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Economists have long lived in a symmetrical, if unpredictable, world. Models, both theoretical and applied, typically allow movements up-and-down supply curves and back-and-forth along demand curves with equal facility. Yet there are good a priori realms to expect that movements may be only partially reversible over certain regions. Marshall described the state of theory this way (p. 807):

"... this theory is out of touch with real conditions of life, insofar as it assumes that, if the prediction of a commodity increases and afterwards again diminishes to its old amount, the demand price and the supply price will return to their old positions for that amount."

Based on the expectation of irreversibility, statistical prodedures have been developed which allow for slope and intercept changes in response to changing situations over time. These procedures may be classified into three broad areas: (a) production functions, (b) stocks (including tastes and habits), and (3) permanency of income.

Irreversibility is perhaps easiest to understand and explain in production function analysis where, due to asset fixity and other rigidities, output is typically more price responsive to price increases than to price decreases. Empirically, this situation can be handled readily by defining two variables, one for price increases and one for price decreases. The hypothesis of non-reversibility may be tested by comparing the magnitudes of the coefficients of the (cumulative) price increase and price decrease terms (Houck; Traill, Colman and Young).

For final demand analysis, the concept of non-symmetry requires further justification. One procedure recognizes that when prices change

the response is not immediate but is rather spread over a certain period of time. If the restrictive assumptions concerning the form of the adjustment are acceptable, then the situation can be handled through stock adjustment procedures such as those proposed by Koyck and Nerlove. For non-durable goods, the "stock" is replaced with the concept of habit formation. Habits are perceived as exhibiting some stickiness, as consumers adapt slowly to both rising and declining price changes (Labys, pp. 10-16). In a study supporting the habit formation hypothesis, Goodwin, Andem and Martin found that supplies of beef and the resultant low prices may, over time, have shifted retail preferences towards beef. Subsequently, as prices rose sharply during the rebuilding phase of the cattle cycle, an abrupt shift in tastes towards a preference for more beef was detectable.

Price increases can bring about yet another type of response. Consumers may learn to economize and perpetuate their more frugal ways once relative prices have been restored (Hogarty and Mackay). Consumer reaction to higher gasoline prices is an example of such a response, with demand adjustments delayed as driving habits and new technology adapted slowly to the much higher prices. Demand continued to remain weak, even when the real price of fuel fell sharply during the winter of 1982-83. A second phase of this adjustment, the availability of fuel-efficient automobiles, is an example of how the development of substitutes may be induced by high prices (Waugh).

Asymmetry due to habit fixity has been termed addiction-asymmetry by Scitovsky (1976, 1978), who sees it as based on physiological or psychological dependency. As a result of this dependency, response to price declines are expected to be more elastic (in absolute value) than

those for price increases. A second form of asymmetry is termed information-asymmetry and would lead to the opposite result, with demand being less elastic (in absolute value) for price declines than for increases. This would also occur if a majority of customers were uninformed of a price decrease and hence did not respond. The identical result (i.e., less elastic demand on price declines) would occur if high prices led consumers to a long-term shift in consumption habits (e.g., purchasing a fuel-efficient automobile) so that needs were altered once prices fell. The theory then suggests that responses to price changes may not be symmetrical, but the direction of the "kink"in the demand curve can not be specified a priori.

In an empirical analysis of the demand response to instant coffee in the U.K., Young used the Wolffram method, which allows responses to price increases and decreases to be estimated separately. Using the 1960-77 period during which coffee prices experienced sharp price variations, he found that the elasticity with respect to price rises was -.69 while during price declines it was -1.17. Thus, these results are in agreement with the addictive-assymmetry hypothesis, which seems reasonable considering the presence of caffeine in this product. The historical progression of prices which rose sharply in 1976 (right at the end of the Young price series) nevertheless raises questions about what the empirical results are actually measuring (data reported in Sun).

The effects of income changes on irreversibility are based on the recognition that consumers' behavior varies depending on the source of income. The best known distinction is between transitory and permanent incomes (Friedman) but other variants can also be considered (e.g., wage, transfer, etc.). In detailed study, Benus, Kmenta and Shapiro

constructed a flexible forms model, using cross-section time-series data to allow for dynamic adjustments in income changes. Results did show the expected differences in the marginal propensity to consume from different income sources. Unfortunately, the estimated price-elasticities for food demand were far outside the range reported in numerous previous studies and are consequently suspect.

