

## Coupon Value: A Signal for Price?

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PRIYA RAGHUBIR\*

In this article, the author proposes that consumers use the value of a coupon to estimate price. Study 1 shows that the higher the percentage discount, the higher the perceived price; Study 2 demonstrates this effect with cents-off coupons. Study 3 then demonstrates that the effect is contingent on whether alternate sources of information are available to consumers and examines the consequences of this on deal evaluations and purchase intentions. The author discusses implications for the information value of promotions, along with managerial implications for coupon design and communication.

## Coupon Value: A Signal for Price?

Price expectations serve as an important frame of reference used by consumers in evaluating price information prior to purchase (Jacobson and Obermiller 1990; Mayhew and Winer 1992). Typically, the lower the price of the product, the lower the economic cost to the consumer and the higher the likelihood of purchase. A similar economic benefit is provided by a sales promotion tool such as a coupon. The higher the promotional discount, the higher the economic benefit, and the higher the likelihood of purchase is. Presumably, the reason manufacturers offer high coupon values is to increase the economic incentive to purchase a brand in the short term. If a consumer had a \$1 coupon for a brand for which he or she expected to pay \$4, he or she probably would be more likely to redeem it than a 50¢ coupon. In keeping with this logic, there is evidence that coupons with higher values are more likely to be redeemed than those with low values (Bawa and Shoemaker 1987; Irons, Little, and Klein 1983; Shoemaker and Tibrewala 1985).

However, in this article, I argue that coupon value may signal the price of the product—the higher the coupon value, the higher the perception of price—and this indirect informational effect can undercut the positive economic effect of providing a discount. For example, if a customer received a \$5 coupon to visit a museum and did not know the price of the admission but was aware of its quality, then, to the extent the \$5 value signals that the ticket price is closer to \$20 than \$10, the consumer might be less likely to visit the museum. Similarly, if the consumer expects that the price of a

new breakfast cereal advertised in the coupon free-standing inserts (FSIs) of his or her daily newspaper is \$6, he or she might be less likely to clip the coupon than if he or she expects it to be \$4. In short, if price promotions lead to high price expectations, they could have a less positive effect on sales than if they did not lead to such expectations.

Here, the effect of coupon value on price expectations is studied. Examining the situation from the consumer point of view, three studies demonstrate (1) the *coupon value effect*, in which brands offering higher valued coupons are perceived to be higher priced (Studies 1 and 2); (2) that the presence of alternate sources of price information (i.e., a contextually provided reference price or individually determined knowledge of past price based on prior purchase experience) moderates this effect (Study 3); and (3) that this has implications for deal evaluations and purchase intentions (Study 3).

The results imply that marketers of new brands, or of existing brands for which consumers are unaware of actual prices, must be cautious about offering high coupon values unless they can include some price-related information, such as past regular price, as a reference in their promotional communications. Offering high value coupons in these conditions might be counterproductive if the indirect informational effect of coupon value (through price) is stronger than its direct economic value. For high value coupons, the results suggest that the inclusion of reference price information might be particularly beneficial. Coupons with higher values may be more effective than those with lower values, without being effective up to their maximum economic potential, if consumers are prone to the informational coupon value effect.

Another implication of the results of this article involves the attraction of brand switchers, which is often the purpose of couponing.<sup>1</sup> If the coupon value effect occurs when consumers do not know the brand well, the irony is that the high

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<sup>1</sup>I thank an anonymous reviewer for this insight.

face values used to attract switchers will be relatively ineffective. Higher face values will be more valued by regular users, making the coupon even less effective in increasing market share.

This raises the question: How common are scenarios in which consumers make a price inference from coupon value or, of perhaps more interest to managers, behave as if they had made such an inference in terms of their intentions to purchase a product? Couponing accounts for approximately one-quarter of consumer packaged-goods marketing dollars (Petersen 1991). Many coupon-related promotions are for new product introductions. Couple that with research showing that, typically, as many as half of all consumers may not be aware of actual prices (Dickson and Sawyer 1990; LeBoutillier, LeBoutillier, and Neslin 1994), and there are many situations in which brands offer coupons to consumers who are not aware of price, which is the very condition isolated in this article when coupon values signal price. Three studies are described and followed by theoretical implications for the effects of price promotions and managerial implications for designing and advertising price promotions.

### STUDY 1

Price promotions offer an economic incentive to purchase a brand. The effect of coupon value predominantly has been demonstrated to be positive in terms of increasing perceived offer value, decreasing the intent to search, and increasing the interest in a brand (Della Bitta, Monroe, and McGinnis 1981). Higher coupon values have been found to increase redemption rates (Bawa and Shoemaker 1987; Shimp and Kavas 1984; Shoemaker and Tibrewala 1985) and sales (Irons, Little, and Klein 1983).

However, is the value of the coupon, apart from being an economic incentive, a source of information that consumers use to make price judgments? If consumers believe that manufacturers offer higher coupon values for higher priced brands to encourage trial, or because they can afford them, higher coupon values would signal higher prices. In support of this, Low and Moody (1996) demonstrate that consumers expected a bottle of shampoo to cost more when they were exposed to a coupon for \$3.50 versus one for \$1.25.

