Contributions to Management Science

Marc-Oliver Jauch

Uniform Across-the-Board Promotions

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Uniform Across-the-Board Promotions

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List of Abbreviations

AVE	Average variance extracted
CR	Construct reliability
DIY	Do-it-yourself *(DIY retailer = hardware store)*
EDLP	Every-day-low-price
et al.	And others (et aliae)
e.g.	For example (exempli gratia)
FMCG	Fast-moving consumer goods
HiLo	High-low-price
i.e.	That is (id est)
IR	Item reliability
SD	Standard deviation
UABP	Uniform Across the Board Promotion

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Chapter 1
Introduction

1.1 Background and Practical Relevance

Retail markets in Germany are becoming more competitive, fueled by a continuous shift from offline to online channels, globalization of the competition and demand saturation in some markets (Homburg 2012). Given this development, retailers face the challenge of attracting customers to their stores to ensure continuous sales and profit growth. With products and styles becoming more and more exchangeable and customers being willing to mix and match between different brands and stores, price management and particularly promotion management grows in importance to win "*the battle for the customer*".

However, as customers might become more accustomed to the omnipresence of promotions and might expect to buy their goods at reduced prices, retailers are coming up with new and innovative forms of price promotions. One type of price promotion, that has gained significant importance in the last years, particularly in the German market, are Uniform Across the Board Promotions (UABPs, see Sect. 2.1.2 for definition). UABPs are in a way special as they offer the customer a uniform percentage discount *on any article* she finds in the store for a limited time period.

In 2003, the DIY chain Praktiker had been among the pioneers to introduce UABPs to the German market and present their customers with a "20 % on everything—except pet food" promotion (Bomsdorf et al. 2003), which had a significant positive impact on their short-term sales and the attention drawn to the retail brand and its stores (Böcking 2012; Hielscher 2010). Given this apparent short-term success, more and more retailers have followed to adopt this type of price promotion as part of their marketing plan. For example one of the largest European fashion retailers, C&A, has offered its customers 20 % off on everything for a week to celebrate its 170 years anniversary (Sparwelt 2012). The large German shoe retailer Goertz sends out 20 % UABP-coupons once a year (Schnäppchenfuchs 2012). International high-street fashion retailers such as Esprit (Style Now 2009), and Replay offer their customer periods with 20 % off on

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Table 1.1 Examples of Uniform Across the Board Promotions

Company	Industry	Article type	Channel	Promotion depth	Duration
Praktiker	Home Improvement	Durable	Offline	25 %	2–7days
C&A	Apparel retail	Durable	Online	24 %	2–7days
Ernest Alexander	Apparel retail	Durable	Online	30 %	1 day
NKD	Apparel retail	Durable	Online/ offline	20 %	1 day
Dorothy Perkins	Apparel retail	Durable	Online	20 %	1 day
meinPaket.de	Department stores (online)	Durable	Online	12 %	1 day
Toys R'Us	Specialty stores	Durable	Online	10 %	1 day
Reno	Apparel retail	Durable	Online/ offline	20 %	2–7days
Expert	Comp & Electro Retail	Durable	Online/ offline	10 %	2–7days
IKEA	Home improvement retail	Durable	Offline	5 %	2–7days
The Body Shop	Personal products	Consumables/ discretionary	Online	20 %	2–7days
Merkur	Food retail	Consumable	Offline	10 %	2–7days
H&M	Apparel retail	Durable	Online	10 %	2–7days
Goertz	Apparel retail	Durable	Offline	20 %	2–7days
Sony	Comp & Electro	Durable	Online	8 %	2–7days
BonPrix	Apparel retail	Durable	Offline	20 %	2–7days
Marionnaud	Personal products	Consumables/ discretionary	Offline/ online	20 %	2–7days
Ernsting's family	Apparel retail	Durable	Offline	20 %	2–7days

everything. The electronic goods manufacturer Sony offered its retail customers 8 % discount on everything (Qipu 2012), and even grocery retailers such as Penny Markt (Paperblog 2011) and Merkur (Sparfreunde 2012) present their customers with a 10 % across the board discount for a limited period of time. Table 1.1 provides an overview of exemplary UABPs that have been run in the time period 2009–2012.

While UABPs have been increasingly used, its pioneer in Germany, Praktiker, meanwhile ran into significant problems, bringing the company to the brink of insolvency. After the original success of UABPs, Praktiker increased the UABP days significantly (to 107 in 2007), before facing significant (sales, margin and image) problems and cutting down on UABPs entirely in 2011 (Böcking 2012; Hielscher 2010). Not few attribute those problems to the excessive use of UABPs. One of the core investors of Praktiker, Thomas Fox, called the UABPs "sweet drugs", others stated that "Praktiker can now not do with nor without them" (Hielscher 2010; Läsker 2012). Against this background, it is the goal of this thesis,

to investigate the performance impact of UABPs on the short-mid and long-term sales of a retailer and explain what type of consumers are attracted to it, what store portfolio is ideal for applying a UABP promotion strategy and how consumers attitude towards the retailer is affected by it.

Moreover this work should help managers to form a substantiated view on whether UABPs can support their strategic promotional goals and if UABPs turn out not to be the right tool, how they could scale them back or adjust them in order to not risk the mid-term success of their business. The following chapter will outline the key research topics and structure of this thesis.

1.2 Key Research Topics and Outline of the Thesis

This thesis is structured in six main chapters in which the impact of the Uniform Across the Board Promotions on sales, customer behavior and customer attitude will be further discussed. The core of this thesis can be found in Chaps. 3, 4, and 5, each one addressing specific aspects of the UABPs, which have been analyzed using a hierarchical Bayes model, a (linear) mixed effects time series model with lead and lag effects as well as confirmatory factor analysis and structural equation modeling. Each chapter is based on different, extremely comprehensive proprietary datasets from a European value fashion retailer. Among these datasets are daily and weekly store-level data for ~750 retail stores over a period of around 4 years, the analysis of detailed marketing plans of the retailer as well as around a dozen store characteristics describing each of the retail stores as well as its typical customers.

Moreover the store-level analysis from Chaps. 3 and 4 is complemented with the analysis of the customer behavior and attitude which is based on an extensive customer survey with ~1,700 participants that have been matched with their respective transactions from UABPs over a 4 year period. The work is structured as follows:

Chapter 2 provides the conceptual framework for Uniform Across the Board Promotions and offers a definition of traditional price promotions and UABPs, while also classifying the UABP vis à vis other price promotions and pricing strategies and pointing out some of the unique characteristics of UABPs. The chapter further summarizes the theoretical background by introducing some relevant concepts and theories such as the adaption-level theory, Prospect theory, Reference Price concept, price search and information economics as well as Behavioral Learning and Attribution theory. Moreover the relevant promotion literature around the short-mid and long-term impact of promotions will be reviewed to build the theoretical foundation for the later research carried out in this thesis. Last this chapter summarizes the findings and discusses the relevance and applicability of the different research results and theoretical concepts for the Uniform Across the Board Promotions.

Chapter 3 discusses the impact Uniform Across the Board Promotions have on short-term retail sales and compares this impact to other types of price promotions.

A hierarchical Bayes model will be applied to analyze weekly store-level data of 742 stores over 4 years to further discuss which characteristics of a retail store portfolio support the short-term effectiveness of UABPs. Furthermore the analysis in Chap. 3 shows whether those store characteristics are generally favorable for retail price promotions or whether this is a particularity for UABPs. The chapter concludes with managerial considerations regarding the short-term use of UABPs.

Chapter 4 focuses on the net effects as well as the longer term effects UABPs have on sales. It therefore discusses the adjustment effects of UABPs and analyses how these develop over time. Furthermore the chapter focuses on the question whether UABPs have a negative long-term effect on baseline sales. The analysis is based on daily store level data from a value fashion retailer, which is being analyzed using a (linear) mixed effects time series model with lead and lag effects.

Chapter 5 discusses the antecedents and consequences of Uniform Across the Board Promotions, to answer questions like "*who is the typical customer during UABPs*" and what impact do UABPs have on concepts such as customer loyalty, price image of the retailer or customer satisfaction. Furthermore this chapter discusses whether on a household level, customers really do change their behavior. These questions are being analyzed based on a combination of an original dataset of transaction data from 20,000 customers, out of which 1,641 have completed a questionnaire about their shopping behavior and attitude. These datasets have been combined and analyzed using a confirmatory factor analysis (CFA) as well as structural equation modeling (SEM). In addition to the store-level sales analysis conducted in Chaps. 3 and 4, this chapter gives more insight into the individual consumer and his attitude towards UABPs.

Chapter 6 summarizes the findings from the three studies carried out in Chaps. 3, 4, and 5 provides managerial implications. The goal of this chapter is to provide a quick overview of what UABPs are—what their impact on sales and the consumer is and what managers can do to best exploit their potential and avoid their risks.

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Chapter 2
Conceptual Framework

2.1 Pricing Strategies and Definitions of Price Promotions

"Nothing is more important in business than getting the pricing strategy right" summarizes the importance of choosing and implementing the right pricing strategy and tactics for a retailer (Tang et al. 2001). Generally retail managers can decide between two core pricing strategies, the *every-day-low-price* (EDLP) strategy or the *HiLo pricing* which together make up for over 56 % of pricing strategies used in the US, with other strategies (often derivatives of the two) such as *exclusive pricing*, *aggressive pricing* and *moderately promotional pricing* being used by ~44 % of US retailers (Bolton and Shankar 2003; Hoch et al. 1994; Lal and Rao 1997; Tellis 1986). In the following this thesis focuses on introducing EDLP and HiLo pricing.

When implementing an *every-day-low-price* strategy, the average price for every article is selected to be between a regular market price and a promotional price. By offering below regular market prices on all items, the EDLP-strategy aims at attracting price- and time-sensitive customers, who want to combine an attractive offering while not visiting multiple shops to hunt for the cheapest bargain (Lattin and Ortmeyer 1991; Seiders and Voss 2004). This strategy is very common as according to Bolton and Shankar (2003), approximately 45 % of US retailers, among them industry leaders such as WalMart, HomeDepot, CostCo and Aldi, have implemented this strategy (Bolton and Shankar 2003). In its pure form, no additional temporary price promotions would be granted to the customer.

The *HiLo pricing* strategy is defined as offering higher non-promotional prices mixed with temporary discounts on individual brands or categories to customers. These temporary discounts or variance in prices are a distinct characteristic and difference to EDLP-strategy. In contrast to the EDLP, the HiLo strategy attracts cherry-pickers, who are willing to invest additional effort in finding and visiting the stores with the cheapest price for a brand, even if this would require them to visit multiple stores (Bell and Lattin 1998). The HiLo strategy is less common than the EDLP strategy, as in the US only 11 % use this strategy, among them retailers like Lion, Safeway and Vons (Bolton and Shankar 2003). Within the HiLo pricing

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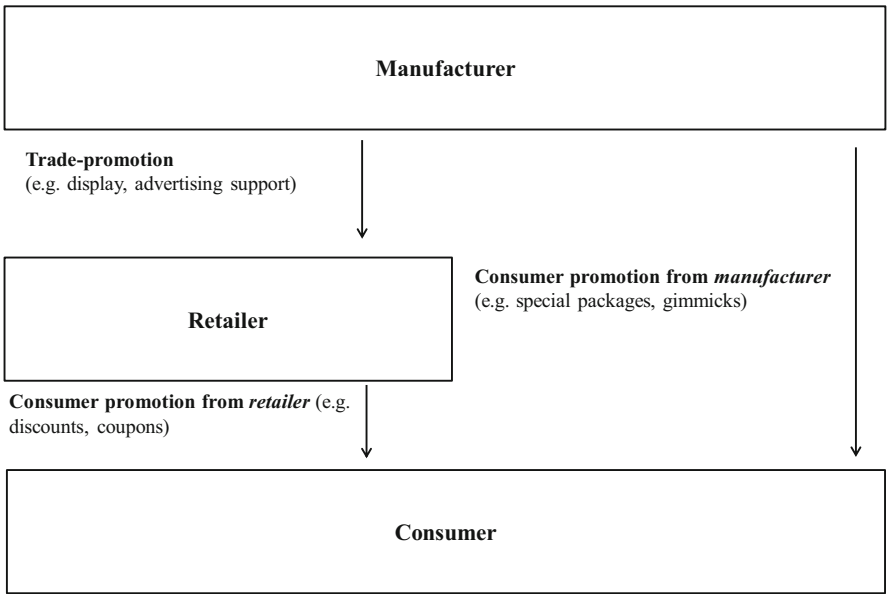

Fig. 2.1 Overview of promotion types

strategy, retailers (as a matter of fact also manufacturers/wholesalers) are free to choose among various different designs of price promotions.

2.1.1 Definition of (Traditional) Price Promotions

For sales promotions one differentiates promotions targeted at the retailer and promotions targeted at the consumer. Sales promotions that are directed towards retailers are called trade promotions, and promotions that a directed towards consumers are called consumer promotions (Blattberg and Neslin 1990; Gedenk 2002, p.14) (Fig. 2.1).

Consumer promotions can further be classified as price promotions or non-price promotions. Non-price promotions are for example free samples, special packaging or promotion games, while price promotions are for example discounts or coupons (Gedenk 2002, p. 19) (Fig. 2.2). Price promotions can be defined as (1) temporary limited discounts to the regular market price, (2) sometimes supported by additional marketing measures (3) to increase sales for a retailer, wholesaler or manufacturer (Diller 1984; Gedenk 2002). Sales promotions and price promotions alike, do not necessarily have to focus on reaching short-term goals, such as the immediate increase in sales, but can also be targeted at e.g. increasing a retailer's image or increasing long-term sales (Gedenk 2002).

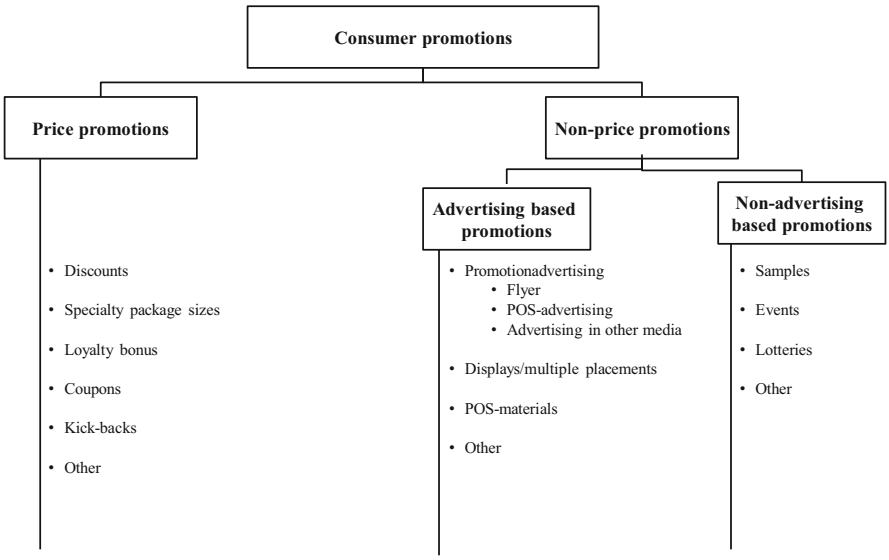

Fig. 2.2 Overview of consumer promotions

2.1.2 Definition of Uniform Across the Board Promotions (UABPs)

Uniform Across the Board Promotions, which is a term introduced to the literature with this thesis, are part of the broader category of *consumer price promotions*. As Uniform Across the Board Promotions have not been defined in the marketing literature before, this thesis introduces a definition, which is based on a qualitative pre-study further described in Chap. 3. For the avoidance of doubt, all other price promotions in this thesis are referred to as *traditional* or *other* price promotions.

Uniform Across-the-Board Promotions can be defined along four characteristics:

"Uniform Across the Board Promotions (1) are store-wide promotions on the entire assortment, that grant the customer (2) an undifferentiated discount on the entire assortment, i.e. no bigger or smaller discounts on any article. (3) This discount is only valid for a limited time period and (4) is expressed relative to the article prices, i.e. as a percentage to the absolute value."

Particularly the breadth of the promotion combined with the undifferentiated discount are differentiating criteria, as (a) other promotions are normally not applied to the entire assortment and (b) retailers generally do not offer the usually a bit cheaper white label products or the subsidized "category loss leaders" along the entire assortment. Even during sales periods, some articles are normally excluded from promotions or the depths of the discounts vary. As for traditional price promotions, UABPs can be supported by other forms of promotion and advertising, such as coupons, TV campaigns etc. Relative to the pricing strategies described in Sect. 2.1, UABPs combine elements from the EDLP strategy and the

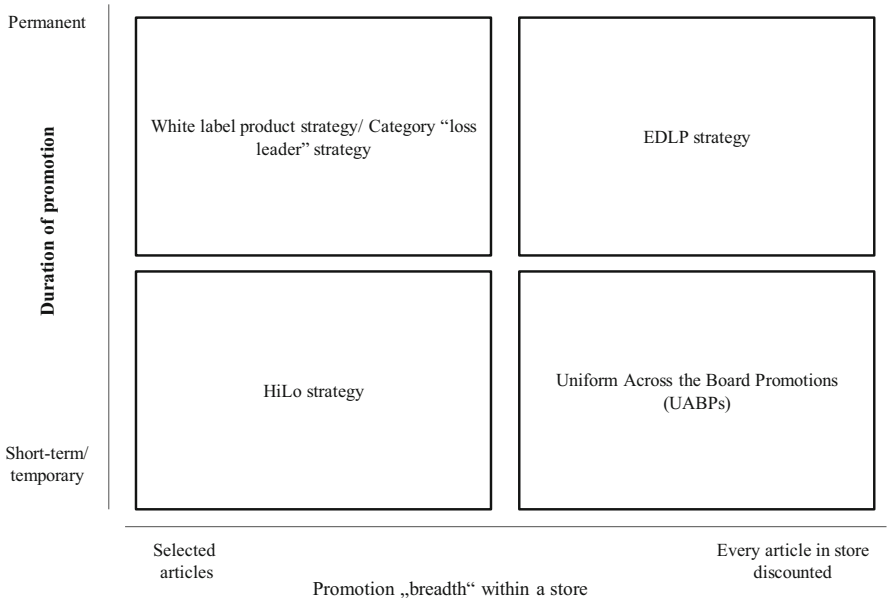

Fig. 2.3 Classification of UABP among pricing strategies

HiLo pricing strategy and are hence targeted at efficient shoppers and cherry pickers alike. The fact that the price promotion is applied on the entire assortment is an EDLP characteristic, while the temporary restriction is an element used in HiLo pricing (Bell and Lattin 1998; Hoch et al. 1994). Figure 2.3 further displays the characterization of UABPs compared to other pricing strategies.

2.2 Theoretical Background

In the following some cornerstone theories and concepts from research in social psychology, micro-economics, and behavioral economics will be introduced, that form the basis for the empirical research conducted later in this thesis and provide explanations to the observed results. Concepts and theories discussed include:

- *Prospect theory/reference price concept* (2.2.1): Theory that goes back to adaption-level theory, that e.g. discusses, how promotions alter the price expectations of consumers and how this affects future buying behavior.
- *Price search and search cost* (2.2.2.): Concept with background in microeconomics, which states that consumers are always putting the search for better offers in context to the actual and opportunity costs related to the search.

- *Behavioral learning* (2.2.3): Theory from social psychology, stating that consumers are constantly learning and adapting their behavior, especially if they are conditioned to change through facing continuous stimuli.
- *Attribution theory and self-perception theory* (2.2.4): Has its background in social psychology and states that consumers always try to find an explanation for a specific state, meaning they e.g. put price promotions in a certain context. This context influences their attitude and behavior towards the observed state.

2.2.1 Prospect Theory and Reference Price Concept

The reference price concept states that consumers do not just evaluate observed prices on a stand-alone basis and as absolute but rather evaluate them in a relative context. This concept goes back to the prospect theory (Kahneman and Tversky 1979) and eventually the adaption-level theory (Helson 1964).

According to the adaption-level theory (Helson 1964), consumers compare a state, i.e. an observed price to a personal reference-level or an adaption-level. These adaption-levels are formed by the individual response to three classes of cues: focal, contextual and organic. Focal cues are stimuli that a consumer is directly responding to (i.e. the observed price), with the contextual cues describing everything in the background to those cues (i.e. comparison with prices of other products). Organic or residual cues are built through previous experiences of the consumer (i.e. past prices that consumers have paid) (Helson 1964). Building on the different cues used to form adaption-levels or reference prices, there is however a discussion that different types of consumers form different reference prices. While more brand-loyal customers focus on their internal reference price, which is built from previous experiences, brand switchers (deal seekers) focus on external (contextual) reference prices (Puto 1987; Rajendran and Tellis 1994).

Kahneman and Tversky (1979) have built on this concept when formulating the prospect theory. According to the prospect theory, which then forms the basis for the reference price concept, consumers do not just look at the actual prices of goods or services but, in line with the adaption-level theory, always put this price in context relative to a personal reference price. The price perception of a brand or retailer depends not only on the actual price of products offered but also on their reference price and the relationship between the two. A positive deviance of the actual price from this adaptation-level or reference price, i.e. a lower actual price than the reference price would in terms of mental accounting be considered a "profit" and lead to a positive price perception, while a negative deviance would be booked as a "loss" (Monroe 1973).

Kahneman and Tversky (1979) found that the utility function for those profits and losses is concave for profits and convex for losses. Moreover the curve is steeper for losses than it is for gains. This means that consumers are in general risk-averse and in absolute terms losses are more negative than the same profit would be positive. In terms of promotions this means that a temporary discount (promotion),

with an observed price lower than the reference price will be considered a profit, while the return to the actual price compared to the "new reference price" would be a loss—with the net of the two effects being negative.

As consumers adjust their expectations to past experiences, e.g. promotions, the response of a consumer to a certain type of promotion can change over time, given the changed reference prices (Anderson and Simester 2004). Regarding promotions and in particular UABPs, historic experiences, and the increased predictability of finding an article at a lower price in the future, could make non-promotional prices less attractive and even provide a lower incentive to act on future promotions, given that the observed promotional price and the new reference price are converging (see Sect. 2.3.2 for a detailed discussion on long-term promotional effects).

Despite a general acceptance of this theory, the concept of the reference price and the rational consumer has come under some scrutiny as empirical research has shown that consumers often have little price knowledge and their internal reference price is often not very precise (Buzas and Marmorstein 1988; Dickson and Sawyer 1990). In reality, rather than having precise price knowledge, consumers use external cues while remembering whether a price was cheap or expensive. This heuristic is in most purchase situations sufficient for making purchase decisions or forming a view about a retailer and brand (Krishnamurthi and Raj 1988; Mazumdar and Monroe 1990).

For the applicability of the reference price concept on UABPs, it can be assumed that the "x percent promotion on everything" claim forms a strong enough external claim itself, so that the relative discount can be viewed as "reference" to what is normally charged for a product. This would mean that consumers do not compare the actual prices paid but rather use the heuristic of the existing "x percent promotion on everything" UABP discount as a reference value. This could lead to consumers expecting a certain (type) of discount rather than a precise price for an article.

2.2.2 Price Search and Search Costs

The behavioral pricing research differentiates between three phases of how consumers deal with prices. The first phase sets out how information on prices are obtained, the second one how those information are processed and the third one how the processed price information is stored by the consumer (e.g. Homburg and Koschate 2005). The *price information search*, i.e. the first phase, herein sets the basis for the processing and acting on the information.

The *interest in price* information, describes the general desire of a customer to search for price information and to consider these information in their decision making process. The greater the interest in price, the higher is the importance of price and the lower the willingness to pay an above average price (Diller 1999). The *interest in price* is increased through promotions, as they put the focus on the price

of a product which can also be tactically used by retailers, aiming at increasing the interest in price (Dickson and Sawyer 1990; Naik et al. 2005).