From this brief review, it is evident that theoretical explanations of the dynamic process consumers go through in adjusting to price changes are fragmentary at best. Our understanding can be described as particularly inadequate in two respects. First, there is no theoretical basis for the "habit persistence" procedure. Rather, the theory seems to be an expost explanation for observed behavior in which it is implicitly assumed that the only change in tastes and preferences was induced by the relative price change. However, in empirical analysis, the period under study is normally long enough to allow for numerous other changes to occur over the period leading to the observed demand relationships. Coffee consumption, for example, had been declining steadily from World War II until the late 1970's, when it took a substantial drop in response to large price increases. However, much of the change was probably due to demographic changes as the post-war baby boom swelled the population with (predominately) soft drink consumers. (Soda consumption increased by roughly 250 percent from 1946-75 [Sun, pp. 4-5]). Much of this change can not be attributed to coffee price fluctuations, although the addictive-assymmetry model might lead to such an incorrect interpretation.

The second limitation of current theory is also related to time periods. At present, nothing is known about the effects of short-term

price changes on reversibility. What effect does a short-term price increase (or decrease) have if it is compensated within a limited period? The habit persistence model suggests that habits respond only slowly to price changes, and hence no lingering effect would be anticipated if price movements were of a limited duration, say of a few weeks or less. Yet, that supposition may not be correct. The answer is of obvious significance to the business community where temporary price reductions are often used to spur demand while price increases are typically phased in over a period of time. This pricing pattern suggests a particular kind of response to price movements that is not included in the habit persistence theory.

Economists, too, are concerned about asymmetry of price response, which causes consumers to respond differentially to price increases and price decreases. Asymmetry causes the budget equation to be non-linear, even when consumers are price takers. Further, the demand function may not be homogeneous of degree zero in product prices and income. Clearly, non-symmetry of price response has potential major consequences for demand theory.

The purpose of this paper is to make an initial investigation into consumers' response to short-term price changes. First, an hypothesized relationship is developed and motivated by reference to prospect theory. Subsequently, the hypothesis of unequal response to price changes is analyzed. The requirements for the test data--substantial price changes persisting over short intervals--are such that observed market data are inappropriate. In their place, data from a controlled token experiment (described below) are used. The limited sample size and other unique characteristics of the data raise questions about the generality of the results. Thus, they should only be viewed as tentative and preliminary.

Assymetry of Price Response: Lessons from Prospect Theory

Prospect theory is proposed as an alternative explanation for choices under risk which were observed as displaying preferences systematically violating the axioms of expected utility theory (Kahneman and Tversky, p. 263). Based on a series of choice problems presented to several groups of subjects, the authors propose that the value function is (a) based on deviations from a reference point rather than an absolute change, (b) generally concave for gains and commonly convex for losses, and (c) steeper for losses than for gains.

The following problem results demonstrate, in part, how these hypotheses were derived:

(6,000 , .25) or (4,000, .25 .-2,000, .25)*

(-6,000, .25)* or (-4,000, .25; -2,000, .25).

The asterisk identifies which choice was preferred by 70 percent or more of the subject groups. The example is constructed so that both choices have equal values, but the subjects rankings led to preferences where $V(6,000) < V(4,000) + V(2,000)$ while $V(-6,000) > V(-4,000) + V(-2,000)$ (pp. 278-79). This result is inconsistent with the accepted axioms of expected utility theory, but does support the hypothesis that the value function is concave for gains and convex for losses. Graphically, the hypothesized value function can be depicted as below (p. 279):

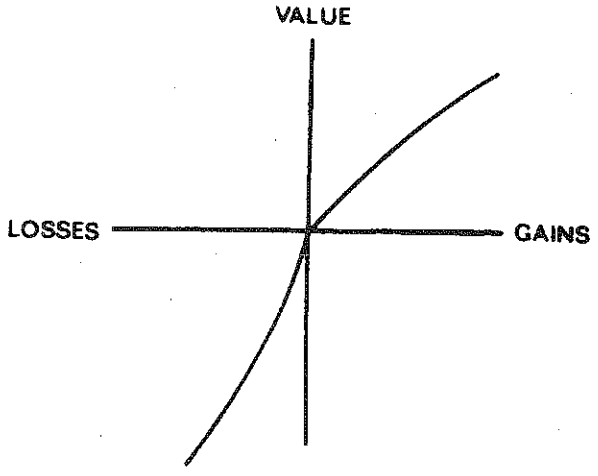

Figure 1: A Hypothetical Value Function.

