Market Price Variation, Perceived Price Variation, and Consumers' Price Search Decisions for Durable Goods

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Previous studies have consistently found that most consumers undertake relatively little prepurchase search for durable goods and do even less price-comparison shopping despite the reported importance of price to consumers' purchase decisions. This article proposes and tests two possible explanations for why consumers' willingness to engage in price search does not increase concomitantly with the price variation of durable goods. The first potential explanation, that consumers simply underestimate the market price variation, was not supported. The second possible explanation, which builds upon Weber's law of psychophysics and Thaler's transaction utility theory, was supported. The data indicate that the psychological utility that a consumer derives from saving a fixed amount of money is inversely related to the price of the item. In this case, even if consumers believe that the price variation of more expensive items tends to be greater, their motivation to spend time in price-comparison shopping for these items may not increase as much as expected.

Previous studies have consistently found that most consumers undertake relatively little prepurchase search for durable goods and do even less price-comparison shopping (Beatty and Smith 1987; Wilkie and Dickson 1985), despite the reported importance of price to consumers' purchase decisions (Rothe and Lamont 1973). In view of the low average level of consumer search, it is interesting to find empirical studies that document considerable price variation for standardized consumer products in local markets (Duncan 1981; Maynes and Assum 1982). Moreover, prices of the more expensive products tend to exhibit the greatest variation across stores (Pratt, Wise, and Zeckhauser 1979).

Given the aforementioned evidence regarding the price variation of big-ticket items, it appears that many consumers engage in considerably less price search than is predicted by the economics-of-information theory (Stigler 1961). Therefore, the primary purpose of this article is to test two possible explanations for why con-

sumers' willingness to engage in price search does not increase concomitantly with the price variation of durable goods. One potential explanation for consumers' price search behavior is that they simply underestimate the market price variation. Consequently, they underestimate the potential savings from shopping and undertake less price search than expected (Maynes and Assum 1982).

A second possible explanation for the relatively low level of price search by consumers builds upon Weber's law of psychophysics and Thaler's transaction utility theory (1985). Weber's law suggests that an individual's response to a change in a stimulus will be inversely related to the absolute magnitude of the original stimulus. Likewise, Thaler's transaction utility theory suggests that the psychological utility that a consumer derives from saving a fixed amount of money, say $20, is inversely related to the price of the item. In this case, even if consumers believe that the price variation of more expensive items tends to be greater, their motivation to spend time in price-comparison shopping for these items may not increase as much as predicted by transaction utility theory. Throughout the remainder of the article, we define consumers' tendency to assess the utility of price savings as a proportion of the item's price as the "psychophysics-of-price heuristic." Thus, the consumer implicitly translates the expected savings from price search into relative terms rather than absolute dollars.

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Consider, for example, a consumer who believes that s/he can obtain a $20 savings on a $100 microwave oven and obtain a $20 price reduction on a $400 television by shopping further. The consumer may be inclined to pursue further price search for the $20 savings on the microwave oven because it appears that the relative savings are dramatically higher. Normatively, the two cases are identical in that the consumer's economic cost and expected benefit of price search are the same and should result in the same intention to undertake price-comparison shopping.

It is interesting that the use of the psychophysics-of-price heuristic would reduce consumers' search for more expensive items and thus would have important economic consequences (i.e., greater market price variation) at the aggregate market level. Specifically, this heuristic could help explain Pratt et al.'s (1979) observation that the actual market price variation of standardized items (i.e., with brand, model, and features held constant) is directly related to their mean market price. Therefore, a supplementary goal of this article is to provide an empirical examination of the relationship between the market price variation of standardized products and their mean market price and to explain this relationship in terms of the psychophysics-of-price heuristic.

THEORY UNDERLYING THE RESEARCH HYPOTHESES

The Underestimation Hypothesis

While several studies have examined the accuracy of consumers' beliefs about the prices of nondurable goods (e.g., Mazumdar and Monroe 1990), inquiry into consumers' price knowledge of durable goods is virtually nonexistent. The sole study that asks consumers to estimate the retail price range of durable goods was conducted by Maynes and Assum (1982). In that research, a random sample of consumers were telephoned, and respondents were given the lowest retail price of a product (e.g., a washing machine of average quality) and asked to estimate the highest price for the same product in the local market area. They found that consumers were more than twice as likely to underestimate the price range as they were to overestimate it. Maynes and Assum then reconcile the twin phenomena of high market price variation and the low level of consumers' search in terms of a "paradox of perceptions." Consumers tend to underestimate the market price variation; their consequent failure to seek out price information then fosters even greater price variation as retailers find success in price discriminating on the basis of consumers' price knowledge.