Conversely, if consumers believe that lower price brands must offer higher face value coupons to be purchased (because they have lower quality), this would suggest the opposite effect. However, though it has been proposed that the mere presence of a promotion leads to perceptions of lower quality (Dodson, Tybout, and Sternthal 1978), there is mixed empirical evidence of this effect (Davis, Inman, and McAlister 1992; Raghurir and Corfman 1995) and no evidence regarding the effect of the size of the discount (or coupon value) on quality perceptions. Such an inferential process (i.e., coupon value leading to inferences of lower quality leading, in turn, to inferences of lower price) is also more complex than the direct route through which higher coupon values imply higher prices. Accordingly, it is hypothesized that

H<sub>1a</sub>: The higher the percentage discount, the higher will be the price expectation.

### Method

The subjects were 173 undergraduates enrolled in an introductory marketing course at Hong Kong University of Science and Technology (HKUST) who completed the task

during a scheduled class for partial course credit. Subjects were asked to imagine the following scenario:

They were visiting Sydney on work for a few days and had half a day free for sightseeing. They went to Avis, the car-rental company in town, to hire a car and pick up some brochures. While at Avis, they received a coupon booklet with a number of options for places they could visit.

They then were shown a coupon for Australiana Park, which had a picture of the attraction with a brief description and a tear-off coupon. Coupon value was manipulated at two levels: 10% and 20%. A third group, the control no-coupon group, was shown the same information about the tourist location (i.e., the left-hand side of the coupon) but not the coupon.<sup>2</sup> The coupon was projected in full color on a large screen using visualizer technology.

Subjects were asked to estimate the ticket price (in A\$ with the exchange rate provided). At the end of the experiment, they were actively encouraged to guess the purpose of the research in the guise of a competition. After ensuring that no subject had guessed the hypothesis correctly, they were debriefed. The procedure took approximately 15 minutes.

### Results and Discussion

A one-way, three-level ANOVA on price estimates showed the hypothesized main effect ( $F(2,170) = 3.60, p < .05$ ). As was expected, price estimates were higher when the coupon discount was 20% ( $\bar{x} = A\$25.58$ ) versus 10% ( $\bar{x} = A\$20.52$ ; contrast  $F(1,170) = 5.59, p < .05$ ). Both estimates were higher than the actual ticket price (A\$14.50,  $ps < .05$ ), and the price estimate in the 20% condition was significantly higher than the price estimate in the no-coupon condition ( $\bar{x} = A\$20.65$ ; contrast  $F(1,170) = 5.45, p < .05$ ).

Consistent with the proposition that people use the depth of a coupon as a source of information, subjects estimated prices to be higher when discounts were higher. This was shown for coupons that use percentage discounts and leads to the question of whether the phenomena is restricted to promotions that are communicated in percentage-off terms or whether it is a more generalizable phenomenon, occurring even when consumers are aware of the cash value of the discount but not what it implies in percentage terms. This question is examined in the next study.

### STUDY 2

Price promotions in general, and coupons in particular, can be framed differentially as percentage-off offers, cents-off offers, and so forth. Framing discounts in percentage or amount terms has been shown to affect deal evaluations (Das 1992). The information content of these offers varies because, whereas the percentage-off offers specify the discount rate, the cents-off offers specify the discount amount. Such cents-off offers might signal higher prices, given

<sup>2</sup>The stimuli closely corresponded to an existing promotion that was being run in Sydney, Australia, by Avis Rental Car in July 1995. Avis was distributing a coupon booklet with 21 coupons targeted to the tourist. Seven of these advertised percentage discounts off fare. The actual price for Australiana Park was A\$14.95. The coupon offered a 20% discount and did not mention the actual price of the ticket. The original stimulus was used for the 20% condition. The stimulus for the 10% condition was created professionally in a photographic studio by changing the discount percentage on the coupon from 20% to 10%.

beliefs about a rational manufacturer and an expected discount rate. Specifically, given that

$$(1) \quad \text{Discount rate} = \text{Discount amount} / \text{Regular price}$$

and a situation in which consumers do not have prior price information but know the discount amount, consumers can "fill in" the discount rate to compute a price expectation. There is some evidence that people have prior expectations about the range of discount percentages that are offered by brands. For example, Liefeld and Heslop (1985) find that perceived discount rates in a scenario in which a sales price was provided ranged from a low of 9.1% (interior paint) to a high of 37.4% (designer jeans). Della Bitta, Monroe, and McGinnis (1981) find that if the discount is large, it is not assimilated in judgments of regular price because it is perceived as exceptional. This is akin to the concept of price acceptability (cf. Lichtenstein, Bloch, and Black 1988). If people have a similar notion regarding discount rates, then given a discount amount, discount rates can be filled in from consumers' preconceptions of the range of what these "normally" are, to derive price, or

$$(2) \quad \begin{aligned} \text{Perceived regular price} \\ = \text{Discount amount} / \text{Expected discount rate,} \end{aligned}$$

where discount amount is provided by the coupon offer, and discount rate is based on people's preconceptions of the range of discounts manufacturers offer. Equation 2 implies that, given a range of discount rates, the higher the discount amount, the higher the perceived price, or

$$\text{Perceived price} = B \text{ Coupon value,}$$

where B is an estimate of the inverse of the expected discount rate. However, because perceived price is some nonzero value that is affected by the presence of a coupon, the model should include an intercept term, or

$$(3) \quad \text{Perceived price} = \alpha + B \text{ Coupon value} + \epsilon.$$

In other words, when consumers are exposed to a cents-off coupon, if they believe that the discount percentage is in a certain range, they can compute price. If they do this, the higher the coupon value, the higher their price expectation is. Note that consumers are not expected to make such mental calculations but to behave as though they had. This study tests the psychophysical model expressed as Equation 3 and offered as  $H_{1b}$ :

$$H_{1b}: \text{The higher the cents-off offered, the higher will be the price expectation.}$$

### Method

Nine hundred ten data points were collected using price perceptions of brands advertised in three FSIs (total of 154 coupons) from the *Sunday New York Times* of May 7, 1995. This is the most common method for distributing coupons; in 1988, more than three-quarters of coupons being distributed used this vehicle (Blattberg and Neslin 1990, p. 267). Each coupon insert included an advertisement for the product along with one or more coupons.