While the interest in price describes the original intention to search for prices, the *price search*, which is the undertaken effort to look and compare prices, influences the actual purchase process. In general price search can take place either between-stores (*between-store-search*), i.e. comparing prices across different stores for comparable products or within-stores (*in-store-search)*, which refers to comparing prices for comparable products and brands within one store (Urbany et al. 1996). The promotion aspect of within-store search is less relevant for Uniform Across Board Promotions, which is why the focus will be more on *between-store* search elements. Understanding the factors influencing the intensity of between-store search will help to better understand in which retail settings UABPs might work better than in others (see also Chap. 3). Various older research studies conclude that regardless of the degree of price variability, consumers tend to put only relatively little effort in the actual process for price search (Beatty and Smith 1987; Grewal and Marmorstein 1994). However price search is influenced by several influencing factors such as:

- Value of the product
- Observed price range
- Price guarantees
- Price knowledge
- Search costs
- Promotions

Regarding the influence *value* has on the price search intensity the existing evidence is mixed. Darke and Freedman (1993) argue that there is a positive effect of a higher value on the price search intensity, as the same relative discount leads to bigger absolute savings, if an article has a higher base price. Grewal and Marmorstein (1994) have found different evidence in the retail market for electronic goods, as the same absolute promotions gives a higher relative benefit to the customer if the article has a lower value. They hence conclude that value has a negative correlation with price search intensity.

Consumers normally have a general idea of the *price range*, meaning the lowest and highest price, to which a certain product can be purchased. Similar to the reference price theory, consumers compare the observed price with this price range and hence try to form an opinion on the probability to shop for a lower price (Urbany 1986). The wider this price range, i.e. the "perceived price dispersion", the higher the chances of finding a cheaper price and the higher the price search intensity (Duncan and Olshavsky 1982).

Price guarantees, which are given by certain retailers, aim at stopping the price search of customers, as they are offered the difference between the price spent for a product and a potentially cheaper price in a different store. This reduces the uncertainty for the customer, and hence has a negative effect on the price search intensity (Jain and Srivastava 2000; Srivastava and Lurie 2001).

The literature concludes that *price knowledge* and the price search efficiency positively impacts price search intensity, potentially also because it indirectly lowers the price search costs (Alba and Hutchinson 1987; Urbany et al. 1996). However this is only valid, if consumers are generally still searching for prices and have not yet "subscribed" to only one particular brand or store (Alba and Hutchinson 1987).

Search costs, which includes all incurred and opportunity costs associated with finding the best price, impacts the price search intensity. Information economics, which focus on utility maximization, argue, that price search is conducted as long as the expected savings are still as high as or higher than the cost incurred by an additional shopping trip (Stigler 1961; Metha et al. 2003). However the subjective utility from the satisfaction of having found a lower price, which is one motivation of bargain hunters, also has to be considered (Marmorstein et al. 1992). As research in the area of psychology states, consumers prefer the heuristic processing of information (over the systematic processing), as decisions are made based on simple decision rules, which reduce their mental effort (Chaiken 1980). *Price promotions* in a store can be seen as such an easy decision rule, as the subjective probability of finding a lower price elsewhere is reduced and consumer hence terminate their price search. Promotions hence have a negative impact on the price search—the higher the absolute discount, the more negative the impact (Darke and Freedman 1993; Darke et al. 1995).

According to the theory of information economics, customers always put the *search costs* in relation to the expected savings (e.g. Metha et al. 2003; Stigler 1961) and one could expect that customers incur higher relative search costs if the expected savings are higher or if the expected relative savings are more certain. Regarding the relative promotion depth, UABPs in our example are generally comparable to other types of price promotions (compare e.g. Chap. 4, Table 4.14), while the certainty of finding the desired article (in a particular size, color and style) on sale and available during UABPs is significantly higher, as the promotion is applied to *every article* in the store. The hypothesis is that rationale consumers would hence be willing to incur higher search costs to shop during UABPs than they would occur for other types of promotions. In theory this could result in UABPs attracting more customers that are willing to incur higher costs to visit a store, e.g. a commute from further away, and hence lead to higher promotional increases than for regular promotions. Part of this will be further analyzed in Chap. 3, when discussing the optimal retail settings for UABPs.

2.2.3 Behavioral Learning Theory

The central concept behind behaviorism or behavioral learning theory, introduced by Skinner (1953) and Thorndike (1911), states that positively reinforced behavior is more likely to reoccur than non-reinforced behavior. Nord and Peter (1980) as well as Rothschild and Gaidis (1981), have summarized the general concepts and

applied them to the field of marketing. Applied to marketing the behavioral learning theory suggests, that a transaction or purchase (response) takes place once a product (stimulus) is favorably received by the customer. If the customer is satisfied with the product (positive reinforced), the probability of repeat purchases increases. Marketers enhance the value of the product through additional stimuli, like adapting price, distribution or promotional variables. Such positive reinforcement, through favorable variables, further increases the purchase probability of the product. In the following some core components of behavioral learning in marketing will be quickly introduced and their potential impact on the purchase behavior for Uniform Across the Board Promotions.

The first step is called shaping, which derives a new behavior, such as choosing a new brand or store. This first step is essential as positive reinforcement, i.e. learning, can only occur, once behavior has already occurred. Rothschild and Gaidis (1981) suggest that shaping occurs through rewarding many small existing patterns, out of which a new, more complex behavior can occur. For example by advertising and promoting one can attract a consumer to a specific store once she already has the intention to buy in a certain product category. However the visit to the store is in this instance closely connected and reinforced by the specific additional stimulus (promotion, advertising). To ultimately achieve a change in behavior that is linked to the store rather than the additional stimulus, the ancillary incentives, such as the promotions and advertising need to fade out.

A common problem and significant risk in the use of those promotions stimuli is either the improper fading out or the over-usage of promotions/UABPs. If promotions/UABPs are not fading, i.e. being decreased over time, store sales may decrease significantly the moment those promotions are eventually dropped (see also Praktiker example and analysis in Chap. 4). This is caused by people switching back to a different store as the stimuli has become the main cause for choosing a certain store, rather than the store's products, features etc. Moreover an over usage of promotional or advertising aids may causes the consumer store choice to be contingent upon and overshadowed by those tools—once these aids are dropped, consumers might also switch back to a different store. To cause a long-term change in shopping behavior, promotional tools, hence also the UABPs can only be used to draw customers to a store, while continuously removing the correlation between the response (store selection) and the reward (UABP), to put the inherent store benefits back in focus (Rothschild and Gaidis 1981).

2.2.4 Attribution Theory

Attribution is a concept from the research in social psychology stating that individuals try to explain the causes for certain observed behavior and events. This concept has also been applied to marketing or more specific pricing research, arguing that consumers try to understand the reasons why a certain article or brand is on promotion (Folkes 1988; Lichtenstein et al. 1991). Consequently a

price promotion can, depending on the reason consumers expect behind it, be seen as positive or negative (Folkes 1988; Weiner 2000). For example the attitude towards are retailer and the value of a promotion is viewed more positively, when the customer thinks the promotions aim at winning market share and attracting customers rather than just for clearance of stock (Lichtenstein and Bearden 1989).

When consumers face unexpected promotions they try to assess whether this has something to do with the product (quality) or the store (Lichtenstein and Bearden 1989). A promotion which consumers cannot explain could be perceived as unfair even if beneficial for the consumer (Xia et al. 2004; Ordóñez et al. 2000). When consumers are facing very large discounts, they are discounting the promotion unless they are familiar with the brand (Moore and Olshavsky 1989). Regarding UABPs it will be interesting to see whether consumers are discounting the price promotion, impacting e.g. image of the brand, not just because of the actual depth but also because of the breadth *("promotion of every article in the store")* of the promotion. Especially in the long-term the impact of very deep discounts or very broad promotions, such as the UABP, has to be assessed as beyond a certain level the perceived value of a promotion is higher if the type of discount is rare—very frequent UABPs should hence lose in efficiency (Lichtenstein and Bearden 1989). The impact of UABPs on the brand and how they are perceived in general will be discussed in Chap. 5, where a connection to the attribution theory will be drawn.

2.3 Literature Review Related to the Impact of UABPs

2.3.1 Short-Term Sales Impact of Price Promotions

When addressing the impact of promotions on short-term consumer behavior, the marketing literature differentiates between two general effects: sales bump and promotional dips. The sales bump or immediate effect of price promotions refers to the increase in sales during a promotion campaign. Potential adjustment effects or pre- and post-promotion dips are understood as the "troughs" prior or post a promotion, during which sales are below the usually observed sales level, as consumers adjust their behavior to the promotions.

This topic was first analyzed in the late 70s, when promotional effects were decomposed and the first evidence for purchase acceleration was empirically observed. Research found, that consumer make sophisticated decisions and increase the quantities of consumer goods purchased (soap, coffee and orange juice) during promotions compared to non-promotional quantities ("sales bump"). Those purchases are often made at the expense of later purchases ("post-promotion dips") (Ward and Davis 1978). In the following the existing literature on the three short-term promotional effects will be reviewed and the potential implications for UABPs will be derived.

2.3.1.1 Immediate Effect of Price Promotions

This paragraph focuses on the immediate effect of price promotions, also called "sales bump", which refers to the increase in sales caused by a (temporary) reduction in price. The paragraph will summarize a review of the respective literature regarding key aspects of the immediate effect of price promotions and derive potential implications for Uniform Across the Board Promotions on:

- Category incidence, brand choice/switching, purchase quantity
- Store choice
- Complementary effects (e.g. impact on customer mix, complementary products)

Effect on Category Incidence, Brand Choice and Store Switching

Earlier research has usually analyzed the promotional impact on brand choice (e.g. Guadagni and Little 1983), quantity decisions (e.g. Blattberg et al. 1981) and category incidence as separate topics. Gupta (1988) has then been among the first to measure the impact, each of those components have on sales simultaneously, as this helps to better understand the overall effectiveness of a promotion. For this reason this paragraph discusses the impact price promotions have on *category incidence*, *brand choice* and *purchase quantity* together.

Category incidence is the likelihood of consumers purchasing in a certain category, while *brand choice* is the impact promotions have on the selection and switching to a certain brand. Purchase quantity, which is often discussed together with acceleration of purchases or inter-purchase time, refers to consumers buying more (and earlier) of a product due to the product being on promotion. Especially for purchase quantity (and acceleration) it is important to understand, that those effects cannot be seen as stand-alone but are closely related to pre-and post-promotion dips, which will be further discussed in the following chapter.

It is undisputed, that store-sales generally respond positively to short-term price promotions, while the effect can be decomposed into within-category brand switching (e.g. Gupta 1988) or category expansion (e.g. Chintagunta 1993; van Heerde 1999). While within-category brand switching does not increase sales of a category but rather shifts those sales to a different brand, category expansion increases the demand for a certain category. Various researchers have further explored these effects, by decomposing the short-term sales increase into primary demand effects: purchase acceleration and increase in purchase quantity and secondary demand effects: brand switching.

As Table 2.1 shows, the elasticity decomposition of promotional impact as measured from household level data shows a broad range of results, for different categories. The average shows, that 74 % of the increase in sales can be attributed to secondary effects and more specific: brand switching (Bell et al. 1999; Bucklin et al. 1998; Chiang 1991; Gupta 1988). Van Heerde et al. (2003) who have analyzed

Table 2.1 Decomposition of promotional sales elasticities

Study	Category	Brand switch.	Timing accel.	Quantity accel.
Gupta (1988)	Coffee	84 %	14 %	2 %
Chiang (1991)	Coffee (featured)	81 %	13 %	6 %
	Coffee (display)	85 %	5 %	10 %
Chintagunta (1993)	Yogurt	40 %	15 %	45 %
Bucklin et al. (1998)	Yogurt	58 %	19 %	22 %
Bell et al. (1999)	Various	49–94 %	1–42 %	0–45 %
Average		**74 %**	**11 %**	**15 %**

store level data have only found this effect to account for 33 % of the short-term sales increase (see also Table 2.1, as inspired by van Heerde et al. 2003).

Walters (1991) in an earlier article has found that the negative impact of a promoted brand on its substitutes, depends firstly on the brand or category but also on the similarity of the perceived attributes of the two brands—this can likely explain some of the variance related to the degree of brand switching shown in Table 2.1. For retailers it is important to understand the brand switching effect, as the within store substitution might be desirable from a manufacturer point of view, however it might not increase overall store sales for the retailer. Based on the average results above (Table 2.1), 26 % of the sales increase is due to primary demand effects, i.e. short-term sales increases for the retailer, that are caused by customers buying more and buying earlier. Whether over a longer period of time, this leads to a net increase in sales for the retailer or causes post-promotion dips will be discussed in more detail later (see Sect. 2.3.1.2 for post-promotion dips). Especially if consumption rates react positively to promotions, i.e. customers consuming faster if they have bought an article at a reduced price, the category incidence increases and the net promotional effect for the retailer is likely even higher (Ailawadi et al. 2007; Bell et al. 1999).

When discussing the sales impact of UABPs against this background, it is important to note, that UABPs are targeted exactly at those primary demand effects, as there is usually no significant within-store substitution expected, given that the promotion is applied to every article in the store. On the contrary UABPs are not a mean to influence secondary effects or specifically brand choice but rather store choice and category incidence as will be discussed in the next chapter.

Effect on Store Choice

Part of the sales bump caused by promotions can be attributed to store switching. As stated before, UABPs are retail driven consumer promotions, i.e. unlike trade promotions or manufacturer driven consumer promotions that target an incremental increase in sales of a specific brand or product, UABPs aim at increasing overall retail store sales. They are hence an important marketing tool from a retailer's

perspective. The following summarizes, how and if price promotions generally affect consumer store choice.

Keng and Ehrenberg (1984) show, for a grocery retail setting, that consumers generally have low store loyalty and little segmentation between different stores and retail chains, when it comes to selecting a certain product. This is an indication, that consumers can theoretically be lured into switching stores by offering them attractive promotions.[1] This has been supported by work from Kumar and Leone (1988) and Walters (1991) that have found that pricing activity for a specific brand in one store has negative effects on sales in its competing stores or more specifically that price promotions of a brand in one store has a negative effect on the brand or its substitutes in a competing store. Bucklin and Lattin (1992) introduce two concepts of competition, direct and indirect, between retail stores that have different implications on the promotional sales effects. *Direct effects* are the influence promotions have on the actual store choice, i.e. that consumer switch stores to profit from a certain promotion. *Indirect effects* are the influence that promotions have on the sales in another store, without causing store switching. This is caused by consumers visiting various stores and increasing their sales for a certain brand in store x (caused by a promotion), with the subsequent decrease for the same brand when they visit store y (Bucklin and Lattin 1992). Direct store switching occurs especially when households use outside store-cues which leads to decreases in sales for competing stores (as opposed to „indirect "autonomous cross-shopping where results are mixed). While both effects help the retailer to increase sales without causing within-store substitution, direct effects are more favorable, as they drive more customers to a certain store, increasing the overall store's market share instead of just the market share in a certain (promotion supported) category.

As Uniform Across the Board Promotions are affecting the entire product portfolio of a store, they generally cause outside-store cues, and are hence likely to also cause direct store switching. While various studies agree that promotion induced store switching exists, they differ on the magnitude of this effect, which can partly be attributed to category specific effects. Kumar and Leone (1988) find that within-store substitution rates are by a factor of between two and three times higher than promotion induced store switching, while Ailawadi et al. (2006) find that store switching only makes up for 45 % (Ailawadi et al. 2006) of a brands temporary sales increase (with the rest coming from within-store substitution) (Ailawadi et al. 2006; Kumar and Leone 1988).

[1] In the case analysed in this thesis this might be somehow different, as products from the vertically integrated retailer are not available in any other store or chain.

Other Effects of the Short-Term Sales Increase

In addition to the impact on the actual size of the sales bump, promotions also affect the consistence of the "sales bump", i.e. what products will be purchased and by whom.

One general notion in retail, which also highlights the advantages of direct versus indirect effects in store switching, is that price promotions of a certain brand or category also stimulate the purchases of their non-promoted complements. Examples in research point to how for example promoted spaghetti sauce causes an increase in sales of the non-promoted spaghettis (Walters 1988). The degree of this effect varies strongly by brand or category (Mulhern and Leone 1991). Related to overall store sales, the promotional bump hence consists partly of incremental sales from the promoted brand but partly also of sales from the complementary products (net of less sales for the substitutes as previously discussed).

Another particularity of the sales bump is that sales in promotional periods can not necessarily be attributed to the regular and established customers a store, as promotions affect the customers mix visiting a store (e.g. more cherry pickers, less repeat purchases). Understanding the impact of the promotion on the customer group, will be important when discussing the long-term impact of price promotions (Anderson and Simester 2004).

2.3.1.2 Post-promotion Dip

The post-promotion dip or the questions whether "there is a trough after the deal" (Blattberg et al. 1995, p. 127) is one of the central topics in short-term promotional research and closely related to the previously discussed "*sales bump*".

When discussing post-promotion dips, this section focuses on four core questions:

1. Do post-promotion dips really exist (and what is the post-promotion dip paradox with regards to store-level data)?
2. What causes post-promotion dips?
3. What influences the degree of post-promotion dips?
4. What is the role of post-promotion dips for Uniform Across the Board Promotions?

Do Post-promotion Dips Really Exist?

The existence of post-promotion dips have among others been empirically shown by Gupta (1988) (*also discussed in paragraph on sales bumps*), who has decomposed the sales increase during a promotion and has found that 14 % of it is due to purchase acceleration, while 2 % is due to consumers buying more during a promotion (stockpiling). Hence 16 % of the promotional sales increase would be at

the expense of other period's sales. Others such as Grover and Srinivasan (1992) find this effect to be up to 25 %. While Bell et al. (1999) on average find a similar degree (26 %) for sales being shifted from non-promotional to promotional periods, they observe a wider range of results among the 13 product categories they have observed (6–51 % of sales increase were attributable to stockpiling or purchase acceleration) (Bell et al. 1999; Grover and Srinivasan 1992; Gupta 1988). These findings support earlier research, which shows that consumers are doing sophisticated planning of purchases and adjust their buying behavior accordingly (Blattberg et al. 1981; Krishna 1992).

Even-though above research has found evidence for post-promotion dips in household-level data, earlier results analyzing store-related data is mixed. In addition to the above mentioned research from Neslin et al. (1985) as well as Jain and Vilcassim (1991) have found a dip following promotions, while Vilcassim and Chintagunta (1995) have found no trough.

Interestingly, Grover and Srinivasan (1992), who had found acceleration effects on household level data, have not found any effects on store-level data. Understanding this paradox and showing post-promotion effects also for store-related data, which is the type of data more managers base their analysis on (Bucklin and Gupta 1999), is important, in order to understand, whether the acceleration and stockpiling phenomenon really exists (on an aggregated basis). Neslin and Schneider Stone (1996) provide arguments, why post-promotion dips might not be observed in store-level data and why even the observation in household-level data might be complicated.

Later research addresses some of those issues, by adjusting the methodology to account for several of those factors hiding post-promotion troughs. Van Heerde et al. (2000) introduce three possible models, with which even complex post-promotion dips can be detected (see Chap. 4 for more details). These results are supported by later research from van Heerde et al. (2004), Macé and Neslin (2004) and van Heerde and Bijmolt (2005) who all find post-promotion dips in store-level data.

What Causes Post-promotion Dips?

Post-promotion dips could occur due to purchase acceleration, which can assume two forms: consumers buying *more* during a promotion (*"stockpiling"*) or them buying *earlier* i.e. shortening inter-purchase time. Neslin et al. (1985) have found that purchase acceleration is more often shown through stockpiling than through shortened inter-purchase time (e.g. Blattberg et al. 1995; Macé and Neslin 2004; Neslin et al. 1985).

What Influences the Degree of Post-promotion Dips?

The effectiveness of promotions and also the degree of acceleration and hence post-promotion dips can vary according to different product, category, promotion, store and customer characteristics (see e.g. Bell et al. 1999; Hoch et al. 1995; Macé and Neslin 2004). Related to product and category characteristics, post-promotion dips are greater for higher value and more established products with a higher general market share, which is explained by Macé and Neslin (2004, p. 346) as consumers "use promotions to ensure inexpensive supply (and consumption) of their favorite brands" . Furthermore the storability of products and general selection within one product category (availability of different sizes) are positively related with the size of post-promotion dips (Macé and Neslin 2004). For products or categories with higher inventory holding costs and lower stock-out costs, consumers tend to hold fewer inventories, causing smaller sales bumps and also smaller post-promotion dips (Gönül and Srinivasan 1996).

Under the term *promotion characteristics*, the type of price promotion, advertising support and the general promotion schedule of a retailer, category or brand is summarized. Advertising of price cuts can increase quantity purchase and decrease inter-purchase time (i.e. accelerate purchases), leading to stronger post-promotion dips. Coupons also cause post-promotion dips, while those are smaller than those for advertised price cuts, as purchases are generally not accelerated through coupons (Neslin et al. 1985).

Krishna et al. (1991) have found that consumers form expectations on the future availability of coupons and promotions, which influence their purchase behavior. Results on the impact of predictability of promotions on the post-promotion dips are mixed. More frequent promotions have according to Macé and Neslin (2004) a positive impact on post-promotion dips as the consumer may learn to stockpile and decelerate purchases (deal-to-deal buying), which is contrary to earlier research, in which less predictable promotion schedules lead to the notion that there is a need to stockpile in order to make it to the next promotion (and ensure low cost availability of the product) (Meyer and Assuncao 1990). A possible explanation for this is, that consumers are conditioned to "lie-and-wait" for even more attractive promotions (Jacobson and Obermiller 1990; Mela et al. 1998) and that the two possible effects, stockpiling only during promotions and foregoing promotions hoping for more attractive ones, lead to the mixed empirical results.

Regarding customer characteristics especially older customer with bigger families that possess a car cause the largest post-promotion dips (Macé and Neslin 2004). One potential reason is that the availability of a larger car decreases inventory costs while bigger families might increase stockout costs, which would then be in line with the findings of Gönül and Srinivasan (1996). Customer loyalty does not necessarily lead to higher post-promotion dips, as findings have shown that this depends on the product category (Neslin et al. 1985).

What is the Role of Post-promotion Dips for Uniform Across the Board Promotions?

As for traditional promotions, post-promotion dips decrease the net effectiveness of UABPs. There is no evidence, why the mere existence of post-promotion dips should be different than for traditional promotions, while the degree, to which they occur, could be affected by the breadth of the promotion. The claim that "every article is discounted" could increase the predictability of the promotion or rather the predictability of finding the desired article on promotion. Consumers could hence as per Macé and Neslin (2004) learn to stockpile and decelerate purchases, especially when frequently confronted with UABPs. Due to the generally higher predictability (of finding the desired article on promotion) of UABPs compared to traditional promotions, the post-promotion dip should be larger. This deal-to-deal buying for UABPs which is favored by the storability of goods will be closer analyzed in Chap. 3, using a dataset from a value fashion retailer.

2.3.1.3 Pre-promotion Dip

Even though the marketing literature has covered post-promotion dips i.e. anticipatory effects of promotions as early as the late 70s, pre-promotion dips or deceleration is not as well studied. Doyle and Saunders (1985) have been among the first, to stress the importance of lead effects when evaluating sales promotions and have found that those lead effects can be as important as lagged effects.

The marketing literature shows, that consumers form price expectations. When consumers anticipate marketing changes, e.g. if they expect significantly lower prices in the future, they react by adjusting their behavior and potentially deferring their purchases which will cause a pre-promotion dip (Kalwani et al. 1990; Winer 1986; van Heerde et al. 2000). Gönül and Srinivasan (1996), conducting research using house-hold level data for disposable diapers, find that consumers might defer purchases when they expect a coupon or promotion to be available in the next period. The likelihood of the deceleration and hence also the degree of the pre-promotion dips depends on the level of stockout-cost. When there is sufficient inventory and stock out costs are comparably low (e.g. when there is a reasonable substitute for a good), the purchase probability in a pre-promotion period decreases further.