In addition to empirical evidence from a consumer context, a theoretical basis for the hypothesis that the range of market prices will be underestimated is found in studies of the calibration of knowledge and the psy-

chology of prediction (Lichtenstein, Fischhoff, and Phillips 1977). In a typical study, subjects provide estimates of the low and high values (i.e., the range) of familiar but unknown quantities, such as the population of various countries. One should note the parallel between this type of estimation task and the task faced by consumers when estimating the range of market prices (i.e., estimating the extreme market price values). The respondents are instructed to estimate the extreme values such that there will be a 98 percent chance that the true value will be contained within the subjective range. One measure of the calibration of their knowledge is known as the "surprise index"—the percentage of cases in which the actual value falls outside respondents' subjective range. In the pioneering research in this area, the surprise index was 46 percent, in sharp contrast to the expected value of 2 percent that would result if respondents' estimates were properly calibrated (Alpert and Raiffa 1985). While the results of other studies of the calibration of knowledge have not generally been this extreme (e.g., Nisbett and Kunda 1985), the finding that subjects underestimate the relevant range is consistent across a wide variety of content domains, levels of respondent expertise, and research methods (see Lichtenstein et al. [1977] for a review). Moreover, similar results have been obtained in studies in which respondents were offered incentives for accurate calibration (Pickhardt and Wallace 1974).

Another basis for predicting that consumers will underestimate the range of market prices for a given item stems from the memory-based nature of the shopping process. Suppose, for example, that a consumer has located the preferred brand of color television with the desired features at an acceptable price and is considering the purchase from within a department store. In the absence of a written shopping plan (Wilkie and Dickson 1985), the consumer may fail to consider a particular store or an entire category of stores (e.g., warehouse clubs) as alternative outlets for this same item (Alba and Chattopadhyay 1985). As a result of the failure to recall the full set of stores that carry the desired product, the consumer may underestimate the market price range and be less likely to engage in further price-comparison shopping. The foregoing evidence provides the foundation for the following prediction:

> H1: Consumers will underestimate the range of prices of standardized consumer products in a local market.

The Psychophysics-of-Price Hypothesis

A second possible explanation for the low level of price search by consumers in the face of high market price variation is founded upon Weber-Fechner's law of psychophysics and Thaler's transaction utility theory. Weber's law states that the magnitude of response to a change in a stimulus depends on the proportion by which that original stimulus is changed (Monroe 1971a,

1971b). It is interesting that Weber's law has been applied to interpret consumers' price thresholds and response to price promotions (Monroe 1973, 1990; also cf. Kamen and Toman 1970). However, its applicability to consumers' price search decisions has yet to be examined.

In the context of consumers' decisions to continue price-comparison shopping, these theories predict that the psychological utility that consumers expect to obtain from achieving a fixed amount of price savings is inversely related to the price of the item. While Thaler (1985) has reported data from role-playing exercises that are consistent with the foregoing theories of consumers' utility, the effect of the psychophysics-of-price heuristic on consumers' price search intentions has not yet been documented in a more externally valid consumer context.

> H2: Consumers' willingness to spend time comparing prices to achieve a fixed amount of price savings is negatively related to the price of the item.

Note that the two hypotheses that are proposed to explain the phenomenon in question need not be mutually exclusive. Consumers could both underestimate the market price dispersion and judge the expected savings from price search in a manner consistent with the psychophysics-of-price hypothesis.

RESEARCH METHODOLOGY

Three types of data were required to test the research hypotheses and examine the supplementary issue. First, data on the actual prices of standardized consumer products (i.e., with brand, model, and features held constant) at multiple stores were needed to establish the market price range of each of these items. These data also enable us to examine the relationship between items' mean price in the market and their price variation across stores. Second, consumers' estimates of the market price range of these same items were required. Together, these data enable us to test the underestimation hypothesis. Finally, data were needed on consumers' willingness to spend time comparing prices. Recall that the psychophysics-of-price hypothesis predicts that consumers' willingness to search to achieve a fixed amount of price savings should be negatively related to the price of the item in question.

