as follows:

- There are two segments of consumers, low valuation and high valuation, that derive net utility of $v - p$ and $\delta^* v - p$ respectively, where v is the intrinsic utility for the single product in the market, p is the price and $\delta > 1$.
- Consumers know the frequency (α) with which manufacturers offer trade promotions, and on observing the retail price at the focal retailer make inference about whether the retailer is being opportunistic (not passing on the trade promotion) or whether the wholesale price is really high and consequently the retail price is at its regular level.
- Based on this, consumers decide to buy from this retailer or choose an outside option, which is to buy from another retailer.

- The manufacturer can use advertising to mitigate the retailer's opportunism by choosing to inform a fraction (φ) of the market about the trade promotion offer.
- The game sequence is as follows. The manufacturer selects φ, the retailer selects the likelihood he would offer a consumer promotion. Consumers observe φ and the retail price and decide whether or not to buy from this retailer.

Kumar et al. show that, in this world, the retailer does not always pass through and is less likely to pass through the greater the level of discount (inconsistent with Walters, 1989), lower the frequency of trade promotions, and lower the manufacturer support through advertising of the promotions (consistent with Walters, 1989).

Lal and Villas-Boas (1998) consider more complex consumer heterogeneity in the presence of retail and manufacturer competition, with each manufacturer selling a single product. There are two manufacturers selling one product each through two retailers and consumers can be in one of nine segments (size): a most price-sensitive segment (S) that buys the cheapest product in the market, two retailer-loyal segments (R) that buy from a single retailer the lowest-priced product, two manufacturer-loyal segments (M) that buy from the cheapest retailer, and four retailer–manufacturer-loyal (that is they are loyal to one retailer and one brand) segments (I). All consumers buy one unit of the product as long as the price is less than the common reservation value r. The game is set as follows:

- Manufacturers set wholesale prices simultaneously to maximize profits.
- Retailers take the wholesale prices as given and set retail prices simultaneously to maximize their profits.
- Consumers decide on the store and brand to buy.

When there is no retailer loyalty ($R = I = 0$), there is no retailer power and retail prices equal wholesale prices, which follows the equilibrium described in Narasimhan (1988). Similarly, when there is no manufacturer loyalty ($M = I = 0$), the manufacturers have no market power, wholesale prices equal marginal cost and now the retail prices track Narasimhan's model. When the market consists of no manufacturer switchers, i.e. $R = S = 0$, all prices are equal to r. If there are no retail switchers, i.e. $M = S = 0$, retail prices equal r and manufacturers randomize as in Narasimhan's model.

In the more general cases Lal and Villas-Boas show that the retail equilibrium can be quite complex depending on the relative magnitudes of the segments, and in some cases, it is possible for the retailer not to promote a brand when that brand's wholesale price is lowered, i.e. under trade promotion. Moreover, in some cases the brand that has the highest wholesale price can have the lowest retail price. An important contribution of this paper is to show when results from prior work such as Narasimhan (1988) will continue to hold and when the equilibrium will be qualitatively different.

Moorthy (2005) extends this literature by considering multiproduct retailers and retail competition. Consider for example two retailers carrying two brands, each with one brand common between the two and the other an exclusive brand that can be interpreted as a private label. Unlike in much of the literature, the demand functions are assumed continuous functions of all prices. In addition to wholesale price changes, the author

considers variety of cost shocks that could lead to a change in retail price. The profit function for retailer *i* can be written as

$$\Pi^i(\mathbf{P}) = (p_{i1} - w_1 - c_{i1} - c_i - c)\, D^{i1}(\mathbf{P}) + (p_{i2} - c_{i2} - c_i - c)\, D^{i2}(\mathbf{P}) \quad (13.2)$$

where **P** is the vector of all prices

w_1 is the wholesale price of the brand that is common among retailers
c_{i1} and c_{i2} are retailer *i*'s brand-specific marginal costs
c_i is retailer *i*'s non-brand-specific marginal cost such as labor cost
c is a non-brand, non-retailer-specific cost such as excise cost
D^{i1} and D^{i2} are the demand functions for product 1 and 2 respectively at retailer *i*.

