

## A COMPARISON OF PERCEIVED VALUE BETWEEN A PERCENTAGE MARKDOWN AND A MONETARY MARKDOWN

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*Because of the importance of markdowns in driving sales, retailers should have information on whether the promotion of a percentage markdown or a discounted monetary amount will minimize the markdown needed. From a survey of 387 consumers familiar with the products employed as examples, several generalizations emerged about the way in which retailers should express and promote markdowns. For low-priced convenience goods a markdown expressed in percent would minimize the markdown needed. For moderate-priced shopping goods, there is indifference whether a discounted monetary amount or a percentage markdown minimizes the needed markdown. Neither type of markdown offers an advantage over the other. To minimize the markdowns on high-priced specialty goods, retailers should state markdowns in the form of a discounted monetary amount.*

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### INTRODUCTION

Goods that are marked down from their original price are frequently responsible for 30 percent or more of a retailer's sales volume (PR News-wire Assoc. 2002). A retailer's past experience, spreadsheet analyses, and instinct have been used typically to determine the amount and timing of markdowns. Recently, the availability of markdown optimization technology has aided larger retailers, such as J.C. Penney, to make markdown decisions that result in higher gross margins and greater returns on investment. Smaller retailers, however, often do not have access to this technology and must continue to use more rudimentary techniques to select the proper markdown for their goods.

### RESEARCH OBJECTIVE

The objective of this paper is to indicate whether a discounted monetary amount or a percentage markdown with the same dollar value provides an equal incentive to consumers to buy a product. The study attempts to deter-

mine whether consumers over a time lapse are able to equate a percentage markdown to the same markdown amount when it is expressed as a discounted monetary amount. In a study by Grewal and Marmorstein (1994) that considered the reasons for a lack of significant price comparison shopping in the purchase of durable goods, the authors made suggestions for future research. One of the suggestions was that when a markdown is stated in dollars, a study should examine whether consumers attempt to calculate their percentage savings or simply make a relative judgment in determining their price savings.

This study involves products that can be categorized as convenience, shopping, and specialty consumer goods as defined by Kotler (2003). A convenience good is one that is low-priced, purchased frequently and quickly with a minimum of thought. A shopping good is a moderate or higher-priced item for which a customer shops at different venues or among different brands by comparing their various features before purchase. A specialty good is generally a higher-priced product—although price is not the most important consideration in its purchase—that consumers buy after a special shopping effort because of the outstanding reputation of the brand or retailer.

As the retailing marketplace has become more competitive, markdowns have become an essential tool in attracting price-sensitive consumers to a particular store. To attract the attention of shoppers retailers often contrast a reference price which is identified as the list price or manufacturer's suggested price to a lower markdown offer. This offer is often depicted as either a monetary price reduction or a percentage reduction.

### LITERATURE REVIEW

Numerous research studies have been conducted to evaluate the effectiveness of price-comparison ads (Grewal and Compeau 1992; Biswas and Blair 1991). A review of the pricing literature was unable to locate any studies that indicated whether consumers could discern whether a discounted dollar amount had the same value as an equivalent percentage markdown.

The focus of this research is to indicate whether a reduced monetary price or a similar reduction expressed as a percentage markdown is perceived as the better value by consumers. In this study the original price of a product is the reference price against which a markdown offer can be compared.

When a consumer views a dollar markdown and attempts to calculate the percentage savings, Weber's Law of Psychophysics is relevant. This law states that the size of response to a change in a stimulus depends on the proportion by which the original stimulus is changed (Monroe 1971). Although consumers should consider a percentage markdown that is equal to a dollar markdown as similar, the psychological utility that consumers expect to obtain through the calculation may not be worth the mental effort. The dollar savings available from a dollar markdown is readily ascertained while the monetary savings generated by a percentage markdown is more difficult to compute. Instead of making an effort to calculate the exact dollar savings represented by the percentage markdown, consumers may view the percentage

markdown simply as either adequate or inadequate. When the consumer believes the percentage markdown will result in an acceptable selling price, the markdown is deemed adequate.