Selection of Product Categories

Several criteria guided the selection of the product categories to include in the study. First, the product categories had to be costly enough to warrant some price-comparison shopping by a substantial proportion of consumers. Second, retail distribution of the products had to be sufficient to enable consumers to compare prices of specific brand/models at multiple stores. Next,

the inclusion of multiple categories increases the generalizability of the research results and incorporates greater market price variance. Finally, it allowed us to collect data from a larger sample of consumers for a fixed research budget. Televisions, VCRs, and microwave ovens met these criteria and were selected as the product categories to be examined.

Sampling Procedure

The respondents were consumers in a southeastern U.S. city who had *just* purchased a TV, VCR, or microwave oven during the same period in which the objective price data were recorded. Recent purchasers provide the best test of consumers' knowledge levels for prices; it is not very important whether the public in general underestimates the dispersion of prices, but it *is* important if consumers making decisions in that marketplace do so. The subjective data were collected from consumers at 17 of the city's 20 retail outlets. Fifteen retailers allowed the study's interviewers to distribute the questionnaire, while two others had their own salespeople distribute the questionnaire. The demographic characteristics of the respondents did not differ as a function of the data collection method. Furthermore, their demographics (i.e., age, education, and household income) were similar to the surrounding county population. Each respondent was given $5 as an incentive for filling out the questionnaire. Two hundred and thirty-five consumers completed the survey, which resulted in a 57.6 percent response rate.

Measures

Consumers' Subjective Market Price Range. Each consumer was instructed to first estimate the lowest price at which the chosen model was available at any store in the local market area. Next, the consumer was instructed to estimate the highest price at which the chosen model was available, and the difference between the two measures was calculated to represent the subjective market price range.[1] Out of the 235 consumers who were surveyed, 89 purchased brands or models that were available at two or more stores in the marketplace.

Actual Market Price Range. The retail prices of all models that were sold at more than one store were col-

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[1]There are three reasons why the subjective price range was used to measure consumers' estimates of the dispersion of market prices. First, preliminary research indicated that consumers were not comfortable providing estimates of the market price dispersion in terms of the variance of prices. Second, in the context of a field study of consumers' price search behavior, there were a large number of control variables to be measured and accompanying questions to be asked. Thus, the length of the questionnaire precluded the use of a longer series of questions (e.g., a fractile-type method as in Alpert and Raiffa [1985]) to measure consumers' estimates of the price dispersion. Third, a methodology very similar to the one that we employed was used in recent research on consumers' acceptable price ranges (e.g., Lichtenstein, Bloch, and Black 1988).

lected on nine separate occasions over a four-month period. In order to ensure that differences in product quality did not perturb the measure of the market price range, the unit of analysis was a standard product (i.e., with brand, model, and features held constant) at a given point in time. In addition, it was essential that the measure of the actual market price range correspond to the measure of the subjective market range. Therefore, the actual market price range was operationalized as the highest price minus the lowest price of each specific brand or model across all stores in the market at a given point in time. This procedure resulted in 497 observations of the actual market price range, including those for the 89 brands/models that were purchased by the sample of consumers. To test Hypothesis 1, each consumer's estimate of the price range of the chosen model is compared to the actual market price range of the corresponding model.

Consumers' Price Search Intentions. To test the second hypothesis we used two measures of consumers' willingness to spend additional time comparing prices to achieve a fixed amount of price savings. Each respondent was asked to assume that the chosen model was available elsewhere and that it could be bought at a lower price. S/he then indicated the amount of additional time s/he would be willing to spend to save *both* an extra $20 and an extra $40 on the purchase price of their chosen model (i.e., with the brand name and model held constant). Thus, we did not ask consumers to make a price versus quality trade-off. Rather, our dependent variables required the consumer to make a trade-off between price savings and price search, with quality and perceived price dispersion held constant. The two dependent variables were highly correlated (r = .80, p < .001).

Price Paid and Control Variables. The predictor variable used to test the second hypothesis is the price paid for the chosen model. This variable was operationalized as the actual price of the chosen item (i.e., not including taxes or any extended warranty). The price paid is expected to be negatively related to consumers' willingness to spend additional time comparing prices to save $20 ($40), ceteris paribus. In addition, several possible control variables were measured to reduce extraneous variation: the respondent's wage rate, price consciousness, perceived enjoyment of shopping, perceived effort of shopping, prior purchase experience in the product category, urgency of the purchase, whether the purchase price was negotiated, and prior price search time. Past research has indicated that these variables affect consumers' search behavior (e.g., Beatty and Smith 1987; Becker 1965; Mittelstaedt and Stassen 1990).