Moorthy examines how, if the retailer maximizes category profits, retail prices will change with respect to wholesale price and the different marginal costs. He shows that the response due to a trade promotion is always positive, leading to a retail promotion. This pass-through would be greater with retail competition and the adoption of category management by the retailers. He also shows that cross-brand effects are ambiguous, i.e. can be both positive and negative, a conclusion supported by Besanko et al.

To summarize, analytical models explain how optimizing retailers' behavior can lead to (i) pass-through of trade promotion, (ii) the pass-through can be greater than 100 percent depending on the shape of the demand function, (iii) in some instances the retailer may not pass through at all, and (iv) cross-brand pass-through can arise but its direction can be positive or negative.

3.3 Manufacturers' incentives to offer trade promotions

At the heart of trade promotions is the question: why do manufacturers offer temporary reduction in wholesale prices? Notice that there are two questions here: (i) why is the incentive tied to the wholesale price as opposed to lump sum payment such as a display support or feature support, and (ii) why are these promotions temporary? The null hypothesis on the second question is: why not offer a permanent reduction in wholesale price? Clearly, if there are demand (seasonality, mismatch between forecast and realization of demand etc.) shocks or supply shocks (crop prices, labor costs) we should observe a temporary fluctuation on wholesale prices. But most trade promotions cannot be dismissed as arising out of these random shocks. There must be consumer, supply chain and competitive factors that lead to such promotions. This second question takes on added importance when we factor in the direct and indirect costs of trade promotion (see Buzzell et al., 1990). One of these costs is the opportunity cost or foregone profit if retailers forward buy on trade promotions. If retailers buy more than what they require to meet the compliance requirements and use the additional quantity to sell the product at its normal regular price, this represents a loss or cost of that trade promotion. We examine the answers provided by analytical models of consumers, intermediaries and manufacturers.

Jeuland and Narasimhan (1985) offered a model of two parties – a monopoly firm and consumers – to explain the occurrence of promotions. There are two segments of consumers who differ in their preferences and inventory costs. The demand for a product at the segment level is given by

$$Q_i = \alpha_i - \beta * P \tag{13.3}$$

where Q_i is the demand for segment i and P is the retail price, α_i is the segment specific parameter and β is the price sensitivity parameter.

The authors assume that the segment with higher α has a higher holding cost for inventorying this product, only buys for current consumption and does not forward-buy. The consumers with lower α, when faced with a retail promotion, respond by increasing their consumption and forward buying the product when it is on sale. They show that the optimal strategy for the monopolist is to conduct periodic sales and solve for the frequency and depth of promotion. The contribution of this paper is to show that consumer heterogeneity in inventory costs and demand elasticity, and correlation between these, can drive periodic promotion by a manufacturer. While they didn't identify the consumers as retailers, they could apply their model to trade promotions as well. As long as there are enough customers able to expand their demand and forward-buy, it is optimal for the firm to offer trade promotions. Lal (1990) offers a model with two competing manufacturers marketing one brand each through a retailer who offers a store brand. He shows that in an infinitely repeated game the manufacturers take turns to offer a trade deal to the retailer. Thus in a non-cooperative game the manufacturers collude to limit the encroachment by the store brand into their franchises. Lal et al. (1996) consider a model of two competing manufacturers selling one product each through a common retailer. The manufacturer incurs a selling cost of promotion and the retailer, if he accepts the promotion, incurs a fixed cost. The retailer can buy the product either at the regular price or at the promoted price and can forward-buy products for future use. The demand model has features similar to models without a retailer (see Narasimhan, 1988). As in earlier models, manufacturers use a randomized strategy in offering discounts to induce the retailer to inventory their products. An important contribution of this paper is to show that even when the retailer forward-buys, manufacturers find it profitable to offer a trade deal. The reason is that holding inventory leads to less intense price competition since smaller deals are less attractive to the retailer when he has inventory and larger deals become unprofitable to the manufacturers. So the manufacturers compete over a narrower range of trade deals, which means that the probability of beating your opponent (i.e. the retailer will accept the deal) is lower and therefore the manufacturers are less aggressive.