Furthermore consumers assign a higher probability to coupon and promotion availability if there is no coupon available in the current period (Gönül and Srinivasan 1996). Mela et al. (1998) have found in household panel data for frequently purchased non-food products, that the formation of expectations is further influenced by the number of promotions. An increased availability of promotions (promotion rate) lets consumers decrease their baseline purchases in non-promotion times, as they expect to be able to purchase at even lower prices in the future. This holding-out further contributes to the existence of pre-promotion dips. In line with their findings when analyzing store level data for the existence of

post-promotion dips, van Heerde et al. (2000) also find that pre-promotion dips exist.

As for their work on post-promotion dips, Macé and Neslin (2004) have found that pre-promotion dips are larger for frequently promoted products that have a higher share of wallet for the consumer. Moreover, they have found that storability and availability of different sizes has a positive impact on pre-promotion dips. Pre-promotion dips are further negatively correlated with age and income, which are the only relevant demographic effects for pre-promotion dips. As for post-promotion dips the degree to which pre-promotion dips exist for UABPs will be further discussed in Chap. 3.

2.3.2 Permanent/Long-Term Effects of Price Promotions

As stated earlier, the original Uniform Across the Board Promotions have been very successful in increasing short-term sales for the DIY retailer Praktiker. However they proved less efficient in the long-run and even worse, various experts claim that UABPs have caused severe problems for the retailer.

When assessing whether a certain type of price promotion campaign is beneficial for a retailer, it is hence critical to also understand the permanent effects on sales and consumer behavior. Specifically it is important to understand three interdependent areas of promotional impact. (1) whether the impact promotions have on sales and purchase incidence changes over time, (2) whether consumers become more price sensitive over time, which also affects their non-promotional buying behavior. This chapter will first review the literature on permanent effects on sales and purchase incidence and second discuss the impact price promotions have on brand or store loyalty. Last past research on how promotions affect the long-term price sensitivity and hence likelihood to stockpile of consumers is being reviewed. These topics give a direction, on how UABPs likely influence the expected mid-term sales bump, potential adjustment effects as well as consumer's attitude towards a brand or retailer and subsequently their long-term behavior. All aspects will be specifically discussed for UABPs in later chapters of this thesis (see Chaps. 4 and 5).

2.3.2.1 Impact on Long-Term Baseline Sales and Purchase Incidence

Overall the research on the long-term effects of price promotions is an area which according to Blattberg et al. (1995) is "the most debated in the promotional literature and one for which the jury is still out" (Blattberg et al. 1995, p. 127). The starting point in this discussion is what can be considered as "long-term", noticing, that the definition of long-term effects and adjustment effects are often quite similar. Mela et al. (1998) define long-term promotional impact as "the cumulative effect of previous promotional exposures (over quarters or years)"

(Mela et al. 1998, p. 250), while Dekimpe et al. (1999) find in their research, that long-term effects on sales can be defined as mostly stationary effects. Stationary effects assume that lagged effects exist but sales will eventually return to their pre-promotion mean, i.e. sales cannot be permanently affected by promotions (Dekimpe et al. 1999). When discussing the long-term impact on sales in this thesis, both a long-term non-reverting mean effect on sales and consumer behavior (Mela et al. 1998) will be discussed as well as a more mid-term adjustment effect that might eventually prove to be mean reverting (Dekimpe et al. 1999). The empirical evidence on whether long-term promotional effects exist is however regardless of the definition of the time-frame, mixed.

Long-Term Negative Impact of Promotions on Baseline Sales

The theoretical background sits close to the before mentioned prospect theory (Kahneman and Tversky 1979), adaption-level theory and the concept of reference prices. The reference price theory suggests, that (noticeable) promotions should have a negative impact on longer term (non-promotional) sales, as consumers get used to a lower price and hence expect to purchase at this price in the future (e.g. Greenleaf 1995; Jacobson and Obermiller 1990; Lattin and Bucklin 1989).

Depending on the type of promotion the promotional gain is separated from the price in a different mental account (Mazumdar and Yun 1993). Non-price promotions (e.g. lotteries) are booked as a separate gain, whereas price promotions are combined with the respective price and are booked as a loss reduction (Diamond and Johnson 1990). Only the later influences the reference price for a product. For UABPs, the discount is not directly applied to the product but rather as a bonus on the check-out on the entire basket, which is why it would be unclear, whether this would be considered as a direct gain or rather a loss reduction. For price promotions, an increased promotional exposure decreases the reference value for the product category during non-sales periods and hence the difference between category value and reference value increases which reduces the likelihood of category purchase incidence (Bell and Bucklin 1999).

According to Kalwani and Yim (1992) the promotion frequency and the depth of price discounts have a significant effect on the price expectations of consumers. They have found that frequent and sizeable promotions change the reference price, while infrequent or small, i.e. only around the current reference price, do not change price expectations of the consumers (Kalwani and Yim 1992). Frequency is hence important for promotions as they are a moderator in the degree to which promotions might change the reference price of the consumer. Reducing the once introduced frequency of promotions can have a negative effect on market shares as the net price to consumers is increased (Ailawadi et al. 2001).

In addition to the reference price concept discussed above, future price expectations or expectation about coupon availability also make consumers defer purchases to subsequent periods (Gönül and Srinivasan 1996), which is why the effect a long-term promotion exposure of a household has on purchase incidence is

significantly negative (Mela et al. 1998). These findings are in line with earlier research that has found that promotions have a negative effect on long-term consumer behavior, i.e. purchase probability (Blattberg and Neslin 1990). During promotions, the average quantity bought increases, which affects future incidence rates and provides further evidence to the "sit and wait" attitude induced by promotions, that negatively affect long-term baseline sales (Mela et al. 1998).

Long-Term Positive Impact of Promotions on Baseline Sales

A second stream of research however suggests that promotions make consumers buy more and consume faster, which indicates a positive long-term impact (Ailawadi and Neslin 1998). While Blattberg and Neslin (1990) had found an overall negative impact, they recognize in line with learning theory, that promotion-induced trial purchases, or trial visits to retail stores, might increase familiarity with a brand or store and result in future repeat purchases, which would have a positive long-term impact (Blattberg and Neslin 1990). This is in line with research stating that promotions can be used to shape brand loyalty, which increases repeat purchases and hence baseline sales (Rothschild and Gaidis 1981). However as the self-perception theory suggests, consumers who have bought during promotions are likely to attribute the purchase to the presence of the promotion rather than their actual brand or retailer preference (Dodson et al. 1978).

Long-Term Neutral Impact of Promotions on Baseline Sales

Dekimpe et al. (1999) are among a group of researchers who argue that permanent effects of promotions do not structurally change the overall baseline sales of a brand or retailer and even if such effects exist for selected categories, they are usually very small (Dekimpe et al. 1999; Lim et al. 2005; Nijs et al. 2001). However the composition of sales, i.e. how much is bought at what point in time might be affected, as Mela et al. (1998) argue that customers will buy more at fewer occasions. This has been reiterated by Pauwels et al. (2002) who see the issue in measuring net impact in the different promotion induced effects cancelling each other out. In line with previous research, they argue that there is a negative impact on incidence and a positive one on quantities, which is why long-term impact has been difficult to measure in articles that can be stockpiled. In case that this argument holds, promotions can in the long-run be attractive for brand managers as consumers stay out of the market for competitive products—but also out of the market for other complements (which is bad for the retailers)—given the reduced frequency of shopping trips (Bell et al. 1999).

Summary of Impact of Promotions on Baseline Sales

As stated initially, one cannot definitely conclude whether promotions have a long-term effect on baseline sales, nor can one pass judgment on the direction such an effect would have. While overall more literature exists, suggesting negative long-term effects of promotions, various studies find positive or negative effects for one product category, which does not hold for other categories. For example the positive effect from promotion-induced repeat purchases (Blattberg and Neslin 1990), would be small or non-existent for mature categories and would only likely occur for new product categories or customers new in an area with different retail stores (Gijsbrechts 1993; Mela et al. 1997).

Overall the conclusion is that one has to (1) carefully analyze the type of price promotion run (*see detailed discussion on UABPs*), as well as the extent (depth and frequency) to which it is run. These factors impact the search costs for the consumer as well as the possibility to anticipate the promotion and the likelihood of a change in reference prices. Furthermore, the (2) category characteristics and (3) customer characteristics will have to be considered to pass a definite judgment on whether a promotion campaign has an impact on the future baseline sales of a brand or retailer.

2.3.2.2 Impact on Promotion Sensitivity and Promotion Effectiveness

This chapter discusses whether the long-term exposure to price promotions has an impact on the customer's decision to act on future promotions, i.e. whether their promotion sensitivity increases. Derived from the reference price theory, the general concept of consumers comparing an observed price to a reference price holds for regular sales periods (baseline sales) and promotional periods. The delta between those two prices is the perceived value for the consumer. If increased promotions lower this reference price and hence the price delta, even a lower price observed during promotions, is less "special" than it might have been if no previous promotions had been run. This reduces the purchase probability also during promotions and hence increases promotion sensitivity (e.g. Helson 1964, Sawyer and Dickson 1984).

As stated above reference prices are not just influenced by the absolute amount of a promotion (see Sect. 2.2.1 Prospect theory/reference prices) but also by the frequency of a promotion. Krishna et al. (1991) have found that consumers are good in assessing the frequency of regular promotions. This finding is important as empirical research has found that the impact of a promotion is significantly larger, if the promotion is unexpected (Kalwani and Yim 1992; Lattin and Bucklin 1989).

Empirical research supports this theory, as Mela et al. (1998) find, that in the long-term an increased use of promotions makes consumers more promotion sensitive, which means that consumers are less likely to react on a promotion as they "sit and wait" for an even better deal to come by. This is in line with Gönül and Srinivasan (1996), who find that also as a function of current consumer inventory

levels, consumers might forego current promotions if they expect to receive future coupons that give them the same or even higher promotional benefits (Gönül and Srinivasan 1996). This entire line of research suggests that if consumers can form a view on future promotions, they might adapt their future shopping behavior accordingly, making promotions less effective. It is hence important to make promotions, or specifically Uniform Across the Board Promotions, as random as possible.

2.3.3 Summary of Theoretical Background and Literature Review and Outlook of Research Contribution

The focus of this was on two general topics: First, is the discussion of the theoretical background (Sect. 2.2), that sets the basis for many of the hypotheses developed in Chaps. 3, 4, and 5. The second focus was the review of existing pricing literature (Sect. 2.3) to introduce and position UABPs accordingly and put the later results into context. The research described in Sect. 2.2 are mostly findings based on experiments carried out in various fields of research, while Sect. 2.3 consists mostly of empirical studies that are based on relatively large data samples, mainly in the FMCG category and based on individual brands/categories.

The theoretical background (Sect. 2.2) dealt with four core concepts of which the highlights will be recalled in this paragraph:

- Prospect theory and reference price concept (Sect. 2.2.1): Which states that consumers compare prices to an internal or external reference price. Subject to the deviation of the observed price and reference price, the consumer forms a view on whether she likes an offer or not. This reference price can change when the consumer is confronted with promotions or the UABP.
- Price search and transaction costs (Sect. 2.2.2): This theory that stems from the field of microeconomics, suggests, that a consumer continues to look for a cheaper price, as long as the search costs are lower than the expected savings from finding a better deal. Expanding this to transaction costs states that consumers are making trade-offs between higher transaction costs and a potentially lower price. This becomes relevant, when the flexibility and breadth of UABPs will be discussed.
- Behavioral learning (Sect. 2.2.3): A concept from the field of social psychology which discusses whether consumers learn to adapt their behavior if repeatedly being confronted with a similar stimulus. A concept very relevant for the evolvement of the consumer's behavior and long-term impact of UABPs.
- Attribution theory (Sect. 2.2.4): This theory also has it's background in social psychology and claims that that individuals try to explain the causes for certain observed behavior and events, which will become relevant when discussing whether the UABP might change the attitude consumers have towards a retailer (Chap. 5).

In addition to the theoretical background, the literature review (Sect. 2.3) focused on how promotions influenced the short-term purchasing behavior (Sect. 2.3.1), specifically whether sales bumps are being caused by promotions and how promotions affect store choice, category choice or brand choice. Furthermore the adjustment effects around any potential sales bumps have been discussed, i.e. whether consumers adopt their purchase behavior through stockpiling and anticipation (Sect. 2.3.1.1)—both short-term and adjustment effects will be separately discussed for UABPs in Chaps. 3 and 4. The literature review concludes with discussing any potential long-term effects that might arise from promotions (Sect. 2.3.2) and that will be touched upon in Chap. 4.

The literature review mainly discusses the impact traditional promotions have on store sales and consumer behavior, while up to this point no study has particularly addressed the impact of Uniform Across the Board Promotions, which is a field that will be addressed by this study. Specifically the following three chapters will deal with this and related questions:

- Chapter 3: What is the impact of UABPs on the short-term sales performance of a retailer? In which type of stores and locations do they work best and how does this compare to other types of promotions?
- Chapter 4: How do UABPs affect any potential adjustment effect, i.e. do they cause pre-and post-promotion dips and what is their impact on the long-term sales performance of a retail store?
- Chapter 5: What are the antecedents of UABPs on a household-level, i.e. what type of consumers are more or less likely to shop during UABPs? Apart from impacting sales—what else is impacted (e.g. customer satisfaction and loyalty) and do households change their purchasing.

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Chapter 3
Impact of Uniform Across the Board Promotions on Short-Term Store Revenues

3.1 Introduction and Context to Short-Term Effects of UABPs

As already briefly touched upon in Sect. 1.1, until 2003 retailers had relatively few options with regard to the design of price promotions due to a "federal promotion regulation" in Germany. Particularly, promotions were only allowed in short and specific timeframes and the type, width and depth of promotion was centrally regulated. For instance any form of coupons or uniform discounts were prohibited.

When this situation changed in 2003, after the regulation was altered and retailers were given more flexibility concerning price promotions—Praktiker, Germany's second largest DIY chain was among the pioneers in using this new flexibility. They became famous for offering their customers uniform discounts on the entire assortment, captured in the slogan "20 % off on any article in the store—except pet food". This uniform percentage discount on every article in the store was in fact the first of a new type of promotion in Germany, which is referred to in this thesis as "Uniform Across the Board Promotion (UABP)" and which is has been defined in Sect. 2.1.2 of this thesis (Bomsdorf et al. 2003).

Despite the growing importance and usage of UABPs in the German and European retail environment (see Sect. 1.1), this new form of promotion and its impact on the consumer has not been covered in the marketing literature thus far. This research gap is important, because the performance impact of UABPs is far from clear as Praktiker faced severe financial problems which the German business press has at least partly attributed these difficulties to the excessive use of UABPs (Handelsblatt/Reuters 2012). Against this background, it is the goal of this thesis, to investigate the performance impact of UABPs with the first step being the analysis of the short-term impact UABPs have on sales, which will be discussed in this chapter.

The key dependent variable is store level performance. This focus distinguishes this research from the more established research on brand promotions. In particular, as UABPs are applied to all products at the same time and to the same degree, within store cannibalization effects that are typical for brand promotions are likely

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to be negligible. Therefore it becomes possible to clearly attribute the impact of UABPs on overall retail store sales. This being said, there is the possibility of different articles having different price elasticities and hence there might be a change in the composition of the shopping basket. This is however not a focus of this study and as this thesis focuses on overall store sales the net effect on the store is assumed to be zero and will be neglected going forward.

Moreover, it becomes relevant to understand how the impact of UABPs is influenced by store characteristics. The latter is a central topic as UABPs are often used by larger retail chains with a heterogeneous store portfolio (e.g. Praktiker, Esprit, and Replay). This chapter discusses the impact of the following store variables on the success of UABPs: (1) the location of the retail stores, (2) the net trading area, (3) the age, and (4) the general condition of the store.

To analyze the impact of UABPs and the role the store trading characteristics play weekly store level data from a German value fashion retailer has been used. The dataset contains weekly sales level data from 747 stores ($S = 747$) over a time span of 225 weeks ($T = 225$) in the period from 2008 to 2012. Methodologically a Markov Chain Monte Carlo simulation in an integrated hierarchical Bayes Model is being used to estimate the impact of promotions on retail store sales as well as the influence of the retail store characteristics on the promotional impact.

The main contribution to research made in this chapter is twofold: First this chapter introduces Uniform across the Board Promotions to the marketing literature and defines their key characteristics based on a qualitative pre-study. Second the short-term sales impact of UABPs is analyzed based on a proprietary data sample and compared with other forms of promotions and advertising. Third the store characteristics of a retailer that influence the impact of UABPs on the short-term sales impact are explored and compared with the impact those store characteristics have on other promotions and advertising.

3.2 Conceptual Framework

3.2.1 Definition and Characteristics of Uniform Across the Board Promotions

To arrive at a clear understanding of what constitutes a "Uniform Across the Board Promotions" a small qualitative pre-study is conducted. In particular promotion materials have been collected over the last years and more systematically in the fourth quarter of 2012 using internet search engines (content and image search) based on the material gathered before. In addition the topic has been discussed with retail managers and experts that have practical experience with those campaigns and/or have launched them in their companies. As a result, a small database containing information on more than 90 UABPs in the period between 2009 and

2012 has been built. Table 1.1 (Chap. 1) provides information for a representative subset of promotions included in this database.

Based on this qualitative pre-study, one can define uniform across-the-board promotions along four characteristics which have been briefly introduced in Sect. 2.1.2: (1) They are store-wide promotions on the entire assortment, sometimes with minor exclusions of certain categories. (2) They involve an undifferentiated discount on the entire assortment, i.e. no bigger or smaller discounts on any article. (3) The discount is expressed relative to the article prices, i.e. as a percentage to the absolute value. (4) They are only valid for a limited period of time.

Compared with other price promotions, the first three characteristics combined are differentiating criteria. In particular, other promotions are normally not applied to the entire assortment and even during sales periods, some articles are excluded or the depths of the discounts vary. Table 1.1 further shows that UABPs are not restricted to certain industries, sales channels or article types. They do vary in their offered promotion depth, duration of the offering and restrictions such as the obligation to use a coupon or minor restrictions in the choice the customer has.

Conceptually, UABPs aim at attracting efficient shoppers as well as cherry pickers, as they combine elements from the every-day-low-price and the HiLo pricing strategy. Providing the customers with lower prices on the entire assortment, and hence not restricting the choice the customer has, is an EDLP element and attracts efficient shoppers, while only doing this temporarily and sometimes supported by featured advertising is an element from the HiLo strategy, which aims at attracting cherry pickers (Bell and Lattin 1998; Hoch et al. 1994).

Another advantage of UABPs for the retailer is the likely absence of within-store substitution effects resulting in higher overall store sales. This distinguishes UABPs from traditional brand promotions that often only fractionally increase store sales due to within-store substitution (Gupta 1988; Sun 2005; Sun et al. 2003; van Heerde et al. 2003). For instance, Kumar and Leone (1988) find that within-store substitution rates are by a factor of between two and three times higher than promotion induced store switching (Kumar and Leone 1988). Directionally consistent, but different in the magnitude, Ailawadi et al. (2006) find that within-store substitution and temporal shifts account for 55 % of the sales bump, while induced store switching only makes up for 45 % (Ailawadi et al. 2006). The different magnitude of the individual drivers for the sales bump could be caused by the differences in categories researched by Kumar and Leone (1988), who have only focused on disposable diapers in ten stores, while Ailawadi et al. (2006) have conducted their research on a large span of drugstore articles.

Given the characteristics of UABPs described above and in the previous chapters, one could expect that the sales impact for the retailer (from store switching) is even stronger for UABPs than for traditional promotions, as it allows consumers to not have to switch to a less preferred brand while still profiting from the promotion. The theory of information economics underlines the advantage of UABPs, as customers always put the search costs in relation to the expected savings. Given the promotion breadth of UABPs, the probability of finding the desired article at a discount, and hence the expected savings (given the same depth of promotion) is

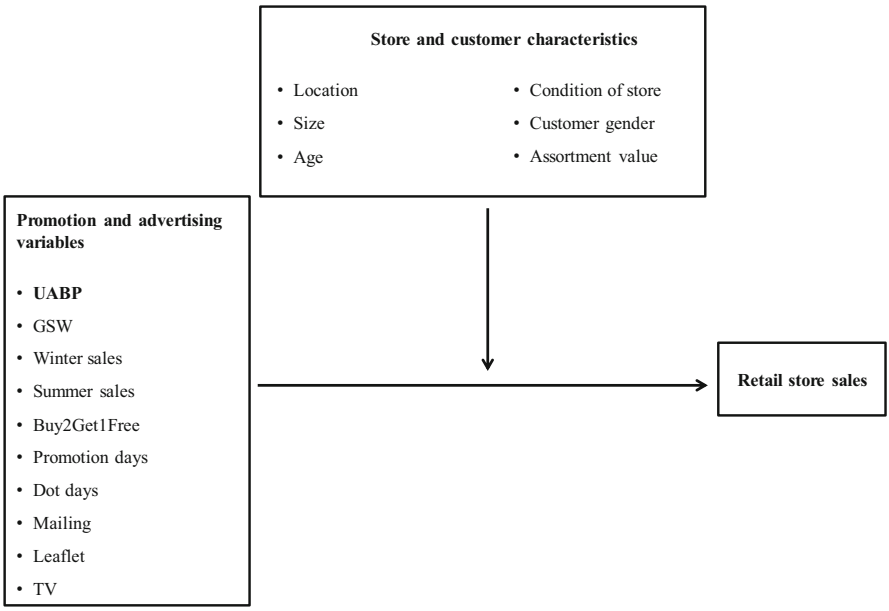

Fig. 3.1 Illustration of research framework

higher for UABPs than for other promotions. In consequence the willingness to incur higher search costs, i.e. drive to a retailer further away, should be higher than during normal promotions (Metha et al. 2003; Stigler 1961).

3.2.2 Introduction of Store Level Antecedents

As UABPs affect the total store sales, it is essential for a retailer to understand the store characteristics that influence the success of UAPBs. This area has been touched in previous research as for example Montgomery (1997) has dealt with customizing pricing according to specific retail settings in order to maximize gross profit in a heterogeneous store portfolio. Macé and Neslin (2004) have analyzed the impact of store-trading-area characteristics on the success of brand specific price promotions. They focused in detail on the store customer parameters such as education, ethnicity, age, income profile, car ownership etc. and have found that pre- and post-promotion dips are influenced by those parameters.

Please refer to Fig. 3.1 for an illustration of the research framework. Variables listed therein are described in Tables 3.1 and 3.2.

Table 3.1 Promotion types and advertising types

Variable	Description
Uniform Across the Board Promotions	All articles in the store are discounted with uniform discounts for a specific promotion period. For example 25 % on all articles in the store. The discount is being granted at the checkout and the UABPs are restricted to a certain time period
GlamourShoppingWeek	Cooperation with a German magazine to grant their readers uniform discounts within a certain week. Promotion form is a mix of UABP and advertising and given the broad distribution of the advertising not exactly comparable with the regular UABPs, which is why it is measured separately
WinterSales	Item specific clearance sales at the end of the winter season. Generally lasts for around 8 weeks—discounts might increase in the later weeks of the sales period. Depth of promotion varies by article
SummerSales	Item specific clearance sales at the end of the summer season. Generally lasts for around 6 weeks—discounts might increase in the later weeks of the sales period. Depth of promotion varies by article
Buy2Get1Free	When selecting three articles the cheapest of the three articles is for free
Promotion days	Assortment specific sales to promote a sub-category with special sales offers. Examples are Jeans days or Lingerie days
Dot days	Specific items in a store a marked with different color dots—each color represents a certain percentage discount on the "dotted" article
Mailing	Existing customers receive a mailing with special discounts on certain articles
Leaflet	Leaflets are distributed to all households in the proximity of a store. Special article based offers are promoted
TV	TV campaigns are run on national television to promote the retailers brand and certain articles

3.3 Method

3.3.1 Store-Level Promotional Data for Short-Term UABP Impact

The analysis is based on weekly store data for 747 retail stores of a German value fashion retailer. Out of the dataset provided by the retailer individual stores had been eliminated due to obvious measurement errors (e.g. no sales history for 10 days, than 1 day with extremely high sales). The time span for the data is 225 weeks in the period 2008–2012. The weekly store sales data has been de-seasonalized and de-trended for a linear temporal trend using a regression model similar to the one by Abraham and Lodish (1993) (see Appendix A) in which weekly sales have been adjusted for seasonal fluctuations and a positive temporal linear trend resulting from same store sales growth over the time period.

