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This report has been prepared by staff members of the Bureau of Economics of the Federal Trade Commission. The views expressed do not necessarily reflect the views of the Commission or any individual Commissioner.

ACKNOWLEDGEMENTS

We would like to thank J. Howard Beales, III, who reviewed this paper for the Bureau of Economics, for his many helpful suggestions. We also gratefully acknowledge the valuable comments received from Jerry Butters, Timothy Daniel, Pauline Ippolito, David Kaplan, James Lacko, Alan Mathios, Paul Pautler, and Louis Silversin. In addition, Lynn Carpenter, Bernadette Harmon, Tammy John, Delores Munson, Susan Painter, Carolyn Samuels, Stefano Sciolli, Helen Small, Pam Wells, and Cheryl Williams deserve special credit for their valuable assistance in data collection and compilation. The analyses and conclusions set forth are those of the authors, however.

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ABSTRACT

This report presents empirical evidence on the likely consumer injury associated with department store reference pricing, a common pricing strategy in which "sale" prices are contrasted prominently with "regular prices" in newspaper advertising. Based on data collected for the Washington D.C. area, the study concludes that although the "regular" prices claimed by department stores are higher than consumers would likely find elsewhere, the so-called "sale" prices are generally quite competitive. For seven of the twenty electronics and houseware items sampled in the study, the department store sale price was as low or lower than the lowest price that could be found. There were only two instances in which the department store sale price was more than ten percent above the average price of competitors, and, when averaged over all items, department store sale prices were about four percent below the average prices of competitors.

INTRODUCTION

No one who reads the newspaper can fail to note the regularity with which retailers conduct "sales", be they "spring sales", "anniversary sales", "closeout sales", "fix-up sales" or "moonlight madness blow outs". Whatever the occasion, whatever the type of store, most newspaper price advertising by retailers is conducted within the context of a "sale".[1]

Is a "sale" a sale? Are "special" prices really lower than a retailer's "regular" prices? Regulators have been worrying about such questions for decades. In fact, the very first volume of legal decisions by the Federal Trade Commission (FTC) included a case against a manufacturer for deceptive pricing. That was in 1919. By the late 1950s the FTC was filing dozens of complaints and orders each year involving deceptive pricing.

Although the number of FTC deceptive pricing cases declined during the 1970s and 1980s, interest in the deceptive pricing area continues today. In fact, a rather extensive academic literature has developed on the subject, particularly in the field of marketing research. As noted in more detail below, this literature for the most part explores consumer interpretation of various forms of reference price advertising. The results of such research could be useful in gauging whether consumers might be misled by reference price advertising and whether they rely on misleading comparisons in making shopping and purchase decisions. Whatever the benefits of this research, there has been almost no empirical work, such as systematic comparison price surveys, that examines the magnitude of consumer injury that could be caused by reference claims

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[1] A detailed analysis of the advertising appearing in the Washington *Post* on June 14, 1991, revealed that 93 percent of the space devoted to price advertising was occupied by ads referencing a special sale. See page 13, below, for a more detailed discussion.

assuming that consumers rely on the claims and purchase the items in question from the advertiser rather than a competitor.

In this paper we attempt to remedy this deficiency by presenting empirical evidence on the likely consumer injury associated with a form of "sale" advertising that appears to be very common at the present time: department store reference pricing that contrasts "sale" prices with the store's "regular" or "original" prices. In order to place the relevant issues in sharper historical and analytical perspective, we begin with a discussion of deceptive pricing enforcement by the FTC and the rationale for its application, and we provide an overview of the relevant academic literature.

DECEPTIVE PRICING LAW ENFORCEMENT BY THE FEDERAL TRADE COMMISSION

During the early years of its existence, the Federal Trade Commission took a case-by-case approach to deceptive pricing law enforcement. The first example of deceptive pricing enforcement at the FTC involved a manufacturer of building materials that advertised that buyers could save between 25 and 50 percent by buying from him at the same wholesale prices that retailers paid.[2] Other cases during the early years of enforcement generally involved misrepresentations of former prices and of competitors' prices. In 1938 the Commission held that it was illegal for a manufacturer to adopt retail list prices that exceeded actual selling prices.[3] The focus upon list prices was to continue for many years.

During the 1950s, however, there was concern that the Commission's orders in the pricing area were not altogether consistent, and the Comparative Price Committee of the Association of Better Business Bureaus and the Advertising Federation of America asked the Commission to develop a set of guides. In late 1958 the Commission adopted a set of guides that attempted to synthesize the Commission's outstanding orders. The guides were quite detailed and, in particular, placed high substantiation burdens on manufacturers that established list prices and on retailers that compared their prices with list prices or with prices charged by other retailers in the trade area. Manufacturers were required to document that their list prices represented customary retail selling prices, and retailers could not claim savings from list prices or competitors' prices unless such comparisons applied to the customary price in the local market.

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[2] *Chicago Mill Works Supply Co.*, 1 FTC 488 (1919).

[3] *National Silver Company*, 27 FTC 596 (1938).

Advertisers that compared reduced prices with former prices were required to document that frequent sales had actually occurred at the former price.

After the 1958 guidelines were issued, deceptive pricing enforcement by the FTC reached a peak. In 1959, for example, the FTC filed approximately 83 complaints. Many of the cases implemented the guidelines' rigid restrictions on comparisons with list prices.[4] In one case, the Commission ruled, and the appellate court confirmed, that the use of list prices implied that consumers would "save" the difference between the advertised and the list prices even if the newspaper advertisement contained a disclaimer to the contrary.[5] The Commission also filed cases against manufacturers that distributed list prices that were above the usual and customary prices in trade areas where retailers might advertise those list prices.[6]

By the early 1960s the Commission became concerned that its enforcement of the guides was in effect prohibiting useful national price advertising by both manufacturers and retailers. Accordingly, the Commission in 1964 issued a new set of guides that were more general in character and eased the substantiation burden on firms that adopted or advertised list prices, particularly

[4] See for example *George's Radio and Television Co., Inc.*, 60 FTC 193 (1962).

[5] See *Giant Food, Inc.*, 61 FTC 326 (1962) affirmed 322 F2d 977 (D.C. Cir. 1963), *cert. dismissed* 376 U.S. 967.

[6] See *The Regina Corp.*, 61 FTC 983 (1962), affirmed 322 F2d 765 (3rd Cir. 1963, and *The Baltimore Luggage Co.*, 58 FTC 4541 (1961), affirmed 296 F2d 608 (4th cir. 1961), *cert. denied* 369 U.S. 860.

on a national scale.[7] Shortly after the 1964 Guides were adopted, the Commission decided three important cases, two involving "catalogue houses" advertising retail prices, and one involving a drug chain using comparative prices [see *Majestic Electric Supply Co*, 65 FTC 1167 (1964), *Continental Products*, 65 FTC 361 (1964), and *Revco D.S.*, 67 FTC 1153 (1965)]. All three decisions exonerated the defendants.

In the 1970s practically all traditional deceptive pricing enforcement ceased. The Commission and Bureau of Consumer Protection management had become particularly troubled that earlier enforcement had targeted discounters disproportionately and that such efforts might have chilled beneficial price competition.[8] Except for deceptive pricing counts included in complaints filed in consumer fraud cases, the Commission's activity in the deceptive pricing area has remained minimal up to the present time.

[7] The 1964 guides stated that a large regional or national manufacturer would not be chargeable with deception if it advertised or disseminated a list price "...in good faith...which does not appreciably exceed the highest price at which substantial sales are made in his trade area." (16 CFR at 29.) The new guides also provided an explicit definition of list price that did not require it to be the usual or customary price:

> Typically, a list price is a price at which articles are sold, if not everywhere, then at least in the principal retail outlets which do not conduct their business on a discount basis. (id.)

In another substantive departure from the old guides, the revised guides dropped the blanket requirement that a price be referenced as "regular" or "former" only after substantial sales have occurred at that price.

[8] Former Commissioner and Director of the FTC's Bureau of Consumer Protection, Robert Pitofsky, voiced these concerns publicly in 1977. See Pitofsky, "Beyond Nader: Consumer Protection and the Regulation of Advertising", 90 *Harvard Law Review*, 1977, 661, 688.

THE RATIONALE FOR CONCERN ABOUT DECEPTIVE REFERENCE PRICING

Even though FTC activity in the deceptive pricing area was negligible throughout the 1970s and 1980s, academic interest in deceptive pricing continued, particularly in the field of marketing. Continued concern about deceptive pricing is premised on the argument that fictitiously high reference prices might deceive consumers in two ways. For relatively standardized products, such as electronics equipment with readily identifiable features and well-known brand names, deceptive reference prices might lead consumers to overestimate the savings inherent in an advertised price. For less standardized products, such as certain types of jewelry or furniture that may have hidden quality characteristics and unfamiliar brand names, deceptive reference prices might in addition cause consumers to overestimate the quality of the advertised good. Several forms of injury could follow from these overestimates of savings or quality.