A paper that models manufacturer promotion not as a wholesale price reduction but as a lump sum transfer is by Kim and Staelin (1999), who consider a model of two manufacturers selling one product each and two retailers who sell two products each. Trade promotion is captured through a lump sum allowance that a manufacturer provides a retailer. Each retailer selects the retail prices and a common pass-through rate for the two brands. The 'pass-through rate' is the proportion of this allowance spent on merchandising activity that affects demand positively. Retail demand for brand i at the retailer is given by the following:

> Demand for brand 1 at store 1 = f (prices of all brands at store 1, pass-through rate at store 1*difference in the promotional allowance of brand 1 in store 1, difference in promotional allowances across stores, pass-through rate at store1*promotional allowance at store1)

Thus the demand function captures the effect of prices, own- and cross-brand pass-through, store switching and category expansion. The game proceeds as follows. Each

manufacturer simultaneously chooses wholesale price and promotional allowance for his brand, anticipating the actions of the retailers. In the second stage, retailers simultaneously choose retail prices and pass-through rates. Two broad conclusions emerge from this paper. First, it offers analytical support to the evidence and argument made earlier by Messinger and Narasimhan (1995) that even when manufacturers provide greater concessions to the retailers, because of retail competition these concessions are passed along aggressively by the retailers. Second, the authors show that even though retailers pass through less than they receive, manufacturers provide the side payments to the retailers.

A different rationale for the existence of trade promotions and allowances is provided by the research stream that examines the channel relationship when the retailer not only distributes manufacturers' products but also markets a store brand. Narasimhan and Wilcox (1998) consider a manufacturer–retailer channel where the retailer is able to procure a private label in a competitive market. There are two segments of consumers, one loyal to the national brand and another that is composed of national brand–private label switchers. All consumers buy one unit of either the national brand or the private label as long as the price of that product is less than $\$r$, the reservation price. A randomly chosen consumer in the switching has a preference for the national brand but will buy the private label if the retail price of the private label is $\$l$ less than the national brand. They assume that l is distributed $U(0, L)$. The manufacturer sets his wholesale price anticipating retailer's pricing behavior in relation not only to the national brand but also to the private label. They compute the equilibrium prices with and without private labels. They show that the retail margin on the national brand is positively related to the size of the switching segment and is negatively related to the heterogeneity of the switching segment. The first result is obvious. The second result arises due to the fact that as the heterogeneity in the switching segment increases, it is more costly for the retailer to attract the same proportion of switchers away from the national brand, which leads to lower concession from the manufacturer. The authors thus show that not only does a private label have a direct effect in terms of attracting more customers in the market; it also has a strategic effect of eliciting better wholesale price concessions from the manufacturer. They offer empirical support to their predictions.

To summarize, we have the following predictions from the analytical models:

- Retailers in general will pass through manufacturers' incentives. Greater than 100 percent pass-through is predicated upon the shape of the demand curve.
- Ignoring menu costs and adjustment costs of changing prices, cross-brand pass-through is likely to occur.
- Even if retailers forward-buy, in a competitive world we should see trade promotions.
- Retail competition forces retailers to pass through more than they would normally have passed through based on demand and cost curves.
- Trade promotions or concessions from manufacturers can arise when retailers market store brands or private labels.

4. Profitability and efficacy of trade promotions

In this section we discuss two key managerial issues: (i) how should one evaluate the profitability of trade promotions and (ii) how can one make trade promotions more effective in achieving stated objectives?