Several theories that have been cited in pricing studies are central to this paper. Adaptation level theory assumes that the consumers of a product have an internal price that they use to make a comparison of the product's current price (Monroe 1973; Urbany, Bearden and Weilbaker 1988). This internal reference price range results from an adaptation to focal, contextual and organic stimuli (Monroe 1979). Focal stimuli include a retailer's offering price and comparative price offers to which a consumer directly responds. The contextual or background cues are all other behaviorally based stimuli, such as a retailer's image, its pricing practices, and purpose of purchase. Organic stimuli refer to the inner physiological and psychological processes affecting a consumer's purchase behavior. Assimilation-contrast theory as it relates to pricing, hypothesizes that consumers will accept a certain latitude or range of prices for a product (Sherif, Taub and Hovland 1958; Sherif 1963). When the price of a product falls within this range, an assimilation effect occurs causing a consumer to view this price as a realistic one. If, however, the price of a product is beyond this range, a contrast effect takes place and the consumer considers the price to be unrealistic. Lichtenstein and Bearden (1989) state that both the original or reference price and the markdown or sale price may be either assimilated or contrasted. This shows the uncertainty that retailers face in setting prices that are attractive to consumers.

Transaction utility theory divides the total value or utility of a good being considered for purchase into both an acquisition utility and a transaction utility (Thaler 1985). Acquisition utility represents the expected benefit and enjoyment attained from the perceived merits of the "deal" minus the pain of paying for the good. Transaction utility is the satisfaction de-

rived from accomplishing a worthwhile transaction. This type of utility is a function of the actual selling price of the product and the consumer's internal reference price for the product. In order to increase the internal reference price, a good may be initially advertised at a relatively high level. Then, when a lower price is advertised; the perceived value of the transaction to the consumer is increased.

### RESEARCH LIMITATIONS

The respondents were students who, because of their age and income status, have shopped more frequently for lower priced convenience goods than for higher priced shopping and specialty goods. They have frequently purchased potato chips, ice cream, and film that are convenience goods. They may have periodically bought walking shoes and jackets; and, perhaps, they purchased a dresser during their college stay. The probability that they may have purchased an expensive Rolex watch or a BMW 330i car is quite low. Because of their past purchasing experiences, students may be able to provide a realistic assessment of the markdowns for chips, ice cream, film, walking shoes, and jackets. The deep markdowns that the respondents indicated were necessary to motivate them to buy a dresser, Rolex watch, or BMW may represent the deep discounts needed for probable nonpurchasers to even contemplate a purchase. If someone were realistically considering the immediate purchase of these three items, the needed markdowns may have been less.

An additional limitation to this research is based on the inability of the respondents to experience the pricing situation in an actual retailing environment. Price perceptions probably are not independent of the context in which a consumer encounters the offer. Fry and McDougall (1974) and Biswas and Blair (1991) indicate that the consumers' perception of a store's image and its corresponding pricing practices affects their acceptance of comparative price advertisements from the store. Their research suggests that a comparative price advertisement is believed to represent a better

value at a low-price oriented store than at a high-priced store. Because the products and their prices in this study were given to the respondents without reference to any type of retailer, this could limit the validity of the research.

Previous research indicates that those individuals who profess loyalty to a certain brand probably will have a wider latitude of price acceptance for that brand (Lichtenstein, Block and Black 1988). This implies that consumers who exhibit a strong brand loyalty toward a product are more concerned with its benefits and less concerned with its price. In this instance, any markdown from the reference price must be substantial before the consumer even perceives the price. In the present research, Fuji film, Nike walking shoes, a Rolex watch, and a BMW 330i car were brands that were mentioned in the survey questions. Although the Lays and Homemade brand names were not stated in the questions relating to the markdowns for potato chips and ice cream, pictures of a package of Lays Potato Chips and a half-gallon carton of Premium Homemade Ice Cream were positioned next to the questions. The questions relating to a jacket and a bedroom dresser showed only nondescript pictures of unbranded goods.