RESULTS

Testing Hypothesis 1

Do consumers underestimate the range of market prices? Eighty-nine consumers estimated the price range

TABLE 1

TESTING THE UNDERESTIMATION HYPOTHESIS

Variable	n	Mean	SD	t-Value	p-Value
Market price range	89	67.02	35.61	2.30	.02
Subjective price range	89	82.73	64.69		

of models for which actual price range data were also available. Contrary to Hypothesis 1, the proportion of consumers who underestimated the price range of the model that they bought (44 percent) was less than the proportion who overestimated it (56 percent). Moreover, the results of a within-subject t-test showed that consumers' estimates of the price range were greater than the actual price range of those same models ($t_{(88)}$ = 2.30, p < .05; see Table 1). Thus, these consumers did not underestimate the dispersion of market prices for the appliance models tested.

Testing Hypothesis 2

Do consumers' search intentions suggest that they judge the expected savings from price search in relation to the price of the product? Measures of consumers' willingness to spend time comparing prices to save $20 and $40 were regressed against the variables price paid, wage rate, price consciousness, enjoyment, effort, purchase experience, urgency of the purchase, whether the purchase price was negotiated, and prior price search time. Both regression models were statistically significant (p < .001 for each dependent variable). The only control variables that reached significance were consumers' price consciousness and prior price search time (see Table 2).

Of focal interest to this research, the price of the chosen item was significantly *negatively* related to consumers' price search intentions ($20 measure: $t_{(224)}$ = −3.28, p < .01; $40 measure: $t_{(224)}$ = −3.16, p < .01). These results are virtually unchanged when the covariates are excluded from the model. Thus, Hypothesis 2 was supported, which suggests that consumers' willingness to spend time comparing prices is a function of the expected savings relative to the purchase price.

SUPPLEMENTARY ISSUE

The observation by Pratt et al. (1979) that more expensive (standardized) products tend to exhibit the greatest amount of market price variation is both curious and contrary to direct implications of economics-of-information theory. The economics-of-information theory (Stigler 1961) suggests that consumers should engage in price-comparison shopping for homogeneous goods until the perceived marginal benefit of search is reduced to the perceived marginal cost. Therefore, the

TABLE 2

TESTING THE PSYCHOPHYSICS-OF-PRICE HYPOTHESIS

	Price search intention:			
	To save $20		To save $40	
Criterion variable	Standard regression coefficient[a]	t-Value	Standard regression coefficient[a]	t-Value
Predictor Variable:				
Price paid	−.22	−3.28[b]	−.21	−3.16[b]
Control variables:				
Wage rate	−.07	−1.00	−.03	−.51
Price consciousness	.17	2.58[b]	.18	2.72[b]
Enjoyment of shopping	.10	1.52	.04	.69
Effort of shopping	−.01	−.17	−.02	−.45
Negotiated the price	.05	.85	.03	.43
Purchase experience	.03	.49	.03	.41
Urgency of purchase	.06	.86	.03	.43
Prior price search time	.18	2.31[c]	.31	4.62[b]

NOTE:—The results for the effects of price paid remain unchanged when the control variables are not included in the model. The simple correlation (n = 235) between price paid and price search intention was as follows: price search ($20): r = −.21 (p < .005); and price search ($40): r = −.17 (p < .01).

[a]For the overall model (n = 234), price search ($20): $F_{(9,224)}$ = 4.79, p < .001, R^2 = .16; and price search ($40): $F_{(9,224)}$ = 6.24, p < .001, R^2 = .20. The difference in sample size used in this analysis and the correlation analysis above is that one respondent did not complete one of the control variables.

[b]Significant at p < .01.

[c]Significant at p < .05.

price variation of standardized products at different price levels should not vary systematically.[2]

In contrast, consumers' use of the psychophysics-of-price heuristic would help explain Pratt et al.'s (1979) observation that there is, in fact, a positive relationship between standardized items' mean market price and their price variation across stores. The psychophysics-of-price heuristic suggests that consumers' motivation to spend time in price comparison shopping may not increase as much as predicted for more expensive items. The lack of price vigilance by consumers would then result in greater market price variation for these items. On the basis of this empirical support for the psychophysics-of-price hypothesis (Hypothesis 2) and Pratt et al.'s (1979) finding, one can predict the following:

H3: There is a positive relationship between standardized items' mean market price and their price range across stores.