4.1 Evaluating the profitability of trade promotions

At first glance this seems a very simple task. Compare the profits with and without promotion and if the latter are greater than the former, declare victory because the promotion is profitable. But closer examination reveals that it is not simple: evaluation of promotion is fraught with many measurement and data problems. To understand the difficulties, let us think about what happens when a promotion occurs by focusing on off-invoice promotion. If retailers anticipate that such promotions are temporary, they are likely to be strategic and engage in forward-buying. Likewise there is a large body evidence that consumers, when faced with retail promotions, forward-buy; more recent evidence (see, e.g., Van Heerde et al., 2003; Chan et al., 2008) seems to suggest that such stockpiling behavior accounts for a major portion of the sales spike. The amount that is forward bought is potentially an opportunity loss since these units could have been sold at the regular price at some point later in time. Of course not all of it is a loss since there is no guarantee that the retailer would have bought the same amount in future. Moreover, wholesale demand and retail demand of a product are subject to random shocks and competitive actions. Given all this, determining incremental sales due to a promotion is a complicated task. If consumers and retailers act strategically, examining shipments data in a 'before versus after' promotion analysis will be misleading. Next is the question of identifying direct and indirect costs of promotion. What are the direct costs of running a trade promotion? What about the indirect or opportunity costs of accumulating higher inventory in preparation for a promotion etc? Thus, even if one can estimate the incremental sales, identifying the direct and indirect costs to evaluate profitability of promotions is daunting. Two papers tried to tackle the profitability of promotion using sales and shipment data.

Blattberg and Levin (1987) use a three-equation model and an accounting identity to predict shipments and consumer sales as below:

$$\begin{aligned}
\text{Shipments } \{t\} &= f1\,(\text{inventory } \{t-1\}, \text{trade promotions, other factors})\\
\text{Retail promotions } \{t\} &= f2(\text{trade promotions } \{t\}, \text{trade promotions } \{t-1\},\\
&\quad \text{inventories } \{t-1\})\\
\text{Consumer sales } \{t\} &= g\,(\text{trade promotions } \{t\}, \text{retail promotions } \{t-1\},\\
&\quad \text{other factors } \{t\}, \text{other factors } \{t-1\})\\
\text{Inventories } \{t\} &= h\,(\text{inventories } \{t-1\}, \text{shipments } \{t\}, \text{consumer sales } \{t\})
\end{aligned}$$

They estimate the model using data from ten products and three markets. Using the estimates, one can simulate what will happen when a trade promotion is offered to shipments and retail sales. This model, by being theoretically sound in that it relies on a process model of the flow of goods and money in the system, gives confidence as to face validity. While this is a good beginning, note that they were not able to estimate separately, due to data problems, the second equation above to uncover the factors that drive retail promotions. Moreover, there was no attempt to explicitly control for or model within-category competitive effects or interstore competition. Finally, the consumer sales model can be enriched to include drivers under the control of the retailers such as feature and display support etc.

Abrahim and Lodish (1987) develop an expert system to evaluate the impact of promotion. Their focus is on identifying baseline sales, those that would result in the absence of promotional effects. They define sales at time t as

$$S(t) = T(t) * SI(t) * X(t) \ (b(t) + p(t) + e(t))$$

where T, SI, X are trend, seasonal and 'exception' indices, b, p are the base-level sales and promotional bump after removing trend, seasonality and 'exceptions', and finally e is an error term. Through data analysis and judgment the baseline sales is estimated and, using that, the incremental sales and profitability of any promotion can be estimated. Unlike the Blattberg and Levin model, this model is purely data driven and the statistical property of the baseline sales is not known. Further, the procedure for identifying exceptions seems not to follow from any structure but rather depend on the analyst's judgment. For example, the authors report that category-level and competitive effects are captured by the exception index but it is not made clear how; nor is the robustness of this index measured.

To summarize, there have been some attempts to model the profitability of trade promotions. Largely due to the type of data available and the cost of conducting this exercise, we have not seen more of this type of research but it remains an important area.