First, and on the most general level, such overstatements eventually could erode consumers' faith in savings claims to the point where this form of advertising no longer performed a useful function. In such a "lemons" scenario, less than the optimal amount of genuine "savings" competition would occur as sellers substituted other forms of competition in their efforts to attract customers.[9] There should be strong market forces at work to forestall such an equilibrium, however. Knowing that consumers would prefer more credible savings claims, firms would likely try to attract customers through the development of reputations concerning the credibility of their claims and the level of their

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[9] See George A. Akerlof, "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism," *Quarterly Journal of Economics*, August 1970, 84, 488-500.

prices generally. The common use of price matching "guarantees" is a good example of such a phenomenon.

Second, there could be actual out-of-pocket losses if a deceptive comparative pricing claim leads consumers to stop shopping prematurely and to purchase from higher priced sellers than they otherwise would. The injury would be equal to the difference between the advertiser's price and the price that the consumer otherwise would have paid.[10] For typical consumers, this latter price could be approximated by the sales-weighted average price charged by the advertiser's competitors.[11]

[10] Strictly speaking, such out-of-pocket losses are merely transfers from consumers to department stores and do not constitute efficiency losses in the formal economic sense. This is because the calculation assumes that consumers would have purchased the item in question whether or not it was advertised in a misleading manner. Thus, the reference price ad would not affect the quantity of items purchased, but would merely influence the price paid.

In the longer run, however, real inefficiencies would occur if the higher prices charged by the advertising department stores reflected higher operating costs. Although some of the department stores' cost disadvantage might result from services and amenities that consumers value, our analysis of out-of-pocket loss assumes implicitly that consumers willingly would have forgone any such services absent the misleading reference price ad and would have patronized more efficient competitors. Under these assumptions, misleading ads lead to higher social costs.

[11] This calculation ignores any search costs that the consumer would avoid by relying on the reference price ad rather than locating the item at a competitor that was charging a price equal to the sales-weighted market average. The amount of effort needed to find such a price presumably would be equal to the average level of search prevailing in the market. Since such typical comparative shopping activity might well involve more than reading and acting on one price ad, search cost savings could be significant and the out-of-pocket injury calculation we have adopted would overstate the net injury imposed by a misleading reference price ad.

In addition, there is no compelling reason to assume that consumers who act on misleading and potentially injurious reference price ads are in fact typical of consumers in general and that they would therefore have found an average price

(continued...)

Third, consumers could respond to a deceptive pricing claim by purchasing an item sooner than they otherwise would. The injury would at most be equal to the interest foregone by purchasing early. Unless the item is very costly and the purchase is accelerated by a substantial time period, this injury is unlikely to be large.[12]

Fourth, when quality is difficult to judge before purchase, a fictitiously high reference price could induce consumers to buy higher or lower quality products than desired; it might even induce product purchases that otherwise would not have occurred in any form. Consider, for example, consumers who are in the market for a high-price premium quality sofa or other piece of furniture and who read an ad for a sofa that "regularly" sells for $1000 but is on special sale for only $499. If the sofa is in fact a medium-grade unit comparable in durability to competitors' $500 sofas, consumers might rely on the higher reference price as an indicator

[11](...continued)
but for the ad. If consumers misled by reference ads normally tend to search less and pay more than other consumers, their out-of-pocket injury would be less than the difference between the advertiser's price and the sales-weighted market price. At the other end of the spectrum, it is possible that conscientious shoppers might be particularly likely to notice and read reference price ads. It is unlikely, however, that such consumers would be harmed since they would tend to be relatively well informed about the distribution of prices in the market and therefore would be better able to evaluate whether the advertised offer price was competitive.

[12] For example, if a deceptive advertisement for a $100 item caused a consumer to purchase the item one month earlier than he otherwise would have, the interest foregone would be only $1.50 even if the consumer had chosen to finance the purchase at an 18 percent rate of interest. This is an upper-bound estimate of injury, however. Even if the consumer would have postponed his purchase in the presence of correct information, the consumer will nonetheless enjoy some benefit from his early use of the item. This benefit will partly offset

of premium quality and unwittingly purchase considerably less quality than they had intended.

Conversely, the same ad might mislead consumers who are searching for bargain-priced entry-level sofas into buying more quality than originally intended. Such consumers might read the ad as an opportunity to obtain far higher quality than they had thought was available in the $500 price range. They thus might decide to spend $100 or $200 more than they had originally planned, believing that they had realized a quantum leap in durability and quality. Had these consumers realized that the quality gain actually was very modest, they would have adhered to their original plan to buy minimal quality at a minimal price.

In the extreme, the sofa ad could injure consumers who were not even considering a sofa purchase until reading what they regarded as an irresistible offer. These consumers might be misled by a fictitious bargain into spending $500 that would have yielded greater benefit if applied to an alternative purchase or investment.

It should be emphasized that the three injury scenarios concerning quality require that a consumer rely almost exclusively on the quoted "regular" or "original" price as an indicator of the quality of the advertised product, and that the "sale" price be approximately equal to or higher than competitors' prices for equivalent items. Serious deception concerning quality seems unlikely for products such as VCRs or television sets with relatively easily identified differences in features and capabilities.

The foregoing discussion of possible sources of injury from deceptive pricing claims suggests that injury is least speculative and most direct when offending advertisers charge prices for comparable or identical products that are higher than the prices that prevail in the market. Less quantifiable injury might also occur if misleadingly attractive offers generated premature purchases or purchases that would not have occurred but for the

claim. Whatever the true relative importance of these various injury categories, only one appears readily testable. Specifically, a comparative price survey could determine whether advertisers that engage in possibly fictitious reference pricing have higher prices than do other retailers in the market area.

THE LITERATURE ON REFERENCE PRICING

The marketing literature includes a number of studies that have attempted to determine the effect of reference pricing on consumer behavior. These studies generally have followed a copy test approach where groups of respondents are shown actual price ads or mock-ups and then asked to respond to a series of structured questions that probe the participants' interpretation of and reactions to the various ads. A few studies have employed an experimental methodology that requires participants to use information from prepared price ads and other sources to undertake a hypothetical shopping exercise. The following discussion provides a brief discussion of the major studies in the area.

The marketing studies have found that consumers frequently are skeptical of the savings implied by reference price advertisements, although these consumers do use some of the information provided by such ads. In one early study, 332 housewives were shown a series of reference price advertisements run by two different stores, one a local furniture and appliance store that used price advertising extensively, and the other a branch of a nationwide department store chain that made only limited use of reference price advertising.[13] Less than half (42 percent) of those interviewed believed that the advertised regular price was the price at which the advertising store usually sold the product, and 38 percent believed that the advertised regular price was the price at which competing stores usually sold the product. These opinions were influenced by the respondents' actual shopping experience at the stores and their perceived knowledge of prices in the area. Consumers were more likely to accept the advertised "regular" prices in the case of the department store, but they were more

[13] See Joseph Fry and Gordon H. McDougall, "Consumer Appraisal of Retail Price Advertisements," *Journal of Marketing*, 38 (July 1974).

likely to believe that the discounter's "sale" prices were low in relation to other prices in the shopping area.

A study by Steven Keiser and James Krum attempted to isolate the impact of a reference price claim relative to that of an otherwise identical ad that provided "sale" price information only.[14] The reference price ad, which had been run by a local drug retailer, listed sale prices and "regular" prices and proclaimed a "1/2 price sale". (The authors had determined that the drug store's advertised sale prices actually were only about one-third lower than the customary pre-sale prices.) The control ad was a mock-up that contained "sale" prices exclusively with no "1/2 price sale" heading or references to "regular" prices. The name of the advertiser was deleted in both of the tested ads.

Participants in the study who read the two-price version of the ad were more convinced than readers of the control ad that the advertised sale prices were lower than the store's regular prices. Interestingly, however, there was no difference in the two groups' assessment of whether the advertised sale prices were low in comparison to prices offered by competing retailers in the area. The authors concluded that other unevaluated factors, such as the retailer's reputation concerning prices might be more likely than advertising to lead consumers to believe that a sale price was "low".

Respondents also were asked whether they would be willing to consider buying from the advertising retailer, but the subjects' responses showed no difference based upon the version of the ad that had been read. Again the authors concluded that retailer reputation and previous shopping experience are probably more important than advertising in determining patronage.

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[14] See Stephen K. Keiser and James R. Krum, "Consumer Perceptions of Retail Advertising with Overstated Price Savings," *Journal of Retailing*, Volume 5, Number 3, Fall 1976, pp. 27-36.

A similar study by Blair and Landon also concluded that reference prices can affect consumers' assessments of the attractiveness of an advertiser's sale relative to his regular prices.[15] The study concluded, however, that reference prices are not accepted at face value, but are instead discounted by about 25 per cent. Nonetheless, consumers make higher attributions of savings with than without a reference price.[16]

Perhaps the most elaborate examination of reference price claims was carried out by Liefeld and Heslop. A total of 207 subjects at two Toronto shopping malls were exposed to newspaper advertisements for four products. Subjects saw one of five different price representations--regular price alone, sale price alone, regular price with Manufacturer's Suggested List Price (MSLP), sale price with regular price, or sale price with MSLP. The ads were reformatted versions of actual advertisements. The regular prices used in the ads were based on the average, nonsale

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[15] See Edward A. Blair and E. Laird Landon, Jr. "The Effects of Reference Prices in Retail Advertisements," *Journal of Marketing*, (Vol 45) Spring 1981, pp. 61-69.