Subjects were six employees of HKUST, ranging in age from 21 to 26 years. Five were female employees and one was a male employee. Four were MBA students, working part-time as teaching or research assistants, whereas the other two had completed graduate degrees and were full-time "demonstrators." The use of few subjects per cell ( $n < 3$ ) with many repeated measures per subject is commonplace in experiments in which individual psychophysical models are fitted (e.g., Schneider and Shiffrin 1977; Shiffrin and Schneider 1977). Subjects were tested individually.

The cover story was that some of the "ads" were going to be used as stimuli for an experiment, and the price estimation was to help decide which coupons should be used. Each subject was requested to estimate the price of each of the 154 brands advertised (in US\$). Because the HK\$ has been pegged to the U.S. dollar (HK\$7.78 = US\$1), Hong Kong residents are not uncomfortable thinking in US\$ terms. They were asked to be as accurate as they could and take into account all that they knew about the brand and product category. Most of the coupons were for brands that are commonly available in Hong Kong. Subjects were encouraged to make estimates for all brands. All subjects made more than 90% of the required estimates. The task took approximately two hours. Given the length of the task, subjects were encouraged to take a break whenever they felt tired. Subjects believed they were providing research assistance, however, and were used to working on stimuli preparation and related tasks for consecutive periods of more than two hours. From an ecological validity viewpoint, consumers more frequently peruse many coupons and decide which to clip, rather than make individual, stand-alone decisions regarding a given coupon.

There were two conditions: coupon-present and coupon-absent, manipulated between subjects. Whereas subjects in the coupon-present condition were handed the booklet with the 154 coupons as is, subjects in the coupon-absent condition received the booklet with the coupons masked to ensure that the value of the coupon could not be seen. The coupon-absent condition was intended to serve as a baseline against which to test Equation 3 ( $H_{1b}$ ). If higher coupon values are associated with higher prices because higher priced brands offer higher discounts, the coupon-absent condition captures that relationship. That is, if higher priced brands offer higher discounts, there should be a positive relationship between price estimates and coupon value in the coupon-absent condition, even though subjects in this condition do not see the coupon while they are making their price judgment. This captures the product effect of higher priced products offering higher value coupons.

Actual coupon value was manipulated within subjects (irrespective of whether subjects had been exposed to the coupon information), using the cross-sectional variation in coupon face value. The breakdown of coupons by value appears in Table 1. More than 95% of all coupons were less than or equal to US\$2, with the most common denominations being .35¢ (21%), followed by \$1 (19%), .25¢, and .50¢ (13.6% each).

### Results and Discussion

$H_{1b}$  predicted that price estimates would be higher for brands with higher coupon face values. To test this hypothesis, price estimates were regressed against coupon value

**Table 1**  
BREAKDOWN OF COUPONS BY VALUE: STUDY 2 STIMULI

Coupon value (in cents)	Number of coupons	Percentage of total	Coupon value (in cents)	Number of coupons	Percentage of total
8.75 <sup>a</sup>	1	.65	45.00	1	.65
15.00	2	1.30	50.00	21	13.64
17.50	1	.65	55.00	3	1.95
20.00	9	5.84	60.00	1	.65
22.50 <sup>b</sup>	1	.65	75.00	3	1.95
25.00	21	13.64	100.00	29	18.83
27.50 <sup>c</sup>	1	.65	150.00	1	.65
30.00	15	9.74	200.00	3	1.95
35.00	32	20.78	>1000.00	2	1.30
40.00	7	4.55	Total	154	100

<sup>a</sup>This coupon offered 35¢ off for purchase of four.

<sup>b</sup>This coupon offered 45¢ off for purchase of two.

<sup>c</sup>This coupon offered 55¢ off for purchase of two.

(1) across all subjects and coupon denominations; (2) for all subjects as a whole, disaggregating by coupons; (3) disaggregating by condition; and (4) individually for each subject. All regressions tested Equation 3. Aggregate regressions incorporated dummy variables for the subject and condition factors. To eliminate the effect of extreme values, these regressions were run for coupons with a value less than or equal to US\$2.00 (ignoring one coupon for US\$10.00 and another for US\$39.95). This was done to be conservative. The results are stronger with the inclusion of these extreme values.

At the highest level of aggregation in the coupon-present condition, coupons were aggregated by value and the mean price across subjects and coupon was estimated. This resulted in 18 data points. The mean prices were regressed on coupon value, both including and excluding coupons of US\$1.50 and above. The overall regressions are significant ( $R^2_s = .50$  and  $.54$ ,  $\beta_s = 3.45$  and  $3.16$ ,  $ps < .05$ , respectively).