As an explanation for these differing responses to losses and gains, Kahneman and Tversky posit that the loss of a sum of money outweighs the pleasure associated from gaining the same amount. This may be particularly true for large losses which can necessitate a change in lifestyle. Stated simply, "losses loom larger than gains" (p. 279). (See Kahneman and Tversky for further references).

Extended to market behavior, prospect theory suggests that price increases loom larger than decreases. This is because a large price increase may compel major changes in purchase decisions and lifestyle. Price decreases, for their part, may increase general welfare by increasing disposable income, but the benefits are achievable only following a complex recompulation of budget reallocations among expenditure groups and, finally, products. Thus, a price increase necessitates an immediate response while the benefits of a price decrease can be delayed in cases of careful allocation of expenditures or diffused if the funds are spent on impulsive purchases. As a result of these non-symmetric effects, it is hypothesized that consumers tend to reduce expenditures more substantially in response to a price increase rather than to increase expenditures as a result of a price decline. Consequently, a price increase (decrease) followed rapidly by a decrease (increase) will not restore a consumer to the pre-price change equilibrium and should in all cases lead to lower total purchases.

Prospect theory can also provide insights into a behavioral basis for observed "habit persistence". Individuals, as Kahneman and Tversky have observed, make decisions based upon a reference point (the origin in Figure 1), with the magnitude of the change measured in proportion to that point (p. 277). Presumably the reference point adjusts over time

but not instantaneously. Hence, it can be expected that behavior over time will be irreversible if the period is long enough for the reference point to adjust. Consider the results of the analysis of beef retail demand done by Goodwin, Andorn, and Martin where the demand was found to become less elastic following a sustained period of low prices. This effect, in their opinion, was attributable to habit persistence; consumers growing accustomed to eating beef during a period of low prices continued with their habits following the price rise. Alternatively, the consumer's reference point could have shifted during the low price period and the asset position improved. Then, as prices rose, the magnitude of the change was not as great relative to the enhanced asset position, and consumption did not fall as it would have based on the original asset position. Thus, prospect theory can explain, or at least provide insights into, both short and longer term responses to price changes. Our concern here, however, is with the short term, and we will proceed with analyzing the hypotheses following a description of the data.

Data Source

As noted above, the analysis requires data incorporating short-term price changes of a sufficient magnitude to affect a consumer's asset position. These conditions are met in a set generated from a controlled token experiment. The experiment was conducted in a ward for chronic psychotics at Central Islip State Hospital in New York in 1971. Briefly, the process and data collection procedures can be described as follows (for more detail, see Battalio, et al.; 1974). Up to 39 long-term patients participated in a token economy where paper money was awarded for job assignments (making own bed, cleaning, etc.) and spent at the ward store, which handled cigarettes, soda and similar items. Tokens also

were required for room rent for patients not wishing to use the dormitory and for permission to leave the ward on particular occasions. Expenditures were recorded directly onto the tokens, which were collected after one use. As a result, the record of expenditures by patients was very accurate (Battalio, et al.; 1973). There was no formal provision for savings or loans, and the tokens were not redeemable elsewhere. As a result, virtually all income was spent (p.55). Income, too, was variable since patients generally had the opportunity to work as long as desired.

Available commodities and services were divided into three groups, as shown in Table 1. Products in Groups 1 and 2 were selected so that each individual consumed something from each group. All other necessities, including the remaining meals and a bunk bed, were provided without charge. Group 3 products were closer to basic necessities. Experimental price changes were instituted according to the following ABA experimental design:

Experimental Price Changes*

Week	Group 1	Group 2	Group 3
1	Same	Same	Same
2	Half	Double	Same
3	Same	Same	Same
4	Double	Half	Same
5	Double	Half	Same
6	Same	Same	Same
7	Same	Same	Same

* Fractional tokens were rounded to the next largest.

Price changes were announced on Sunday noon without any prior warning. The first change was made after base prices were in effect for several months. Only the researchers knew the duration of each price change.

Table 1: Products available for tokens and baseline prices.