[16] This latter finding was further corroborated in two other studies, one by Della Bitta and Monroe and the other by Bearden, Lichtenstein, and Teel [See Albert J. Della Bitta and Kent B. Monroe, "A Multivariate Analysis of the Perceptions of Value from Retail Price Advertisements," in *Advances in Consumer Research*, Vol. 8., ed. Kent B. Monroe, Ann Arbor, MI: Association for Consumer Research (November 1981), 161-165; also see William O. Beardon, Donald R. Lichtenstein, and Jesse E. Teel, "Comparison Price, Coupon, and Brand Effects on Consumer Reactions to Retail Newspaper Advertisements, *Journal of Retailing*, 60 (Summer 1984), pp. 11-36]. In a more specialized study of consumers' perception of catalogue showroom reference prices, Sewall and Goldstein concluded that the vast majority of catalog showroom customers either disregard these references or understand them to represent the regular prices of full-margin department stores [See Murphy A. Sewall, and Michael H. Goldstein, "The Comparative Advertising Controversy: Consumer Perceptions of Catalog Showroom Reference Prices," *Journal of Marketing*, Volume 43, Number 3 (Summer 1979), pp. 85-92].

prices charged by retailers in the area; the sale prices were sale prices that had actually been advertised; and the MSLP's were actual list prices.

The authors wanted to learn the effect of the different price representations on consumers' estimates of average, nonsale prices. The results suggested that references to regular or MSLP prices do not raise consumers' estimates of average nonsale prices. Use of the term "sale" did have an effect, however. For 3 of 4 product categories, the mention of a "sale" (in conjunction with reference prices or standing alone) tended to *lower* consumers' estimates of ordinary selling price. This suggests that subjects are very suspicious of price claims when a sale is noted.[17]

[17] See John Liefeld and Louise A. Heslop, "Reference Prices and Deception in Newspaper Advertising," *Journal of Consumer Research*, Volume 11, Number 4 (March 1985), pp. 868-876. Using a very different methodology, a study by Urbany, Bearden, and Weilbaker produced results that appear to contradict those of Liefeld and Heslop. Urbany, Bearden, and Weilbaker used students to shop for television sets using computer simulations. The students were given hypothetical bank balances and were instructed to shop for television sets after having been given a set of advertisements and limited information about the distribution of prices charged by retailers, some of which included only sale prices and some of which included both sale and reference prices. The students bank balances were reduced not only by the cost of the television sets they purchased, but also by the hypothetical costs they incurred while shopping. Contrary to the results of Liefeld and Heslop, the authors concluded that exaggerated reference prices increased the perceived attractiveness of offers, even when subjects were skeptical. These results are subject to a major caveat, however. The hypothetical bank balances of the subjects who failed to search after being shown an exaggerated reference price were not lower than the bank balances of the control group which shopped without benefit of reference prices. Hence, the former group apparently saved enough in search costs to overcome any price premium due to the failure to search. [See Joel E. Urbany, William O. Bearden, and Dan C. Weilbaker, "The Effect of Plausible and Exaggerated Reference Prices on Consumer Perceptions and Price Search," *Journal of Consumer Research*, Volume 15, Number 1 (June 1988), pp. 95-110.

EVIDENCE ON REFERENCE PRICING BY DEPARTMENT STORES IN WASHINGTON D.C.

The foregoing review of the relevant marketing literature suggests that most consumers are skeptical of reference prices. Moreover, most of the studies conclude that reference price advertising does not cause the majority of consumers to overestimate ordinary market selling prices. These conclusions must be qualified, however. Although copy tests often provide useful information on ad meaning, they are by their very nature artificial constructs that may not measure consumers' true beliefs or predict actual behavior under real shopping conditions. More importantly, these tests may provide only suggestive and indirect evidence on the critical issue of consumer injury. Even if the evidence revealed that "regular" price references caused consumers to overestimate savings from "sale" prices, and even if consumers acted on these misperceptions and patronized the advertiser rather than a competitor, we could not determine from the copy test results alone whether consumers actually had been injured. The answer to this question would require additional evidence on competitors' prices relative to the advertiser's sale prices. Only the Liefeld and Heslop study reviewed above collected any evidence on the prices charged by competitors, and because that study was not designed to focus on injury, the number of items surveyed was too small to provide reliable evidence on the relative prices of reference price advertisers.[18]

[18] The Toronto data are also poorly suited to measure consumer injury because the advertisers' competitors were asked to provide nonsale prices that may have been higher than the actual transaction prices that were in effect at the time the tested ads ran. Thus, any estimate of injury based on these "regular" prices would be biased downward.

Overview of Study Methodology

Because of the limitations in the existing literature on reference pricing, we have attempted to develop empirical evidence bearing directly on the magnitude of consumer injury that could occur if advertisers' reference prices are in fact fictitiously high and if these reference prices do affect consumers' purchase decisions. We selected for analysis a form of reference price advertising that appears to be quite common--namely comparisons by department stores of sale prices with "regular" or "original" prices. We also selected brand name items that would likely be available at a wide variety of stores. These items included kitchen equipment, small appliances, and entertainment gear.

Our sample of advertising department stores was limited to those major retailers operating in the Washington D.C. metropolitan area. These included Hecht's, Macy's, Bloomingdales, and Woodward and Lothrop.[19] As will be detailed shortly, we first analyzed the composition of price advertising published in the *Washington Post* to determine which products and which types of reference claims were most prevalent. We next gauged the feasibility of our project by shopping for television sets advertised by two local department stores. We then selected a tentative sample of other products and waited for a time period during which all of the targeted department stores would simultaneously run sales for items in these product categories. Competing stores were then visited to determine whether they also sold the advertised items, and if so, at what price. Finally, these data were analyzed to determine the relative position of the advertiser's reference and sale price in the overall distribution of market prices.

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[19] Department stores such as Lord and Taylor and Saks Fifth Avenue were excluded because they specialize in fashion items and do not offer an extensive line of household goods.

The Study in Detail

As an initial step, we attempted to document and classify the kinds and sources of newspaper price advertising that one observes in the Washington market area. As indicated above, this exercise helped us select products and claims for the price survey, and also provided background information on a broad range of price advertising. Specifically, we surveyed all reference price advertising in the *Washington Post* for the week of April 9 through April 15, 1990, and assigned the various ads to one of eight categories reported below. Reference pricing was defined very broadly to include any mention of a "sale", whether or not additional comparisons were given to regular prices, list prices, or prices of competitors. Due to the massive volume of reference price advertising published in the *Post* during just one week, it was infeasible to measure the size of each ad and to rank the relative importance of the eight categories of claims in terms of the advertising space they occupied. Our ranking is instead based purely on the number of times ads containing a given category of claim appeared during the week. In a separate content analysis of *Washington Post* price advertising appearing on a single day (June 14, 1991), we were able to account for ad size and expand the scope of analysis to include all advertising of any kind, including both nonprice advertising and price ads that mentioned neither a sale nor a specific reference price.

Our week-long survey of reference price advertising revealed that about half of the 224 such claims contrasted a sale price with the seller's previous regular or original price. The second most frequent type of claim, appearing in seventeen percent of the ads, announced a certain percentage or dollar value off of some unspecified reference (e.g., "$100 Off!"). About twelve percent of the ads contained comparisons between the advertiser's price and a manufacturer's suggested retail price, a "department store" price, or a "retail" price. In ten percent of the ads, an item was merely claimed to be "on sale", with no further elaboration.

Slightly less than seven percent of the ads listed a reference price representing a "comparable value". A similar percentage of ads mentioned price guarantees designed to compensate customers who found a lower price elsewhere subsequent to purchase. Finally, during the entire week only two ads claimed to offer the lowest prices available in the market area.

The one-day follow-up survey indicated that explicit references to former prices or to list or retail prices are far less important when prevalence is measured by advertising space rather than number of ads. Although 67 percent of the sale ads appearing in the June 14, 1991 issue of the *Washington Post* identified a comparison price of some kind, these ads accounted for only about 20 percent of sale price advertising space. The remaining space, much of it devoted to full-page or multi-page supplements by large appliance and electronics retailers, simply listed offering prices in the context of a special sale.

As noted in footnote 1 above, our one-day follow-up analysis also suggested that, in terms of advertising space, sale advertising (both with and without additional reference prices) accounts for the vast majority of all advertising in the *Post*, regardless of subject. There were 346 nonclassified retail advertisements, accounting for over 40,000 square inches of newspaper space. Price ads (as opposed to ads that merely announced the availability and nonprice attributes of a restaurant, movie, resort, theater production, etc.) accounted for 59 percent of these ads by number and over 87 percent by space. Of all space devoted to price ads, the vast preponderance--93 percent--was occupied by ads that referenced a special sale of some kind. (By number, 56 percent of price ads were made in the context of a sale.) Thus, over eighty percent (.874 x .93 = .813) of all advertising space appearing in the June 14 *Washington Post* concerned a special sales event.

Selection of Products and Stores for Comparative Price Survey

Items advertised by the department stores in our sample were selected for the comparative price survey so as to ensure our ability to make valid price comparisons. Accordingly, we selected brand name products with clear model designations that showed the greatest promise of being carried widely by other stores in the Washington area. We included both expensive and inexpensive items in our sample.