Method for Examining the Supplementary Issue

To examine the relationship between standardized items' mean market price and their price range across

[2]A plausible alternative explanation for the same result would be that more expensive items tend to be bought by consumers who have a higher wage rate and higher opportunity cost of time. In order to rule out this rival explanation, the test of the psychophysics-of-price hypothesis included consumers' wage rate as a control variable. However, consumers' willingness to spend time comparing prices was still a function of the expected savings relative to the purchase price.

stores, the data on the actual prices of the 497 specific brands or models that were sold in multiple stores were again used (see above for details).

Criterion Variable. The dependent variable was the actual market price range of each model at a given point in time.

Predictor Variables. Of focal interest was each standardized item's mean market price across stores at a given point in time. Three additional variables were measured in an effort to control for factors that could produce a spurious relationship between the items' mean price and their price range—the number of stores at which the item was available (i.e., amount of competition); the product category (microwave, TV, and VCR); and whether the item was sold at both discount stores and department stores (i.e., variety of competition).

An important issue concerns how this research improves on and extends the study by Pratt et al. (1979). The first methodological refinement is that this study focused exclusively on three consumer durable product categories—microwaves, VCRs, and TVs—that were priced in the range of $100-$1,000 and were available at the same set of retail outlets. This homogeneity of products reduces the likelihood that the observed relationship is due to an extraneous factor that may be confounded with an item's mean market price. (Pratt et al. [1979] included both services and goods and nondurable products as well as durables.) Second, in this study the actual selling prices of the items under examination were recorded rather than merely asking the

sellers (by phone) to indicate the prices at which they would be willing to sell if a buyer were interested. A telephone query could result in different prices being quoted, with some retailers providing a reference price (e.g., a manufacturer's suggested retail price) and other retailers providing a sale price. Thus, the data collection method should reduce the error variance in the measurement of each item's market price range. Third, the analyses in the current study are based on 497 observations as compared to Pratt et al. (1979), in which the regression analysis had 39 observations. Fourth, as noted above, the number of stores and the variety of competition were explicitly controlled for in the analysis of the relationship between items' mean market price and their market price range.

Results

The price range of each standardized item was regressed against its mean market price and the control variables used in the previous analyses. The regression model was statistically significant ($p < .01$) and accounted for 25 percent of the variation in the market price range of each item (see Table 3). All of the control variables were statistically significant (see Table 3). More important, the relationship between items' mean market price and their price range was significant ($t_{(491)}$ = 6.34, $p < .001$). Likewise, the simple correlation between items' mean price and their market price range was significant in the predicted direction ($r = .30$; $p < .001$), which provides further validation of the observed relationship. These findings, coupled with the results of the consumer survey, suggest that an empirical link exists between the psychophysics-of-price heuristic at the individual consumer level and retail price variation at the aggregate market level.

GENERAL DISCUSSION

Summary and Implications

This study presents empirical evidence on the price range of standardized consumer products in a local market, consumers' estimates of that price variation, and consumers' willingness to spend time shopping to achieve a fixed amount of price savings. By asking respondents to project themselves from the point at which they had found the brand, model, and features that they prefer, this study focuses solely on consumers' price search; it thereby overcomes a limitation of previous research, which has typically assumed either that there was no product differentiation or that the product in question was carried by all of the retailers in a given market.

The data on the actual price ranges of these standardized items are consistent with previous studies in two interesting respects. First, many standardized consumer products did exhibit considerable interstore price variation within a local market. This finding suggests

TABLE 3

TESTING THE RELATIONSHP BETWEEN ITEMS' MEAN MARKET PRICE AND THEIR MARKET PRICE RANGE

Variable	Standard regression coefficient[a]	t-Value	p-Value
Predictor variable:			
Mean price[b]	.30	6.34	.000
Control variables:[c]			
Number of stores	.26	6.47	.000
Variety of competition	.24	5.58	.000
Product dummy 1	−.19	−3.42	.001
Product dummy 2	−.30	−5.58	.000

NOTE.—The criterion variable is market price range. For microwaves, TVs, and VCRs, respectively, the market price range (highest price minus lowest price) in each category was $53.21 ($n$ = 112), $52.13 ($n$ = 260), and $38.74 ($n$ = 125).

[a]For the overall model, $F_{(5,491)}$ = 32.99, $p < .001$, R^2 = .25. The simple correlation between the mean price and the market price range was $r = .30$ ($p < .001$).

[b]For microwaves, TVs, and VCRs, respectively, the mean price in each category was $231.42 ($n$ = 112), $367.78 ($n$ = 260), and $366.08 ($n$ = 125).