Table 3.2 Store characteristics

Characteristics	Description	Mean	SD	Min	Max
Location	The retail stores are located in different types of locations: Shopping center, strip mall, inner city, sublet from hypermarket	Shopping center (n = 69); strip mall (n = 470); commercial zone (n = 86) inner city (n = 63), sublet of hypermarket (n = 59)			
Size	Trading area of the store in square meters	560.9	127.0	147.0	1,238.0
Age of store	Age of the store since opening (in years)	11.65	5.25	5.00	29.00
Age since refurbishment	Some stores had a make-over. This measures the age of the store since make-over or opening (in years)	3.92	4.31	2.00	29.00
Assortment female	Share of assortment (sales) per store in female category	50 %	3 %	37 %	74 %
Assortment male	Share of assortment (sales) per store in male category	17 %	3 %	0 %	25 %
Assortment kids	Share of assortment (sales) per store in kids category	21 %	3 %	11 %	36 %
Assortment accessories	Share of assortment (sales) per store in accessories category	13 %	2 %	4 %	17 %
Value per article	Average value per article sold (in EUR)	7.91	0.49	4.22	9.09

For the promotions dummy variables have been introduced that indicate whether a certain promotion has been applied in the retailer's stores in a certain week according to the central marketing plan of the company. The store characteristics have been provided by the company for all 747 stores.

3.3.2 Methodology to Analyze Short-Term Promotional Impact

In the marketing literature there are various different models proposed to analyze the impact of promotions. The majority of these models deal with the promotional impact on certain brands and categories, i.e. their specific price elasticity, rather than the impact on the overall retail store sales (e.g. Bell et al. 1999; Lim et al. 2005; Nijs et al. 2001). A popular approach to model the short-term promotional "sales bump" caused by promotions and advertising would be the use of the SCAN*PRO model which is widely accepted among managers and also often used in academics (e.g. Hoch et al. 1995; Montgomery 1997; Montgomery and Rossi 1999; van Heerde et al. 2000) but which would have to be adjusted similar to the use in Blattberg and George (1991) to focus on store wide promotions rather than on brand specific promotions. To measure the impact of the various promotional and advertising campaigns in this example would let each store have its own OLS regression model and then in a second step perform a cross-sectional regression in which the

relevant parameters (e.g. impact of UABP, impact of 2 for 1 promotion etc.) would be treated as dependent variables and the store characteristics as their antecedents.

However, especially in heterogeneous store environments the resulting store estimates might have large standard deviations in the promotional and advertising parameters and larger error terms across stores (Montgomery 1997). Assuming non-heterogeneity across stores, and pooling stores, could however be misleading from a managerial point of view and the expected promotional impact of the UABP would be over- or underestimated (Andrews et al. 2008).

To overcome this issue, a hierarchical Bayes (HB) model is being applied to analyze the promotional impact for all stores simultaneously and to derive the store characteristics that have the strongest influence on the promotional sales impact. In recent years, the use of hierarchical Bayes models has become more common as usage constraints—particularly computational time—were overcome through advances in the power of PC's while standardized software packages (e.g. plug in for R) have become easier accessible (Rossi et al. 2005).

3.3.3 Hierarchical Bayes Model

3.3.3.1 General Application of a Hierarchical Bayes Model

The term *hierarchical* stems from the fact that the model consists of multiple levels. This way the methodology accommodates nested data structures. In this study, two levels are considered. Weekly store sales and weekly store promotional activity at the lower level are nested in stores with specific store characteristics at the higher level. With hierarchical Bayes models the distribution of the effects of the different promotional activities (i.e., beta coefficients) across stores at the lower level is thought to follow a normal distribution [see also (3.3a)]. In other words, for each promotional activity a separate effect is estimated for each store. At the same time, it is modeled whether the way the store is set up affects these store-specific estimates.

The method requires initial betas ("priors") for each promotional activity. Priors can be "informative", i.e. based on prior knowledge or analysis of the objects or they can be more or less random "guesses". In this case the informative betas were estimated using OLS regressions for each individual store. These initial estimates, i.e. the individual betas as well as the mean and covariances of their distribution are then continuously updated using a process called "Gibbs sampling". This estimation process for each beta is always conditional on the other parameters (i.e. betas) estimated in the same "draw". Eventually theses estimates converge to a stable and correct estimate for all individual betas (*posterior* distribution). As the results from every iteration/draw have been saved, every beta has an entire distribution of results. This process shows another difference to OLS regressions, as HB models fully account for uncertainty and provide results conditional on the observed data (Rossi et al. 2005).

In other words, the prior is the belief one has in a certain beta or parameter, without knowing the data. The posterior is the belief in the distribution conditional on the observed data. The likelihood function is the probability that the data can be generated by the model, believing in the parameters, while the evidence is the distribution of the data. Basically one believes in a parameter distribution according to a function, and by testing this against the data, the original belief will be continuously updated in order to fit with the observed data (Kruschke 2011, p. 301):

$$\text{posterior} = \text{likelihood} \times \text{prior}/\text{evidence}$$

3.3.3.2 Application of a Hierarchical Bayes Model to Estimate the UABP Impact

In this example, a hierarchical Bayes model is being applied, in which the promotional impact and the store characteristics are modeled in one integrative framework, without treating each store as separate and unrelated. The integrative framework of the HB model allows estimating the immediate effects of the promotions and advertising and relating those effects to the individual store characteristics. While under certain *prior* assumptions the integrated HB model could yield results identical to those from individual store model regressions (Montgomery 1997) the method introduced by Blattberg and George (1991) is being applied, in which the results from the parameters of the individual OLS models are used as samples from a common prior distribution. These results, i.e. their means and co-variance matrix, will form the prior for the analysis.

The weekly sales for store j ($j = 1, 2, \ldots 747$) in week t ($t = 1, 2, \ldots, 225$) is denoted by the vector

$$\mathrm{S} = (\mathrm{s}_1, \mathrm{s}_2 \ldots, \mathrm{s}_{747}) \tag{3.1}$$

where s_j^1 equals sales of store j in week 1, and

$$x_1 = (x_{1,1}, x_{1,2}, \ldots, x_{1,747}) \tag{3.2}$$

are matrixes of the individual promotional $(X_1, X_2, X_3, \ldots X_{11})$ dummy variables described in (3.1).

$x_{i,j}^1$ is the value of promotional campaign i ($i = 1, 2, \ldots, 11$) in store j in week 1. The first column in the X matrix is set identical to 1 ($\mathrm{x}_\mathrm{j}^1 = 1$) to account for an intercept. Using the standard regression notation for the sales response model, one can write the standard hierarchical model for all j stores as

$$S_{j,t} = \sum\nolimits_{i=1}^{11} \beta_{j,i}^t x_{j,i}^t + \varepsilon_j, \varepsilon_j \sim N(0, \sigma) \tag{3.3}$$

And priors:

$$\beta_i \sim N(\gamma, V_\beta) \tag{3.3a}$$

$$\gamma \sim N(\overline{\gamma}, A^{-1}) \tag{3.3b}$$

$$V_\beta \sim IW(v, V) \tag{3.3c}$$

The priors (3.3a), (3.3b), and (3.3c) are independent. The informative priors of β could be input either directly or by estimating those using a least squares estimate (Boatwright et al. 1999). As described above, the latter approach was chosen here. The resulting covariance matrix of the *β-prior* was obtained from the empirical regression results of running 747 separate OLS regressions for each store in a method based on Montgomery (1997) [see also Casella (1985), Carlin and Louis (2008), for similar approaches].

The second stage priors of the β-priors are set diffuse to $\gamma \sim N(\overline{y}, A^{-1})$ and $V_\beta \sim IW$ (v, V) to allow for broad coverage of the parameter space (Rossi et al. 2005). This broad coverage is important to not restrict the results of the HB model by setting priors limited to a certain parameter space. As suggested by Rossi et al. (2005) the inverse Wishart distribution was used as prior distribution for the variance of the beta coefficients with a three degrees of freedom.

The error term is normally distributed with $\varepsilon_j \sim N(0, \sigma)$ and σ is modeled to be $\chi^2 - distributed$ with three degrees of freedom (df = 3). These degrees of freedom and the choice of the Wishart distribution were based on the default setting in the R package "*bayesm*" (Rossi 2012; Rossi et al. 2005) that was used for the analysis.

The hierarchical Bayes model treats γ_j as the effect of the store parameters z on the promotional parameters β_j^i:

$$\gamma_j = \varphi z_j + u_j; u_j \sim N(0, V_\gamma) \tag{3.4}$$

z_j is the matrix containing the store parameters which are listed in Table 3.2.

In this model setup, the posterior distribution depends on both types of variables, store and promotional variables. The parameters were simulated in a Markov Chain Monte Carlo approach (MCMC) using a Gibbs sampler with 6,000 iterations, and a burn in of 500 iterations. The results converged nicely already after a couple thousand iterations.

3.3.4 Model Variables

This paragraph deals with the specifications of variables used in the hierarchical Bayes model. To analyze the impact of UABPs versus other types of promotions and in various store settings, one can distinguish between (1) promotional variables, which relate to nine types of promotions and advertising used by the German value

fashion retailer (see Table 3.1) and (2) six different store characteristics (see Table 3.2).

3.3.4.1 Promotional Variables

As described above, the central marketing plan served as input for the exogenous promotion and advertising variables described below. Note that the retailer runs the same promotion and advertising campaigns in all stores in a given week. Promotions and advertising are usually not run in the same week, nor are different types of promotions run at the same time. A summary of promotions are listed in Table 3.1.

The average promotion depth for each promotion campaign over time varies due to external factors such as inventory levels and competitive market behavior and has been on average around the same level as the promotion depth the UABP offers (~20 %) within the research period. In addition to UABPs six other types of promotions as well as three types of advertising have been analyzed. Please refer to Table 3.1 for further details.

3.3.4.2 Store Characteristic Variables

The performance of the individual store promotions is tested against various store parameters to determine whether the sales impact of UABPs (or other promotional forms) is influenced by store characteristics and if so, in which retail setting the relevant promotion type might work best. The analysis will be performed on 747 fashion retail stores located in Germany. The store trading area characteristics analyzed include the following:

1. *Location of the store* which serves as a proxy for the related search and transactions costs for the customer. The location mix is heterogeneous and the stores of the fashion retailer have been clustered in five different location types by the company according to typical characteristics such as footfall, average commute for the customer and general outlay of the premises. The five location types are comparable regarding the size of the trading areas, interiors and product carriers and show the following typical characteristics: (a) strip malls/commercial zones: Typically lower footfall, out of city locations, which require longer commutes for the customer, typically accessed by the retailer's customer to shop for specific items, as the associated transaction costs are higher; (b) shopping centers/inner city: Comparably high footfall, convenient locations for the customer; (c) hypermarket sublet: Typically stores in larger hypermarkets that carry food but also a fashion and non-food assortment with moderate footfall and often non-prime locations within the hypermarkets. Dummy variables are being used for *location* with *inner city* used as reference point.

2. *Size of the store* refers to the net trading area measured in square meters. While all stores carry the same core product portfolio, larger stores can offer a slightly broader and deeper choice in products when it comes to "sizes and fits". The size of the store hence serves as a proxy for whether UABPs work relatively better, if customers are given a broader product selection.
3. *Age of the store* is a proxy for how established a store is in a community—this is assumed to also directionally affect the number of people who know of the store and who actively follow its promotions. Given that the retailer had recently refurnished all stores, this does not reflect the shape a store is in.
4. *The age since refurbishment*, is hence a better proxy for the condition of the store. Refurbishments typically include a major refurbishment of the store including floors, walls, product carriers etc. This retailer has spent considerable funds to refurbish its stores, which is why this criterion is relevant to be considered.
5. *Gender focus*, *is rather a retail assortment specific characteristic*, which is measured as the percentage of weekly sales being made in any of the three categories: female, male or kids. A 50 % female share would hence mean that during a week 50 % of the retail value of sold articles comes from the category "female". A third product category referred to as "accessories" serves as the reference point. The analysis of these variables aims at understanding whether the UABP works particularly well with a certain gender in the discussed retail setting.
6. *Value per article is* used to analyze the impact a higher average price of articles sold in the store has on promotions. It has to be noted, that the core assortment is identical in every store and as seen in Table 3.2 the standard deviation for this variable is relatively small, which is why any impact would only be directional and would have to be further researched.

3.4 Empirical Results

3.4.1 Empirical Results: Short Term Performance Outcomes

Table 3.3 shows the impact the promotions have on the short-term sales. The impact is shown as normalized, de-trended and de-seasonalized sales as described above.

The first key observation is that in the integrated model all types of promotions have a positive impact on retail store sales. On a *by individual store* basis, one can however observe that UABPs strongly impact sales with a mean of 1,533 and a standard deviation of 103 per store per week. These results are not to be confused with the impact of the promotions on each individual store, which can vary, as in some stores; promotions have for store specific reasons stronger or less strong impacts. Particularly for UABPs one can observe that the range of impact for UABPs is between 211 and 6,396 for individual stores, which makes the analysis for store specific criteria that influence the UABP, even more relevant.

Table 3.3 Impact of promotions on marginal sales—individual store values

Parameter	Mean	Median	SD
Intercept	−862.8	−870.1	60.9
UABP	1,533.4	1,546.2	103.9
WinterSales	321.4	320.6	35.2
SummerSales	764.8	776.1	71.6
Buy2Get1Free	443.1	447.6	57.0
Promotion days	275.7	276.6	55.3
Dot days	378.4	388.0	56.1
GlamourShoppingWeek	4,242.6	4,259.7	310.9
Mailing	325.7	334.9	79.2
Leaflet	954.3	963.2	74.7
TV	737.6	739.8	52.9

Comparing this to any other type of promotion or advertising, the relative impact becomes evident as UABPs increase weekly store sales by a magnitude of 2.0–5.0× compared to other promotion types with comparable average promotion depth of the individual promotion types. Only the Glamour Shopping Week, which in fact has many commonalities with UABPs, as across the board promotions are given, coupled with significant advertising in a popular magazine and some in store additional promotions, has a bigger relative impact on weekly store sales. When further comparing the impact of UABPs and various types of advertising on weekly store sales, UABPs influence short-term sales about twice as much as the national TV campaign and 60 % more than the broadly distributed leaflets.

Reviewing the impact UABPs on an *across-store* basis (see Table 3.4), i.e. how the various types of promotions affect individual stores, one can observe that the impact of UABPs is positive for the entire store portfolio, while the range of its impact across stores varies significantly. The minimum marginal sales increase is 211.3, with the maximum being 6,395.7. The standard deviation of the sales impact is 533.1 on an average impact of 1,533.4. The relative large standard deviation and range across stores bears the question, which parameter influences the relative impact of those promotions, which is what will be discussed in the next paragraph.

3.4.2 Empirical Results: Store Level Antecedents

Table 3.5 shows parameter estimates of store-level effects in the hierarchical Bayes model. Overall only the location parameters shown have a strong impact on the success of UABPs, while some other parameters give an indication of the likely direction of impact while still having relatively high standard-deviations relative to their mean.

The strong impact of locations on sales during UABPs is an important finding as it would allow retailers to either only choose a sub-sample of stores in which UABPs will be offered to their customers or would even have some retailers

Table 3.4 Impact of promotions on marginal sales—across-store values

Parameter	Mean	Median	SD	Minimum	Maximum
Intercept	−862.8	−823.6	312.4	−3,992.0	−222.5
UABP	1,533.4	1,493.5	533.1	211.3	6,395.7
WinterSales	321.4	310.2	138.9	−8.2	1,914.7
SummerSales	764.8	744.7	245.0	56.9	3,310.0
Buy2Get1Free	443.1	356.5	57.0	−363.8	3,817.9
Promotion days	275.7	253.8	55.3	−364.8	2,989.6
Dot days	378.4	402.0	116.8	−348.9	691.7
GlamourShoppingWeek	4,242.6	4,218.3	1,071.3	368.5	11,820.8
Mailing	325.7	309.5	238.6	−202.4	2,687.6
Leaflet	954.3	922.4	333.0	168.7	4,060.0
TV	737.6	697.3	316.3	−409.5	4,141.1

Table 3.5 Impact of store characteristics on sales impact of UABPs

Parameter for UABP	Mean	Median	SD	Minimum	Maximum
Store characteristics					
Size	0.48	0.50	0.61	−1.45	2.37
Age of store	7.32	7.35	6.33	−15.85	28.74
Years since renovation	−5.23	−5.43	6.01	−24.99	18.06
Location					
Shopping center	−186.6	−190.8	104.5	−599.0	144.5
Strip mall	311.2	315.4	91.3	16.0	608.1
Sublet	103.9	107.7	137.0	−384.0	685.8
Commercial zone	339.4	345.3	127.5	−84.3	734.0
Customer type					
Share of female	502.3	498.7	868.0	−3,048.7	3,489.7
Share of male	−157.9	−161.9	983.4	−4,041.1	3,300.9
Share of kids	−248.0	−253.5	862.4	−3,357.8	4,362.2
Value per article	364.9	363.5	255.6	−468.9	1,202.7

reconsider, whether UABPs would even be the best suited form of promotion given their store portfolio.

Store Characteristics Regarding store size and age since renovation relatively high standard deviations compared to their means indicate that their impact on store sales during UABPs is not very robust. The impact of the age of the store seems to be marginally more robust, indicating that the older, i.e. more established a store is, the stronger the impact on sales during UABPs.

Location The respective means and standard deviations suggest a strong impact of location on UABPs, showing that out-of city, lower-footfall locations [strip malls ($\mu = 311.2$; $\sigma = 91.3$) and commercial zones ($\mu = 339.4$; $\sigma = 127.5$)] have a strong and positive impact on the performance of UABPs relative to inner city locations (which is the reference variable), while shopping center locations have a negative relative impact on retail store sales during UABPs ($\mu = -186.6$; $\sigma = 104.5$). The

sales impact of sublet location is less obvious as shown by the relatively high standard deviation compared to its mean ($\mu = 103.9$; $\sigma = 137.0$), which indicates no strong impact of sublets on retail store sales during UABPs. According to the data, location does influence sales during UABPs, however when it comes to measuring the exact impact, further research would have to be conducted, taking into account the exact footfall which also varies within location types according to positioning within a shopping center, inner city etc. Furthermore it is to be noted that these impacts are on a relative basis, i.e. UABPs have a positive impact on all locations (as discussed before) but a more positive impact on certain locations.

Customer Type As Table 3.5 shows, the value per article, i.e. whether articles sold in a store are more costly, significantly impacts the influence UABPs have on sales ($\mu = 364.9$; $\sigma = 255.6$)—hence UABPs are more successful in stores with relatively pricier items. Furthermore Table 3.5 reports that *gender*, i.e. whether a store has for example more female than male customers, does not significantly influence the impact of the UABP on sales. This is shown by the large standard deviations that are larger than the respective means for each "gender category".

3.4.3 Comparison of Store Level Antecedents to Other Promotion Types

In addition to analyzing the store characteristics that impact the UABPs, particularly the several very robust results such as *location* and to a lesser extent the *age of the store* or the *average value of the articles purchased*, it is interesting to discuss, whether those were distinct findings for UABPs or generally true for various other types of promotions.

Location When comparing the impact of *location* among different types of promotions, Table 3.6 shows that the location impact is only evident for UABPs, showing an average of the absolute impact of 235.3 and a standard deviation of 115.1. The impact of *location* on all other types of promotions and advertising show significantly higher standard deviations compared to their mean, suggesting that location does not influence the relative success of promotion and advertising campaigns for every type of promotion to the same degree as it does for UABPs.

Value of Article Table 3.7 shows that the impact of the value per article for the different promotion and advertising types is mostly positive, suggesting that in general promotions work better if the articles purchased in a store are more expensive. However, relative to the respective standard deviations, this statement only suggests robust results for winter sales ($\mu = 234.4$; $\sigma = 126.1$) as well as TV ($\mu = 414.4$; $\sigma = 232.3$) and flyer advertising ($\mu = 322.1$; $\sigma = 188.7$). The impact of the value per article is slightly lower for UABPs ($\mu = 364.9$; $\sigma = 255.6$).

Table 3.6 Impact of location on different promotion types

Promotion type—location	Mean	SD	Mean/SD
Uniform Across the Board Promotions	235.3	115.1	2.04
GlamourShoppingWeek	350.4	402.9	0.87
WinterSales	30.3	100.0	0.30
SummerSales	93.9	130.4	0.72
Buy2Get1Free	117.2	171.6	0.68
Promotion days	191.4	190.1	1.01
Dot days	121.4	179.7	0.68
Leaflet	127.4	91.9	1.39
Mailing	116.5	224.0	0.52
TV	108.6	115.5	0.94

Table 3.7 Impact of value per article on different promotion types

Promotion type—value of article	Mean	SD	Mean/SD
Uniform Across the Board Promotions	364.9	255.9	1.43
GlamourShoppingWeek	624.5	848.5	0.74
WinterSales	234.4	126.1	1.86
SummerSales	98.9	238.7	0.41
Buy2Get1Free	334.8	292.0	1.15
Promotion days	214.2	396.2	0.54
Dot days	−271.4	302.8	0.90
Leaflet	322.1	188.7	1.71
Mailing	245.3	413.8	0.59
TV	414.4	232.3	1.79

Age of the Store The *age of the store*, which is used as a proxy for how established a retail location is, has only moderate positive impact on UABPs compared to e.g. *location or value of the article* as Table 3.5 shows. This effect is similarly small for other promotion types and one can conclude that the moderately positive effect of the store age is no distinct characteristics of UABPs as outlined in Table 3.8.

3.5 Summary and Discussion

In this chapter, a new form of promotion, Uniform Across the Board Promotions (UABP), is introduced and their impact on short-term retail sales and the impact store characteristics have on the success of UABPs are investigated.

Table 3.8 Impact of age of store on different promotion types

Promotion type—age of store	Mean	SD	Mean/SD
Uniform Across the Board Promotions	7.32	6.33	1.16
GlamourShoppingWeek	−6.71	20.26	0.33
WinterSales	1.12	3.82	0.29
SummerSales	9.07	6.21	1.46
Buy2Get1Free	−11.00	8.86	1.24
Promotion Days	0.72	11.66	0.06
Dot Days	0.08	8.65	0.01
Leaflet	5.15	4.46	1.15
Mailing	9.57	11.21	0.85
TV	−2.61	6.12	0.43

3.5.1 Academic Implications from Short-Term Effects UABPs

This chapter discusses conceptually, that UABPs appear to have advantages for retailers and consumers alike. This has been supported by the results of the analysis as UABPs show a stronger positive short-term impact on retail sales than any other promotion type and advertising type analyzed. The stronger increase in overall retail sales can partly be attributed to UABPs not causing any within-store substitution effects, the way other promotions do (Gupta 1988; Sun et al. 2003). Furthermore the increase in flexibility, which reduces the information and transaction costs for the customer (Metha et al. 2003; Stigler 1961), while not causing any reactance, makes the promotion more attractive for customers and can hence cause promotion induced store switching, which positively affects the higher short-term sales impact of UABPs recorded in these findings.