Before undertaking this project on a relatively large scale, we conducted a feasibility study by price shopping for six television sets advertised by Macy's and Hecht's. The advertisements appeared in the *Washington Post* in August 1990, and shopping took place during the period of the advertised sales. In preparation for this phase of the study, we compiled a list of every retail firm that we believed might stock television sets. The list included all retailers listed under *Television and Radio Dealers* in the yellow pages of the telephone directories for Washington D.C. and the surrounding suburbs. In addition we added to the list all department stores, discount stores, catalogue stores and other retailers that we believed might offer electronic goods. The list was long, but we nonetheless sought to gather data from every retailer.[20] Our extensive shopping efforts provided us with comparative price data for as few as three and as many as twelve different retailers offering sets identical to those advertised by the two department stores.

The feasibility test revealed that it was extremely expensive and not altogether productive to attempt to collect price data from every possible retailer of an item. Many of the retailers listed in the yellow pages were small shops that specialized in repair, often stocking only a limited selection of television models. For the full scale project we decided to include merely a sample of the smaller

[20] Only one outlet for any given chain was visited.

retailers. Because we sought to control the amount of travel necessary to collect the price data, this sampling process was not always random. We did, however, attempt to include retailers that might be selling at the very low end of the price spectrum. We were aided in this effort by the publication, *Washington Consumers' Checkbook Bargains*, a local guide to low prices in the Washington D.C. area that often cites small, relatively unknown retail establishments.

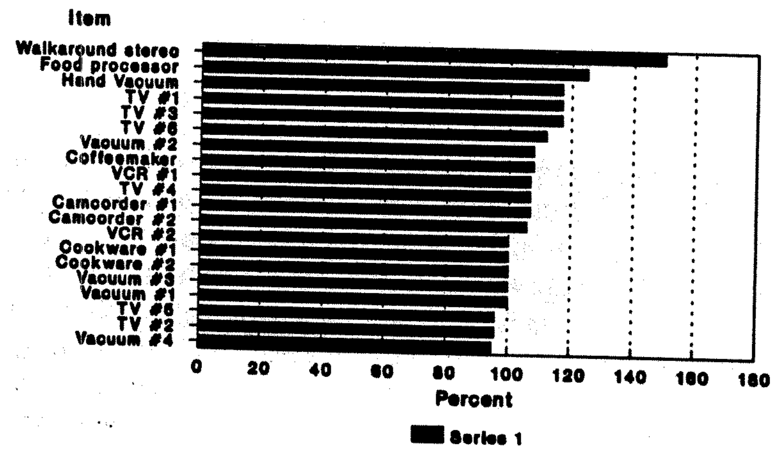
During phase II of data collection, we collected price data for 27 different items advertised by four department stores in the *Washington Post* during April, 1991. Once again, the shopping took place during the advertised sale periods. The items included cookware, small kitchen appliances, microwave ovens, a variety of vacuum cleaners, video cassette recorders (VCRs), video camcorders, and one walkaround stereo. Because we frequently had difficulty locating strictly comparable models (particularly in the case of cookware and microwave ovens), usable data were collected for only 14 items: two pieces of open stock cookware, one food processor, one coffeemaker, a hand vacuum, four regular vacuum cleaners, two VCRs, two camcorders, and a walkaround stereo. Thus, when combined with the six television sets canvassed in phase I, results were obtained for a total of 20 items. The number of comparative price observations for these advertised items ranged between two and ten. In all cases the prices collected represent the actual selling price on the day of our store visit, regardless of whether this was a regular or a sale price.

The Results

Prices collected for each of the twenty items are presented graphically in the appendix. The first bar in these graphs presents the referenced "regular" price cited in the department store's advertisement. Adjacent to it is a bar showing that store's advertised sale price. The remaining bars show in ascending order the prices for the sample stores that also sold the advertised item.

It is immediately apparent from the various graphs that the reference prices advertised by department stores tend to be well above the selling prices prevailing in the market. This not altogether surprising result is highlighted in Figure I below, which shows for each item the department store reference price as a percent of the highest competitor's price in our sample. Note that in 12 of 20 cases the reference price was above the highest offer price we observed, and in five cases was equal to the highest price. In only three instances did the reference price lie somewhat below the highest price.

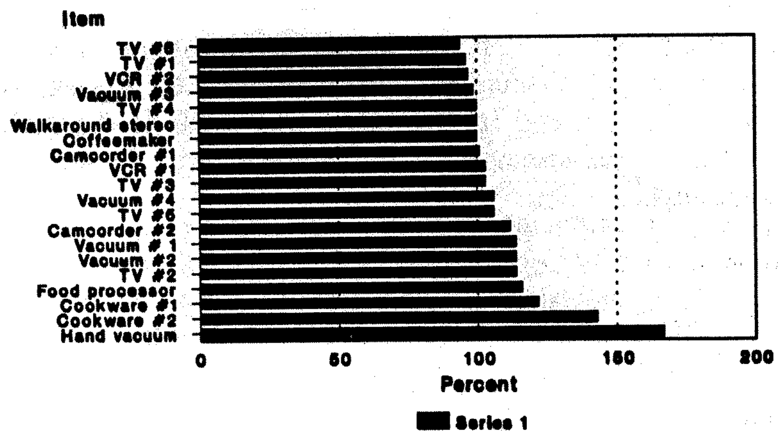
Figure I
Department Store Reference Price Relative to Highest Price of Competitors



See Appendix for brands and models

In contrast, it is also evident from the graphs in the appendix that the sale prices advertised by department stores tend to be competitive for our sampled items. Figures II and III show respectively department store sale prices as a percent of the lowest price and as a percent of the average of the prices that we sampled in the market. Figure II shows that in 7 of the 20 cases the

Figure II
Department Store Sale Price
Relative to Lowest Price of Competitors

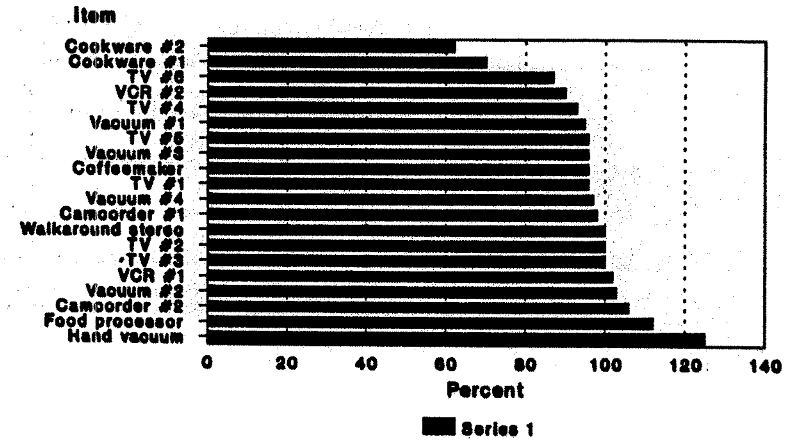


See Appendix for brands and models

department store sale price was actually as low or lower than the lowest price we were able to find. Figure III reveals that there were only 6 cases out of 20 where the department store sale price was above the average of the prices that we sampled and in only 2 instances was it more than 10 percent above that average. These latter cases both involved small appliances. The sale price of $50 for the Black & Decker Power Pro 2000 hand vacuum exceeded the lowest market price by $20 and was about $10 higher than the average price charged by other stores.[21] The advertised sale

[21] Similar results were obtained when we checked the advertising department store's sale price for the more expensive Power Pro 6000 against prices charged by five Washington area catalogue stores. (Analysis of our full comparative price data set had shown catalog showroom prices generally were among the lowest in the market.) The average showroom price for the Power Pro 6000 was about $49, $15 cheaper than the advertising department store's sale price of $65. Indeed the advertising department store's price was $5 higher than any of the catalogue stores' reference prices.

Figure III
Department Store Sale Price
Relative to Average Price of Competitors



See Appendix for brands and models

price for the Cuisinart Custom II Food Processor was $219, $30 higher than the lowest sampled price and about $13 higher than the average of competitors' prices.