The Rolex and BMW brands were prominently mentioned so the respondents would have a frame of reference in their consideration of the markdown necessary to entice them to purchase an expensive watch and a luxury car. These items are viewed as specialty goods that are often purchased for the aura of their brand. Nike was referred to in the question because the shoemaker markets various types of athletic shoes that are frequently worn by college students. Many of the respondents probably have shopped for athletic shoes and considered the Nike brand among their choices. Thus, Nike shoes should be a satisfactory representative of a shopping good purchased by students. Fuji film was mentioned in a question because film is usually viewed by consumers as a convenience good and available at many stores.

## RESEARCH METHODOLOGY

This research involved two questionnaires that were administered four weeks apart and completed by 387 juniors and seniors in several Principles of Marketing classes at a midwestern university. Each questionnaire contained a listing of eight consumer products. In one questionnaire, respondents were asked for each product to select the smallest percentage markdown that would motivate him/her to purchase it. For each product, there was a forced choice of ten percentage markdowns—5, 10, 15, 20, 25, 30, 35, 40, 45, 50—from which a respondent could choose. The other questionnaire listed the same eight products, but for each one, a respondent was asked to select a price that represented the smallest monetary markdown that would motivate a purchase. For each product, there was a choice of ten prices that reflected the monetary equivalency of the ten percentage markdowns in the initial questionnaire. These prices were listed in the same sequence as the percentage markdowns, moving from low to high. For example, for a \$3.00 bag of potato chips, a \$2.85 price on the second questionnaire is equivalent to a five-percent markdown on the first questionnaire. A \$2.70 price is equivalent to a ten-percent markdown and so on. To determine the markdown amount in percent when a price is stated monetarily, a respondent must perform a mental calculation.

The items on the questionnaires were selected by a focus group of six students. They determined that potato chips, ice cream, and a four-pack of camera film would be appropriate convenience goods to be included in the survey. Nike walking shoes, a winter jacket, and a bedroom dresser were chosen to denote shopping goods; and a Rolex watch and a BMW 330i sedan were selected as signifying specialty goods. To the left of each question was a picture of the item mentioned in the question. The original retail price listed for potato chips was \$3.00; for ice cream, \$5.00; for film \$10; for running shoes, \$70; for a jacket, \$100; for a dresser, \$400; for a Rolex watch, \$3,000; and for a BMWi sedan, \$40,000. Because monetary

markdowns from odd prices, such as \$2.99 and \$4.99, could be difficult for respondents to mentally transform into percentage markdowns, these prices were not used.

Initially, respondents completed the survey that showed the markdowns in percentages. Four weeks later, the survey, that listed the markdowns as discounted monetary amounts, was presented to the same respondents. The lengthy period of time between the completion of the two surveys should have made any recall of the markdown expressed in the first survey difficult. Each respondent was asked to write the last four digits of her/his social security number on the two survey instruments, so answers on both instruments could be compared. There were, also, spaces on each instrument for the respondents to identify their gender and age.

In order to determine whether a percentage markdown or a discounted price reflecting the same percentage markdown provides an equal incentive to consumers to buy a product the following hypotheses are tested:

- H<sub>1</sub>:** For a convenience good, such as potato chips, ice cream, or film, a markdown that will trigger purchase can be expressed as either a discounted dollar amount or a percentage markdown that has the same dollar value.
- H<sub>2</sub>:** For a shopping good, such as walking shoes, jackets, or bedroom dressers, a markdown that will trigger a purchase can be expressed as either a discounted monetary amount or a percentage markdown that has the same dollar value
- H<sub>3</sub>:** For a specialty good, such as a Rolex watch or a BMW 330i, a markdown that will trigger a purchase can be expressed as either a discounted monetary amount or a percentage that has the same dollar value.