Group 1		Group 2		Group 3	
Items	Base price	Items	Base price	Items	Base price
Cigarettes	2	Coffee	2	Package deal	3
Candy bars	2	Penny Candy	1	Clothing items	varied
Soda	6	Cookies	1	Dance	2
Room rent	7/wk	Milk	1	Breakfast	1
		Locker rent	4/wk	misc.	varied
		Honor Card rent	4/wk		
		Honor Card use	2		

Source: Battalio, et al.; 1973, p. 54.

These data provide several advantages aside from the appropriateness of the magnitude and direction of price changes. They are more accurate than is typically the case. Unusual factors, such as availability of items from outside of the experiment, are largely excluded. The consuming groups are homogenous so that equivalency scales and size economies in purchasing are not factors. The non-product costs of consumption, including travel and information collection, are negligible and equal for all. Finally, the time period of the experiment (seven weeks) is brief enough so that underlying tastes can be assumed to be generally constant.

In short, the token data set provides significant advantages over market data. Limitations, nonetheless, do exist. Some are generic to the use of limited panel data of this type and relate to their generality for other groups and conditions. For example, problems may arise if the particular situation of the patients and their environment lead to specialized responses that are not representative of universal behavior. While this is at best an empirical question, Battalio et al., state emphatically: "The experimental evidence to date is that the empirical relationships discovered in the therapeutic, controlled environments are

quite similar across environments containing radically different populations, and, furthermore, these relationships are not contradicted by data from national economic systems" (1974, p. 53). Thus, until evidence to the contrary is presented, we shall proceed using the available data, reserving final judgment until a broader sample is available.

Analysis

The token experimental data to be analyzed are contained in Table 2, which includes aggregate per capita expenditure data for Group 1, 2 and 3 commodities, and consumption separately for six items. These items--cigarettes, bar candy, soda, coffee, penny candy and cookies--are all items for which demand is likely to show substantial variability in response to relative price changes. A glance at the table provides comforting evidence that the demand function is indeed downward sloping. It also shows that the demand for Group 3 products remained quite constant throughout the experimentation period. It can thus be inferred that expenditures are indeed separable across categories.

Battalio et al., in an earlier evaluation of these data, detected an apparent irreversibility in the demand behavior exhibited by the experiment patients. Their analysis is summarized in Figure 2 from which they conclude,". . . in each baseline period following a price change, the expenditure ratio fails to return completely to the value attained in the preceding baseline week" (1974, p.57). The task here then is to determine if this evidence is consistent with the habit persistence explanation or with the interpretation developed from prospect theory.

In our analysis, we shall follow the lead of Battalio et al. by using a qualitative discussion of the data rather than quantitative tests of formal hypotheses. Qualitative analysis is necessitated in part

Table 2: Token Experiment Results With Aggregate Per Capita Expenditures and Consumption By Group and Item.

Week	Commodity Prices	Commodity Group Expenditures (Week 1 Prices)			Number of Token Store Items Purchased						Total Expenditures (current prices)
					Group 1 Items			Group 2 Items			
		Group 1	Group 2	Group 3	Cigarettes	Bar Candy	Soda	Coffee	Penny Candy	Cookies	
1	Baseline	19.4	10.1	12.1	4.5	2.2	.8	2.2	1.3	2.2	41.6
2	Group 1: x 1/2 Group 2: x 2	38.9	6.0	11.1	9.7	4.3	1.7	1.7	.2	1.0	42.6
3	Baseline	22.7	8.2	11.5	5.3	2.4	1.1	1.8	.3	2.1	42.4
4	Group 1: x 2 Group 2: x 1/2	8.5	13.6	10.5	2.0	1.2	.2	3.2	1.0	3.4	34.3
5	Group 1: x 2 Group 2: x 1/2	8.7	14.6	10.7	2.5	.5	.3	3.7	1.1	3.5	35.4
6	Baseline	13.3	10.7	10.6	3.8	1.1	.5	2.7	.5	2.1	34.6
7	Baseline	13.8	8.8	11.0	3.3	1.3	.7	1.3	.4	3.1	33.7

Source: Battalio et al., 1974, p. 56.