In addition to the impact promotions and specifically UABPs have on sales, it is also analyzed which store characteristics influence the success of UABPs. It is being tested, whether those criteria are unique for UABPs or shared with other promotion types. The analysis shows that location has a stronger impact on the performance of UABPs than other types of store characteristics. This is being shown by the fact, that, e.g., inner city locations and shopping centers perform much worse on a relative basis, than out-of-city locations such as commercial zones and strip malls. A possible explanation lies within the theory of information economics, as the guaranteed discount from the UABPs on the entire assortment is an incentive for the consumer to incur the higher search and transaction associated with the longer commute to an out of city location, which causes more positive relative sales increase. The data shows that this is a unique feature of UABPs, as all promotions seem to directionally perform relatively better in commercial zones and strip malls than in inner city and shopping center locations. One could hence figure, that location only affects the impact of UABPs on relative retail store sales, while the relative performance of other promotion and advertising types are not strongly affected by location in the example. Regarding the store characteristics the data

shows that the average value per article influences the success of UABPs. This impact is positive, which is intuitive as the higher the potential savings, which are always relative to the value per article, the higher the incentive to visit a store during UABPs. The theoretical explanation lies again within the information economics which compare the savings with induced search and transaction costs.

This chapter has closed a research gap, introducing UABPs, their impact on overall retail sales as well as the influence certain store characteristics have on the promotional success. Due to the large and extensive dataset it has been possible to compare these results to the impact other forms of promotions have on overall retail sales and the role store characteristics play for those promotions, while previous research has mostly focused on the impact promotions have on certain brands or categories, rather than overall retail sales. Regardless of these contributions, moving forward, one needs to work on several topics to enhance this research:

First, this chapter has dealt with promotions of a value fashion retailer, whereas researchers should be encouraged to expand this to other categories and sales channels as promotions in the fashion business are very common and customers are used to reacting to them and potentially adjusting their shopping behavior accordingly. Also fashion articles are a durable good and spending on fashion is mostly discretionary—both characteristics are likely to influence the results. Furthermore the value of an individual article of the retailer is on average below 10 euros, and hence on the lower end of the general fashion market. As shown above, the actual value per article influences the customer reaction on UABPs (while the ranges tested for those articles are still within the 10 euro range) and testing reactions to UABPs for significantly more expensive goods will be an interesting area for future research.

Second: The impact of UABPs on sales for store characteristics and a few product-store characteristics (such as price) has been tested in this chapter. While the articles the UABPs have been applied on are basically non-branded goods of a vertically integrated retailer, it will be interesting to conduct similar research when testing the influence of more product specific characteristics, such as brand image, on the success of UAPBs, as conducted in previous research for other forms of promotions (e.g. Nijs et al. 2001; Macé and Neslin 2004; Montgomery 1997).

Third: This chapter only considers the impact on sales, whereas retailers are also interested in the impact promotions have on gross profit. While the exact gross profit, which given the operational leverage in many retail businesses is a good short-term proxy for EBITDA (Earnings before Interested Depreciation and Amortization) is influenced by the price elasticity and the gross margins of the actual goods purchased during UABPs, a simple calculation shows (Table 3.9), that a 20 % across the board discount on a net sales price level, when assuming a typical non-promotional gross margin of 50 % (as discussed with management), would require the retailer to sell approx. 67 % more, on a volume basis, to break even on a gross profit level. This obviously is a strong simplification as articles have different gross margins and promotional expenses. To estimate the gross profit impact of UABPs future research should look at overall retail sales in combination with product specific gross margins and price elasticities.

Table 3.9 Illustrative calculation of required volume increase to break-even during UABPs

	Non-promotion	(Break-even) UABP	% vs. non-promotion
Price per article	100.0	80.0	−20.0 %
Volume	1.0	1.67	67.0 %
COGS per article	50.0	50.0	0.0 %
Net sales	100.0	133.3	33.0 %
COGS	−50.0	−83.3	67.0 %
Gross profit	50.0	50.0	0.0 %
GP margin	50.0 %	37.5 %	−12.5 %

Fourth: Regardless of whether one discusses the impact on sales or profitability, future research would have to analyze the long-term impact UABPs have on the retailer's image and customer behavior. This impact could be positive or negative, in a sense that positively, the increased short-term traffic in retail stores, might help to promote the store in general and hence also serves as a sort of advertising, increasing long-term traffic to the store. Negatively, consumers could be conditioned to only visit the retailer's stores given the provided flexibility through UABPs, which would result in an overall decline of gross margins and a decrease in sales in non-promotion periods. Only after these additional topics have been further analyzed will one be able to pass a judgment on whether Uniform Across the Board Promotions are a sustainable and favorable alternative to traditional price promotions.

3.5.2 Retailer Implications from Uniform Across the Board Promotions

This research shows that UABPs have a strong impact on short-term sales and are hence an effective promotional tool for retailers. The advantage of not causing substitution effects within a store goes with the disadvantage that the retailer is not able to use UABPs to steer the customer towards certain brands or assortments, i.e., use UABPs as a tool to sell-off or promote specific items, as used in end-of season sales. UABPs should hence be used to cause an overall sales increase or general de-stockage and potentially drive new customers to the stores that are attracted by this form of promotion. As UABPs aim at promoting the entire store, store trading characteristics influence the success of UABPs, which is why they need to be considered when taking decisions on whether and in which scope UABPs are to be launched. Especially when retailers chose to apply a micro-marketing strategy (Montgomery 1997) and only launch UABPs in a subsample of their stores, a consideration of store characteristics is important to find the most efficient subsample of stores. As mentioned above, going forward it is important for managers to gain further understanding on the sales and profit impact of UABPs for additional sales channels, product categories and analyze their long-term impact on themselves, non-promotional sales and overall customer behavior.

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Chapter 4
Adjustment and Permanent Effects of Uniform Across the Board Promotions

4.1 Introduction to Adjustment and Permanent Effects of UABPs

To introduce the adjustment and permanent effects of UABPs and put them into context, it makes sense to review and extend on the Praktiker (German DIY retailer) example referred to in Sects. 1.1 and 3.1. While Chap. 3 mainly describes how Praktiker has been a pioneer in introducing UABPs, how they have gained importance in the retail environment and how strong their short-term impact on retail store sales can be, this chapter fast forwards to the situation, where UABPs have been in use for a longer period of time.

Back to Praktiker—Following 3 years of negative like-for-like sales, an overall drop of revenues from €4 bn to €3 bn, Praktiker, the second largest German DIY retailer with more than 200 stores faced losses in excess of €500 m for the financial year 2011, forcing Kay Hafner, the CEO of Praktiker, to reach out to his shareholders and plead for the acceptance of a major restructuring and refinancing package which was the last and only alternative to an immediate insolvency of Praktiker (Böcking 2012). Current and former management, retail experts, investors and the media blame the excessive use of Uniform Across the Board Promotions (UABPs), to have caused or at least significantly contributed to this downfall. One of the core investors of Praktiker, Thomas Fox, called the UABPs "sweet drugs", others stated that "Praktiker can now not do with nor without them" (Hielscher 2010; Läsker 2012).

After introducing UABPs to the German market in 2003, Praktiker only ran few days of UABP campaigns a year. Encouraged by their short-term success, management increased the UABP promotion days to 107 in 2007 until they feared that customers adapted their shopping behavior to the once successful UABPs, which in sum negatively affects the overall gross margin of Praktiker. In order to reverse this trend, Praktiker decreased the number of UABP days down to 62 in 2010 and eventually down to 0 in 2011 (Böcking 2012; Hielscher 2010). This contributed to

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the described decrease in sales and the eventual collapse of the share price from 34.50 Euro in 2007 to 1.24 Euro in 2012 (Hirzel 2012).

While the German business press and management alike sees the root cause for Praktiker's financial difficulties in the excessive use of UABPs, this hypothesis has not been validated by marketing research. Even though Sect. 1.1 and Chap. 3 introduces this new form of promotion to the marketing literature, and among other things analyses the short-term impact of UABPs on retail store sales, the adjustment effects or permanent effects on customer behavior has not yet been covered in the literature. Against this background, it is the goal of this chapter to analyze adjustment and permanent effects of UABPs on retail store sales.

The key dependent variable is store level performance: before, during and after UABPs. The analysis of the sales bump during UABPs and the respective pre- and post-promotion dips show how customers adapt their shopping behavior to profit from those promotions. Investigating, how those dips and bumps evolve over time, helps to understand the long-term impact of UABPs on potential acceleration and stockpiling effects, promotion sensitivity and their subsequent impact on long-term retail store performance.

To analyze the long-term impact of UABPs on pre-and post-promotion dips as well as baseline sales, i.e. customer behavior, store level data from a German value fashion retailer is being used. The dataset contains daily sales level data from 421 stores ($S = 421$) over a time span of 1,107 days ($T = 1{,}107$) in the period from 2008 to 2012. Methodologically a mixed-effect times series model is being applied on the panel dataset to reflect fixed promotion effects, random store intercepts, and time based interaction variables, with the adjustment effects of UABPs models as lead and lag effects (Macé and Neslin 2004; Judge et al. 1985; Van Heerde et al. 2000). The main contribution to research is twofold: First the existence and degree of pre-and post-promotion dips for UABPs is being shown and second it is analyzed how those dips evolve over time and whether the long-term baseline sales of the retailer is being affected by the UABPs.

4.2 Conceptual Framework

Before developing the hypotheses for discussing the immediate and dynamic adjustment effects (pre-and post-promotion dips) as well as long-term effects of UABPs some key concepts the following paragraph (1) recalls some of the main characteristics of UABPs and discusses, what (2) "adjustment effects" and (3) long-term effects are defined as in this context.

4.2.1 *Definitions of Relevant Concepts When Discussing Adjustment and Permanent Effects*

As previously discussed, UABPs are a form of temporary price promotion that is characterized by its flexibility for the customer which is caused by its promotional breadth, as the same relative discount is being applied to any article in the store. In Chap. 3 it is already shown, that Uniform Across the Board Promotions have a substantial immediate impact on overall retail store sales, significantly higher than the short-term sales increase caused by other traditional promotions and advertising analyzed. To judge whether these particularities have broader effects on the net performance of UABPs in the long-run, this chapter focuses on the analysis of the *adjustment effects* of UABPs as well as the *permanent, i.e. long term effects*.

4.2.1.1 Definition of Adjustment Effects

Under adjustment effects, the existence of pre and- post-deal troughs around potential promotional bumps is being summarized. Post-deal troughs are often attributed to timing and purchase (quantity) acceleration effects, as customers try to profit from a promotion, by building up stock or anticipating purchases and hence reducing their purchases in subsequent periods (Bell et al. 1999; Blattberg et al. 1995; Grover and Srinivasan 1992). Pre-deal troughs are anticipatory effects of promotions which are caused by consumers anticipating marketing changes, e.g. lower prices in the future, and adjust their behavior by deferring purchases accordingly (Kalwani et al. 1990; Winer 1986; Van Heerde et al. 2000). The magnitude of those dips can for instance be influenced by explicit advertising for a promotion as well as by learning (Doyle and Saunders 1985). Adjustment effects can in general lead to either the reversion to previous sales levels or a new sales level, while the adjustment effects themselves can be positive or negative (Blattberg and Neslin 1990; Greenleaf 1995).

4.2.1.2 Definition of Permanent/Long-Term Effects of UABPs

While the definition of long-term promotion effects differs widely in the marketing literature, the focus is on the existence of three potential effects that could influence the performance of UABPs at any time. Those effects could show as either (1) reversion to a different sales level after the promotion and adjustment period are over (2) less positive immediate sales effects of the promotion over time potentially caused by a decrease in promotion sensitivity or (3) stronger adjustment effects over time, leading to an overall neutral or even negative sales impact of UABPs. Figure 4.1 illustrates the focus of this research which will be further outlined in four key hypotheses.

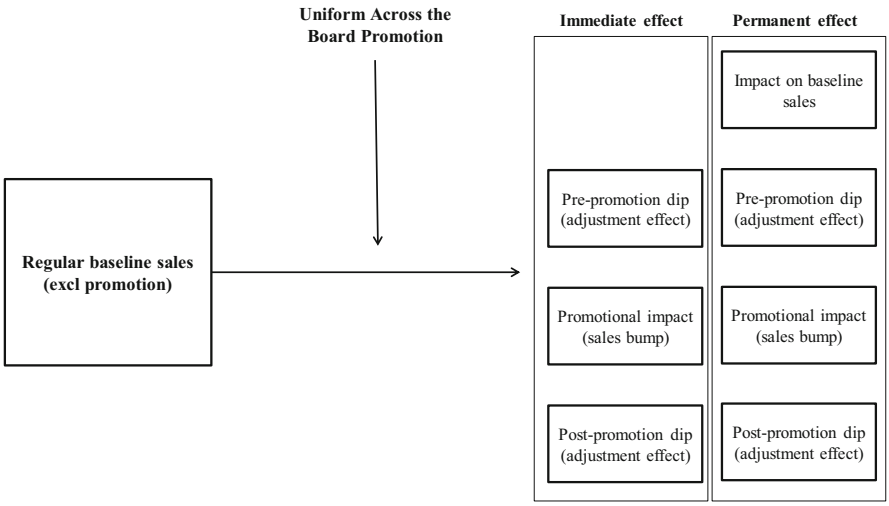

Fig. 4.1 Framework of impact of Uniform Across the Board Promotions on store sales

4.2.2 Hypothesis Regarding the Adjustment and Permanent Effects of UABPs

Adjustment effects of UABPs Empirical evidence on whether adjustment effects exist is mixed. Price perception theory suggests that price promotions impact the reference prices of consumers to which they compare prices during non-promotion times and which hence increases the reluctance to buy during non-promotional periods (Helson 1964; Lattin and Bucklin 1989). Moreover, Blattberg et al. (1995) argue that promotions damage the brand's quality image, which could in turn affect future sales and cause post-promotion troughs (Blattberg et al. 1995). Nevertheless, post-promotion troughs are rarely detected in store level sales data, which has been explained by behavioral theories, as for instance new consumers, attracted by lower prices, will try the store or product during promotions and might repurchase in the future (Mela et al. 1997) or else promotions can remind existing consumers to return to a brand or store and reinforce their attraction to it (Erdem 1996). Despite those arguments, one could expect that in line with the short-term results, the flexibility of UABPs increase the incentive to shop during UABPs over non-promotional periods and that pre- and post-promotional dips will be visible in store-level data. Moreover UABPs focus on the entire store and not just on individual brands, which offsets Neslin and Schneider Stone's (1996) argument that competitive promotions within a store might mask the post-promotional dips of promotions on a store-level (Neslin and Schneider Stone 1996).

H_1: Uniform Across the Board Promotions cause adjustment effects, i.e. pre- and postpromotion sales dips, which reduce the net sales effect of UABPs

Permanent/long-term sales impact of UABPs When discussing the potential long-term effects of UABPs, the focus lies on the analysis of three areas as mentioned above: (1) impact on baseline sales, (2) impact on immediate sales effects over time and (3) adjustment effects over time.

First (impact of UABPs on baseline sales) Even though, as stated earlier, repeated promotions increase consumer price sensitivity and decrease the reference price while also decreasing brand equity over time, results on the long-term impact of promotions are mixed (Blattberg and Neslin 1990). Kalwani and Yim (1992) find that there seems to be a tipping point, as consumers that have often purchased goods during promotions are likely to adapt their behavior to shift all purchases to promotion times. However, a number of studies exist, arguing that there are no negative long-term effects on the baseline sales, as sales will eventually return to their pre-promotion level (Assuncao and Meyer 1993; Krishna 1992, 1994). Even if there is a non-mean reverting effect of promotions on sales, this long-term effect is generally small and applicable only to a few categories (Dekimpe et al. 1999; Lim et al. 2005; Nijs et al. 2001).

Against this background, it is unclear, whether UABPs will generally have negative long-term sales effects, i.e. a mean-reversion to a sales level below the pre-promotional level. However given the product characteristics of this data sample, which focuses on durable goods, that are easy to stockpile (as opposed to consumables, for which out of stock costs are sometimes higher and that are more difficult to stockpile), one could expect to see negative long-term effects on baseline sales—in a later part of the chapter it will be discussed whether this can be made a general finding.

H_2: Uniform Across the Board Promotions have a negative long-term effect on baseline sales

Second (impact on immediate sales effects of UABPs over time) In addition and related to the long-term impact on non-promotional periods, this chapter discusses how consumers react to subsequent promotions or specifically UABPs and how this affects the adjustment effects. Due to the decreased reference price and increased price sensitivity, the probability to react to future promotions decreases (Mela et al. 1997). Moreover households are less likely to act on a promotion, if they are conditioned to "lie and wait" for even more attractive promotions in the future (Jacobson and Obermiller 1990; Mela et al. 1998). Gönül and Srinivasan (1996) find that consumers form expectation about the availability of promotions (coupons) in the future and that depending on those expectations they defer purchases to subsequent periods.

H_3: The positive sales impact of Uniform Across the Board Promotions decreases over time

Third (Impact on adjustment effects over time) An increase in adjustment effects over time could lead to a neutral or even negative effect of UABPs on sales over time. While Pauwels et al. (2002), do not find that the negative pre-and post-promotion dips outweigh the positive immediate sales effect, they do state, that

these findings strongly depend on the product category and its storability. This argument also supports earlier research that reported mixed results on the net impact of promotions. While some researchers found positive effects (e.g. Davis et al. 1992; Guadagni and Little 1983), later studies found predominantly negative net effects on sales (Jedidi et al. 1999; Mela et al. 1998). As mentioned before the flexibility of UABPs for consumers, combined with the low out of stock costs of the category fashion (or most durable goods) are an indication that consumers learn how to adjust their shopping behavior, which would lead to larger adjustment effects. However and in line with the existing research, there are strong indications that any of the measured net effects, or increasing adjustment effects might be strongly affected by the actual category which is why it is again being addressed in the discussion section of this chapter.

H_4: Adjustment effects from UABPs increase over time (potentially leading to neutral or negative net effects of UABPs)

4.3 Method

4.3.1 Store-Level Data to Analyze Adjustment and Permanent Effects

The analysis is being performed based on daily store data for 421 retail stores of a German value fashion retailer. Out of the original sample, stores with incomplete or flawed sales history (e.g. a week missing and then 1 day with ten times the regular sales) had been eliminated. The time span for the data is 1,107 days in the period 2008–2012. The daily store sales data has been de-seasonalized and de-trended for a linear temporal trend using a regression model based on to the one by Abraham and Lodish (1993) with additional adjustments for the weekday and store level sales data. For the promotions dummy variables are introduced that indicate whether a UABP has been run in the retailer's store during a certain day according to the central marketing plan of the company—lead and lag variables as well as time interaction effects have been added accordingly.

4.3.2 Methodology to Analyze Adjustment and Permanent UABP Effects

Even though the existence of pre- and post-promotion dips is evident in household level data, it is often not observed when analyzing store data. Various arguments imply the difficulty of detecting such dips and refer to the complex patterns in brand and store sales (Neslin and Schneider Stone 1996; Van Heerde et al. 2000). To

overcome these difficulties, Van Heerde et al. (2000) have introduced the use of a flexible economic model, which is based on the SCAN*PRO model (Christen et al. 1997) to regress brand-level sales on immediate, lagged and lead price promotion effects.

This model (called an "*unrestricted dynamic effect model*" or also dynamic effects regression model) is being adapted to suit the purposes as further described below. The original model already provides very accurate results and its advantages further lie in the high degree of flexibility, which will also allow us to include parameters to reflect potential long-term effects of UABPs. Furthermore it is relatively straight forward to implement from a managerial perspective (Macé and Neslin 2004; Van Heerde et al. 2000).

4.3.2.1 Dynamic Effects Regression Model

To analyze pre- and post-promotion dips for Uniform Across the Board Promotions as well as long-term effects, the econometric model used by Van Heerde et al. (2000) is being adapted. The model used in this chapter mainly differs in three aspects from the original model. First, instead of applying the model on weekly brand sales, the results are being estimated using OLS estimation on overall daily store sales, calculating an absolute sales impact of the promotion rather than promotion brand price elasticities. Second contrary to Van Heerde et al. (2000), who were pooling across stores, the model is being estimated at a store-specific level as done by Macé and Neslin (2004), by introducing a store-specific intercept. Third, a time variable is being included i.e. the impact of the cumulative number of UABPs used on the promotional bumps, lead and lag effects as well as non-promotional sales is being considered.

The original model, which serves as basis for the model used in this chapter looks like the following (compare Van Heerde et al. (2000) and Macé and Neslin (2004))

$$S_t = \alpha x_t + \sum_{u=1}^{s} \beta_u x_{t-u} + \sum_{v=1}^{s'} \gamma_v x_{t+v} + u_t$$

Where S_t are sales in period t. Lagged and lead effects are included with the relevant lag ($t-1$, $t-2$, $t-3$) and lead ($t+1$, $t+2$, $t+3$) predictors on the UABP which is included as the dummy variable x_t. u_t is a store specific intercept with $u_t = \alpha_0 + \theta_n$ with $\theta_n = (0; \sigma)$ where n is an indicator for the specific store. In addition to this basic model, the model is being enhanced as mentioned before to fit the required purposes, which is shown in the model below. For store n with $n = 1,\ldots,421$, the full model is:

$$S_{n,t} = \alpha_{n,t} x_t + \sum_{u=1}^{3} \beta_{n,t-u}^{UABP} x_{t-u} + \sum_{v=1}^{3} \gamma_{n,t+v}^{UABP} x_{t+v}$$
$$+ X_t * \left(\alpha_{n,t}^{'} x_t + \sum_{u=1}^{3} \beta'^{UABP}_{n,t-u} x_{t-u} + \sum_{v=1}^{3} \gamma'^{UABP}_{n,t+v} x_{t+v} \right)$$
$$+ \delta_{n,t} X_t$$
$$+ u_n$$

$S_{n,t}$ is daily sales of store n for period t

Indicators and intercept
x_t is the immediate sales effect indicator for UABPs in period t. *($x_t = 1$ if in period t an UABP is taking place and 0 otherwise).*
x_{t+v} is the lead effects indicator for UABPs in period $t - v$. *($x_{t+v} = 1$ if an observation is a lead in period $t+v$ and 0 otherwise).*
x_{t-u} is the lag effects indicator for UABPs in period $t - u$. *($x_{t-u} = 1$ if an observation is a lag in period $t - u$ and 0 otherwise).*
X_t is the mean-centered overall number of UABPs performed in a specific store until period t *(on total 23 UABPs considered, hence average is 11.5; this number is deducted from the respective UABP, i.e. for the twentieth UABP, X equals 8.5 ($20 - 11.5$)).*
u_n is a store specific intercept, which reflects the impact of all store characteristics on sales.

Parameters
β_{t-u}^{UABP}, is the parameter for adjustment effect (lag) of UABP on sales
α_t^{UABP}, is the parameter for the immediate promotion impact of UABPs on sales
γ_{t+v}^{UABP} is the parameter for adjustment effect (lead) of UABP on sales
β'^{UABP}_{t-u}, are the parameters for the long-term effects of UABPs on its lag parameters
α'^{UABP}_{t+v}, are the parameters for the long-term effects of UABPs on their immediate promotional increase
γ'^{UABP}_{t}, is the parameter for the long-term effects of UABPs on its lead parameters
$\delta_{n,t}$, is the parameter for the long-term effect of UABPs (modeled as mean-centered cumulative UABPs) on sales

The model has been estimated using the statistical software R and specifically the *nlme package* (Pinheiro et al. 2013), from which the use of the linear-mixed effects function (*lme*) has been applied to conduct an OLS regression considering fixed effects as well as the random-store effects (Macé and Neslin 2004). To perform the regression, the store data has been shaped as panel data (long-format) and lead and lag variables have been included, using mainly functions from the *plyr package* in R (Wickham 2009).