Table I presents the sale and average price data in tabular form and reveals that for all items the department store sale price was on average about four percent below the average price charged by competitors. For electronics goods, the department stores beat their competitors' prices on average by about three percent while

TABLE I
ACTUAL SAVINGS FROM SHOPPING AT THE ADVERTISING DEPARTMENT STORE

Item	Sale Price ($)	No. Stores	Average Price of Competitors ($)	Actual Savings ($)	Savings as a Percent of Competitors' Average Prices
Television #1	288	3	299	11	3.68
Television #2	399	12	398	-1	-.25
Television #3	600	7	597	-3	-.50
Television #4	249	7	269	20	7.43
Television #5	499	9	522	23	4.41
Television #6	329	7	378	49	12.96
Walkaround Stereo	60	2	60	0	0
VCR #1	400	3	393	-7	-1.78
VCR #2	249	4	276	27	9.78
Camcorder #1	700	4	717	17	2.37
Camcorder #2	900	7	851	-49	-5.76
All Electronics					2.94
Vacuum #1	90	10	95	5	5.26
Vacuum #2	200	5	195	-5	-2.56
Vacuum #3	99	3	103	4	3.88
Vacuum #4	297	9	306	9	2.94
Hand Vacuum	50	6	40	-10	-25.00
Coffeemaker	50	5	52	2	3.85
Food Processor	219	3	196	-23	-11.74
Cookware #1	60	4	86	26	30.23
Cookware #2	30	3	48	18	37.50
All Housewares					4.93
ALL ITEMS					3.84

for housewares the advantage to buying from the department store is about five percent.[22]

The savings shown in Table I can also be used to analyze further the usefulness of department store reference prices. As noted earlier in Figure I, department store reference prices tend to be higher than the prices generally prevailing in the market. Even if the "savings" suggested by comparing the sale and the reference prices are exaggerated, however, it is possible that these advertised savings provide a reliable index of the actual savings that might be achieved by purchasing from the department store rather than a competitor. That is, it is possible that the magnitude of actual savings increases directly with the magnitude of the claimed savings. Figure IV tests this hypothesis by plotting the actual savings from buying at a department store (calculated in Table I) against the savings claimed by the department store. The graph reveals that, on average, the higher the claimed savings, the higher the actual savings. Thus, the data suggest that, even if the absolute value of the savings is exaggerated, higher claimed savings are indicative of higher actual savings.[23]

The usefulness of the preceding comparisons with the average prices of competitors is limited by our inability to determine

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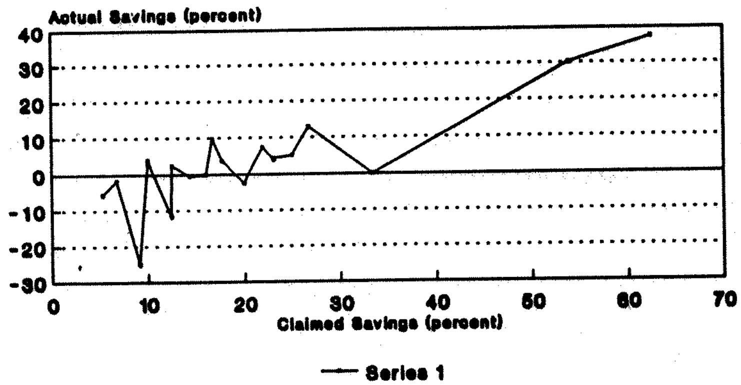
[22] The data in Table I can be analyzed from still another perspective. Effective price advertising by department stores can benefit consumers by reducing the amount of time they have to spend searching for a good price on an item. By comparing the department store sale price with the average price of competitors we can calculate the savings a consumer might expect to gain by making one more search after reading a department store advertisement. For the items in our sample, the data suggest that once the consumer has read a department store advertisement, the expected savings from shopping at a randomly chosen competitor are negative.

[23] The correlation between claimed and actual savings is significant at the five percent level and remains so even if the two most extreme observations are eliminated from the analysis.

Figure IV
Actual Savings
Relative to Claimed Savings



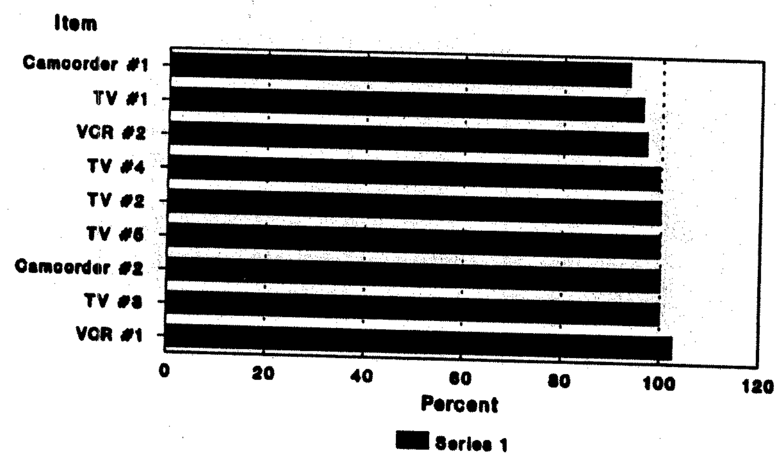
Actual savings are as a % of the average price of competitors. Claimed savings are as a % of the reference price.

market shares for the various stores in our sample. Such information was not available for most of the narrow product categories shopped and would have been prohibitively expensive to obtain from private sources for broader product classifications, such as home entertainment products. Thus, our non-sales-weighted averages give only a rough and possibly unreliable indication of the prices consumers would have paid on average had they not patronized the advertising department store. (This deficiency is, of course, less important in the seven cases where the department store's price was as low or lower than that of any of its competitors).

We attempted to account to a limited degree for market share by identifying the store most likely to be the largest seller of electronics home entertainment products in the Washington area and then comparing its prices with the advertising department store's sale price for those items carried by both retailers. We used as a proxy for sales the number of individual outlets operated

by each of the retailers in our sample that carried home entertainment products. The leading seller judged by this criterion was an electronics and appliance retailer with a number of local outlets. This retailer carried nine items that were comparison shopped in our survey. As disclosed in Figure V, the advertising department stores' sale prices were either lower than or within a dollar of those of this major seller of electronics entertainment products for all nine products carried in common.

Figure V
Department Store Sale Price Relative to
Price of Major Electronics Retailer



See Appendix for brands and models

Finally, we would note on a more general level that price dispersion was quite low for most of the sampled items regardless of the advertising department store's relative showing. Table II illustrates the coefficient of variation, defined as the standard deviation in price expressed as a percent of the average market price, for the 20 products in our sample. For 15 of the 20 products the coefficient was less than 10 percent. The only items for which the coefficient exceeded 20 percent were the two cookware items, which tend to be carried in a small number of specialty stores and are not widely advertised.

Table II

RELATIVE DISPERSION OF PRICES

Item	Coefficient of Variation (percent)	Average Price (dollars)
1. Walkaround Stereo	.07	59.96
2. Television #3	1.09	597.11
3. VCR #1	1.21	394.73
4. Television #1	1.66	296.49
5. Camcorder #1	3.16	713.79
6. VCR #2	4.31	263.95
7. Vacuum #3	4.38	102.22
8. Food Processor	5.36	201.95
9. Camcorder #2	5.46	857.11
10. Television #6	6.31	371.62
11. Television #4	6.38	266.89
12. Coffeemaker	7.22	51.66
13. Vacuum #4	7.57	305.24
14. Television #2	8.18	398.13
15. Vacuum #2	9.23	195.64
16. Television #5	10.79	519.88
17. Vacuum #1	12.63	94.43
18. Hand Vacuum	16.20	40.98
19. Cookware #1	38.61	80.58
20. Cookware #2	52.04	43.24

CONCLUSION

The picture that emerges from our comparative shopping survey is that of an actively competitive retail market in which department stores generally offer consumers attractive sale prices. At the same time, our results support the common allegation that the "regular" prices claimed by department stores are higher than consumers likely would find elsewhere. Further, although we gathered no evidence on this point, the reference prices we observed were sufficiently high to suggest that the advertising department store may not itself have sold a substantial number of items at the "regular" price. In this sense, much price advertising by local department stores could be technically misleading if consumers interpret a "regular" price to mean the price at which substantial sales actually have occurred. Nonetheless, our analysis suggests that department store claims of savings are, in fact, correlated with actual savings. The data revealed that the higher the claimed savings, the more attractive the department store sale price was in comparison to competitors' prices.

Due to our lack of knowledge of retailer market shares for the various items sampled, we can make no precise statements concerning the magnitude of injury that Washington area consumers might have suffered if they had been misled by one of the department store reference price ads and as a result had changed their purchase decision. We can state with certainty that for seven of the twenty advertised items (where no competitor in our sample offered a lower price), any such switches to the advertising retailer would either have benefited consumers or left them unaffected. Similarly, in two cases a switch in retailer allegiance unambiguously would have injured consumers, since all sampled competitors were underselling the department store. For the remaining 11 cases we can state only that our evidence supports the hypothesis that consumers misled by the advertised reference price either would have suffered a very small out-of-pocket loss or, in the majority of instances, broken even or benefited. Moreover, when we aggregate over all items, we find that, department store sale prices are competitive. For our sample of items, consumers could on average expect to save approximately four percent by buying from the advertising department stores rather than from randomly selected competitors. We cannot reject the possibility, however, that sales-weighted average market prices might place this group of department store prices in a slightly less or more favorable perspective.