## RESULTS

In reference to the purchase of potato chips, hypothesis H1 is rejected by the analyses which use the paired sample t-test ( $p=.033$ ) and the sign test ( $p=.009$ ). Both tests show statistically significant differences between the two markdown approaches. Respondents indicated the markdown value that would motivate a respondent to purchase was higher when stated as a discounted price rather than a percentage markdown. To motivate consumers to purchase potato chips, a percentage markdown slightly greater than 20 percent is necessary. This is the required markdown that is sufficient to cause at least 50 percent of respondents to make a purchase. The needed discounted monetary amount is closer to 25 percent. Based on a linear interpolation, the necessary percentage markdown is 21.2 percent while the monetary markdown is an equivalent 23.3 percent. (Figure 1)

For the purchase of ice cream, hypothesis H1 is rejected by the analyses using the paired sample t-test ( $p=.012$ ) and the sign test ( $p=.048$ ). The tests indicate there are statistically significant differences between the two markdown methods. In this instance, the markdown needed was greater when stated as a discounted monetary value rather than a percentage markdown. A percentage markdown slightly more than 20 percent is the markdown that is required to cause a minimum of 50 percent of respondents to make a purchase. On the other hand, the needed discounted monetary amount is greater than 25 percent. A linear interpolation indicated that the required percentage markdown is 22.9 percent while the necessary discounted monetary amount is an equivalent 25.6 percent. (Figure 1)

In regard to the purchase of film, hypothesis H1 is accepted by the analyses which use the paired sample t-test ( $p=.687$ ) and the sign test ( $p=.863$ ). Respondents disclosed the markdown value was similar whether stated either as a discounted monetary amount or a percentage markdown. A percentage markdown or a dis-

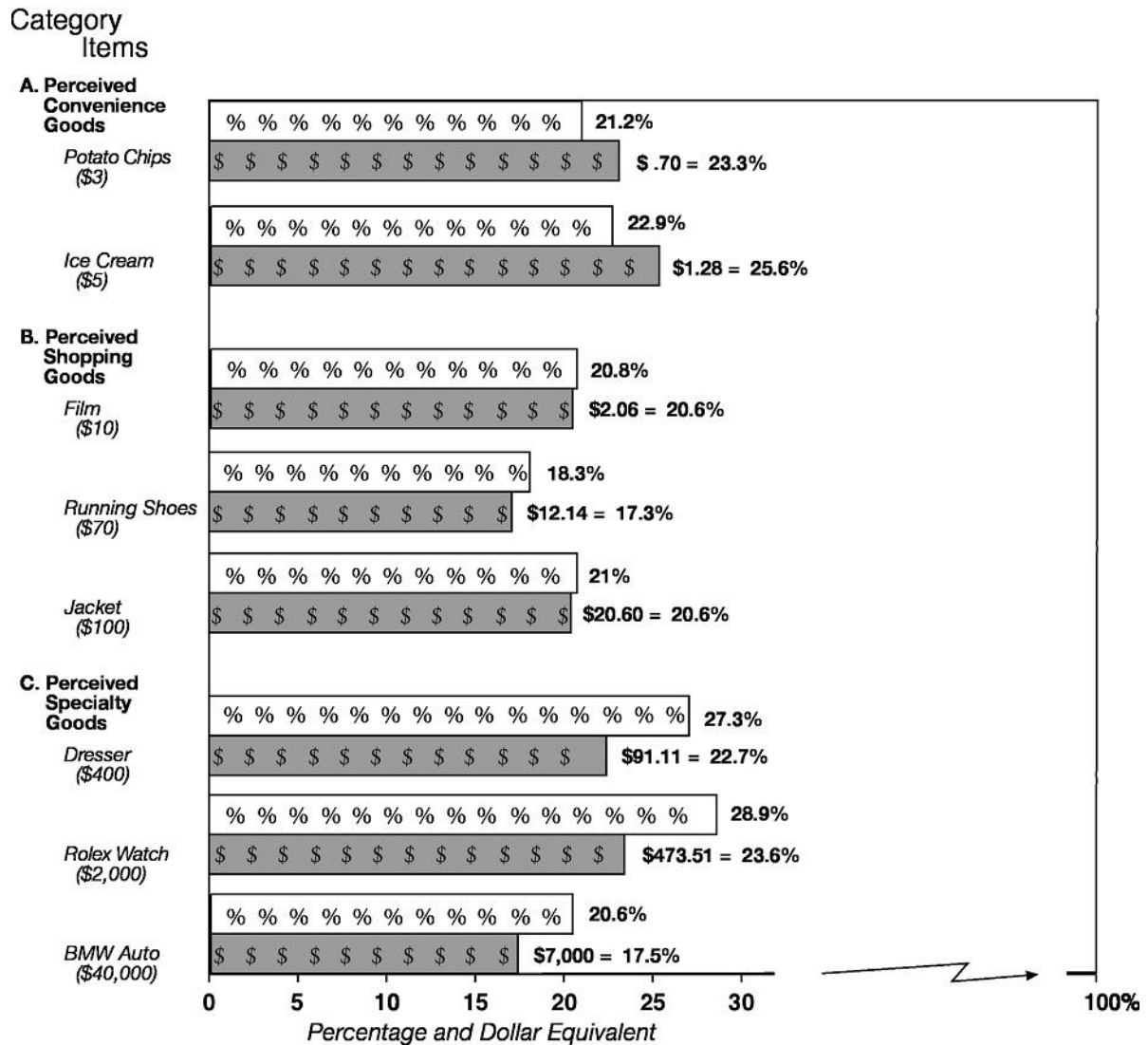
counted price that is greater than 20 percent is essential to cause at least 50 percent of respondents to make a purchase. Calculated by a linear interpolation, the required percentage markdown is 20.8 percent and the necessary discounted monetary amount is an equivalent 20.6 percent. (Figure 1)