4.3.2.2 Model Variables

This section explains the specifications and operationalization of variables used in the regression model. To analyze the impact of UABPs on adjustment and permanent effects one distinguishes between five main types of indicators and parameters: (1) Impact of UABPs on sales in the respective period, (2) the lead and lag structures as described above *(line 1 of full regression model)*, (3) the interaction between the cumulative UABPs run and the lead and lag indicators *(line 2 of the full regression model)* and (4) the direct impact of the cumulative UABPs on sales *(line 3 of full regression model)*. In addition (5) store-specific characteristics are being considered *(line 4 of full regression model)*.

In the model the criterion variable is the daily sales of a particular store. As described above, daily sales have been de-trended for a linear time trend as well as for seasonal and week-day fluctuations that are typical in this fashion retail setting. As predictors five different type of variables described in the following have been included:

1. *Uniform Across the Board Promotions*: the impact of Uniform Across the Board Promotions on daily sales has been modeled using dummy variables on a daily basis for whenever a UABP has been taken place in the observation period.
2. *Adjustment effects/lead and lag effects*: as outlined above, these effects show the impact UABPs have on the sales in the periods exactly before or after this type of promotion has been run. After discussing with management the lead and lag effects are chosen to be 3 days ($s = 3$; $s' = 3$) prior or post the use of an UABP. These lead-and lag effects are modeled using dummy variables, as suggested by Van Heerde et al. (2000). While when testing for model alternatives these lag and lead periods could be extended, the reason 3 days are chosen is that first the pre- and post-promotion periods do not interact with any other form of promotion or advertising and second the leakage/announcement of an upcoming UABPs does typically not exceed 3 days prior to the promotion.
3. *Long-term effects of UABPs on promotion and adjustment effects*. The flexibility of the model allows to include the variable of (mean-centered) cumulative number of UABPs run by the fashion retailer which interacts with the dummy variables described under (1) and (2) namely the (1) the immediate effect UABPs have on sales and (2) the adjustment effects of each UABP. This allows measuring how the sales bump and dips are impacted by the term "*cumulative UABPs over time*" which is used as a proxy for the long-term promotional impact of UABPs.
4. *Long-term impact on non-promotional store sales*. The effect of running UABPs on the daily store sales can be measured by analyzing the direct impact the (mean-centered) cumulative numbers of UABPs have on average on sales. This is modeled as a linear impact—with the respective implications to be discussed in a later part of the chapter.

5. *Store specific intercept*. As promotions are being carried out on a store level, a store specific intercept is being introduced to reflect e.g. different store sizes and locations.

4.4 Empirical Results

Immediate and adjustment effects of UABPs The results in Table 4.1 confirm the significant positive impact (5,448.5) UABPs have on daily store sales. These immediate effects and particularly their adjustment effects will be discussed in the following.

Hypothesis 1: Pre-and post-promotion dips for UABPs Figure 4.3 basically zooms into the sales pattern and focuses on the adjustment effects and further portrays the average lead and lag effects around the sales increase. These de-trended and de-seasonalized effects on daily store sales are a visualization of the regression results reported in Table 4.1. Figure 4.3 shows that the UABP induced effect on sales in the period leading up to the UABP (3 trading days) is negative, indicating a pre-promotion dip. In the period following the UABP (again 3 trading days), the figure shows the same pattern, while the effects in the outer *leads* (Lead 2 and Lead 3) are relatively small (Fig. 4.2).

Table 4.1 summarizes these findings, showing that all lag effects are significant and negative (Lag 3 to Lag 1: −382.3, −313.4 and −1,091.2), while all lead effects are also negative (Lead 3 to Lead 1: −1,013.4, −58.5 and −11.9) but only lead 1 and lead 2 are statistically significant. Overall hypothesis 1 can be supported as there are significant adjustment effects for UABPs with most variables being significantly below 0. These effects are in line with results from Macé and Neslin (2004) that have applied a similar approach for various categories during traditional price promotions (Macé and Neslin 2004). Despite significant adjustment effects, the net effect of the UABP is still positive, as the increase in sales during the UABP outweighs the adjustment effects.

Long-term impact of UABPs When assessing the long-term impact of UABPs on promotions three distinct areas are covered: First it is discussed how the increased use of UABPs affects the expected baseline store sales of the retailer. Second the focus is on how the effectiveness of UABPs changes over time, i.e. whether the impact of later UABPs on sales is different compared to earlier UABPs—a concept closely related to research on promotion sensitivity. Third it is investigated how adjustment effects develop over time, i.e. are the pre-and post-promotion troughs getting larger or smaller once consumers get more used to UABPs. Table 4.2 shows the long-term effects of UABPs on the three discussed concepts above.

Hypothesis 2: UABPs have a negative long-term effect on baseline sales The effect of running UABPs does have a significantly negative effect on sales in periods where no UABPs are run (−3.59). While this effect is statistically significant (H_2 can be supported), the effect is relatively small on a daily basis compared to the

Table 4.1 Adjustment effects for UABPs (pre- and post-promotion dips)

Variables	Term	Result
Intercept		−153.63*** (1.74)
UABP-lag (t − 3)	$\beta_{n,t-3}^{UABP} x_{t-3}$	−383.85*** (9.47)
UABP-lag (t − 2)	$\beta_{n,t-2}^{UABP} x_{t-2}$	−314.1*** (11.00)
UABP-lag (t − 1)	$\beta_{n,t-1}^{UABP} x_{t-1}$	−1,091.72*** (10.89)
UABP (t)	$\alpha_{n,t} x_t$	5,448.62*** (10.90)
UABP-lead (t + 1)	$\gamma_{n,t+1}^{UABP} x_{t+1}$	−1,014.29*** (10.88)
UABP-lead (t + 2)	$\gamma_{n,t+2}^{UABP} x_{t+2}$	−59.60*** (10.86)
UABP-lead (t + 3)	$\gamma_{n,t+3}^{UABP} x_{t+3}$	−12.90 (9.17)

N = 461,246 observations from 421 stores
***p < 0.000

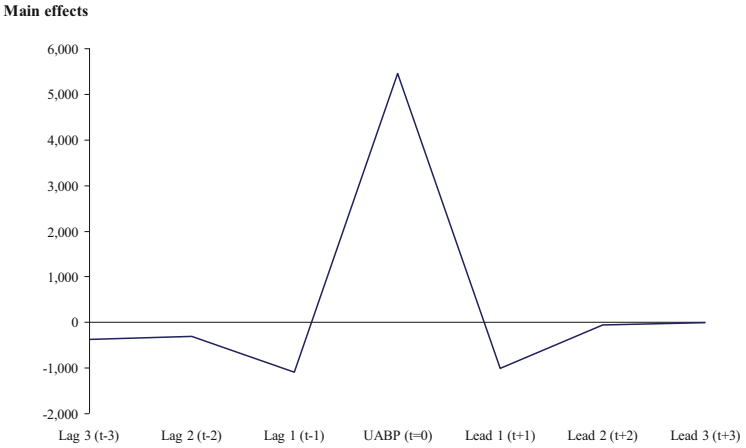

Fig. 4.2 Pre-and post-promotion dips for Uniform Across the Board Promotions

overall sales effect of UABPs, however adds up over time given the relatively longer non-UABP periods. The interpretation of this number is, that the baseline, to which daily store sales revert is slightly lower (by 3.58 Euros sales per day) after running one additional Uniform Across the Board Promotions (see also Table 4.2). Significant but small negative effects (that are however category specific) from promotions on baseline sales are in line with findings in the recent marketing literature (Lim et al. 2005; Nijs et al. 2001).

Table 4.2 Impact of running more UABPs on immediate and adjustment effects

Variables	Term	Result
Long-term impact on UABP-lag (t − 3)	$X_t\beta'^{UABP}_{n,t-3}X_{t-3}$	−10.30*** (0.50)
Long-term impact on UABP-lag (t − 2)	$X_t\beta'^{UABP}_{n,t-2}X_{t-2}$	3.20*** (0.61)
Long-term impact on UABP-lag (t − 1)	$X_t\beta'^{UABP}_{n,t-1}X_{t-1}$	49.75*** (0.62)
Long-term impact on UABP (t)	$X_t\beta'^{UABP}_{n,t}X_t$	−82.04*** (0.62)
Long-term impact on UABP-lead (t + 1)	$X_t\gamma'^{UABP}_{n,t+1}X_{t+1}$	47.94*** (0.62)
Long-term impact on UABP-lead (t + 2)	$X_t\gamma'^{UABP}_{n,t+2}X_{t+2}$	−18.46*** (0.63)
Long-term impact on UABP-lead (t + 3)	$X_t\gamma'^{UABP}_{n,t+3}X_{t+3}$	7.49*** (0.51)
Long-term impact on non-UABP sales	$\delta_{n,\mu}X_t$	−3.58*** (0.11)

N = 461,246 observations from 421 stores
***p < 0.000

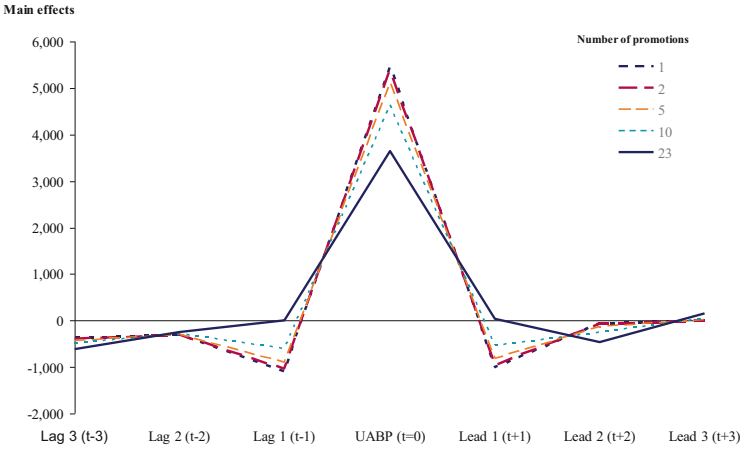

Fig. 4.3 Visualization of long-term evolvement of immediate and adjustment effects

Hypothesis 3: The positive sales impact of UABPs decrease over time The long-term impact of UABPs on sales decreases significantly with additional UABPs performed over time (−82.04), which means that this type of promotion continuously wears off. This has to be put into perspective with the actual sales bump caused by UABPs—strongly simplifying and assuming a linear decline over the cumulative number of UABPs suggests that after around the 66th UABP run (5,448.63 immediate impact divided by 82.04 wear-off effect ~66 UABPs), the positive impact of the UABP on sales would have vanished. This has been visualized in Fig. 4.3, in which simply the main effects from the promotional impact had

been considered and the impact of running additional UABPs multiplied by the respective number of UABPs has been added/subtracted from that number *(e.g. immediate sales impact of 10th UABP = 5,448.63 − 82.04 × (10) = 4,628)*. Each UABP is shown with its lead and lag effects as a different line in the Fig. 4.3.

Hypothesis 4: Adjustment effects from UABPs increase over time As visible in Fig. 4.3, adjustment effects do change over time. Table 4.2 reports that the impact of UABPs on the long-term adjustment effects (*e.g. Long-term impact on UABP-lag (t − 1)*) is mixed. The impact of running additional UABPs on the direct adjustment (*lag1 (t − 1) and lead1 (t + 1)*) are significantly positive (49.75 and 47.94). This means that the pre-and post-promotion troughs directly surrounding UABPs, are getting smaller with an increased usage of UABPs over time. The effects on the other lag (*lag2* and *3*: 3.20/−10.30) and lead (*lead2* and *3*: −18.4/7.49) variables are mixed regarding the direction of their impact. While being smaller in magnitude the effects are still statistically significant. The initial hypothesis that adjustment effects increase over time cannot be supported. Furthermore despite the net effect of promotions being negatively affected over time as the sales impact of UABP is decreasing, this effect is partly offset by the net decreasing of promotional dips. These results combined with the long-term sales impact on the promotion period itself indicates a generally declining, yet in the beginning still positive, effect of UABPs over time, which will later be discussed in detail.

4.5 Summary and Discussion

Overview This chapter discusses the long-term impact Uniform Across the Board Promotions (UABP) have on sales of a value fashion retailer. Specifically the focus is on the (1) sales bump as well as their respective pre- and post-promotion dips, and (2) and it is analyzed how they develop over time. Furthermore (3) the impact an increased use of UABPs have on long-term store-level baseline sales is being analyzed in this chapter.

4.5.1 Academic Implications

Despite mixed results in the marketing literature regarding adjustment and permanent effects of promotions, relatively clear implications for the three topics regarding Uniform Across the Board Promotions have been found.

1. *Sales bumps and pre-and post-promotion dips*: As already discussed in Chap. 3, UABPs are an effective means to increase short-term sales, leading to a significant sales bump during the UABP which is also evident in the daily sales level data of the retailer. While the net effect is still positive, the sales impact of UABPs is reduced by significant pre-and post-promotion dips, that are larger

than those for traditional price promotions in this dataset. Particularly the period leading up to the UABP period experiences significant dips.

As discussed earlier this can be due to "stockpiling" or in this case rather purchase acceleration. The magnitude of the effect is likely positively influenced by the particularities of the category (fashion items), which is characterized by better storability and "lower out of stock costs" than e.g. consumables is. Moreover the increased flexibility and increased certainty of finding the desired article on sale, provides the consumer with advantages that lower the search costs and offer a higher incentive to shift purchases to UABP periods (Urbany et al. 1996). This can lead to higher sales bumps and deal troughs on a store level, compared to traditional price promotions.

Directionally, on average over all stores and throughout the entire year, the UABP decreases sales in the 3-day period preceding the UABP by on average 28 % per day assuming baseline sales of ~€2,000 for an average store (largest decrease around 50 % the day prior to the UABP) and by approximately 18 % per day in the 3 day period following the UABP (again the day directly following the UABP faces the biggest decrease: ~50 %). During UABPs sales are by approximately 275 % higher each day than during regular periods. The net average sales gain solely attributable to the UABP is approximately 76 %, after subtracting pre-and post-promotion dips. Hence approximately 28 % of the original increase (76 % divided by 275 %) is the net percentage gain from a UABP (compare to Macé and Neslin (2004) for methodology).

When comparing to the results of previous research that focused on traditional price promotions, one has to make a caveat for category characteristics as those tend to play quite an important role, as shown by Macé and Neslin (2004) who have found promotion bumps ranging between 23 % (gum) and 200 % (machine dish detergent) for individual categories. However this study would like to directionally do just that, as Macé and Neslin (2004) have shown that traditional promotions (with same promotion depth of 20 %) lead to an average increase of 85 % (compared to the 275 % for the UABP). The net average sales gain, again considering pre- and post-promotion dips in their research is 57 % (vs. 76 % for UABPs). The respective percentage net gain is 67 % (vs. 28 % for UABPs) (see also Table 4.3).

This indicates, that while the overall impact of UABPs in this example is stronger (in line with the results introduced in Chap. 3), the relative dips also seem to be larger for UABPs (indicated through lower percentage net gain), which, while partly category dependent, is in line with the original expectations, that UABPs cause larger changes in consumer purchase behavior than traditional promotions do. As clearly shown by the large range of outcomes in the paper of Macé and Neslin (2004) it is strongly encouraged to repeat this study based on different categories. Furthermore customer and store specific characteristics should be included as Chaps. 3 and 5 shows that those have a significant impact on the relative performance of UABPs.

2. *Impact of UABPs on promotion sensitivity (i.e. evolvement of sales bumps and deal troughs*: The long-term effects of UABPs on their future effectiveness is

Table 4.3 Estimated incremental store sales gains

Promotion type	Current-period avg. sales gain[b,c]	Net avg. sales gain[b,c]	Percentage net gain[b,c]
Uniform Across the Board Promotion (this thesis)	275 %	76 %	28 %
Traditional price promotion[a]	85.1 %	56.8 %	66.7 %

[a]As per 20 % price decrease (comparable to UABP), Macé and Neslin (2004)
[b]Average sales impact of a 20 % price reduction, with baseline sales indexed at 100. 85.1 % current-period increase in sales: after subtracting pre- and post-promotion dips, the net sales gain is 56.8 %. This implies that 66.7 % (58.8/85.1) of the current-period average sales gain represents truly incremental sales (Macé and Neslin 2004)
[c]For UABPs assuming 3 days of running the promotion; lag period and lead period also 3 days each. The main effects which are attributed to the promotion (Table 4.1) have been set in relation to the median daily sales of all stores to calculate the respective figures

negative, i.e. the more UABPs are being offered to customers over time, the smaller the immediate sales increase from each one of them is. This is in line with the literature stating that consumer form expectations about future promotion availability which can lead to them deferring purchases on subsequent occasions. In the long-run they are becoming less promotion or specifically UABP sensitive, i.e. they can forego a deal as they expect to get a better one in the future (Gönül and Srinivasan 1996; Mela et al. 1998).

As Uniform Across the Board Promotions have a strong impact on short-term sales (outperforming traditional price promotions), managers whose performance is measured on like-for-like sales growth, are often forced to continue offering UABPs to their customers once they have introduced them. This makes the use of UABPs predictable and customers learn to adopt their behavior accordingly. This change in behavior can further be shown by some customers coming to the stores a few days ahead of an UABP are sometimes allowed to "reserve" items instead of buying them instantly, which further increases sales bumps and deal troughs, according to discussion with the retail managers of the fashion stores. The next section will address the practical implications of these results.

With regards to the adjustment effects, the immediate pre-and post-promotions dips (one period before and after) of UABPs are also decreasing over time, which is a sign of the overall decreasing impact of UABPs on the sales level. Eventually, the impact of UABPs on sales could become negligible as consumers get used to them and form lower reference prices for the store and its articles. Sales increases could then only be motivated by offering ever lower prices at lower gross margins further reducing consumer reference prices and potentially being detrimental to the customer attitude—which is a special topic to be investigated given this background.

3. As discussed earlier, the interaction term between UABPs over time and the overall sales level is negative, implying that UABPs reduce baseline sales for a retailer in periods where no promotions are run. Albeit this negative trend is relatively small compared to the positive short-term impact of UABPs—it is

significant and further supported by the existence of a long-term negative impact on the outer pre-and post-promotion dips. This is explained by the adaption level theory and reference price concept, as consumers get used to lower prices and hence expect those prices in the future (e.g. Jacobson and Obermiller 1990; Lattin and Bucklin 1989; Greenleaf 1995). While anecdotal evidence suggested similar results for DIY articles ("*Praktiker example*") future research on the long-term effects of UABPs should try to base this on household-level data, to check whether different customer groups react differently or whether different customer groups are being attracted during the promotion (e.g. Neslin and Shoemaker 1989) and whether these result also hold for other retailers with a different product portfolio. Furthermore a linear decline over the number of promotions has been assumed, which going forward, can, be extended to more sophisticated non-linear, long-term decay models.

4.5.2 Retailer Implications from Long-Term Effects of Uniform Across the Board Promotions

Despite the existence of adjustment effects (pre-and post-promotion dips), UABPs have a positive net effect on sales around the actual promotion period and can hence be considered a useful tool to increase short-term sales (see also Table 4.1). As over time their effectiveness decreases, so do the adjustment effects—as a result the net effect continues to be positive, albeit on an eventually much smaller level. This of course only considers the net sales impact—the net gross profit might be negative, depending on the retailer's margin, as already shown in Sect. 3.5.1.

To hence achieve the same sales or gross profit impact as when UABPs are first run, retailers need to increase the use of UABPs, which however will have negative effects on the baseline sales of the retailers. Once UABPs are introduced and retailers try to match sales levels of previous periods, they ceteris paribus enter in a vicious circle that they cannot escape, given the long-term negative impact on promotion sensitivity and baseline sales. However reducing once introduced frequency of promotions can have a negative effect on market shares as the net price to consumers is increased (Ailawadi et al. 2001).

Getting of the UABP drugs, while not losing too much sales, i.e. market share requires retailers to apply UABPs (and other forms of promotions) more creatively, segmenting their customers and getting the more promotion prone customers off a bit softer than the non-promotion prone. Furthermore to decrease the adjustment effects and mitigate a potential change in behavior of the customers, retailers need to a.) be disciplined with restricting UABPs to the actual promotional period and to a pre-selected target group but also b) be discrete and unpredictable as to when the next UABP is going to take place.

As for any type of short-term performance enhancing drug, another solution is of course not starting with them (UABPs) at all, as they eventually catch up to you. Not starting with a regular use of UABPs or swiftly finding suitable means of

reducing UABPs would even be stressed, if UABPs also have a negative impact on further customer and retailer KPIs such as for example customer loyalty, customer satisfaction, attitude towards the retailer, brand equity and so forth. This, along with other household-level studies on UABPs is an area which will be discussed in Chap. 5.

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Chapter 5
UABPs: Antecedents and Consequences on a Household Level

5.1 Introduction and Context to UABP Antecedents and Consequences on a Household Level

As discussed in previous chapters, Uniform Across the Board Promotions (UABPs), are a relatively new type of promotion concept that has received negative publicity in the international business press, as it has partly been blamed for the insolvency of Praktiker, a major European DIY retailer (Böcking 2012). The anecdotal evidence of a negative long-term impact of UABPs from "*the Praktiker example*" is supported by the analyses of store-level data of an international value fashion retailer, where strong pre-and post-promotion troughs, decreasing positive sales effects during the promotion as well as negative long-term effects on baseline sales can be observed (compare Chaps. 3 and 4). Many of those effects also exist directionally for traditional price promotions, however to a smaller extent (van Heerde et al. 2000). Despite these findings, many retailers still use UABPs and for those retailers, it is important to further understand, whether those effects also exist on a household level or whether other drivers impact the observations above.

While the previous chapters and existing research has not yet covered the household level impact of Uniform Across the Board Promotions specifically, extensive research exists that covers related topics: First a broad stream of research explains and shows *lead effects*, *stockpiling* and increasing *promotion sensitivity* on a household level, often explained by changes in *reference prices*. (Anderson and Simester 2004; Doyle and Saunders 1985; Mela et al. 1998). Second, another stream of research empirically analyses the adjustment effects of traditional promotions and how they are affected by category and customer characteristics, i.e. which type of customers or categories are most likely being affected by promotions (Bell et al. 1999; Macé and Neslin 2004). The third stream of research discusses the impact of price promotions and discounts on consumer behavior, e.g. the perception of a brand or the customer loyalty. Two exemplary studies are Grewal et al. (1998a, b) who analyze the promotion consequences using structural equation modeling based on an experiment with a subsequent questionnaire and

M.-O. Jauch, *Uniform Across-the-Board Promotions*, Contributions to Management Science, DOI 10.1007/978-3-319-07115-2_5,

Dodson et al. (1978) who use a long-term household panel data, to show the impact of promotions on customer loyalty and brand switching.

While the research carried out and introduced in this chapter has various similarities with the above, it differs and adds value in three major points: (1) this thesis, i.e. chapter specifically focuses on UABPs. Given the distinct characteristics of UABPs as well as their increased popularity it is important to specifically analyze the impact UABPs have on consumers. This has become even more evident, as store-level results for the impact of UABPs differed in their magnitude and partly direction from traditional promotions (see Chap. 3). (2) While various studies covered either antecedents or specific consequences of promotions on a household level, no study covers the two aspects as extensive and in one single model. (3) Historical studies covering the antecedent or consequences of promotions have mostly either used panel or experimental data, while this thesis uses transaction and survey data combined. It is expected to hence provide realistic results when linking survey results for attitudes and intended behavior to actual past behavior.

In addition to the points above, this chapter also aims to provide guidance to managers using UABPs by discussing three relevant questions: (1) Can the effects observed on a store-level be confirmed by the behavior of individual consumers or are other factors affecting the performance of UABPs? (2) which customers are most likely to react to UABPs—who is the "typical UABP customer" to target? (3) what other "soft" consequences, apart from the direct impact on sales does the use of UABPs have on store image and customer behavior?