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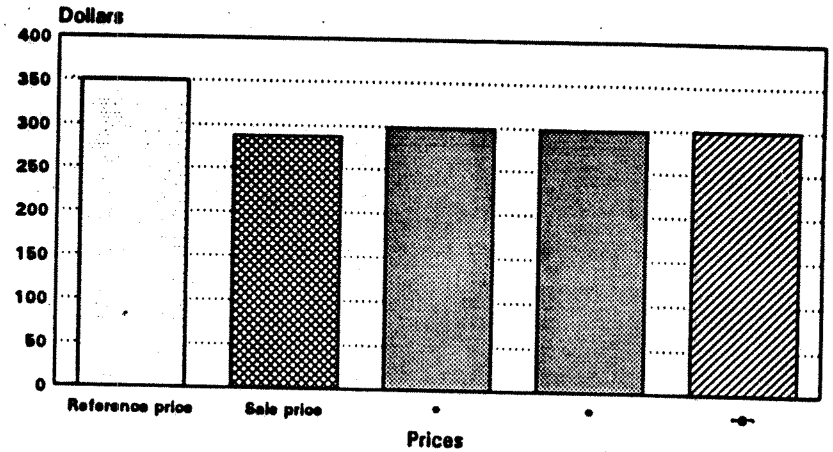
APPENDIX:

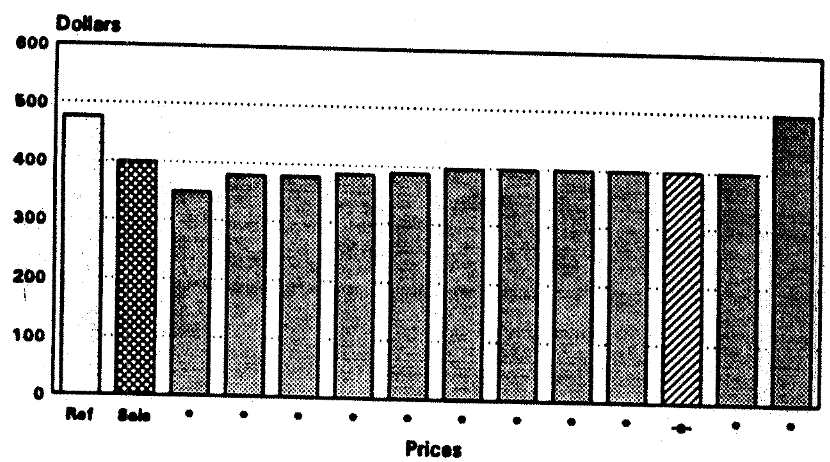
A GRAPHICAL PRESENTATION OF THE DATA

Figure A-1
Prices for Advertising Department Store and Competitors, Television #1



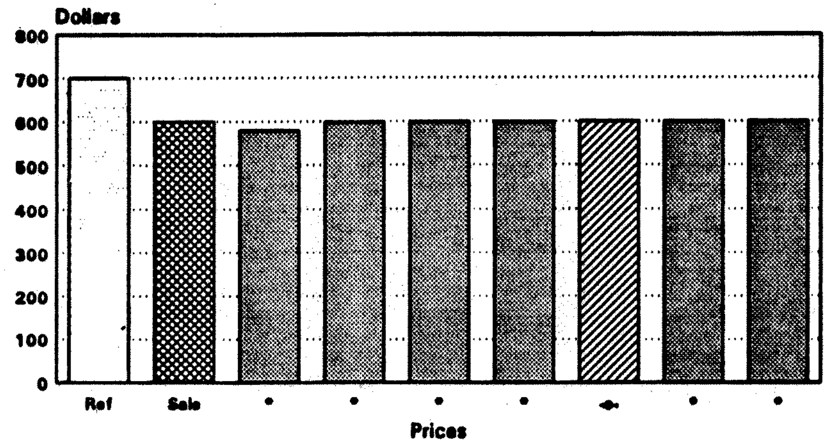
Toshiba, Model 2011
-•- = Major electronics retailer
* = Other competitors

Figure A-2
Prices for Advertising Department Store and Competitors, Television #2



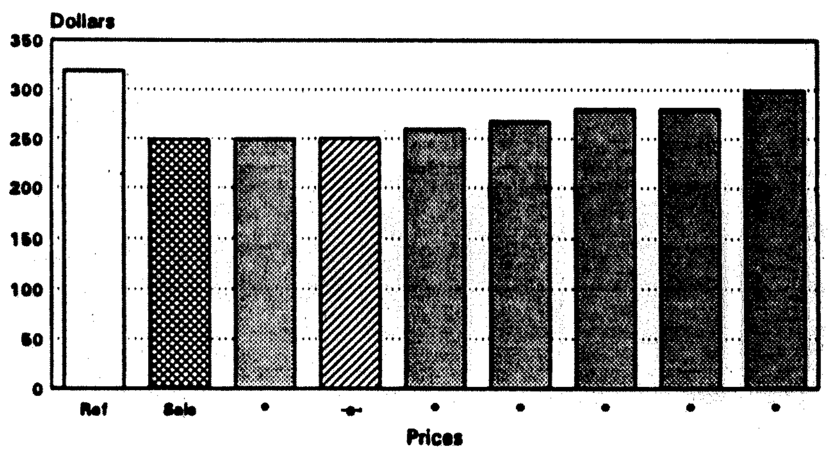
Sony, Model KV19TS20
-•- = Major electronics retailer
* = Other competitors

Figure A-3
Prices for Advertising Department Store and Competitors, Television #3



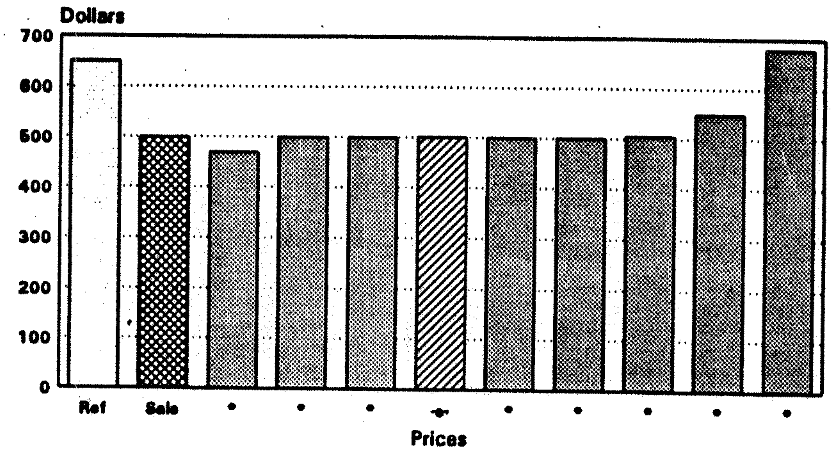
Mitsubishi, Model 2611
-●- = Major electronics retailer
* = Other competitors

Figure A-4
Prices for Advertising Department Store and Competitors, Television #4



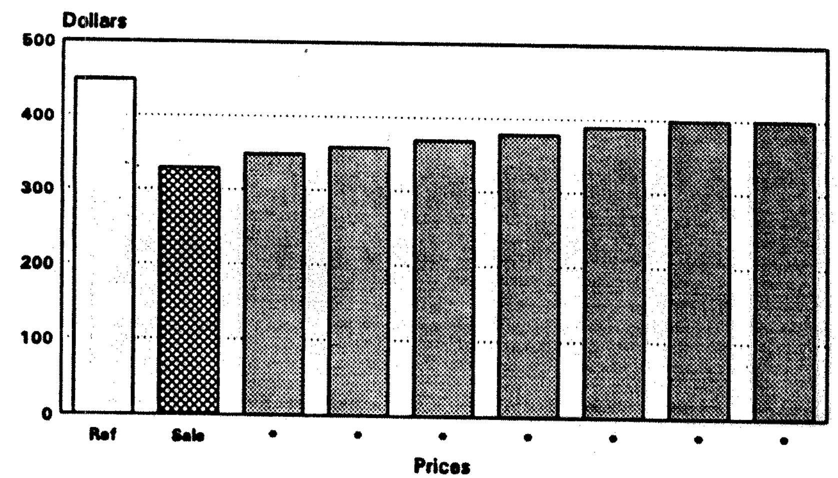
Magnavox, Model 4240
-●- = Major electronics retailer
* = Other competitors

Figure A-5
Prices for Advertising Department Store and Competitors, Television #5



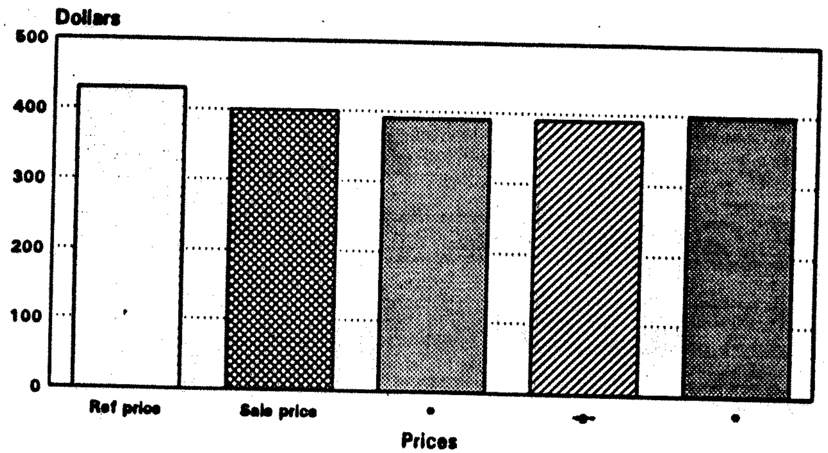
Toshiba, Model 2665
-●- = Major electronics retailer
* = Other competitors

Figure A-6
Prices for Advertising Department Store and Competitors, Television #6