For the purchase of walking shoes, hypothesis H2 is accepted by the analyses which the paired sample t-test ( $p=.812$ ) and the sign test ( $p=.955$ ). Respondents indicated the markdown value was the same whether stated as either a discounted monetary value or a percentage markdown. A percentage markdown or a discounted monetary price that exceeds 15 percent is needed to motivate 50 percent or more of respondents to make a purchase. A linear interpolation disclosed that the necessary percentage markdown is 18.3 percent while the required discounted monetary amount is an equivalent 17.3 percent. (Figure 1)

In reference to the purchase of a jacket, hypothesis H2 is accepted by the analyses which use the paired sample t-test ( $p=.982$ ) and the sign test ( $p=.953$ ). Respondents indicated the markdown value was similar whether identified as a monetary markdown or a percentage markdown. A markdown or a discounted price larger than 20 percent is required to cause at least 50 percent of respondents to make a purchase. Based on a linear interpolation, the required percentage markdown is 21.0 percent while the necessary discounted monetary value is an equivalent 20.6 percent. (Figure 1)

For the purchase of a bedroom dresser, hypothesis H2 is rejected by the analyses using the paired sample ( $p=0$ ) and the sign test ( $p=.000$ ). Both tests reveal statistically significant differences between the two markdown approaches. Respondents indicated the markdown value was lower when stated as a discounted price rather than a percentage markdown. To motivate consumers to purchase a dresser, a percentage markdown greater than 25 percent is essential to cause at least 50 percent of respondents to make a purchase. However,

**FIGURE 1**  
**Discount Required to Trigger Purchase Decision by Majority of Respondents**



when stated as a discounted monetary value, a markdown of only slightly more than 20 percent is necessary. According to a linear interpolation, the required percentage markdown is 27.3 percent while the required discounted monetary amount is an equivalent 22.8 percent. (Figure 1)

In regard to the purchase of a Rolex watch, hypothesis H3 is rejected by the analyses which use the paired sample t-test ( $p=.007$ ) and the sign test ( $p=.033$ ). These tests show statistically significant differences between the two markdown procedures. Respondents indicated the markdown value was lower when shown as a discounted price rather than a percentage markdown. A markdown greater than 25 percent is needed to cause at least 50 percent of respondents to make a purchase. Similarly, the discounted dollar amount required is less than 25 percent. Based on a linear interpolation, the necessary percentage markdown is 28.9 percent while the requisite discounted monetary value is an equivalent 23.7 percent. (Figure 1)

