

Advertising Effects on Consumer Welfare: Prices Paid and Liking for Brands Selected

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Abstract

The effect of advertising on consumer welfare has been the subject of dispute among economists, arising largely from disagreement among scholars regarding the persuasive versus the informative role of advertising. This paper reports two experiments that explore the welfare implications of advertising effects. Experiment 1 shows that the same advertisements can either increase or decrease prices paid for selected brands, depending on the degree to which the choice situation requires brands to be recalled in order to be considered. However, an increase in prices paid caused by advertising does not necessarily imply detrimental effects on consumer welfare. Experiment 2 shows that, even under circumstances in which differentiating advertising leads consumers to select brands with higher average prices, it can provide useful information to consumers that allows them to make purchases that are more in line with their personal tastes than are the choices of consumers not exposed to the advertisements.

Economic and welfare effects of advertising have received extensive scrutiny by economists. However, researchers continue to make opposing predictions that appear to be derived from two conflicting theoretical views on whether advertising is primarily a source of market power or information. The first model emphasizes the ability of advertising to create “artificial” product differentiation, which lowers the price elasticity of demand and leads consumers to be price takers unwilling to switch from their favorite brands to less expensive alternatives (Bain, 1956; Comanor and Wilson, 1974, 1979). The second model stresses that advertising provides information about alternatives and promotes competition. In so doing, advertising actually increases price elasticity and lowers prices (Telser, 1964; Nelson, 1974). The market power school has been seen as implying that advertising has negative effects on consumer welfare, while the information school is seen to imply positive effects of advertising.

The empirical evidence on these issues has been mixed. Some authors report empirical findings consistent with the market power view of advertising (Comanor and Wilson, 1974; Krishnamurthi and Raj, 1985; Lambin, 1976; Boulding, Lee, and Staelin, 1994), while other studies find support for the information view (Benham, 1972; Cady, 1976; Eskin and Baron, 1977; 1984; Kanetkar, Weinberg, and Weiss, 1992; Wittink, 1977). Several aspects of these studies make it difficult to reconcile the conflicting evidence and draw general conclusions about the economic effects of advertising.

In a recent paper (Mitra and Lynch, 1995) we examined the effects of advertising on price elasticity and identified the two conflicting perspectives as parts of a generalized theoretical model of advertising effects on price elasticity at the level of the individual consumer. In our framework, we explicitly considered two roles of advertising that mediate its effects on price elasticity. First, advertising differentiates between brands in real or illusory ways, increasing the relative strength of preference of some brands over others. Second, advertising enhances memory for brand names, and this increases the size of the consumer's consideration set. Results of an experiment conducted to test theoretical predictions based on our model showed that the effects of advertising on consumer price elasticity depends on the choice situation. In particular, we found that for choice situations in which point-of-purchase information dictates what options are considered—making advertising's effect on brand-name recall superfluous for consideration set formation—advertising decreased price elasticity. This result is in accordance with the market power view of advertising. We also found that support for the information view of advertising; for choice situations in which advertising's effect on brand name recall for inclusion in the consideration set was relevant—because brands had to be remembered to be considered—the net effect of advertising was to increase price elasticity.

The goal of this paper is to contribute to the debate on the economic effects of advertising by focusing on the welfare implications of advertising effects. The two experiments reported here jointly explore the issue of consumer welfare in terms of the price paid compared with the utility from purchase. For simplicity, we compare the case in which *all* brands advertise to the case in which *none* of the brands engage in advertising. Experiment 1, described below, demonstrates that the same ads that increase purchase prices in some choice situations reduce purchase prices in other situations. Experiment 2 shows that even advertising that increases prices paid, apparently consistent with the market power view, can provide information that allows consumers to make choices that provide greater utility than choices made in the absence of advertising.

1. Experiment 1

One of the most controversial issues in the economics literature concerns the effects of advertising on actual price levels (Farris and Albion, 1980). While some studies suggest that advertising lowers prices (Benham, 1972; Cady, 1976), and other studies show that advertising increases prices (Farris and Reibstein, 1979), they all rely on aggregate market-level data. Based on this evidence, it is difficult to assert that advertising and prices are *causally* linked. Therefore, in Experiment 1, we examined the causal relationship between advertising and prices paid by the individual consumers for brands selected from a set of imperfect substitutes. Supplier pricing and advertising are exogenous in our study. We focus on how advertising affects consumers' willingness to avail themselves of price deals on substitutes.