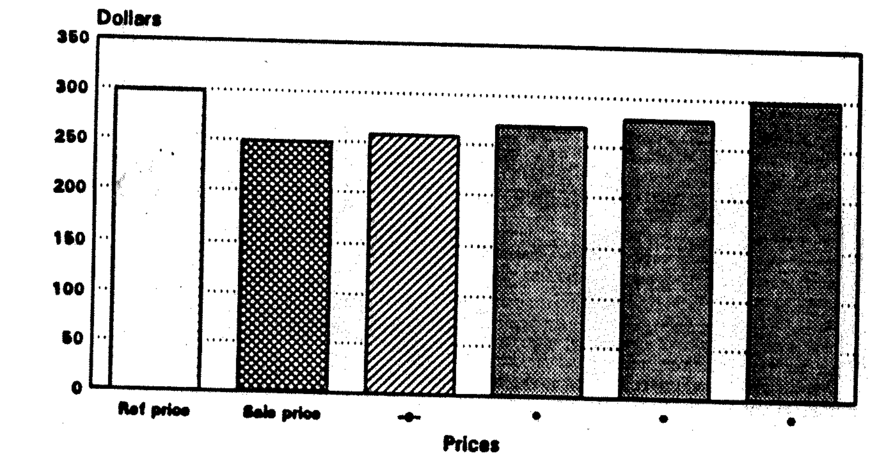
Panasonic, Model 2061
* = Competitors

Figure A-7
Prices for Advertising Department Store and Competitors, VCR #1



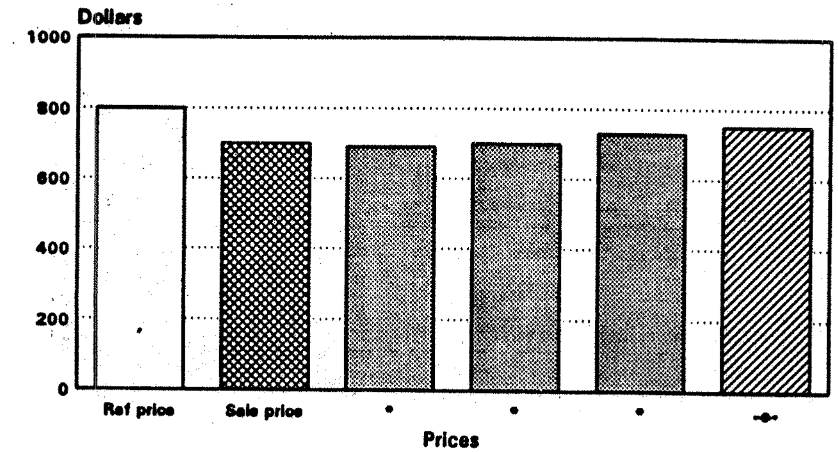
Toshiba, Model M641
-●- = Major electronics retailer
* = Other competitors

Figure A-8
Prices for Advertising Department Store and Competitors, VCR #2



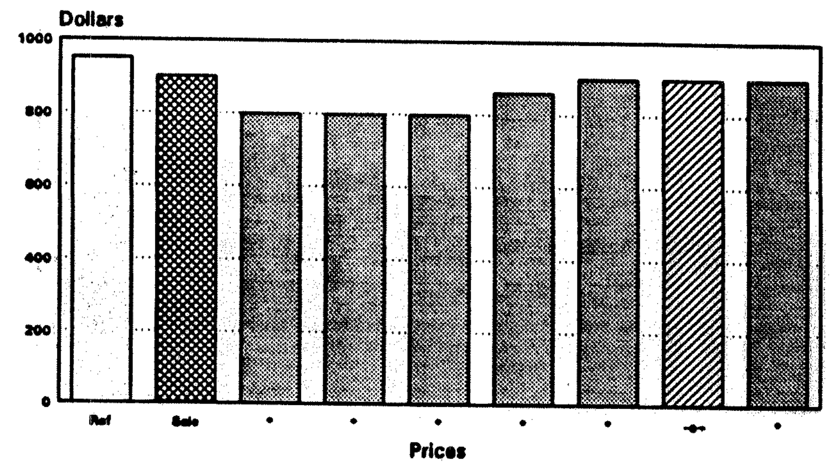
Magnavox, Model 3255
-●- = Major electronics retailer
* = Other competitors

Figure A-9
Prices for Advertising Department Store and Competitors, Camcorder #1



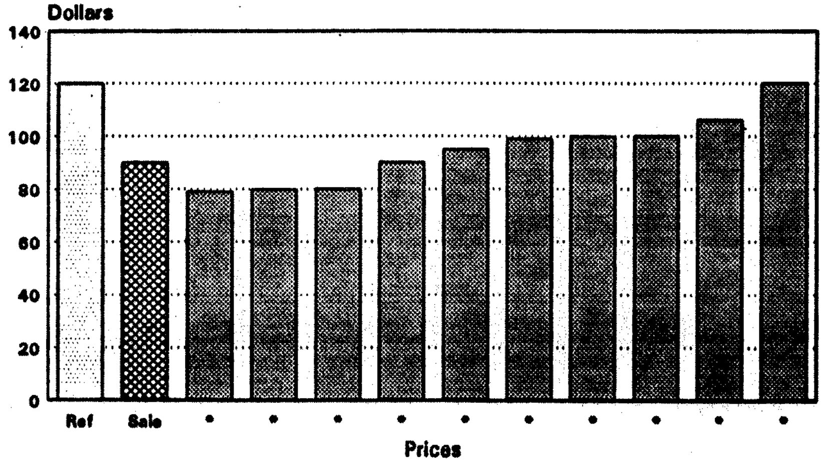
Sony, Model F33
-●- = Major electronics retailer
* = Other competitors

Figure A-10
Prices for Advertising Department Store and Competitors, Camcorder #2



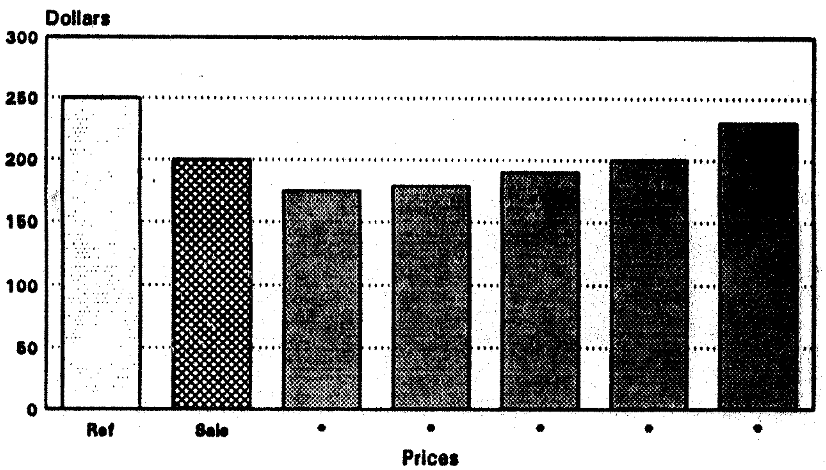
Sony, Model TR4
-●- = Major electronics retailer
* = Other competitors

Figure A-11
Prices for Advertising Department Store and Competitors, Vacuum #1



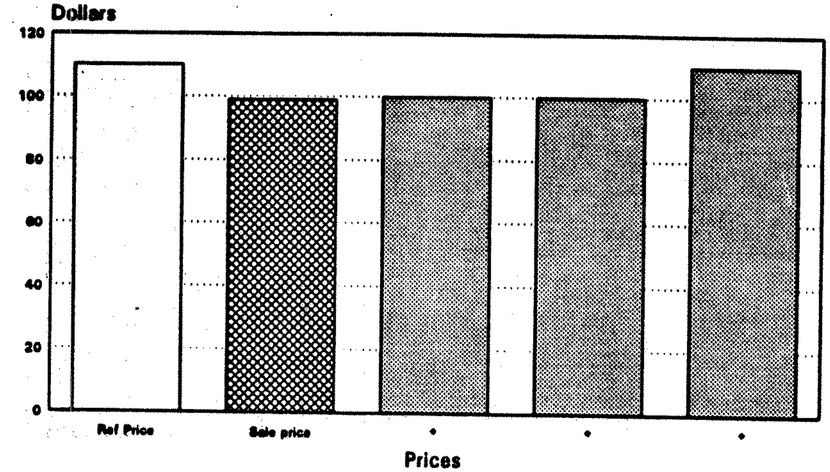
Hoover Elite upright, Model 4463
* = Competitors

Figure A-12
Prices for Advertising Department Store and Competitors, Vacuum #2



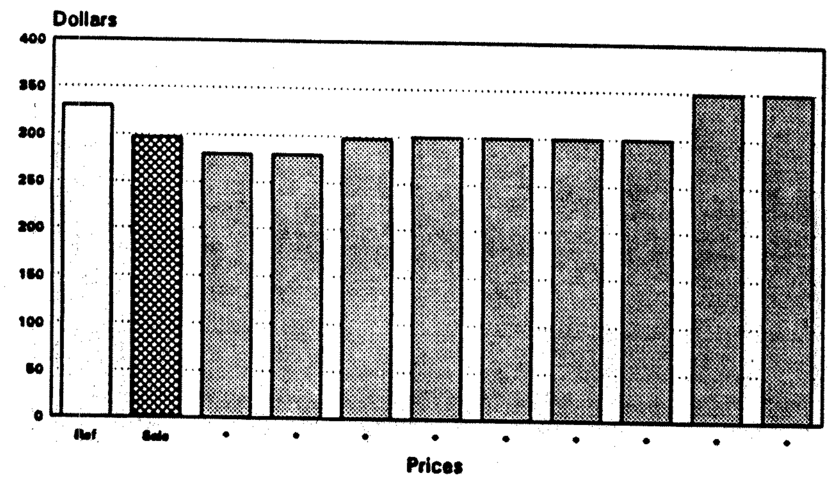
Hoover Legacy upright, Model 4557
* = Competitors