[c]Number of stores is the number of stores at which each item is available. Variety of competition indicates whether the product was available at both discount stores and department stores (0 = no, 1 = yes). Product dummy 1 indicates whether the item is a TV, and product dummy 2 indicates whether the item is a VCR. Both product dummy variables are set to zero when the item is a microwave oven.

that many consumers would benefit from conducting additional price search for their chosen model. Note, in addition, that the current study did not examine intrastore price variation over time. To the extent that there is considerable intrastore price variation as well, consumers would derive even greater benefit by extending their deliberation period and making additional price comparisons over time. Second, the results of this study replicate an interesting observation made by Pratt et al. (1979)—the higher the mean price of a standardized item in the market, the greater the price range of that model across stores.

One possible explanation for these phenomena was that consumers underestimate the extent of market price variation. Contrary to both the proposed theory and previous empirical research, the current study found that consumers did not systematically underestimate the variation in market prices. A possible reconciliation of these results with those obtained by Maynes and Assum (1982) is that the consumers in their study simply had less accurate beliefs about the marketplace because they were not in the market for the products in question. In addition, their measure of the objective price range of each product incorporated price differences across brands of "similar quality" as defined by Consumer Reports, whereas the current study examined the actual and subjective price range of standardized items.

The second explanation that was proposed for both consumers' price search and the nature of the market price dispersion was supported. The data indicate that

consumers' willingness to spend time comparing prices is affected by the psychological utility, as well as the economic value, of the expected savings. In accord with previous research on the psychophysics of prices and transaction utility theory, consumers' reported willingness to spend time shopping to save a fixed amount of money was negatively related to the price of their chosen item. This result is contrary to economics-of-information theory and has implications for both marketers and consumer educators.

According to traditional microeconomic theory, the expected costs and benefits of price search should guide consumers' search efforts irrespective of the price of the item to be purchased. Moreover, it is generally accepted that consumers' price search acts as a powerful force, preventing too wide a dispersion of prices (Telser 1973). In contrast, the current results demonstrate that consumers become less willing to search to obtain a given amount of price savings as the price of the desired product increases. As a consequence, consumers' price search fails to serve as an adequate policing mechanism and allows the market price variation to vary concomitantly with the price of the product. Therefore, consumers' use of the psychophysics-of-price heuristic may help explain the empirical relationship between items' mean market price and their price range across stores observed by Pratt et al. (1979) and replicated herein.

Use of the psychophysics-of-price heuristic may also account for the anomaly that a consumer who is willing to spend an extra hour shopping for groceries to save $5 may be unwilling to spend an additional hour comparing prices to save $100 or more on the purchase of a $15,000 car. The consumer seems to be deciding that the relatively small savings on the car simply are not worth the time and effort.

A final contribution of this article stems from its interdisciplinary approach to studying consumers' intentions to search for price information. In the spirit of Hogarth and Reder's (1987) suggestion for improving consumer research through the integration of economic and psychological principles, this research incorporates several factors that economists have proposed to affect price search. At the same time, the research demonstrates that a factor suggested by consumer psychology, the psychophysics-of-price heuristic, also affects price search and has important consequences at the individual and aggregate market level. At the individual level, the research provides insight into the low mean amount of price search observed in many previous studies. At the aggregate market level, the research provides an interpretation for the finding that high market price variation increases with the mean product price.

Limitations and Suggestions for Future Research

There are several possible limitations of the current research and associated avenues for future research.

First, the operational measure of the market price variation of each product was its price range (i.e., highest price minus lowest price). A challenge that remains for future research is to determine whether alternative methods of measuring the market price range (e.g., fractile methods as measured in Alpert and Raiffa [1985]) would affect the results pertaining to the underestimation hypothesis.

A second interesting issue raised by the current research relates to the process by which consumers translate their expectations about potential price savings into some type of relative measure (or percentage). The research results suggest that consumers use the psychophysics-of-price heuristic to make price search decisions. Future research should examine whether consumers attempt to calculate and use percentage savings or use a simpler form of relative judgment. Likewise, the extent to which retailers have recognized that consumers use the psychophysics-of-price heuristic to guide their search behavior and have adapted their pricing practices accordingly represents another area for future research.

A final limitation of the conclusions regarding the role that the psychophysics of price plays in consumers' price search should also be noted. In this study, consumers' willingness to undertake price-comparison shopping was used as the criterion variable rather than actual price search behavior. While these data on consumers' price search intentions appear to be consistent with past evidence, indicating that consumers undertake relatively little price search, future research should assess the role that psychophysics of price plays in actual search behavior.

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