4.2 Drivers of effective trade promotions

What are the drivers that improve the effectiveness of trade promotions? How can we use these drivers to optimize the timing and characteristics of promotional offers? To answer the first question, we should develop metrics for effectiveness. Is it just profitability, or are there other measures that we should examine? Hardy (1986) explored this issue through a survey of managers from a sample of 27 Canadian packaged good companies on 103 trade promotions. Each manager was asked to complete the survey instrument for one successful and one unsuccessful promotion. Using these data, Hardy examines through a multiple regression model the drivers for the following four dependent variables: short-term volume, long-term market share, build-up of trade inventories and increased consumer trial. He found that trade support had a predictable impact on all the four metrics. The level of incentives affected positively the short- and long-term share goals while competitive promotion affected negatively the build-up of inventories, with the trade, of the focal brand. These results are intuitive. Blattberg and Neslin (1990), based on a study by Curhan and Kopp (1986), identify the following four factors as influencers on the level of support the retailers would provide:

1. Economic structure of promotions such as amount of discount, terms, requirements and restrictions.
2. Item importance, including volume, category size and competitive retail activity.
3. Manufacturer's reputation.
4. Promotional elasticity.

Murry and Heide (1998) consider the issue of retailer participation and compliance with manufacturer-initiated promotions such as POP programs. They theorize that both interpersonal relationship and incentives matter in retailers' decisions. They designed a

conjoint study that included four factors (two levels each) to capture both organizational and incentive drivers. The study was administered using a full factorial design to liquor and grocery store managers. They found that incentive factors are more important in the decisions of the retailers, and that strength of interpersonal relationship does not diminish this importance.

Which type of trade promotions would be best and what are the drivers? This is somewhat of an underresearched area. Given the structure of these promotional incentives, it is not surprising that manufacturers tend to favor performance-based promotions such as scan-backs while the retailers favor straight off-invoice promotions. Drèze and Bell (2003) show analytically that if the terms of the deals are identical, the above result is valid, but a manufacturer can redesign the scan-back promotion to leave the retailer no worse off while improving his profitability. This is because under scan-back there is no excess ordering and retail price is lowered, resulting in higher retail sales. In their model there is no manufacturer or retail competition, so it is not clear how these added institutional details would change the result.

5. Trade promotion as part of the marketing mix

As any marketing student knows, firms have multiple instruments to stimulate demand and to respond to competitive and channel initiatives. So where does trade promotion fit as part of the overall marketing strategy? How should managers address the problem of budget allocation? I explore these issues in this section.

Narasimhan (1989) explores the factors that are perceived to be important in deciding on consumer and trade promotions. He conducted a survey of brand managers to assess this. He identified three factors that drive the importance attached to trade promotions. These are goal oriented (achieving sales targets, introducing new products, motivating sales force), defensive (maintaining shelf space, meeting competition), and penetration (increasing usage rate and getting more retailer push). The factors for consumer promotion were similar except that there were two goal factors, one short and one long term. He found that the managers' beliefs about the importance of these factors were correlated with category and brand variables such as category, volume, growth rate, shelf life, purchase frequency, market share, rank etc. Finally, he finds that the decision to allocate money between trade and consumer promotions is based not only on category and brand variables but also on the perceived importance of the factors.

Neslin et al. (1995) consider a market consisting of a single manufacturer–retailer dyad and consumers. The manufacturer can advertise the product to consumers and trade-promote to its retailers. Advertising affects retail sales through the pull effect and retail promotion also affects retail sales. The manufacturer is assumed to maximize its net profit over a year by deciding on the optimal allocation between advertising and trade promotions. Unlike the standard analytical models, they do not use a game-theoretic set-up. The amount to be ordered by the retailers, the intensity of promotion at retail level etc., do not come from maximizing behavior by the retailer but rather are written down as exogenous decisions. A demand equation describes the total sales at the retail outlet. They use numerical optimization methods to arrive at an optimal policy for the manufacturer. In the base case, for example, they show that periodic trade promotions and constant advertising expenditures except in the period before a trade promotion is an optimal strategy. While this kind of exercise incorporates a level of richness that is

not found in standard analytical models, the non-strategic behavior of retailers and consumers is a limitation of such an exercise.