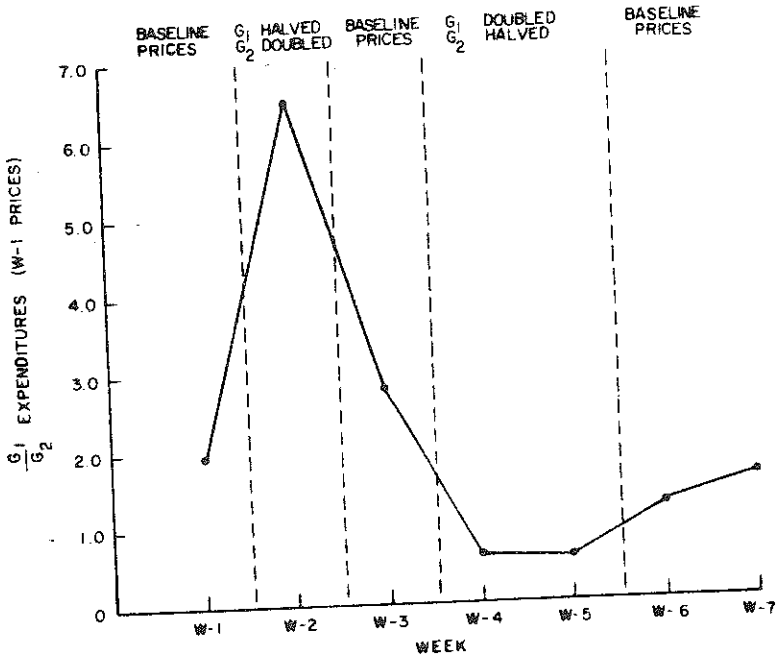

Figure 2

Source: Battalio et al., 1973.

because the form of the data is not suitable for time series analysis (too short a period) nor for cross-section (no horizontal price variability) analysis. Descriptive analysis is also useful when the intent is to generalize insights into market behavior rather than to substantiate theories. Moreover, given the specialized nature of the consumer panel, any generalization would be suspect, even from the best statistical data. Thus, we proceed by recognizing the limitations of the analysis and present it only as a preliminary investigation.

The habit formation (addiction) hypothesis proposes that, as a result of slow changes in habits, responses to price changes take place over an extended period of time. Young, in fact, found that consumers in Great Britain took approximately two years to fully respond to a steep price decline (p. 183). With the token experiment data, habit persistence would be observable as consumption changes in successive periods of stable prices following a substantial price adjustment.

Two distinct time periods during the experiment display these characteristics: weeks 4 to 5, and 6 to 7. Data from Table 2 are presented in a more usable form in Table 3. According to our analysis, if habit fixity were present, weeks 5 and 7 would show a pattern similar to the one for weeks 4 and 6. The data, however, do not support this hypothesis. With Group 2 products, one value shows the opposite sign, nearly cancelling out the previous week's response, while the others vary substantially in magnitude. With two Group 1 items, nearly all of the adjustment is made in week 4, with little further change the following week. Overall, the evidence for this data set is not very supportive of the habit formation theory. Indeed, most consumption adjustments are made in the period concurrent with the price changes. It should be noted

Table 3: Token Experiment Results With Aggregate Per Capita Weekly Changes in Individual Items Purchased.

Group 1 Items

Week	Δ Price	Cigarettes Q	Cigarettes ΔQ[1/]	Cigarettes ΔQ%[2/]	Bar Candy Q	Bar Candy ΔQ[1/]	Bar Candy ΔQ%[2/]	Soda Q	Soda ΔQ[1/]	Soda ΔQ%[2/]
1	(B)	4.5			2.2			.8		
			+5.2	+115		+2.1	+95		+.9	+112
2	—	9.7			4.3			1.7		
			-4.4	-45		-1.9	-44		-.6	-35
3	+ (B)	5.3			2.4			1.1		
			-3.3	-62		-1.2	-50		-.9	-82
4	+	2.0			1.2			.2		
			+.5	+20		-.7	-58		+.1	+50
5	0	2.5			.5			.3		
			+1.3	+52		+.6	+120		+.2	+67
6	— (B)	3.8			1.1			.5		
			-.4	-10		+.2	+18		+.2	+40
7	0	3.4			1.3			.7		