Consumers' price sensitivity influences the prices that they are willing to pay for products; therefore, we expected that the theoretical predictions for advertising effects on purchase price would be very similar to the pattern of effects that we had hypothesized for

price elasticity. In this context, two roles of advertising are important: advertising affects prices paid due to its effects on (1) perceived differences among competing brands and (2) the number of brands considered for purchase (consideration set size).

First, the price paid by the consumer for a particular brand is affected by the perceived differences among brands considered. Advertising provides preference-relevant information that differentiates between competing brands. The more the differential preference for some brands over others as a result of advertising, the greater is the willingness of the consumer to pay a higher price for those preferred brands. As discussed in more detail in the method section, we varied the amount of preference-relevant information contained in “differentiating” and awareness” ads to examine the differentiating role of advertising.

Additionally, the price paid for a particular brand is a function of the set of brands that are considered for choice. Larger consideration sets lead to a greater number of effective substitutes and lower prices paid. Advertising effects on the set of brands considered depends on the extent to which the consideration set is generated from memory versus external cues in the environment. If the consumer has to rely on memory for generating the set of brands to be considered for purchase, advertising can increase consideration set size by enhancing recall of brand names. In this situation, in addition to differentiating among competing brands (as suggested in the previous paragraph), advertising serves an important reminder function. In contrast, if consideration sets are largely determined by point-of-purchase factors available in the choice environment, advertising’s role in increasing consideration set size (by making brand names more salient) will be relatively superfluous. Thus, while its differentiating function is still relevant, advertising’s potential to enhance consumer memory for brands is irrelevant. As detailed later, we examined the reminder role of advertising by manipulating the relative importance of memory versus external cues for the generation of brand names for consideration.

In sum, the effects of advertising on prices paid is a function of two opposing forces: (1) ad-induced increases in consideration set size, which tend to lower prices, and (2) ad-induced increases in differential preference for some brands, which lead to higher prices. The net effect of advertising (whether increase or decrease) on prices paid depends on the relative strength of these forces. We varied the relative strength of these two competing forces and made the following predictions regarding the net effects of advertising:

Hypothesis 1: In a choice situation where advertising differentiates but its reminder role is superfluous for consideration set formation (“recall-superfluous”), advertising by all brands will increase average purchase price compared to a case in which no brands advertise.

Hypothesis 2: In a choice situation where advertising differentiates and also serves a reminder role (“recall-relevant”), advertising by all brands will lead to a smaller increase—and perhaps a decrease—in average purchase price, compared to a case in which no brands advertise.

Hypothesis 3: All else equal, the more the differentiating information contained in advertising, the greater the average purchase price. Thus, differentiating advertising by all brands will lead to a higher average purchase price than would awareness advertising by all brands.

1.1. Design and Procedure

The participants were 191 students enrolled in an introductory marketing course, who received course credits and \$3.00 in candy of their choice for participating in the study. All subjects participated in a two-day computer-based shopping experiment in which they made choices from among twelve real brands of Canadian candy bars. The design was a 2×3 factorial, with choice situation (recall-relevant/recall-superfluous) and advertising condition (differentiating/awareness/no ads) as between-subjects factors. Subjects were randomly assigned to one of the six cells of the design. Further details on the procedure are available in Mitra and Lynch (1995).

In the first session, all subjects were exposed to (mildly) differentiating product package information (such as weight and ingredient list) about twelve brands of Canadian candy bars. Then, subjects saw advertising for these brands. Subjects in the differentiating advertising condition were shown twelve thirty-second television commercials that provided information on brand attributes not available in the product package information that they had seen earlier. Subjects in the awareness advertising condition saw twelve slides that displayed the package, the product, and the brand name; these slides were taken from a frame in the corresponding television commercial. Subjects in the no advertising condition did not see any ads.

In the second session, all subjects took part in sixteen different shopping trips for the candy bars with prices of the twelve brands varying over shopping trips. They were informed that they had \$3.00 to spend on each shopping trip and that they would actually receive the candy bars that they purchased on one of the sixteen trips. Before going on these shopping trips, subjects in the awareness and differentiating advertising conditions were reexposed to the same ads they had seen before. During the shopping trips, subjects in the recall-superfluous choice condition were given a list of the twelve candy bar names that they could use to decide the brands for which they wanted price information. Subjects in the recall-relevant choice condition did not have access to this list and therefore had to recall brand names from memory. On every shopping trip, subjects could search for price information on any and all brands they wished prior to allocating their budget of \$3.00 among candy bars of their choice.