Figure A-13
Prices for Advertising Department Store and Competitors, Vacuum #3



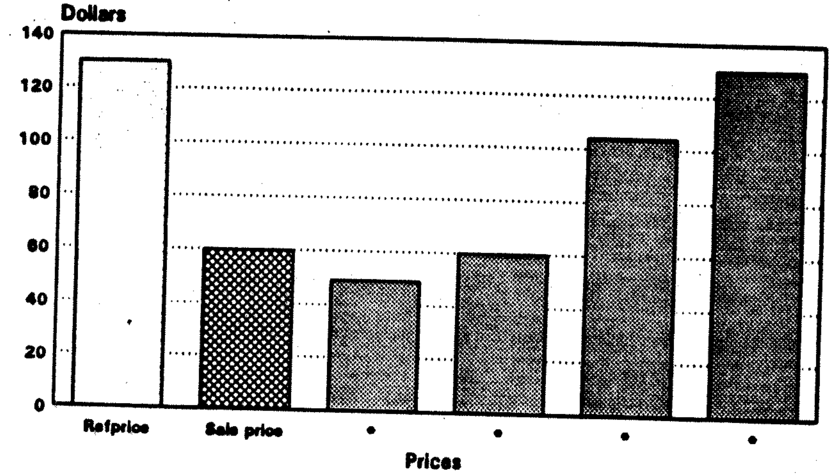
Hoover Encore upright, Model 4595
* = Competitors

Figure A-14
Prices for Advertising Department Store and Competitors, Vacuum #4



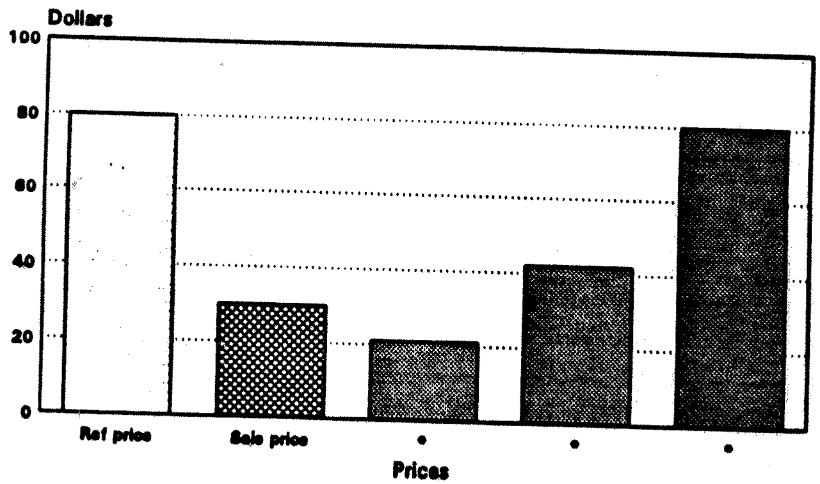
Hoover Spectrum canister, Model 3575
* = Competitors

Figure A-15
Prices for Advertising Department Store and Competitors, Cookware #1



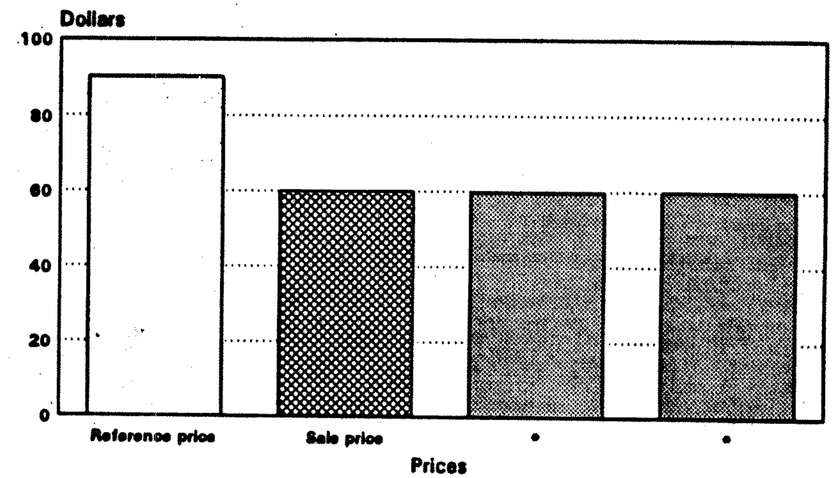
Le Creuset 4.5 quart oven
* = Competitors

Figure A-16
Prices for Advertising Department Store and Competitors, Cookware #2



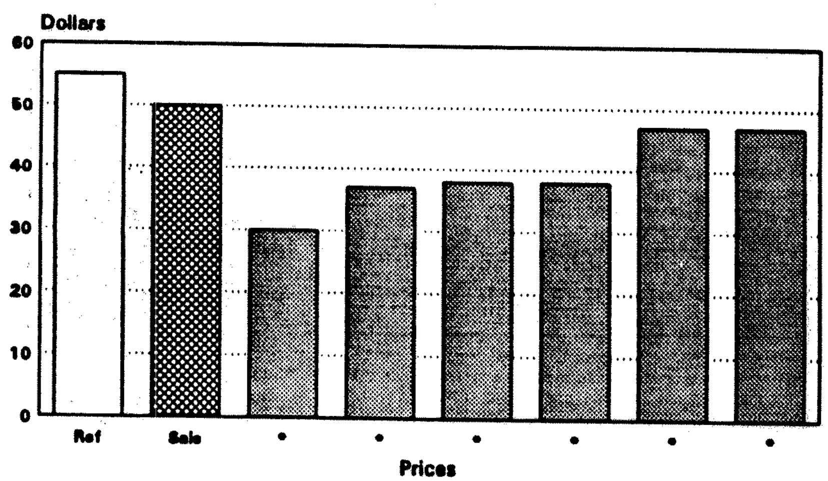
Le Creuset 2 quart oven
* = Competitors

Figure A-17
Prices for Advertising Department Store and Competitors, Walkaround Stereo



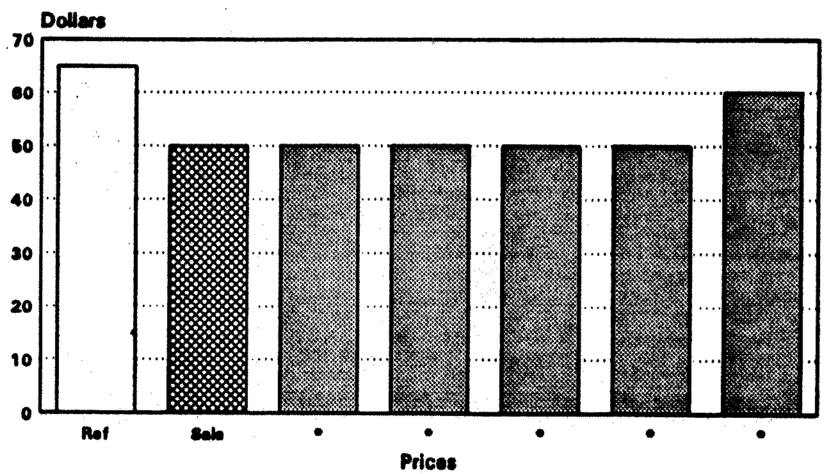
Sony, Model WMF 2031
* = Competitors

Figure A-18
Prices for Advertising Department Store and Competitors, Hand Vacuum



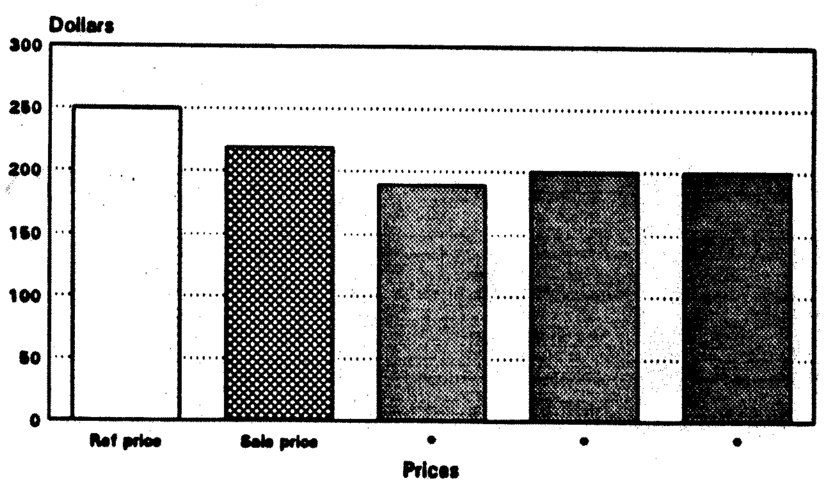
Black & Decker Power Pro, Model 2000
* = Competitors

Figure A-19
Prices for Advertising Department Store and Competitors, Coffeemaker



Krups Brewmaster Plus, Model 149
* = Competitors

Figure A-20
Prices for Advertising Department Store and Competitors, Food Processor



Cuisinart, Model DLC 807
* = Competitors