Disaggregating by coupon value, price was expected to be affected by coupon value in the coupon-present condition to a greater extent than in the coupon-absent condition; that is, the presence of the coupon was expected to moderate the ef-

fect of coupon value on perceived price. The aggregate regression across subjects and coupon values used price estimates as the dependent variable and coupon value, condition (coupon-present versus coupon-absent), and a dummy variable to capture the interaction between these two factors as independent variables. Individual dummy variables were assigned to account for the subject factor. The regression was significant ( $F(7,892) = 26.30$ ,  $p < .0001$ ) and explained 16.5% of the variation. As was expected, the effect of coupon value was significant and in the expected direction ( $B = 1.91$ ,  $t = 5.79$ ,  $p < .0001$ ), as was the interaction term ( $B = 1.53$ ,  $t = 3.32$ ,  $p < .001$ ). The dummy subject variables were significant, which implies between-subject variation.

After disaggregating by condition, separate regressions for the coupon-present and coupon-absent conditions showed that coupons are a stronger predictor of price estimates in the coupon-present rather than the coupon-absent condition ( $B = 3.45$  versus  $1.91$ ,  $t = 1.925$ ,  $p < .05$  by one-tailed test of differences; for details, see Table 2; Cohen and Cohen 1983, p. 56).

Finally, because individual subject dummy variables were significant, individual regressions for each subject

**Table 2**  
REGRESSION RESULTS: STUDY 2

Model: Price Estimate = $\alpha + B$ (Coupon Value) + $\epsilon$								
	Overall Model			Unstandardized Beta Coefficient			Constant	
	$R^2$	degrees of freedom	$F^{**}$	$B$	$(1/\beta)$	$t^{**}$	$\alpha$	$t^{**}$
Coupon present	.270	1,453	168.57	3.45	28.99	12.98	199	11.99
Subject 1	.168	1,150	31.49	2.59	38.61	5.61	190	6.55
Subject 2	.190	1,150	36.38	3.19	31.35	6.04	247	7.45
Subject 3	.558	1,149	190.60	4.56	21.93	13.81	163	7.83
Coupon absent	.050	1,443	24.57	1.91	52.36	4.96	207	8.64
Subject 4	.032	1,150	6.06	2.26	44.25	2.46	151	2.63
Subject 5 <sup>a</sup>	.010	1,139	2.39	.61	163.93	1.54	298	12.25
Subject 6	.151	1,150	27.98	2.67	37.45	5.29	182	5.75
Aggregate <sup>b</sup>	.165	7,892	26.29	1.91	52.35	5.79	169	6.48

<sup>a</sup>All F and t values are significant at  $p < .01$ , except for subject 5.

<sup>b</sup>The aggregate regression includes four dummy variables for the subject factor. Three were significant at  $p < .01$ .

were performed for coupon value on price estimates. The regressions were significant for all subjects except one in the coupon-absent condition (see Table 2).

It appears that subjects use coupon value as a source of information to estimate price. The value of the unstandardized beta coefficients (2.59 to 4.56) suggest that the implicit price discount assumed by subjects while making their judgments is 30% on average and, more generally, in the 20%–40% latitude. This is consistent with Liefeld and Heslop's (1985) findings. However, because the intercepts of the regression are nonzero, these numbers must be interpreted with caution.

Study 2 successfully replicated Study 1's results using different stimuli, operationalizations, and procedures. One of the limitations of this study was that the subjects' task was tiring, which might have led them to use coupon value heuristically to estimate price, a strategy that might seem defensible on the grounds that higher priced brands do offer higher discounts. This leads to the question: Under what conditions would consumers not use coupon value to make price judgments? Furthermore, though the results show that, when elicited, higher coupon values are associated with higher price estimates, there is no evidence that coupon values affect deal evaluations and purchase intent indirectly through their effect on price judgments. Study 3 examines these issues.

### STUDY 3

Study 3 has two objectives: (1) to explore whether the presence of prior price information moderates the coupon value effect and (2) to explore the implications of the coupon value effect on deal evaluations and purchase intent.

If consumers do not have any price-related information other than coupon value, given an expectation of average discount rates, higher coupon values would imply higher prices. However, if consumers know prices because of prior experience, they should be more likely to resort to these for price judgments. This would reduce their use of coupon value as a source of information to make price judgments. Contextually provided reference prices should serve the same purpose, because they are an alternate source of price information, and there is empirical evidence that they affect estimated regular price and offer value (Urbany, Bearden, and Weilbaker 1988). Accordingly, it is hypothesized that

H<sub>2</sub>: The presence of prior price information, either (a) contextually provided or (b) internally available, moderates the strength of the coupon value effect, such that higher coupon values are more likely to lead to higher price expectations in the absence of alternative information.

H<sub>2</sub> can be rewritten as an extension of Equation 3:<sup>3</sup>

$$(4) \text{ Perceived price} = \alpha + B_1 \text{ Coupon value} + B_2 \text{ Coupon value} \\ \times \text{ Price information present} + \epsilon,$$

where  $B_1 > 0$  (H<sub>1</sub>),  $B_2 < 0$  (H<sub>2</sub>), and the strong form of H<sub>2</sub> suggests that  $B_1 + B_2 = 0$ .