For the purchase of a BMW 330i, hypothesis H3 is rejected by the analyses using the paired sample t-test ( $p=0$ ) and the sign test ( $p=.006$ ). Both tests indicate statistically significant differences between the two markdown methods. Respondents indicated the necessary markdown value was lower when indicated as a discounted price rather than a percentage markdown. A percentage markdown greater than 20 percent is needed to motivate at least 50 percent of respondents to make a purchase. However, the required discounted price is just slightly more than 15 percent. A linear interpolation revealed that the needed percentage markdown is 20.6 percent while the requisite discounted monetary amount is an equivalent 17.5 percent. (Figure 1)

### IMPLICATIONS AND CONCLUSION

Respondents indicated that to motivate them to purchase potato chips and ice cream, which are viewed as convenience goods, a markdown expressed and promoted in percent by retailers

could be less than one expressed as a price discounted by an equivalent percentage amount. In regard to the purchase of film respondents indicated that a percentage markdown or a discounted price of the same percentage markdown value was equally satisfactory in causing respondents to buy. A similar indifference as to how a markdown is expressed is reported for walking shoes and jackets, which are generally considered shopping goods. Because respondents treated the markdown scenario for a four-pack of Fuji film the same as for shoes and jackets, they possibly viewed Fuji film as a shopping good. According to a brand survey by Leo J. Shapiro and Associates, Kodak is the most popular film, desired by 64 percent of all film purchasers. Fuji is the first choice of only 11 percent of consumers, indicating some unfamiliarity with the brand. If the question had stated Kodak rather than Fuji film, respondents may have viewed the necessary percentage markdown and the needed price discount in the same context as shown for potato chips and ice cream.

For a bedroom dresser, a Rolex watch, and a BMW 330i car a percentage markdown that is greater than a comparative discounted price is more effective in prompting respondents to buy the products. Because a dresser is an infrequently purchased good and carried a \$400 price—a high price for most college students, many respondents probably considered it a specialty good.

This research should alert retailers that to minimize the markdown for a particular good they should consider whether the markdown should be promoted as a percent or a discounted monetary amount. This study indicates that the way the markdown is expressed can influence the amount of markdown needed to motivate consumers to purchase goods. Although any statements about how to express markdowns is based on the observation of only a few products, certain generalizations about markdowns may be applicable. For inexpensive convenience goods retailers may be able to minimize their markdowns by stating them in percent-

ages. For moderately-priced shopping goods consumers are indifferent whether markdowns are promoted as a percent or a discounted price that reflects an equivalent percentage markdown. Either kind of markdown will be equally effective in motivating a purchase.

Respondents indicated that retailers could minimize their markdowns on specialty goods by stating the markdowns in terms of a discounted price. For the higher-priced specialty goods the respondents apparently perceived a significant discounted dollar price as a greater price reduction than its equivalent percentage markdown. Although the respondents may not have had any experience in purchasing high-priced goods such as a Rolex watch or a BMW car, their responses may reflect the behavior of many consumers. For a higher priced good consumers may perceive a monetary markdown shown as a discounted price to be more meaningful than an equivalent percentage markdown. For example, for a product priced at \$10,000 a \$9,000 price that represents a \$1,000 markdown appears more significant than when stated as a ten percent markdown.

### FUTURE RESEARCH

This research was limited to eight different products categorized into convenience, shopping, and specialty goods. Numerous other products in each of the three categories of goods could be studied to determine whether the findings of this study are valid. Some of the products in this research were clearly identified by their brand while for others the brand was not mentioned. Future research could include a study of the way to express a markdown necessary to motivate consumers to buy a popular branded product as compared to the type of markdown needed to prompt them to purchase an unfamiliar brand. Prior to asking a respondent about the necessary markdown for a product, a respondent could be queried if he/she had purchased or is contemplating the purchase of the product. This would add a greater sense of reality to the response.

Studies similar to this one could be directed to individuals in different age groups or life cycle stages. For example, do 40-year olds and 60-year olds respond similarly to markdowns; and do empty nesters and couples with children at home view markdowns in the same manner? Because the present study indicated there was no significant difference between the responses by men and women, this aspect of the study was not elaborated. For goods that appeal more to one sex, however, the manner in which markdowns are expressed could differ between the sexes. These comments indicate that a rich area of additional research can be pursued on whether markdowns could be minimized by expressing them in percentages or discounted monetary amounts.

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