1.2. Dependent Variables

The average purchase price was calculated at the individual subject level by averaging the purchase prices for each of the twelve brands over the sixteen shopping trips. Each brand was sold at its high price for eight of the sixteen shopping trips and at its low price for the remaining trips, with prices of the twelve brands varying orthogonally across the sixteen trips. High and low prices of the twelve brands varied, ranging between thirty-five and seventy cents. Pricing schedules were identical across the experimental conditions. Interest centers on how advertising changes consumers' propensity to demand certain preferred brands at high prices rather than opting for cheaper substitutes.

1.3. Results

Cell means are presented in Table 1. Results indicate that there were significant main effects of choice situation, $F(1, 95) = 5.78, p < .02$, and advertising condition, $F(2, 95) = 2.48, p < .07$, and a significant advertising x choice situation interaction, $F(2, 95) = 4.79, p < .01$.

1.3.1. Effects of Advertising (Versus No Advertising). Hypotheses 1 and 2 predicted that the effect of advertising (versus no advertising) would vary by choice situation. A planned interaction contrast revealed that the effect of advertising (differentiating and awareness advertising versus no advertising) was opposite in direction in the two choice situations $F(1, 95) = 8.23, p < .005$. Consumers in the recall-superfluous choice situation paid higher prices on average given advertising than given no advertising, $F(1, 95) = 5.33, p < .02$. In contrast, in the recall relevant situation, average purchase prices were marginally lower given advertising than given no advertising. $F(1, 95) = 3.06, p < .08$. Thus Hypotheses 1 and 2 were supported.

1.3.2. Effects of Awareness Versus Differentiating Advertising. A planned contrast pooling across choice situations showed that consumers paid higher average prices following exposure to differentiating advertising than following exposure to awareness advertising, $F(1, 95) = 4.82, p < .015$. This effect did not depend on the choice situation, $F(1, 95) = 1.29, p > .25$. Thus Hypothesis 3 received support in the study.

Hypotheses 1 and 2 involved comparisons of the no advertising condition to the average of the differentiating and awareness advertising conditions. Separate comparisons of awareness (differentiating) advertising conditions with the no advertising condition provide additional insights on the effects of advertising. An interaction contrast showed that the effect of awareness advertising (versus no advertising) differed in the two choice situations $F(1, 95) = 9.39, p < .003$. In the recall-superfluous choice situation, average prices were marginally higher given awareness advertising than given no advertising, $F(1, 95) = 2.63, p < .06$. However, in the recall-relevant situation, exposure to awareness advertising resulted in significantly lower average prices compared to the no advertising condition, $F(1, 95) =$

Table 1. Mean purchase price.

Advertising Condition	Choice Situation		Marginal Means
	Recall Superfluous	Recall Relevant	
No Ad	\$0.462 ^a (32)	\$0.494 ^a (32)	\$0.478
Awareness Ad	\$0.476 (32)	\$0.471 ^b (32)	\$0.473 ^c
Differentiating Ad	\$0.482 ^b (32)	\$0.491 (31)	\$0.486
Marginal Means	\$0.474	\$0.486	

Note: Cell sizes are in parentheses.

- Significant difference from average of awareness and differentiating conditions in same choice situation ($p < .04$).
- Significant difference from the no advertising condition in same choice situation ($p < .005$).
- Averaged across choice situations, significant difference from differentiating condition ($p < .005$). Difference between awareness and differentiating does not differ across choice situations ($p > .25$).

7.35, $p < .004$. When consumers were exposed to differentiating advertising, a somewhat different pattern of effects was observed; the effect of differentiating advertising (versus no advertising) was marginally different in the two choice situations $F(1, 95) = 3.62$, $p < .06$. In the recall-superfluous choice situation, differentiating advertising resulted in significantly higher average prices compared to the no advertising condition, $F(1, 95) = 5.65$, $p < .009$, but in the recall-relevant choice situation, average prices were no different given exposure to differentiating advertising than given no advertising, $F(1, 95) < 1$.

1.4. Discussion

Experiment 1 examined the causal relationship between advertising and purchase price, which has been debated in the literature on advertising's economic effects (Comanor and Wilson, 1979; Farris and Albion, 1980). In our laboratory investigation of this issue, we found support for both schools of economic thought. We found that for choice situations in which the effect of advertising on brand recall was superfluous, advertising *increased* the average purchase price, in accordance with the market power perspective. As predicted, differentiating advertising resulted in higher prices than did awareness advertising.