Furthermore, price should have a negative effect on intent, given a downward-shaped demand curve, whereas, to the extent a discount provides an economic incentive to pur-

chase, coupon value should be related directly to intent. In other words,

$$(5) \text{ Intent} = \alpha + B_3 \text{ Perceived price} + B_4 \text{ Coupon value},$$

where  $B_3 < 0$ , and  $B_4 > 0$ .

Replacing Equation 4 in Equation 5 suggests that the net effects of coupon value on intent are a function of the relative strength of the positive economic incentive offered by the coupon ( $B_4$ ) versus the negative price signal ( $B_3$ ) indirectly provided by the coupon. It also suggests that higher discounts need not have a positive effect on trial intent. In other words,

$$(5a) \text{ Intent} = (\alpha + B_3\alpha) + (B_1B_3 + B_4) \text{ Coupon value} \\ + (B_2B_3) \text{ Coupon value} \times \text{ Price information present} + \epsilon, \text{ or}$$

$$(5b) \text{ Intent} = \alpha + B_5 \text{ Coupon value} + B_6 \text{ Coupon value} \\ \times \text{ Price information present} + \epsilon,$$

where  $B_6 > 0$  (as  $B_2 < 0$  and  $B_3 < 0$ ), and the value of  $B_5$  is indeterminate (as  $\beta_1$  and  $\beta_4 > 0$ , but  $\beta_3 < 0$ ).

Equation 5b suggests that if consumers know past prices, then higher coupon values carry little information about regular price, have only an economic value, and should lead to higher trial intent. However, if consumers do not know past prices, higher coupon values, though representing higher economic savings, suggest that the base price from which these economic benefits accrue are higher. This information effect of higher coupon values on regular price undercuts (offsets or overwhelms) the economic value of the coupon. In this condition, higher coupon values may be less likely to be associated with higher intent. Specifically,

H<sub>3</sub>: The presence of prior price information moderates the effect of coupon value on deal evaluations and purchase intentions, such that higher coupon values are more effective when consumers know past prices, as compared with when they do not.

### Method

*Design.* Subjects were 158 students drawn from the same pool as in Study 1. A 3 (coupon value: HK\$13, 23, and 32)  $\times$  2 (contextual past price information: "Original Price: \$65, Now at \$\_\_" versus absent) between-subjects design was employed. Knowledge of past price information was measured at the individual level through a proxy variable (past purchase experience). It was expected that existing consumers would have better information on past prices than nonusers.

*Procedure.* The promotion was based on an actual promotion being conducted by the HKUST Souvenir Shop, which retails university paraphernalia. Subjects were told the following:

As you are perhaps aware, the Souvenir Shop on campus has been advertising a Summer Sale of HKUST t-shirts. These are cotton t-shirts with the HKUST logo. They have short sleeves and a round neck. They are available in a variety of colors, including white, blue, green, and red, among others. The promotion is a...

T-shirts were chosen as the product category because they are commonly purchased by the subject population. Dis-

<sup>3</sup>I thank an anonymous reviewer for this insight.

count values mirrored actual price promotions offered at the time of data collection (actual prices ranged from HK\$60 to HK\$100, and discounts ranged from \$12 to \$32, or 20% to 50%), which enabled testing with consumers who had the ability to gain information about the product's price in a setting in which they were the target consumers.

*Measures.* Subjects rated their likelihood of purchasing the t-shirt on a seven-point scale ("Not at all likely"/"Very likely") prior to making other ratings to prevent potential contamination by prior elicitation of the price perception measure. Subjects rated the quality of the t-shirts on a seven-point scale anchored by "Poor quality"/"Good quality," elicited to control for quality perceptions' effect on purchase intentions. Deal evaluations were elicited to supplement the single-item purchase intentions measure. Subjects rated the promotion on three seven-point scales ("Unattractive"/"Attractive," "Low value for money"/"High value for money," and "Worthless"/"Worthwhile"), which were combined to form the deal evaluation index ( $\alpha = .83$ ).

Subsequently, subjects supplied covariate information; they rated the importance of price, quality, and size of discount in their decision to buy the t-shirt on seven-point scales anchored at "Not at all important"/"Very important," as well as the amount of attention they normally paid to price information while purchasing on another seven-point scale anchored at "Not much attention"/"A lot of attention." To test  $H_{2b}$ , information regarding prior purchase experience was elicited using two open-ended questions asking (1) the number of occasions they had purchased something and (2) the amount they had spent on souvenir shop purchases (in HK\$). Given that, in the information-present condition, the specific price of the t-shirt had been provided, price perceptions were measured in terms of the average price of a t-shirt at the souvenir shop, elicited using an open-ended format. Finally, as a manipulation check directly testing Equation 2, subjects estimated the minimum and maximum

discount percentages offered by the souvenir shop. The procedure took approximately 20 minutes.

*Results and Discussion*

Means, by condition, for the three dependent variables appear in Table 3. There were no differences across conditions in importance ratings of price, discount size and quality, expected discount rates, reported usage, or attention. The analyses for price perceptions ( $H_{1b}$ ,  $H_2$ , and Equations 2 and 4) are presented first and followed by the analyses for deal evaluations and purchase intentions. Finally, some exploratory post hoc analysis is presented.

*Manipulation check.* Revealed prices (RPs) were computed using Equation 2 and dividing the actual discount by the elicited minimum and maximum discount percentages. This was regressed against perceived price. Both regressions were significant ( $R^2 = .04$ ,  $F(1,156) = 5.64$ ,  $p < .05$ ,  $B = 1.05$  for  $RP_{min}$ ;  $R^2 = .05$ ,  $F(1,156) = 7.61$ ,  $p < .01$ ,  $B = 3.16$  for  $RP_{max}$ ).