Gomez et al. (2007) evaluate the drivers behind the allocation of the trade promotion budget and its components. They hypothesize that the amount of money allocated to trade promotion increases is positively (negatively) correlated with the size of retailer and the brand power of retailer (size of manufacturer, brand strength) while the effect of private label penetration is ambiguous. Similarly, allocation of money between off-invoice and performance-based scan-backs is also driven by these factors. Using survey data from 36 supermarkets in the USA, they test their hypotheses and find support. It is interesting and somewhat intuitive that they find that, with greater retailer size, positioning and power through private label, retailers are able to elicit better concessions from the manufacturer through off-invoice promotions, a point made earlier by Narasimhan and Wilcox (1998).

Gerstner and Hess (1991, 1995) consider the dual role of trade promotions and consumer promotions through coupons or rebates. They consider a manufacturer–retailer dyad with no competition at either level. Consumers are of two types, H and L. The H type has a higher reservation price than the L type. All consumers desire at most one unit of the product as long as the price is less than their reservation price. The manufacturer distributes the product through a retailer and decides on the wholesale price first and, conditional on this, the retailer decides his retail price. As long as the L-type segment size is below a critical level, the manufacturer's optimal strategy is to cater only to the H type. But as the L type grows it is optimal for the manufacturer and for the channel as a whole to sell to both types. But in the standard Stackleberg leader–follower game, if the manufacturer lowers the wholesale price, the retailer has every incentive not to pass along the lowered price to attract the L type due to the standard double marginalization problem. Gerstner and Hess show how the use of pull promotions through rebate or coupon can coordinate the channel. They go on to discuss the effect of coupons and what happens if perfect targeting of low-value consumers is not possible. This paper doesn't capture the essence of trade promotions, which are temporary reductions in wholesale price. These papers offer insights into when a wholesale price reduction is necessary and how other marketing mix variables play a role in enhancing the effectiveness of such a policy. These papers make two interesting points. Consumer promotions in conjunction with trade promotion can coordinate the channel. Pull promotions, in addition to any discriminatory or segmentation effect among end users, can serve an added role in the presence of an intermediary.

Agrawal (1996) considers the effect of brand loyalty on advertising and trade promotion. He constructs a theoretical model that captures two competing manufacturers distributing one brand each and a common retailer that distributes both brands. Consumers desire at most one unit of either product as long as the retail price is less than \$$r$. There are two segments of consumers each loyal to one of the two brands, but each will switch to the other brand if the price of the other brand is lower than a threshold relative to its favorite brand. The retail demand for brand i ($i = 1, 2; j = 3 - i$) can be written as

$$D_i(p_i, p_j) = \begin{cases} 1 & \text{if} \quad p_i < p_j - l_j \\ M_i & \text{if} \quad p_i - l_i \leq p_j \leq p_i + l_j \\ 0 & \text{if} \quad p_j < p_i - l_i \end{cases} \tag{13.4}$$

where p_i and p_j are retail prices, and l_i and l_j represent the threshold the competing brand has to overcome. A firm's own advertising expenditure raises, at a diminishing rate, the threshold the other firm has to overcome but competitive advertising lowers this threshold. So firm *i*'s advertising raises l_i while firm *j*'s advertising lowers l_i and vice versa. The author assumes that the thresholds for two brands are sufficiently different so that the brand with a larger *l* is called the stronger brand and the other the weaker brand. The game proceeds in four stages. In stage one, the two manufacturers simultaneously decide on their respective advertising levels. In stage two they simultaneously set wholesale prices, in stage three the retailer sets the retail prices for the two brands and in stage four consumers observe all the prices and make their choices. He finds that the retailer, similar to Narasimhan's results, promotes the stronger brand more frequently than the weaker brand. Turning to the manufacturer, he finds that there are several equilibria, depending on the marginal cost of advertising, where the stronger brand does not advertise but the weaker brand advertises and the promotional strategy is one of the following:

(a) Neither manufacturer promotes.
(b) Both promote and the weaker brand spends less.
(c) Both promote and the weaker brand spends more.