To achieve these objectives, this chapter is divided in two parts: the first part discusses the *antecedents of UABP user intensity* and the second part focuses on how the *UABP user intensity impacts four central retailer KPIs*: (1) Customer satisfaction, (2) Price and promotion image of the retailer, (3) Customer loyalty and (4) Expected promotion driven change in behavior

As stated above, the analysis will be based on a combination of household survey data, conducted among 1,641 customers of a value fashion retailer, complemented by the respective transaction data of each of these households during any Uniform Across the Board Promotion campaign carried out over the period between 2008 and 2012. Methodologically the study pursues in two steps. First a confirmatory factor analysis is used to ensure the reliability and validity of the relevant concepts as laid out in the questionnaire. Second a structural equation model is built in order to analyze the hypotheses regarding antecedents and consequences of the UABPs.

5.2 Conceptual Framework: Antecedents and Consequences

In the following the model that further explains the antecedents and consequences of UABP usage is being introduced. The first part discusses which customers, depending on socio-demographics and attitude are most likely to react to Uniform

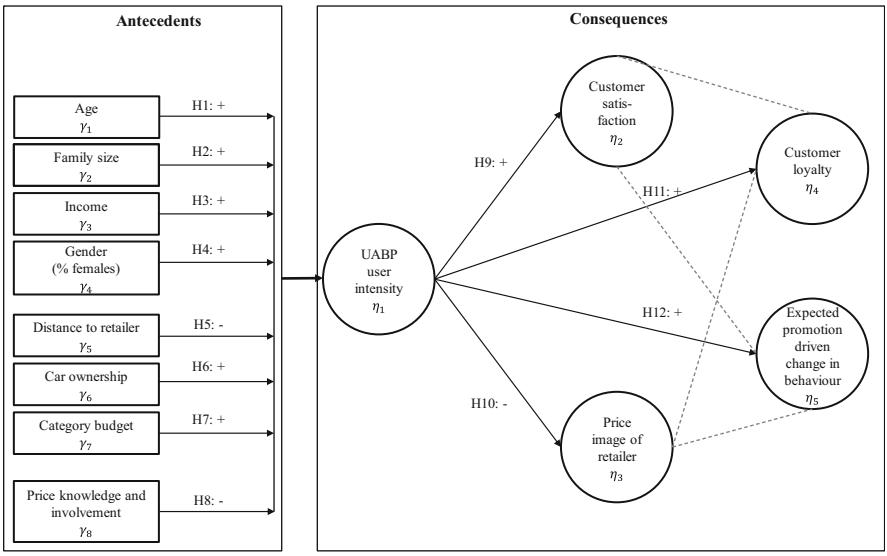

Fig. 5.1 Antecedents and consequences of UABPs

Across the Board Promotions while the second part explains how the participation in UABPs might affect the attitude towards the retailer and future shopping behavior. The left side of Fig. 5.1 lists the antecedents and how they influence the *UABP user intensity*, which is the participation intensity of a consumer for UABPs.

When analyzing the antecedents of UABPs the focus is on three different areas. First *general socio-demographic variables*, that are commonly used to describe the composition of customers in a retail store (e.g. Bell et al. 1999; Macé and Neslin 2004; Montgomery 1997). These are helpful to segment customers and differentiate their exposure to marketing instruments and price, as suggested by Montgomery (1997). The variables used are:

- Age
- Family size
- Income
- Gender.

There is no information available for this study on some of the typical socio-demographic information that is often derived from store-trading area characteristics (e.g. Hoch et al. 1995) as for example the education level or the ethnicity of the customers.

Second additional *search cost related variables* are being discussed, in order to describe the cost-benefit ratio of a promotion from the viewpoint of a consumer. This is based on the transaction or search cost theory that is derived from information economics that state that customers put the search (and transaction) costs in relation to the expected savings (Metha et al. 2003; Stigler 1961). Consumers hence

continue to search for a better price as long as the expected savings are still as high as or higher than the cost incurred by an additional shopping trip. Price promotions decrease the probability of finding a lower price elsewhere and consumers are more likely to terminate their price search. Promotions hence have a negative impact on the price search—the higher the absolute discount, the more negative the impact (Darke and Freedman 1993; Darke et al. 1995). The variables used for transaction cost/price search are:

- Distance to the retailer
- Car ownership
- Category budget.

Distance to the retailer and the ownership of a car are part of the cost side of the equation, i.e. how much effort is required to visit a retailer and search for deals, whereas the category budget, which is the money spent on fashion, implies whether any savings in this category has an overall relevant impact on the household budget or whether it is negligible (if category budget is low).

The third variable considered is *price knowledge and involvement*. This variable refers to the questions whether the customer is interested in comparing prices and whether she has a general idea about the prices in the market, as this also influences the search cost behavior of the customer.

Hypotheses regarding the impact of antecedents on UABPs The impact of consumer-demographics as a predictor of usage of promotions has been frequently discussed in the marketing literature while reporting mixed results given that many attempts to find a correlation between the two has in the past only found weak or no correlation for the majority of parameters (e.g. Bell et al. 1999; Jolson et al. 1987; Macé and Neslin 2004). Nevertheless empirical research shows, that some consumer demographics do influence the deal proneness of consumers and their likelihood to shop during promotions (e.g. Hoch et al. 1995; Macé and Neslin 2004). Some of those demographics will be discussed in the following:

Age The age of the consumer has been among one of the most frequently discussed characteristics and as for the overall subject, results are mixed (e.g. Jolson et al. 1987; Macé and Neslin 2004; Teel et al. 1980). There have been suggestions, that older customers have more time and should hence be more deal prone (Bell et al. 1999), that promotion elasticities increase with age (Macé and Neslin 2004) or that deal-prone housewives tend to be older (Webster 1965). Other research has however found that older customers are less price sensitive (Ainslie and Rossi 1998; Hoch et al. 1995) and that young customers are more likely to react to coupons (Teel et al. 1980). Macé and Neslin (2004) explain the difference in results above by the fact that they and Bell et al. (1999) consider UPC characteristics, which e.g. Hoch et al. (1995) do not control for.

In the case of UABPs and this particular product category, fashion, it can be expected that older customers tend to be more promotion prone, as UABPs offer them a very broad selection of items. Moreover older customers might be more

likely to carry out shopping for their children and husbands as opposed to customers in their late teens and early twenties.

H_1: Age is positively correlated with UABP user intensity

Family size As mentioned above, the breadth of the promotion across the entire assortment is a specific characteristic of UABPs, which differs from traditional brand based promotions. This allows customers to purchase fashion items for the entire family during one shopping trip, hence reducing search costs and increasing efficiency. Macé and Neslin (2004) have found that post-promotion dips, an indicator for stockpiling and purchase acceleration and hence promotional activity are positively correlated with household size. This is in line with Hoch et al. (1995) who find that larger families are more price sensitive and hence try to profit from promotions while optimizing their search costs.

H_2: Family size is positively correlated with UABP user intensity

Income One could expect a negative correlation between income and deal proneness as the opportunity costs for less affluent households are often lower, allowing them to invest more time searching for items on promotion. Additionally, for less affluent consumers, money saved due to a promotion might be higher on a relative basis, than the same absolute savings would be for affluent consumers. However existing research has often not found any significant effects between income and promotion sensitivity, which might have been driven by the relative small absolute savings on the consumable categories tested (Bell et al. 1999; Macé and Neslin 2004). Surprisingly, which was also against the expectation of the authors, Kwon and Kwon (2007) have found a positive income effect, i.e. higher incomes have a higher likelihood to use coupons. Despite the findings in the literature this study still expects less affluent consumers to try to shift more of their purchases into UABP periods, as (1) this study tests for fashion items, for which savings are also in absolute terms relevant for the customer and (2) the customers can time their purchases accordingly, as the out of stock costs on fashion are negligible (compared to e.g. groceries).

H_3: Income is negatively correlated with UABP user intensity

Gender (% of females) While Jolson et al. (1987) have found no correlation between deal proneness and gender, this study assumes a positive relationship, which is retailer specific. For the value fashion retailer used for this study, most customers are female and once can hence assume that they keep up more with retailer specific UABP promotions. This might however be more category or retailer specific than finding a (stereo-type) male-female explanation for this hypothesis.

H_4: Women exhibit a higher UABP user intensity

Distance to the retailer The results of Chap. 3 have shown that retailers in rural areas i.e. where customers have a longer commute, perform relatively better during UABPs. The absolute performance might however be higher in more central locations, given the higher natural footfall partly owned to the lower opportunity costs of visiting the store. While customers with a longer *distance to the retailer* might shop relatively more during UABPs compared to non-promotional periods, customers with a short commute might in absolute terms shop more during UABPs and during non-promotional periods given their lower search and transaction costs.

H_5: Distance to the retailer is negatively correlated with UABP user intensity

Car ownership Further reduces the opportunity costs for a customer, while facilitating the ability to stockpile and hence profiting more from the UABP. This has been confirmed by Macé and Neslin (2004) who find a positive relationship between stockpiling, promotion participation and car ownership.

H_6: Car ownership is positively correlated with UABP user intensity

Category budget Macé and Neslin (2004) find that post-promotion dips are larger in categories, with a high budget share, i.e. where customers spend a high percentage of their income. This can again be explained by transaction costs and information economics, as if the expected savings, meaning the category budget times the expected percentage discount, is higher, customers are willing to time their purchases accordingly and/or visit the stores in which they are being offered discounts.

H_7: UABP user intensity is positively correlated with category budget

Price knowledge and involvement Very often consumers do not have precise knowledge of prices (Dickson and Sawyer 1990) but rather use heuristics, i.e. simplified external cues, such as whether an article is on promotion, to form a purchase decision. Very often those external cues are sufficient to form a view about a price, retailer or brand (Krishnamurthi and Raj 1988; Mazumdar and Monroe 1990). One could hence assume that in absence of perfect price knowledge or involvement, the customer will use the UABP as a cue that positively stimulates her buying decision. Price knowledge is consequently negatively correlated with UABP participation.

H_8: UABP user intensity is negatively correlated with Price knowledge and involvement

5.2.1 Consequences of UABPs

To gain a better understanding of whether it is advisable for a retailer to perform UABPs, it is important to not just look at the impact this type of price promotion has on sales but also consider non-monetary consequences the Uniform Across the Board Promotions have on consumer behavior and attitude. This is relevant as

Anderson et al. (1994) show that customer satisfaction and long-term economic performance are positively correlated. Moreover several studies have found that a strong link between customer satisfaction and loyalty exists, which in turn is influenced by the (quality and price) image of the retailer (Anderson and Sullivan 1993). Retailers hence need to consider the impact on those variables as those can be indicators for future performance.

Specifically this chapter discusses the impact of UABPs on (1) the customer satisfaction and the (2) price image of the retailer. Moreover it will be discussed whether UABPs have an impact on (3) customer loyalty and (4) whether UABPs will influence the shopping behavior of existing customers.

Customer satisfaction and its antecedents have been extensively studied in the marketing literature and can be broadly characterized as the post-purchase evaluation given pre-purchase expectations (Anderson and Sullivan 1993). The expected price of a product plays an important role and Oliver and Winer (1987) show that consumers adapt their expectations according to past prices. A positive deviation from the expected, historic price and quality levels (Helson 1964) has a positive impact on customer satisfaction. This is supported by the reference price concept which suggests that a positive deviation from the regular or expected price is booked as a "profit" in the consumer's utility function, which hence increases the satisfaction of the customer (Kalyanaram and Little 1994; Mayhew and Winer 1992). It can hence be expected that UABPs, where customers receive the discount on the desired article without having to compromise on selection or quality positively influences the customer satisfaction.

H_9: UABP user intensity is positively correlated with customer satisfaction

Price image: of the retailer Another critical topic is how UABPs affect the price image of the retailer. In the literature, there are particularly two factors that influence the price image: regular price-quality ratio and the depth and frequency of price promotions (Nyström 1970). Regarding the latter the results are mixed. While some empirical research shows, that price promotions have a positive influence on the price image (Desai and Talukdar 2003; Schindler and Rogulic 1998), others did not find a correlation between the two (Cox and Cox 1990). However all of those studies focused on the impact promotions of individual articles have on the retailer's image—while during UABPs not just selected items are put in focus to signal a certain price image for the retailer but rather the entire retail assortment serves as a signal, which is why it can be expected that UABPs will have an impact on the price image of the retailer.

H_{10}: UABP user intensity is positively correlated with the price image of the retailer

Customer loyalty It is empirically proven that promotions can be used to shape *customer loyalty* (Rothschild and Gaidis 1981) which is furthermore affected by customer satisfaction (which is expected to be positively influenced by UABPs). However according to the self-perception theory consumers might attribute their buying during UABPs to the presence of the UABP itself, rather than their actual

affiliation with the retailer (Dodson et al. 1978). While it is hence unclear whether buying will solely be attributed to the UABP, one could still expect some positive impact on customer loyalty which is further supported by the indirect positive effects from loyalty and price image.

H_{11}: UABP user intensity is positively correlated with customer loyalty

Expected promotion driven change in behavior The promotion driven change in behavior refers to the phenomenon that customers might shift purchases from non-promotion periods to UABP periods, causing large pre-and post-promotion dips on a store-level (see Chap. 4). This change in behavior can be explained by changes in the reference price of the customer and a learning process in which customers adapt their shopping behavior to frequently repeated promotions. Furthermore the fact that during UABPs all articles will be promoted reduces the uncertainty of finding the right article and hence reduces the risk of potential stock-out costs for the consumer, making the deferring of purchases even more prominent than during normal promotions (Gönül and Srinivasan 1996).

H_{12}: UABP user intensity is positively correlated with change in shopping behavior (stockpiling and anticipation)

5.3 Method

5.3.1 Household Level Survey and Transaction Data

The company provided actual transaction data of a random sample of 20,000 customers from an international value fashion retailer's customer database. The sample has the same distribution in terms of gender and age as the overall population of the customer database and was randomly distributed geographically. Every customer in the sample had provided an email-address and did participate in at least one UABP in the period 2008–2012. For each customer, certain socio-demographic information that the customers have provided when signing up for the newsletter were available as well as the information whether she had participated in a specific UABP and what the total amount of purchases has been during each UABP. There is no information available on customer spending in non UABP periods, nor on the composition of the shopping basket.

All of those customers had been sent a personalized e-mail request by the retailer to complete a questionnaire, which was designed using professional survey software, carrying logos of the retailer and the university. The participants of the survey had been offered the opportunity to win a gift certificate of the retailer valued between €10 and €100, overall prizes in a total value of €500 had been given away. The survey consisted of questions related to, for example, their general attitude towards the retailer, customer satisfaction, their shopping behavior as well as

UABP specific information. Items related to each construct were formulated as statements which were to be answered on a seven-point Likert scale (*1 = strongly disagree, 7 = strongly agree*)—further details are provided in the Appendix B. Furthermore the customer was asked to provide some socio-demographic information about herself and her household (see Appendix B for more information on the question categories).

The questionnaire consisted in total of around 75 questions; with the median time for answering to all of them was slightly above 10 min (*606 s*). Respondents not completing the entire questionnaire or obviously answering the questions arbitrarily (e.g. family size 100 members, age 0 years) had been excluded from the sample, leaving 1,641 adult completes, for which all questions had been answered properly and the actual transaction history during UABPs was available. It is to be noted, that there might be a gender and slight age bias in the data sample, with above 90 % of respondents being female and 70 % of respondents being between 30 and 50. With the gender bias being slightly over-proportionate to the total share of male customers for the retailer both values are still directionally in line with the target customer group of the store.

5.3.2 Methodology to Analyze Antecedents and Consequences: CFA and SEM

Latent variables i.e. constructs, derived from the items in the questionnaire and the transaction data serve as an input to testing the hypothesis H_1-H_{12} on the antecedents and the consequences of UABPs using structural equation modeling (SEM). The validity and reliability of the constructs has been assessed with a confirmatory factor analysis (CFA) in which each item is prescribed to be loaded on one specific latent variable; thus, a customer loyalty item is related to the customer loyalty factor and not to any other factor. A standardized solution has been calculated using the lavaan-package in the statistical software R (Rosseel 2012), which shows that the items load highly on their corresponding constructs and are mostly above the recommended 0.40 item reliability threshold. The few exceptions that are below the threshold are in the customer satisfaction category as well as one in the customer loyalty variable. Those items are still kept to preserve conceptual comprehensiveness and as keeping those in still improved construct reliability and average variance extracted values (AVE). Overall the measures exhibit good reliability and validity of the constructs with composite reliabilities above the recommended 0.70 threshold (see Table 5.1).

Furthermore the fit indices of the structural equation model show a good fit of the measures, indicated by a Comparative Fit Index (CFI) of 0.90, which is at the recommended threshold of 0.90, a RMSEA of 0.06, which is in between the 0.05 for good and 0.08 for moderate fit (MacCallum et al. 1996) and a SRMR of 0.06, which is below the 0.08 threshold and indicates good fit (Hu and Bentler 1998). The NFI

Table 5.1 Indicator and construct reliabilities from CFA

Construct	Item	IR	CR	AVE
UABP user intensity	Actual participation (absolute numbers)	0.55	0.78	0.55
	Relative participation (% since first participation)	0.53		
	Recent participation (has participated in at least two recent UABPs)	0.56		
Customer satisfaction	"I am satisfied with the selection of the assortment"	0.33	0.85	0.47
	"I am satisfied with the friendliness of staff"	0.54		
	"I am satisfied with the store design"	0.70		
	"I am satisfied with the cleanliness of the store"	0.62		
	"I am satisfied with the accessibility of stores"	0.28		
Price image	"The assortment of the retailer is worth its price"	0.74		
	"The prices at the retailer are justified"	0.86		
Price image Customer loyalty	"The quality of the goods justifies their price"	0.84	0.93	0.81
	"I would recommend the retailer to my friends"	0.81		
	"I will visit this retailer more often in the future"	0.35		
Customer loyalty	"I will continue to visit this retailer in the future"	0.50	0.79	0.56
Expected promotion driven change in behavior	"I deliberately buy at times when UABPs take place"	0.58		
	"I try to plan my purchases according to when UABPs take place"	0.49		
Expected promotion driven change in behavior	"I expect to be able to continue to buy at this retailer at reduced prices"	0.36	0.62	0.36
Price knowledge and involvement	"I am very interested in the price of articles and I do compare prices"	0.50		
	"I know quite precisely what a similar article would cost at one of the retailer's competitors"	0.68		
Price knowledge and involvement	"I am very involved regarding my decision on where to buy clothes"	0.92	0.77	0.46
	"I am often contemplating where to best buy fashion articles"	0.67		

and NNFI are both at 0.88, which is around the recommended threshold of 0.90 indicating a moderate fit (Bentler and Bonett 1980) of the model.

The Chi-square test was used to explore that the relationships proposed in the model provide a plausible explanation to the relationships that exist in the data. The χ^2/df of 5.9 is above the 5.0 threshold which is the upper bound of the threshold being discussed in the literature (Wheaton et al. 1977). However this measure of fit is less important in the outlined case, given the large sample size, which makes the chi-square test less relevant (Burnham and Anderson 2002). Due to these facts and despite the relatively high χ^2/df ratio no concepts or variables have been altered or deleted.

The Fornell/Larcker criteria (1981), which states that the squared correlation of each construct with any other construct needs to be below the average variance extracted for the respective construct is met. This means that there is sufficient discriminant validity in the model, as concepts that are supposed to be unrelated are in fact unrelated. Table 5.2 gives an overview of the individual constructs and their correlation among each other.

Table 5.2 Correlations and measurement information

Variable	M	SD	CR	AVE	1	2	3	4	5
UABP user intensity	2.99	1.81	0.78	0.55	1.00				
Customer satisfaction	5.46	0.92	0.83	0.50	0.13	1.00			
Price image	5.03	1.21	0.93	0.82	0.05	0.55	1.00		
Customer loyalty	5.36	1.21	0.79	0.56	0.15	0.72	0.70	1.00	
Expected promotion driven change in behavior	4.94	1.20	0.72	0.47	0.24	0.18	0.20	0.24	1.00

5.4 Empirical Results

The structural equation model shows, that five out of eight hypotheses regarding the impact of antecedents on UABPs can be supported at the 5 % level and one hypothesis can be supported at the 10 % level while two hypotheses cannot be supported at the 10 % level and hence those antecedents have no significant impact on the likelihood to participate in Uniform Across the Board Promotions. Out of the four hypotheses tested regarding the consequences of UABPs, three can be supported, while one cannot be supported at the 10 % level. Table 5.3 and Fig. 5.2 give an overview of the impact of the individual antecedents and consequences that will be further discussed below.

5.4.1 Results Regarding the Antecedents of UABPs

As highlighted in Table 5.3, the analysis shows that there is a positive relationship between the age of the shopper and the UABP participation, i.e. the older the customer, the more likely she is to participate in UABPs (hence supporting H_1). Regarding family size, H_2 is supported, as larger families participate more actively in UABPs than small families do. Income does not influence the participation probability in Uniform Across the Board Promotions, as other than expected, households with a lower income do not participate more intensively in the UABPs (not supporting H_3) than affluent ones. In this example gender does have an impact, as women seem to be more UABP prone than men are, as they have a significantly higher likelihood of participating in this type of promotion (supporting H_4). As this might be retailer specific, it will be further discussed later in this chapter.

Concerning the hypotheses regarding the variables that could be influenced by transaction costs and search costs, the results are mixed. As expected, the distance a customer has to commute to the retailer, i.e. the effort it takes her to participate in an UABP, has a negative impact (supporting H_5) while having a car, which eases the effort and allows for stockpiling has a positive impact on the likelihood for her to participate (supporting H_6). However the category budget, i.e. what a household

Table 5.3 Antecedents and consequences of Uniform Across the Board Promotions

		Dependent variable				
Hypothesis	Independent variable	User intensity	Customer satisfaction	Price image	Customer loyalty	Change in behavior
H_1 (+)	Age	0.208* (0.116)				
H_2 (+)	Family size	0.450*** (0.115)				
H_3 (−)	Income	−0.081$^{n.s.}$ (0.118)				
H_4 (+)	Gender (% females)	1.317* (0.486)				
H_5 (−)	Distance to retailer	−0.290** (0.115)				
H_6 (+)	Car ownership	1.683*** (0.450)				
H_7 (+)	Category budget	−0.069$^{n.s.}$ (0.115)				
H_8 (−)	Price knowledge	0.341** (0.115)				
H_9 (+)	UABP user intensity		0.027*** (0.007)			
H_{10} (−)	UABP user intensity			0.014$^{n.s.}$ (0.010)		
H_{11} (+)	UABP user intensity				0.020** (0.007)	
H_{12} (+)	UABP user intensity					0.076*** (0.013)

n.s. not significant
Notes: standardized parameters are shown, and standard errors are in parentheses
*p ≤ 0.10; **p ≤ 0.05; ***p ≤ 0.001

spends on fashion per month does not influence its likelihood to participate in UABPs (not supporting H_7), which is surprising, as the potential savings for those households should in theory be larger. Against the initial assumption, price knowledge and involvement does not negatively impact the likelihood of costumers to participate in UABPs—in fact price knowledge has a positive impact on UABP user intensity (not supporting H_8).

The standardized parameters in Table 5.3 further highlight the magnitude of the impact on the likelihood to participate in UABPs. Taken aside gender and car ownership, as these variables might have a particularly strong impact due to category and retailer specific characteristics discussed separately, family size has the strongest impact on the likelihood to participate in UABPs ($\gamma_{family\ size} = 0.454$), followed by the general price knowledge and age of the customer. The negative impact of income and category budget is negligible.