$H_2$ .  $H_{2a}$  was tested by Equation 4, which regressed price estimates on coupon value and an interaction between coupon value and presence of price information. This regression was significant ( $R^2 = .04$ ,  $F(2,155) = 2.87$ ,  $p < .05$ ), with signs of the two coefficients not only in the expected direction, but also in support of the strong form of the hypothesis that  $B_1 + B_2 = 0$  ( $B_1 = 5.06$ ,  $t = 2.21$ ,  $p < .05$ ;  $B_2 = -4.80$ ,  $t = -1.95$ ,  $p < .05$ ). A follow-up regression of price on coupon value when information was absent was significant ( $R^2 = .04$ ,  $F(1,77) = 2.89$ ,  $p < .05$ ,  $B = .52$ ) but was not when information was present ( $R^2 = .00$ ,  $F < .01$ ), which suggests that the presence of contextual past price information moderates the coupon effect. Note that the  $R^2$ , though low in absolute terms, does not include the perceived average price in the product category, which is the primary predictor variable. Consistent results are obtained through ANOVA, with the main effect of information present not significant. To

Table 3  
MEANS BY DEPENDENT VARIABLE: STUDY 3

	Information Absent			Information Present		
	\$13 off	\$23 off	\$32 off	\$13 off	\$23 off	\$32 off
Deal evaluations	3.75 <sup>a</sup> (1.187)	3.88 <sup>a</sup> (1.137)	3.73 <sup>a</sup> (1.000)	3.54 <sup>a</sup> (0.995)	3.47 <sup>a</sup> (1.210)	4.25 <sup>b</sup> (0.894)
Purchase intentions	3.64 <sup>a</sup> (1.868)	3.67 <sup>a</sup> (1.544)	3.44 <sup>a</sup> (1.717)	2.89 <sup>b</sup> (1.397)	2.88 <sup>b</sup> (1.536)	3.56 <sup>a</sup> (1.758)
Price perceptions—All subjects	\$61.76 <sup>a</sup> (19.481)	\$59.81 <sup>a</sup> (20.685)	\$71.85 <sup>b</sup> (22.877)	\$59.11 <sup>a</sup> (18.462)	\$60.68 <sup>a</sup> (20.344)	\$59.00 <sup>a</sup> (18.143)
Price perceptions—Nonusers	\$58.40 <sup>a</sup> n = 10	\$57.00 <sup>a</sup> n = 10	\$75.00 <sup>b</sup> n = 19	\$53.08 <sup>a</sup> n = 13	\$52.64 <sup>a</sup> n = 11	\$61.67 <sup>a</sup> n = 9
Price perceptions—Users	\$64.00 <sup>a</sup> n = 15	\$61.56 <sup>a</sup> n = 16	\$64.38 <sup>a</sup> n = 8	\$64.33 <sup>a</sup> n = 15	\$67.00 <sup>a</sup> n = 14	\$58.24 <sup>a</sup> n = 17
Price perceptions—Low discount importance subjects	\$58.09 <sup>a</sup> n = 11	\$65.00 <sup>a</sup> n = 12	\$69.58 <sup>a</sup> n = 12	\$60.71 <sup>a</sup> n = 14	\$54.42 <sup>a</sup> n = 12	\$61.36 <sup>a</sup> n = 11
Price perceptions—High discount importance subjects	\$64.64 <sup>a</sup> n = 14	\$55.67 <sup>a</sup> n = 15	\$73.67 <sup>b</sup> n = 15	\$57.50 <sup>a</sup> n = 14	\$66.46 <sup>a</sup> n = 13	\$57.14 <sup>a</sup> n = 14

Note: Across a table row, means not sharing a superscript are significantly different than one another. Standard deviations are in parentheses.

test whether the effect of coupon value on price perceptions is mediated through beliefs regarding discount rates, RP was added as a predictor variable in Equation 4. Its beta coefficient was significant ( $B_{RP-min} = .98$ ,  $B_{RP-max} = 2.81$ ,  $p < .05$ ), the significance of the coupon value term was reduced ( $B_{coupon\ value} = 3.97$  and  $3.53$  with  $RP_{min}$  and  $RP_{max}$ , respectively,  $p > .05$ ), and the interaction term remained significant ( $B_{min} = -4.92$ ,  $t = -2.02$ ,  $p < .05$ ;  $B_{max} = -4.47$ ,  $t = -1.84$ ,  $p < .10$ ). This suggests a pattern of partial mediation (Baron and Kenny 1986).

To test  $H_{2b}$ , a 3 (discount)  $\times$  2 (past usage) ANCOVA on price judgments was conducted. Subjects who reported never having used the souvenir shop ( $n = 72$ , 45.9%) were categorized as nonusers, and subjects who reported having used the souvenir shop at least once ( $n = 85$ , 54.1%) were categorized as users. This classification resulted in unequal cell sizes (8–19 per cell). The analysis revealed a significant discount by user interaction ( $F(2,147) = 3.64$ ,  $p < .05$ ), and the only other significant effect was the importance of the price covariate ( $F(1,147) = 4.30$ ,  $p < .05$ ). An analysis of the interaction showed that, unlike nonusers who estimated higher prices with higher discounts ( $F(2,66) = 5.03$ ,  $p < .01$ ), users did not ( $F < 1$ ). In summary, only in the absence of alternate price information did higher discounts lead to higher price perceptions. Therefore,  $H_2$  was supported.