On pass-through of trade promotions the author finds that the stronger brand enjoys greater pass-through in terms of frequency but not on the size of the discount. Some of these results, especially on the pass-through, seem to be inconsistent with the empirical evidence cited earlier. Using scanner panel data, he examines some of the predictions from his model. To test these predictions he first estimates the size and strength of loyalty for each of 54 brands in seven different categories. Using linear regression he estimates the following three modes at the brand level:

$$\text{Advertising expenditure} = \alpha_0 + \alpha_1 \times \text{loyalty} + \alpha_2 \times \text{size} + \text{category dummies} + \varepsilon_1$$

$$\text{Average retail discount} = \beta_0 + \beta_1 \times \text{loyalty} + \beta_2 \times \text{advertising expenditure} + \text{category dummies} + \varepsilon_2$$

$$\text{Frequency of retail promotions} = \gamma_0 + \gamma_1 \times \text{loyalty} + \gamma_2 \times \text{advertising expenditure} + \text{category dummies} + \varepsilon_3$$

Consistent with his theoretical predictions, he finds that high loyalty leads to lower advertising expenditures, lower retail discount and greater frequency of retail promotions, and loyal segment size is positively related to the manufacturer's advertising expenditure. The contribution of this paper is in considering trade promotions as part of the overall mix in conjunction with advertising and promotions at both the wholesale and retail level.

6. Discussion

In this chapter I discuss several research streams examining the role of trade promotions, the incentives of trading partners in offering and accepting these, the drivers of the

efficacy of trade promotions, evaluating the profitability of trade promotions and how trade promotions may interact with other marketing variables.

Manufacturers, especially CPG manufacturers, have been allocating a greater share of the promotional budget to trade promotions over time. We are also seeing a shift in the allocation among the types of promotions, partly driven by improvements in IT that have lead to better data capture, analysis and monitoring.

Existing research has evolved along the following streams:

- Documenting retailer acceptance and pass-through rates.
- Empirically identifying the drivers of retailer acceptance.
- Analytical models exploring the rationale behind trade promotions in monopoly and competitive contexts.
- Analytical models characterizing the impact of promotions on retailers and their propensity to accept these.
- Models evaluating profitability.
- Understanding the drivers to improve the efficacy and impact of trade promotion.
- Role of trade promotion as part of the marketing mix.

Several conclusions emerge from the extant literature:

- Retailers are selective in passing the money they receive from the manufacturers to the consumers. Surprisingly, several instances have been documented where the retailers pass through more than they receive.
- A brand's strength and its ability to pull sales or increase store traffic (Lal and Narasimhan, 1996), item importance, size and structure of incentives are key predictors of retailer compliance.
- Retail competition increases the pass-through rate.
- Trade promotions can arise even if retailers forward-buy.
- The presence of store brands or private labels acts as an important driver for the manufacturers to offer concessions to trade, often in the form of trade promotions.
- Cross-brand pass-through can occur, although the empirical evidence seems to be somewhat scant or mixed.

Based on this, I expect future research to continue to build on this important topic along the following lines:

- A broader assessment of the empirical regularities across many categories and markets such as in international markets.
- Exploring in greater depth the efficacy and profitability of trade promotions by explicitly modeling retailer characteristics such as size, market share, reputation etc. in the empirical models.
- Extending and checking for robustness of the findings in non-grocery markets such as apparel, electronic goods, toys etc. Some studies have looked at trade promotions in durable goods (Bruce et al., 2005) and dealer promotions in automobiles (Busse et al., 2006). More work along these dimensions would help us to understand

and establish robust drivers for the incidence, acceptance and pass-through of these trade promotions.

- Examining analytically and empirically the promotion incentives, acceptance and performance when there are multiple channels such as brick-and-mortar and online channels.
- Examining the strategic role of trade promotions as part of the overall pricing strategy. How exactly do or should firms design trade incentives and an overall pricing strategy including a regular list price?

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