Group 2 Items

		Coffee Q	Coffee ΔQ[1/]	Coffee ΔQ%[2/]	Penny Candy Q	Penny Candy ΔQ[1/]	Penny Candy ΔQ%[2/]	Cookies Q	Cookies ΔQ[1/]	Cookies ΔQ%[2/]
1	(B)	2.2			1.3			2.2		
			-.5	-23		-1.1	-85		-1.2	+54
2	+	1.7			.2			1.0		
			+.1	+6		+.1	+50		+1.1	+110
3	— (B)	1.8			.3			2.1		
			+1.4	+78		+.7	+233		+1.3	+62
4	—	3.2			1.0			3.4		
			+.5	+16		+.1	+10		+.1	+3
5	0	3.7			1.1			3.5		
			-1.0	-27		-.6	-54		-1.4	-40
6	+ (B)	2.7			.5			2.1		
			-1.4	-53		-.1	-20		+1.0	+48
7	0 (B)	1.3			.4			3.1		

(B) - Baseline prices

[1/] Absolute change from week 1 levels.

[2/] Percentage week-to-week changes.

Source: Derived from Table 2.

that habit formation may not be observable for such short time periods or may not be as applicable for relative price changes of the magnitude used in the token experiment.

Considering further alternative sources of asymmetry, it is instructive to examine its impacts on total expenditures each week (Table 2, last column). Aggregate per capita expenditure declined 19 percent from the beginning to the end of the experiment. In fact, expenditures, can be divided roughly into two periods: weeks 1-3 when they were quite steady, and weeks 4-7 when expenditures were all smaller . Any theory of demand asymmetry must explain how successive short-term and self-cancelling price changes lead to a net reduction in total demand over the period.

In order to ascertain the differential responses to price increases and decreases, it is necessary to examine them separately.

Responses to Price Increases

Per capita demand, as noted, invariably declines following a price increase. Moreover, the magnitude of the decline is similar, regardless of whether the price increase is a doubling from half to baseline prices or a change from baseline to double prices. For Group 1 items, these changes can be observed by comparing weekly changes 2-3 and 3-4 (Table 3). In all cases, demand declines were up to 50 percent for the paired weeks. For Group 2 products, the comparisons can be made for weekly changes 1-2 and 5-6. The results for cookies conform closely to those for the Group 1 products. Coffee and penny candy display the same pattern but the variability is closer to 100 percent of the base than 50 percent or less. Overall, however, there are no really strong systematic differences between responses to prices increasing to the base and

increases from the base to double.

Responses to Price Decreases

Again, price decreases show the expected effect of leading to demand increases. Demand does, nevertheless, show a strong response to the base used. This may be seen by examining the differential response during weeks 1-2 and 5-6 for Group 1 goods. The changes over weeks 5-6 describe an adjustment as prices fall from double levels to the baseline values. As a result of these falling prices, compared to the week one levels, per capita consumption increased by 29, 25 and 27 percent, respectively, for cigarettes, soda and bar candy. In contrast, the demand increases from week 1-2 were 115, 112 and 95 percent, respectively. Clearly, the demand response was much greater when prices fell to half the base level than when they declined from double to the base.

The same general results may be seen for Group 2 products. Here, the relevant comparisons are weeks 2-3 (double to base) and 3-4 (base to half). For coffee, the demand increases in relation to the week one consumption levels for the two weeks were 4 and 64 percent, respectively. Penny candy showed results of 8 and 54 percent and finally for cookies 50 and 59 percent. While the evidence for cookies is not strong, the other two Group 2 products exhibit patterns similar to Group 1.

Evaluation

Our review of the experimental data shows an asymmetrical response to price decreases. That is, demand responds more strongly to declines below the base than it does to declines from double to the base. This finding explains why following a series of short-term price increases and decreases, consumption does not return to its original level. This is due to the fact that while demand decreases in a roughly uniform fashion

following uniform price increases, the response to price decreases is not at all uniform for five of the six items examined. We must now consider whether this result is consistent with prospect theory and with observed pricing behavior.

Prospect theory, it will be recalled, identified three traits of consumers which led to assymetric responses: (a) action is based on a reference point rather than an absolute change, (b) responses are generally concave for gains and convex for losses, and (c) responses are steeper for losses than for gains. Regarding point (a), demand appears to respond strongly to the base rather than the absolute magnitude of price change for price decreases. It is almost as if the consumer has a perception of the "proper" price and makes purchase decisions in relation to that price level when prices are declining. From the limited token experiment data, it is impossible to determine how long a price change must remain in effect for the base to change. Consumer response to price increases, on the other hand, appear to be based on absolute changes without regard to the base.