$H_3$ : *Deal evaluations (DE)*. A 3  $\times$  2 ANCOVA for DE, using the stated importance of price, discount, and quality as covariates, showed a significant discount by information interaction ( $F(2,148) = 3.06$ ,  $p < .05$ ). The only other significant effect was the importance of the discount covariate ( $F(1,148) = 8.59$ ,  $p < .01$ ). The form of the interaction was as expected; when information was present, a higher discount resulted in a higher deal evaluation ( $F(2,72) = 4.08$ ,  $p < .05$ ), but this was not so when information was absent ( $F < 1$ ). Therefore,  $H_3$  was supported.

*Intent to try*. Results of a 3  $\times$  2 ANCOVA, similar to the one for deal evaluations, showed that, though the discount by information interaction was not significant at the aggregate level ( $F(2,148) = 1.44$ ,  $p < .12$ ), the individual ANOVAs, when information was absent versus present, yielded support for  $H_3$ . Two of the three covariates were significant (importance of discount,  $F(1,148) = 7.95$ ,  $p < .005$ ; importance of quality,  $F(1,148) = 3.00$ ,  $p < .10$ ). There was also a marginal effect of presence of information ( $F(1,148) = 3.16$ ,  $p < .10$ ), but no other effects were significant. Intent did not increase with higher discounts when information regarding past prices was absent ( $F < 1$ ) but did increase directionally when such information was present ( $F(2,72) = 1.51$ ,  $p < .11$ ). (A direct test of Equation 5a through regression analysis showed a similar pattern of results.)

An unexpected result was that reference prices depressed purchase intentions for lower coupon values (at \$13 = 3.64 versus 2.89; and at \$15 = 3.67 versus 2.88 for no information versus reference price information, respectively). The price estimates are approximately the same in these groups (between \$59.11 and \$61.76), which may be because the absolute level of the price estimate in the information-present group is less than the actual reference price given (\$65). In other words, it appears that the consumers in this condition implicitly believed that the reference price was exaggerated, consistent with Blair and Landon's (1981) finding that the full savings claims made by reference prices are not accepted.

This might have led to the lower purchase intentions.

*Exploratory post hoc mediation analysis*. To determine whether the effect on DE was mediated by price perceptions, a variable based on price perceptions was included as an additional covariate in the ANCOVA.<sup>4</sup> This new analysis yielded a significant effect of the covariate ( $F(1,147) = 5.03$ ,  $p < .05$ ), but the interaction reduced in significance ( $F(2,147) = 2.70$ ,  $p < .10$ ). Such a statistical pattern implies that the effect of coupon value on deal evaluations is explainable by its effect on price perceptions (Baron and Kenny 1986). A similar analysis for purchase intentions showed that the effect of coupon value on intentions also was mediated by price perceptions; the covariate based on price perceptions was significant ( $F(1,147) = 5.40$ ,  $p < .05$ ), and the F-value of the interaction term dropped even further ( $F(2,147) = 1.17$ ,  $p = .31$ ).

*Post hoc analysis of higher order moderators*. Given the significance of the importance of discount rates as a covariate in the ANOVA and regression analyses, a post hoc analysis to assess the moderating effect of importance of discount rates on the coupon value effect was conducted. Subjects were categorized as low or high discount importance on the basis of a median split ( $Me = 4$ ,  $n_{Low} = 71$ ;  $n_{High} = 85$ ) that was unrelated to usage ( $\chi^2 = .52$ ,  $p = .47$ ) and did not differ across experimental manipulations ( $F_s < 1$ ). A 2 (discount importance)  $\times$  3 (coupon value)  $\times$  2 (past information) ANOVA on price perceptions yielded a significant three-way interaction ( $F(2,145) = 2.46$ ,  $p < .05$ ). Follow-up 2  $\times$  3 (information  $\times$  coupon value) ANOVAs for low and high discount importance subjects showed that, though there were no significant effects for low importance subjects, the coupon  $\times$  information interaction was significant for high importance subjects ( $F(2,79) = 3.13$ ,  $p < .05$ , main effects  $F_s < 1$ ). This interaction was as per  $H_2$ —the coupon value effect was present when contextual information was absent ( $F(2,41) = 2.79$ ,  $p < .05$ ) but not when the regular price of the product was provided ( $F < 1$ ). This implies that consumers prone to the coupon value effect not only must have no access to alternate sources of price information but also must value discounts.

## GENERAL DISCUSSION

This article shows that price estimates are related directly to coupon values for both percentage-off (Study 1) and cents-off coupons (Studies 2 and 3), thereby demonstrating the coupon value effect, and identifies two moderators of this effect: alternate past price information (contextually provided or retrievable from memory) and the importance of discounts. Study 3 also shows that larger discounts are more effective in improving deal evaluations and purchase intentions when a price inference is not made and consumers have access to alternate sources of information. The managerial and theoretical implications of these findings are now discussed.

<sup>4</sup>This was computed as (regular price – discount amount)/perceived regular price. Discount amount was \$13, \$23, or \$32, depending on the condition; regular price was \$65 in the information-present condition, and perceived regular price in the information-absent condition. Perceived regular price was the elicited price judgment. This measure makes comparisons between the different conditions, which vary on information and discount amount, possible.