We also found support for the argument of the information school that advertising lowers prices. This was true for choice situations in which advertising's role in enhancing brand recall for inclusion in the consideration set was relevant. In these situations, the overall effect of advertising was to *decrease* purchase price. Even here, advertising performed a differentiating function, which tended to neutralize the brand-recall based effect. This neutralizing effect of advertising was stronger for differentiating advertising than for awareness advertising, as is evident from the differences obtained between the two advertising conditions. Compared to the no advertising condition, while average prices given differentiating advertising were no different, prices were actually lower given awareness advertising.¹

2. Experiment 2

The information school argues that advertising enhances consumer welfare. In Experiment 1, it seems likely that in the recall-relevant condition, advertising made consumers better off by enabling them to purchase brands that they perceived as attractive at lower prices. In contrast, the market power school argues that advertising leads consumers to be price takers for their ad-induced preferred brands, and it is not clear that consumers receive additional utility for the price premia they pay when they refuse to switch to take advantage of deals on less favored alternatives (Comanor and Wilson, 1979). In our research, we observed that when the effects of advertising on brand name recall for consideration set formation were superfluous, advertising increased purchase prices. The market power view would argue that this occurred because advertising leads consumers to value and therefore pay a premium for differentiating attributes that would otherwise be seen as trivial; therefore, advertising has detrimental effects on consumer welfare. This interpretation of the results of Experiment 1 is consistent with the logic adopted by Benham (1972) and assumes that if advertising increases prices, consumers are necessarily worse off (and they are better off if advertising decreases prices).

However, even if advertising-induced differentiation leads consumers to pay higher average prices, the implications for welfare may nonetheless be positive. Rosen (1978) asserts that advertising helps match brands and consumers in the presence of dispersion of product attributes among brands and heterogeneity of preferences among consumers. In other words, advertising provides attribute information that allows consumers to concentrate search efforts on their most preferred brands and thereby enables consumers to make choices that more closely conform to their personal tastes than would be true in the absence of advertising.

In this experiment we tested Rosen's thesis by closely replicating two conditions out of the six cells from Experiment 1. Subjects either saw no advertising or differentiating advertising and then made choices in a recall-superfluous choice situation in which they had access to a list of all brands that could be chosen. Following Rosen's (1978) logic, we expected that information conveyed in differentiating advertising would enable consumers to better match brand names with attributes and thereby allow them to choose brands that more closely conformed to their personal tastes than would be true without advertising. Thus,

Hypothesis 4: Exposure to differentiating advertising will lead consumers to choose brands that are more closely related to their personal tastes than will no exposure to advertising.

2.1. Method

2.1.1. Design and Procedure. One hundred and thirty-six undergraduate business students from an introductory marketing class participated for extra course credit. Subjects reported to the experiment and saw the same differentiating product information that was given to all subjects at the outset of Experiment 1. Subjects then viewed the television ads for six of the twelve brands that were used in Experiment 1. These ads had been randomly split into two sets that we shall call A and B. Half the subjects saw the tape for the six ads from Set A, with a second exposure immediately after the first. The other half of the subjects followed the same procedure but were exposed twice to the ads from Set B. Subjects were randomly assigned to these two groups.

Immediately following the advertising exposure, all subjects were given an order form that listed the six brands from set A and were told that they should check off one of the brands that they would like to receive as a reward for participation. Therefore, for half of the subjects, the choice set corresponded to the brands seen in earlier advertising (differentiating-ad condition). The other half made choices without having seen ads pertinent to the choice set (no-ad condition). This yielded a simple two-group between-subjects design.

After subjects had filled out their order forms, they were given a blind taste test in which they were asked to rank six unmarked candy bars in terms of preference. These unmarked bars were actually the same bars from Set A that had been included in the choice set. Interest centered on where they ranked the sample of the brand they had ordered earlier. After completing the blind taste test, subjects were given a list of the six brand names and were asked to match the unmarked samples of candy with the appropriate brand names.

2.1.2. Dependent Variables. The primary dependent variable was the blind taste-test ranking of the chosen candy bar (1 = ranked the candy bar chosen earlier first out of 6; 6 = ranked

the chosen candy bar sixth out of 6). The number of samples correctly identified by subjects (0 = none matched correctly; 6 = all 6 matched correctly) served as a manipulation check.

2.2. Results

2.2.1. Taste-Test Ranking of Chosen Candy Bar. Chance performance would lead subjects to choose brands that ranked, on average, 3.5 out of 6. Results showed that in the no-ad condition, choices were not significantly better than chance ($M = 3.31$, $s.d. = 1.90$), $t(67) = -0.83$, $p > .20$. However, subjects in the differentiating-ad condition made choices that were significantly more attractive than chance ($M = 2.75$, $s.d. = 1.77$), $t(67) = -3.50$, $p < .001$, and marginally better than those of subjects in the no-ad group, $t(134) = 1.78$, $\omega^2 = .02$, $p < .08$, consistent with Hypothesis 4.