Responses to price increases do not show the convex/concave pattern predicted by prospect theory. Rather, the loss function appears nearly linear. Gains for their part are a convex function of prices; steeper price cuts (i.e., those below the base) seem to lead to greater consumer value. Finally, the response to price decreases is steeper than for price increases. This contradicts the expected result that losses in the real value of money loom larger than gains.

The rationale for differing consumer responses to price increases and decreases is not clear. It may be that consumers retain over a period of time a concept of real price or real value. Responses to price

increases are necessitated by budget limitations and aided by the presence of substitutes. Price decrease responses are, however, discretionary and do not seem to be triggered until the perceived real value is enhanced. Alternatively, shoppers may harbor a resentment to price increases, which is not mollified until the nominal price decline. Finally, shoppers appear to be far less the creatives of habit than one might expect. Once a high price causes a change in purchase choices, the consumer may be slow in returning to that product, holding off until the nominal price actually declines.

This observed behavior in the token experiment is in agreement with market pricing strategy. Sellers of volatilly priced products tend to have an incentive to stabilize prices, especially if prices are likely to decline in the future. Thus, the failure of retailers to immediately pass on price changes to consumers may be the result of a profit maximizing decision on their part, and not simply a measure of market competitiveness. Indeed, in cases of extreme price volatility, it may be more profitable for a retailer to ration goods than to raise prices to the market clearing level. Very high prices, as has been shown, may cause consumers to hold off purchases until prices once again reach their base levels. The low level of demand elasticity to the initial price cuts would, of course, cause prices to fall sharply as supplies increased.

Consumer sensitivity to base prices may also explain introductory pricing with coupons and cents-off inducements. With a new product, the introductory price could establish the consumers' perceived base price. Pricing below that level using temporary discount offers would, according to our observed results, elicit a greater demand response. The offering of coupons and cents-off for existing products is also explainable within

this context. By pricing below the regular level the manufacturer is catering to the apparent asymmetry of consumer demand. Through a manipulation of prices in this manner the seller could actually increase total sales.

Conclusions

Demand behavior is reexamined using data from a controlled-economy, token experiment. This experiment included much wider savings in prices over shorter time periods than are normally observable in the marketplace. Thus, these data permit an examination of consumers' responses to short-term large price fluctuations. The price changes are of such limited duration that underlying tastes are assumed to be stable. In short, this analysis seeks an alternative to the "habit persistence" explanations of asymmetrical responses to price increases and decreases. As a conceptual base for the investigation, prospect theory is used. This theory explains differing responses to gains and losses as a function of shifting base points and as a greater pain involved with possible loss than with gains.

An examination of the token experimental data shows that an asymmetric response did indeed exist. Responses to price increases were generally uniform. Reactions to decreases, however, showed a marked difference, whether the decrease merely returned the shopper to a previous base price or involved a further reduction. Thus, consumers appear to show a selective awareness of base points when responding to price decreases. The reasons for these asymmetric responses are not known and, in fact, such responses are contradictory to the tenets of prospect theory. The most probable explanation for this phenomenon is that price increases necessitate consumption adjustments as dictated by

income constraints. Price decreases, however, allow for greater discretion since saving or purchasing substitutes is a ready option. Responses to price decreases then show a sensitivity to a price base which may, in turn, be related to shoppers' concepts of value or equity. Observations made from the token data are consistent with much market pricing strategy and provide a partial explanation for retail pricing rigidity in addition to imperfect competition.

These observations raise some fundamental questions about demand theory as they suggest, for example, that demand may not be homogenous of degree one. More fundamentally, however, consumers appear to make decisions at least partially based on absolute prices and on some seemingly personal measure of "value."

It was found that habit persistence theories may hold, but not to the extent generally perceived. Substitutions for products--at least for those examined here--appear to be greater than expected. What does seem to persist is a measure of value for the dollar, which is a fundamental force in short-term purchasing decisions.

These results should be viewed as tentative and interpreted with caution. The duration of the experiments, sample size of the products, closed nature of the economy, analytical procedure, and even characteristics of the participants all make it difficult to generalize from these results. Nevertheless, they do provide insights into short-term demand behavior that are clearly plausible and consistent with market pricing behavior. These results, at the least, reflect a real need for additional micro examinations of consumer behavior in the future.

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