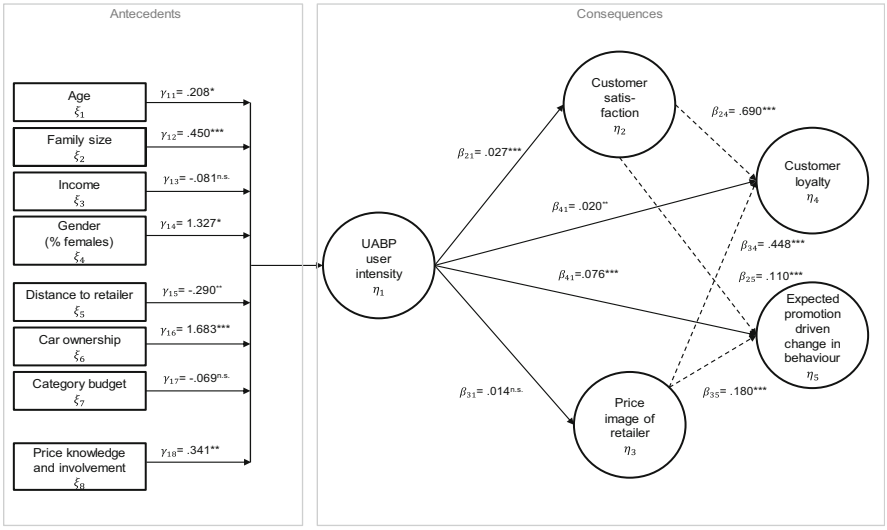

Fig. 5.2 Results of model estimation. *p ≤ 0.10; **p ≤ 0.05; ***p ≤ 0.001; n.s., not significant; notes: completely standardized parameters are shown

5.4.2 Results Regarding the Consequences of UABPs

As further highlighted in Table 5.3 and Fig. 5.2, UABPs have a significant influence on some important retailer KPIs which is discussed in hypotheses H_9-H_{12}.

First UABPs have a positive impact on the customer satisfaction, meaning customers who often shop during UABPs are significantly more satisfied with the retailer than customers who do not use UABPs (supporting H_9). However UABPs do not positively influence the overall price image of the retailer, nor do they seem to hurt the price image (not supporting H_{10}). The direct effect of UABPs on customer loyalty is also positive (supporting H_{11}), indicating that customers that are more likely to participate in UABPs are also more likely to re-visit the stores of the retailer. Despite the higher likelihood of customers returning to the store, those customers are in fact less likely to visit the retailer during regular price periods as they expect to shift their purchases to UABP periods and expect to always have the opportunity to shop during those type of promotion (supporting H_{12}).

When also considering the indirect effects of UABPs on customer loyalty and expected change in behavior, the total impact of UABPs become even more evident, as both total effects are significant at the 1 % level. The total, direct and indirect impact of UABPs on customer loyalty is *0.082 (SD: 0.013)*, and the total impact on the expected change in behavior is *0.045 (SD: 0.011)*. Particularly the total effect of UABPs on customer loyalty benefits from the significant relationship between customer satisfaction, price image and customer loyalty, which has been a

subject of various studies in the marketing literature (e.g. Anderson and Sullivan 1993). The R^2-values for customer loyalty and expected change in behavior are 0.66 and 0.10 respectively, indicating especially for the expected change in behavior that this is influenced by many additional factors, which will be further discussed in the following.

5.5 Summary and Discussion

5.5.1 Academic Implications

Overall, especially given the public discussions of how UABPs can hurt a retailer, its image and future business perspectives, some of the results of this analysis came rather surprising. When looking at the consequences of Uniform Across the Board Promotions, it appears that they have a positive influence not only on customer satisfaction but also on customer loyalty, meaning customers who participate in UABPs more frequently are significantly more satisfied with the retailer and are more likely to visit the retailer in the future. Customers hence seem to differentiate less between UABPs and regular price periods than previous research has found (Dodson et al. 1978).

However, whilst being satisfied and loyal customers, those customers do want to shift their shopping behavior to periods where UABPs take place and they do expect to be able to buy at reduced prices going forward. The positive attitude towards UABPs as well as the intention to shift purchases through anticipation and stockpiling fully supports the results earlier discussed when analyzing store-level data (Chaps. 3 and 4). The extraordinary promotional sales bumps followed by dips seen in store-level data will likely also exist on a household level, given the results of this study. As stated above, any potential negative long-term effects that have been found analyzing store-level data, can however be complemented by some positive effects UABPs have on a household level. Before going ahead and discussing what this implies for retailers, some results are to be shared and some caveats to be discussed in order to give guidance for future research.

In this particular context, the customers that are most likely to participate in the UABPs are older, female customers that typically shop for a larger families and are in possession of a car to go on a shopping trip. On the basis of these results as well as the consequences of UABPs, it is possible that the nature of the data sample might contain a selection bias. The data sample is based on one single retail chain (with more than 1,500 stores), with mostly (a) female loyalty customers of (b) durable goods from (c) mostly non-high-street fashion stores, whose (d) USP is clearly price. Those characteristics could hence be biased towards generally more deal prone customers compared to the overall population. Furthermore the fact that the majority of the retailer's stores are less convenient to be reached by car and that 75–80 % of its assortment is targeted towards women and children explains some of the results.

Of course these results are generally supported by literature and theory (e.g. transaction cost/price search theory), but might be influenced by category and retailer specific characteristics. In this context the relative high correlation between the latent variables, such as price image, customer satisfaction and loyalty, which are directionally not surprising but in their magnitude outstanding, also makes more sense, given that price and promotions play an integral role for the shopping decision of those customers with this particular retailer. Researchers should hence be encouraged to extend on this study to also include stores in different price segments and additional categories. Furthermore a broader study could analyze whether the UABP induced changes in consumer behavior, does also affect her purchase behavior and price expectations towards other retailers in the same segment.

It is further to be noted, that especially the R^2 of the latent variable "expected change in behavior" is relatively small (*0.1*), which shows that apart from UABPs there are additional factors that influence the buying behavior of customers. This concept is closely related to the reference price theory. When consumers observe a positive deviation, they are more likely to buy in the future and factors such as internal and external cues (e.g. prices observed at other retailers) will further impact the reference price in addition to the impact the UABPs have.

5.5.2 Retailer Implications from Long-Term Effects of Uniform Across the Board Promotions

As mentioned before, UABPs can help retailers to improve customer satisfaction and loyalty—however they also "mis-educate" customers and might turn them from "*a normal customer of retailer A*" into "*a loyal and happy customer of retailer A but only during times when they are running their Uniform Across the Board Promotions*". Does this mean retailers should always shy away from using this type of promotion: no! But it does mean that the general marketing strategy ought not to be based solely on UABPs, as frequently using them would condition customers in the wrong way and stopping those promotions immediately will have negative effects on sales and likely also on loyalty and satisfaction.

Currently certain sectors are facing a situation, where on-going and frequent use of UABPs in will likely change the long-term shopping behavior of customers up to a point where retailers might not be able to further increase sales "by just using more" UABPs to sustainably win or keep any customers. What does this mean for retail managers? A couple of messages could be distilled:

1. *You can use UABPs for short-term benefits and as tactical measures*: UABPs are a powerful tool for retailers, given how well they perform with customers and there are situations in which using them makes sense. For example UABPs could be used to attract customers that otherwise would not have visited the retailer or retailers could use them for required short-term sales increases (e.g. to generally

clear stock and generate cash). However it is important not get hooked on them and use them with extreme care, as people will adopt their shopping behavior accordingly leading to a downward spiral.

2. *Make UABPs unpredictable, restrictive and inconvenient*: Even when only occasionally using UABPs, shoppers will try to adapt their shopping behavior. Making UABPs unpredictable (e.g. short-term notice, no clear rhythm), inconvenient (e.g. only during certain shopping hours) and restrictive (e.g. only certain customers invited or stores included) will mitigate some of those negative long-term effects and ensures that only the most promotion-prone shoppers (that might otherwise not buy at all) are actually fully adjusting their shopping behavior.
3. *Track the use of UABPs carefully*: Be aware what share of your business is generated during UABPs and know which customers (or at least what share of customers) predominantly shop during UABPs—set yourself clear KPIs to what an acceptable ratio would be and stick to this ratio. Therefore you have to link UABPs to a loyalty program, which again helps you to target specific customer segments for the next UABPs
4. *Mix UABPs with marketing instruments to sustainably win loyal customers*: While shoppers increasingly come to stores during UABPs—retailers should find alternative ways to create loyalty and satisfaction among those customers. Especially during UABPs customer can be convinced by other instruments such as a great assortment, general good price-quality ratio or friendliness of staff, so they do not want to wait for the next UABP—but want to come back sooner.
5. *If you are really addicted—get of them slowly but surely*: As with drugs UABPs will eventually erode your sales and customer base and it is essential to get off them. However in reality it is difficult to cut a major promotion campaign as sales will likely drop sharply. To get off these "drugs" slowly, in addition to doing 2, 3 and 4 as described above, retailers could segment their target customers and retail locations (Chap. 3) to assess in which sub-group or sub-stores UABPs will continue to be run—while steadily decreasing their frequency and substituting them with other types of promotions and advertising.

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Chapter 6
Summary of Results

The aim of this thesis was to introduce a relatively new type of price promotions, Uniform Across the Board Promotions, that have become more and more popular among retailers of various categories. Despite their growing popularity they had not been covered in the marketing literature thus far. In addition to introducing UABPs and putting them in context with the relevant marketing literature and theoretical background, this thesis discussed the impact UABPs have on retail sales as well as consumer behavior and attitude. More specifically, the aim was to answer the following questions:

- How do Uniform Across the Board Promotions affect short-term retail sales and how does this compare to other types of price promotions (Chap. 3)?
- Do Uniform Across the Board Promotions perform better in specific retail settings and if so, what are these? Is this UABP specific or typical for all types of price promotions (Chap. 3)?
- Are there any adjustment effects for UABPs, and if so, what is the net impact of UABPs on retail sales (Chap. 4)?
- Do these adjustment effects change over time or do they remain constant (Chap. 4)?
- Do Uniform Across the Board Promotions also affect long-term baseline sales (Chap. 4)?
- Are there any customer specific characteristics/antecedents that are an indicator for consumers to be more likely to shop during UABPs (Chap. 5)?
- What are the consequences on a household level of individuals participating in UABPs—does this e.g. affect customer satisfaction and loyalty (Chap. 5)?

The data on which the empirical research in Chaps. 3, 4, and 5 was based consisted of:

- Daily store-level sales data of more than 700 retail stores over the period of 2008–2012.
- A detailed marketing plan of the retailer, outlining every single type of promotion and advertising used over the last 4 years.

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- A description of the individual stores including store characteristics (some of which had been researched).
- Transaction data of 20,000 customers having shopped during Uniform Across the Board Promotions.
- An extensive customer survey among ~1,600 customers having shopped during UABPs (and for which transaction data was available).

Methodologically, the data has been analyzed with various statistical methods, namely (1) a hierarchical Bayes model (Chap. 3) to analyze short-term sales effects and impact of store characteristics, (2) a (linear) mixed effects time series model with lead and lag effects (Chap. 4) to analyze adjustment and permanent effects of UABPs, and (3) a confirmatory factor analysis and structural equation model to discuss antecedents and consequences of UABPs (Chap. 5). Section 6.1 aims at summarizing some of the key results from Chaps. 3, 4, and 5, while also providing the core caveats of the research as well as further areas researchers are encouraged to address when discussing UABPs. A more specific summary can be found in Sects. 3.5, 4.5, and 5.5, respectively.

6.1 Summary and Discussion of Results

With regards to the short-term impact of Uniform Across the Board Promotions it was not surprising to find that UABPs have a very strong positive impact on short-term retail sales—stronger than other type of price promotions being used by the retailer. As discussed earlier, there are two likely reasons for the strong increase in overall retail sales. First, the fact that UABPs are not causing any within-store substitution effects, the way other promotions do (Gupta 1988; Sun et al. 2003) and second the increase in flexibility, which reduces the information and transaction costs for the customer (Metha et al. 2003; Stigler 1961). The latter makes UABPs more attractive for customers and hence encourages store switching which in turn positively affects the sales for the retailer.

Furthermore the analysis in Chap. 3 has shown that there are some very specific store characteristics, which favor the impact UABPs have on sales: the strongest influence on the relative performance of UABPs is the *location of the retail store*. The analysis shows that on a relative basis, inner city locations and shopping centers perform much worse than out-of-city locations such as commercial zones and strip malls, which has partly been explained by the theory of information economics. Furthermore, Chap. 3 shows that the average value per article positively influences the success of UABPs, which can be explained using the transaction cost theory. Other tested store characteristics have not been found to significantly impact the success of UABPs.

With regards to adjustment effects, the analysis in Chap. 4 shows that there are significant pre- and post-promotion dips around the sales bump caused by UABPs. These adjustment effects are an indicator for stockpiling and anticipation effects.

Despite sales troughs around the UABPs, the net effect remains strongly positive. The adjustment effects over time decrease, while the positive sales bump of UABPs also decreases; this hints at a general wear-off effect of this type of promotion. This has also been experienced in other settings, where retailers were forced to increase the number of UABP days in order to keep up (elevated) sales levels. Part of this can be explained by behavioral learning and conditioning of the consumer as discussed in Sect. 2.3. Moreover, the analysis shows that the effect Uniform Across the Board Promotions have on baseline sales is negative, which means that the more UABPs a retailer runs (cumulatively) the more their regular baseline sales decrease. This effect can be explained by consumers shifting purchases to UABP periods, which then go missing in regular price periods.

All of the research results outlined above indicate that UABPs can increase sales and can encourage store switching, i.e. taking sales from a competitor. However there is also the notion that there are negative long-term effects and there might be a "natural cap" at which amount additional sales can be lured to a specific retailer, which is shown by the negative effects of cumulative UABPs. Once this cap has been reached (through continuous UABPs) there might be going forward more inter-temporal substitution, i.e. cannibalization, than actual market share gains. This will result in no/lower sales growth and significantly reduced margins as discussed in Chaps. 3 and 4. Overall, this is however an area that requires significantly more research, as the competitive perspective and the profit perspective have not been the focus of this study and would have to be taken into account when further discussing short- and long-term effects of UABPs for the retailer.

In addition to the impact UABPs have on sales, this thesis has also shown that there are certain antecedents that positively impact the likelihood of a household to participate in UABPs. The research has shown, that older, female customers, who shop for a larger household and are more knowledgeable and interested in prices are more likely to shop during UABPs, especially if they possess a car and do not live to far away from the retailer. Interestingly their household income or the amount they spend on fashion (the respective category) did not influence the likelihood to participate in UABPs after all.

Regarding the consequences of UABPs, the data shows, that UABPs have a positive impact on customer satisfaction and customer loyalty, while they do not influence the price image of the retailer. Despite the customers being happier and more loyal though, there is also a clear tendency that these loyal customers only want to visit the store when the next UABP is taking place—hence there is clear evidence for a shift in purchase behavior on a household level.

While all the areas for further research have been discussed before, the three major caveats are (1) store and product characteristics: this research is well applicable to durable goods and particularly fashion, however product characteristics likely have a big impact and researchers should hence be encouraged, to test these results in different settings. (2) The focus and recommendations have only been based on a sales perspective, while initial discussion of a profit perspective has been made in Sect. 3.5. Going forward researchers should extend on this to discuss the impact on retailer's profits during UABPs but also in periods following UABPs.

(3) As mentioned before a general market and competitive perspective will help to discuss how UABPs are affected if competitors react and/or how the conditioning of a customer in one retailer affects her shopping behavior in another retailer.

6.2 Managerial Implications

The managerial implications of UABPs have in detail been discussed in Sects. 3.5, 4.5, and 5.5, so this chapter just aims at providing some highlights:

1. UABPs can be advantageous for retailers in certain settings and situations, and there are times, when they should be considered in the marketing mix. They have a stronger impact on sales than any other type of promotion and could hence, e.g., be used for a de-stockage of inventory or to drive customers to a store. This being said it does not make sense to use them early in the season, to sell "new inventory" at discounted prices, that would have likely also been bought at regular prices, nor does it make sense to try to attract existing customers to the store—focus should be on new customers or at least customers that for a long-time have not visited the store.
2. The long-term impact of UABPs is negative. Research has shown that despite having a positive impact on customer loyalty and satisfaction, customers are conditioned to shift purchases from regular price periods into UABP periods—in the long-run this negatively affects margins and makes the retailer dependent on this type of "promotional drug"—UABPs hence need to be used with extreme care and the behavioral learning process of the customer needs to be made as difficult as possible, e.g. making them unpredictable and in a way also uncomfortable (to only attract the really price sensitive customers).
3. When using UABPs it makes a lot of sense to view them as a marketing investment to attract new customers, while at the same time, the store and customer experience needs to be made impeccable for customers visiting a store for the first time during a UABP, in order for those customers to return to the store in regular price periods. As already discussed in Chap. 5, it goes without saying that the customers that shop during UABPs need to be encouraged to sign up for any type of loyalty program for the retailer to keep in contact with them in order to trigger further visits to the store. Moreover though, they must be carried away by the product and store so the UABPs in that moment become an additional reason to shop at that store—not the primary and only reason. This is potentially what has caused the problems at Praktiker, where at some point in time the UABPs became Praktiker's USP, while other competitors claimed areas such as "great customer service" or "breadth of assortment"—the UABP is not a unique tool to any retailer and hence no retailer should bet its success (or a disproportional share of their revenues) solely on it.

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Appendix A: De-seasonalizing and De-trending of Sales

Step 1: Use a linear time-trend regression model with monthly seasonal dummy variables to predict sales. The dependent variable is sales, the independent variables are 12 monthly dummy variables set equal to one for the respective month and 0 otherwise. Other independent variable is a linear time variable, reflecting same-store-sales growth in the research period

$$S_t^i = T_t^i + D_t^i$$

S_t^i = store sales for store i at time t
T_t^i = store trend for store i at time t
D_t^i = dummy variable D for each month at time t for store i

Step 2: Estimate sales if only seasonal and time-trend would be present, i.e. sales without any influence from promotions or error terms.

Step 3: Deduct sales estimated in step 2 from actual sales for each store to derive de-trended and de-seasonalized sales for each store. Those sales are now only influenced by promotions and error terms and no longer subject to any time trend or seasonal component.

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Appendix B: Survey Results (Antecedents and Consequences of UABPs)

Question	Mean	Median	SD	Included
Sociodemographic information (antecedents)				
How many people are you shopping for at the retailer?	2.59	2.00	1.18	Yes
What is the distance to the next [name of store] outlet (in km)	7.36	5.00	6.54	Yes
For how many years have you been customer with the company (years)	7.85	7.00	4.21	No
How often are you shopping at the retailer (per year)	13.60	10.00	17.86	No
How much are you spending per shopping trip at this retailer (€)	44.86	40.00	29.29	No
How often do you shop at other fashion retailers (per year)	12.22	10.00	13.06	No
How much are you spending per shopping trip at other fashion retailers (€)	45.25	40.00	32.40	No
Gender	95 % female; 5 % male			Yes
Do you have a car (which you can use for your shopping trips)	93 % yes, 7 % no			Yes
Do you shop online for fashion	40 % yes, 60 % no			No
How much money did you spent on fashion last month (€)	111.37	100.00	85.70	Yes
How much money have you spent on fashion online last month (% of total)	26.96 %	0 %	37.29 %	No
How old are you	38.82	40.00	9.80	Yes
What is your monthly income (1 ≤ €1,000; 2 = €1,001–€1,500; 3 = €1,501–€2,000; 4 = €2,001–€2,500; 5 = €2,501–€3,000; 7 ≥ €3,000)	3.01 (€1,501–€2,000)	3.00 (€1,501–€2,000)	1.76	Yes
Due to the UABP I am visiting the retailer more often	5.56	6.00	1.56	No

(continued)

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Question	Mean	Median	SD	Included
I go to the retailer specifically during periods when the UABP takes place	5.48	6.00	1.65	No
The UABP is a main reason why I shop at the retailer	4.65	5.00	1.76	No
If no promotion is offered I am buying fewer things	4.33	4.00	1.77	No
The retailer offers more attractive promotions than other retailers	5.37	6.00	1.32	No
I can buy promoted articles more often at this retailer than at other retailers	5.03	5.00	1.45	No
This retailer offers promotions more frequently than other retailers	5.14	5.00	1.52	No
This retailer offer more attractive promotions than other retailers	5.23	5.00	1.49	No
The UABP offered is a very attractive type of promotion	6.13	7.00	1.25	No
The UABP offered is a more attractive type of promotion than other types of promotions with other retailers	5.47	6.00	1.42	No
Price knowledge and involvement (Likert scale 1 = Strongly disagree, 7 = strongly agree) (antecedents)				
I am very interested in the price of articles and I do compare prices	5.66	6.00	1.42	Yes
I know quite precisely what a similar article would cost at one of the retailer's competitors	4.88	5.00	1.57	Yes
I am very involved regarding my decision on where to buy clothes	4.67	5.00	1.63	Yes
I am often contemplating where to best buy fashion articles	4.68	5.00	1.71	Yes
UABP user intensity (antecedents and consequences)				
Number of UABPs the customer has participated in (from 2008 to 2012)	8.06	7.00	5.03	Yes
Participation rate since first having participated in a UABP (in %)	39.99 %	37.03 %	20.83 %	Yes
Average value of shopping basket during UABP (in €)	34.36	31.45	17.01	No
Average number of articles bought during a UABP	4.33	4.00	1.84	No
Average value of items bought during a UABP	8.05	7.66	2.64	No
Customer who has participated in at least 2 of the last 4 UABPs (1 = for yes; 0 = no)	0.50	1.00	0.50	Yes

(continued)

Question	Mean	Median	SD	Included
Attitude towards the retailer (Likert scale 1 = Strongly disagree, 7 = strongly agree) (consequences)				
I am proud to be a customer of the retailer	4.92	5.00	1.58	No
This brand is a good brand in my opinion	5.28	5.00	1.33	No
Shopping at the retailer makes me feel better	4.45	4.00	1.62	No
Customer satisfaction (Likert scale 1 = Strongly disagree, 7 = strongly agree) (consequences)				
I am very satisfied with the retailer	5.67	6.00	1.19	No
I am satisfied with the quality of the assortment	5.02	5.00	1.24	No
I am satisfied with the selection of the assortment	5.03	5.00	1.28	Yes
I am satisfied with the friendliness of staff	5.62	6.00	1.29	Yes
I am satisfied with the store design	5.35	5.00	1.23	Yes
I am satisfied with the cleanliness of the store	5.71	6.00	1.19	Yes
I am satisfied with the accessibility of stores	5.85	6.00	1.32	Yes
I am satisfied with the availability of parking spaces	6.05	7.00	1.30	No
Price and promotion image of the retailer (Likert scale 1 = Strongly disagree, 7 = strongly agree) (consequences)				
Prices at the retailer are fair	5.49	6.00	1.22	Yes
The retailer is cheaper than comparable retailers	4.86	5.00	1.38	No
The assortment of the retailer is worth its price	5.04	5.00	1.29	Yes
The prices at the retailer are justified	5.09	5.00	1.26	Yes
The quality of the goods justifies their price	4.93	5.00	1.33	Yes
Expected promotion driven change in behavior (Likert scale 1 = Strongly disagree, 7 = strongly agree) (consequences)				
I deliberately buy at times when UABPs take place	5.48	6.00	1.65	Yes
I try to plan my purchases according to when UABPs take place	4.37	5.00	1.91	Yes
I expect to be able to continue to buy at this retailer at reduced prices	5.84	6.00	1.52	Yes
I am not willing to buy any articles at their regular prices anymore	3.51	4.00	1.85	No

(continued)

Question	Mean	Median	SD	Included
Customer loyalty (Likert scale 1 = Strongly disagree, 7 = strongly agree) (consequences)				
I would recommend the retailer to my friends	5.58	6.00	1.32	Yes
I will visit this retailer more often in the future	4.47	4.00	1.40	Yes
I will continue to visit this retailer in the future	6.03	6.00	1.17	Yes