2.2.2. Number of Samples Correctly Identified. Chance performance would correspond to correctly matching one out of six samples with its appropriate brand name. Both the no-ad group ($M = 2.65$) and the differentiating ad group ($M = 3.87$) performed far above this standard, $t(67) = 9.62$ and 16.74 , respectively, $p < .001$. However, performance was significantly better for subjects who had been exposed to differentiating advertising, $t(134) = 5.04$, $\omega^2 = .16$, $p < .001$, suggesting that the manipulation operated as expected. The above-chance performance of the no-ad subjects rules out the possibility that they chose brands with chance levels of attractiveness simply because they had failed to retain any differentiating information about the brands.

2.3. Discussion

One of the key points of economic debate on advertising concerns the following question: does advertising enhance consumer welfare by providing information that enables consumers to buy brands that are in line with their personal tastes? Or does it artificially differentiate brands on the basis of trivial attributes and persuade consumers to purchase products even when priced higher, reducing consumer welfare? Results of Experiment 2 suggest that advertising need not always decrease consumer welfare, as predicted by the market power view. In conditions nearly identical to those in Experiment 1 that showed differentiating ads increased prices paid, we showed that the same ads had countervailing, socially beneficial consequences. Attribute information conveyed in differentiating advertising helped subjects make choices that more closely conformed to their personal tastes than did the choices of subjects not exposed to such advertising, consistent with the theoretical speculations of Rosen (1978).²

We cannot say whether the benefits of differentiating advertising in terms of promoting ability to choose higher-utility brands outweigh the negative effects shown in Experiment 1—higher average price paid. Moreover, our results are clearly a function of the particular set of ads we employed. Our differentiating ads had enough real attribute information—

such as type of filling, nuts, type of chocolate—that they helped people choose in line with their personal tastes. It is obvious that some differentiating advertising simply highlights illusory differences among parity products (Hoch and Deighton, 1989; Resnik and Stern, 1977; Stern, Krugman, and Resnik, 1981) and could persuade consumers to buy brands that are not in line with their personal definitions of quality. Nonetheless, Experiment 2 does allow one to conclude that even differentiating advertising (that leads to higher prices) *can* serve as a socially useful source of real information and help consumers make choices that represent higher levels of utility.

We view Experiment 2 as a demonstration experiment, as we suspect that we could have produced the opposite result by choosing different ads or a different product class. Past research has demonstrated that specious claims by a single advertiser can lead consumers to choose irrationally (see Carpenter, Glaser, and Nakamoto, 1994; Heath et al., 1995). If specious claims are effective, all brands would make them. More research is needed on the consequences when all brands simultaneously proffer speciously differentiating ads.

3. General Conclusions

This research investigated advertising effects on consumer welfare. Through the two experiments reported in this article, we have attempted to develop insights into the informative versus persuasive roles of advertising that have been central to the debate in the economics literature.³ Our studies support the view that advertising does have some economic value. Experiment 1 showed that for product markets in which consumers have to rely on memory to generate brand names for consideration (Alba, Hutchinson, and Lynch, 1991; Nedungadi, 1990), the effects of increased advertising by brands may be to decrease the average price of brands selected, as predicted by the information school. But when consumers rely on point-of-purchase information rather than memory to generate brands for inclusion in the consideration set, the net effect of increased advertising by brands will be to increase prices paid. However, while such an increase in prices caused by advertising is consistent with the market power argument, it does not necessarily imply negative effects on consumer welfare. Experiment 2 showed that even in such circumstances, advertising may provide useful information that allows consumers to make choices more in line with their personal tastes than would be possible without advertising.

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Notes

1. The awareness and differentiating ads differed on dimensions other than their ability to remind or differentiate among brands. While we recognize this limitation, at present it is not obvious that any such confounded dimension might provide a plausible rival explanation for the entire pattern of results obtained in our research.
2. Since attribute information in advertising made it easier to identify the brands, one cannot rule out dissonance reduction as an alternative explanation for the observed result that subjects' chosen brands scored higher on the taste test.
3. The differentiating effect of advertising that was obtained in this research might be somewhat magnified because subjects had no prior knowledge or experience with respect to the candy bar brands. More accessible and diagnostic prior knowledge reduces the impact of new information (Alba, Hutchinson, and Lynch, 1991).

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