### *Managerial Implications*

Decisions regarding coupon values and whether to place reference price information on coupons depend on the market segment under consideration.<sup>5</sup> For less knowledgeable consumers who show the coupon value effect, lower coupon values without reference price information should lead to the most favorable results. However, more knowledgeable consumers are responsive to high face value coupons. For these consumers, deep discounts lead to improved deal evaluations and higher purchase intentions only when alternative information is present and price inferences are not made. Given that higher coupon values imply a higher cost, the overall profitability decision of offering deep discounts remains a function of the size of the positive effect on sales.

Results suggest that, at high coupon values, the inclusion of reference price information leads to improved deal evaluations. However, the level of the reference price was not systematically varied, which itself has been shown to affect deal evaluations (Urbany, Bearden, and Weilbaker 1988). The level of the provided reference price might affect quality perceptions as well as price expectations. Further research should disentangle the myriad routes through which providing reference price information can affect purchase intentions by delineating the factors that moderate the inferences this leads to and those it impedes. This would lead to a prescriptive model of normatively correct reference price levels. As a first step toward such an integrated model, this research shows that offering deep versus shallow discounts does not lead to higher deal evaluations when alternate price information is absent, and deep discounts can be made more effective in terms of increasing purchase intentions if alternate price information is contextually provided. This is required particularly if deep discounts are offered to consumers who are not aware of actual prices and for whom discount size is important.

There are many instances when consumers are not aware of actual product prices, such as for new product introductions or when products are infrequently or irregularly purchased (e.g., consumer durables). Even in the domain of frequently purchased products, Dickson and Sawyer's (1990) results show that less than half of consumers surveyed were aware of having purchased on promotion seconds after they made their purchase. Of those aware, more than half could not estimate the amount of the reduction (see also LeBoutillier, LeBoutillier, and Neslin 1994). Thus, it might not be an overstatement that scenarios of well-known brands offering discounts to consumers who are not aware of exact price might be more the norm than the exception, which underlines the generalizability of the results of this article.

In the Avis booklet example, on which Study 1 was based, managers of tourist attractions could have provided retail prices on coupons. Only a handful did. When managers can control the final retail price and have decided to offer deep discounts, they should provide the regular price. For the manufacturer-distributed coupons for frequently purchased products examined in Study 2, it is more difficult to specify final retail price for products sold through retailers. Even in this scenario, "manufacturer suggested retail prices" (MSRPs) can serve the same purpose for deep dis-

counts, even if consumers believe that actual retail price is lower than the MSRP.

### *Theoretical Implications*

Given the importance of price expectations, a common concern regarding repeated price promotions has been that they lower price expectations, which, in turn, could affect repeat purchase behavior and reduce the effectiveness of a future promotion (Kalwani and Yim 1992; Kalwani et al. 1990). Although increasing repeat purchases is one common sales promotional objective, another common objective is inducing trial. Price promotions can affect repeat purchase adversely through their effect on lowered price expectations, which leads to reference effects, but they also might reduce the likelihood of trial through their effect on increasing price expectations. Many researchers have argued that price promotions lower price expectations and lead to a negative effect on sales (e.g., Jacobson and Obermiller 1990; Mayhew and Winer 1992; Winer 1986). In a study directly measuring price expectations, Kalwani and Yim (1992) hypothesized and found that the price a consumer expects to pay decreased as the observed discount deepened. Although Kalwani and Yim's results suggest that offering coupons to consumers to encourage repeat purchases leads to the lowering of expected price and can depress repeat purchase likelihoods, this article shows that offering coupons to consumers to encourage trial (low price awareness scenario) might lead to higher price expectations, which might depress trial intent.

Furthermore, research on the effect of RPs on improving deal evaluations has explained this in terms of a positive comparison of sale price with reference price (Blair and Landon 1981; Della Bitta, Monroe, and McGinnis 1981; Urbany, Bearden, and Weilbaker 1988; for an exception, see Liefeld and Heslop 1985). This article suggests another reason why including an external reference price might be beneficial: It might curtail price inferences.

### *Study Limitations and Areas for Further Research*

A major limitation of these studies is that they lack external realism, being student-based laboratory experiments, and need replication in the field. Furthermore, the issue of whether price inferences are made at all or are an artifact of questioning is a theoretical concern. Although in Study 3, price perceptions were elicited after other measures, this was not done in Studies 1 and 2 and thus leaves their results open to the criticism that the price inferences might not have been made at all in the absence of measurement. Additional research, using reaction time technology, might examine whether people indeed infer prices and whether these effects persist with a time lag after exposure.

Further research also could examine factors affecting expected discount rates and the antecedents of the belief. Under what conditions would schemas regarding a rational manufacturer's ability versus motivation to offer higher discounts dominate? Do consumers infer that higher priced brands can afford higher discounts or that higher priced brands provide more incentive for higher priced goods to reduce consumer purchase risk? Under what conditions might a deep discount signal low product quality and, through that route, signal a lower price?

<sup>5</sup> I thank an anonymous reviewer for this insight.

The moderating role of product category and involvement on the coupon value effect are also potentially important variables not investigated here. The potentially moderating role of brand name, whether the introduction is a brand extension offered to existing users or nonusers of the parent brand, and competitive environment, including the level and range of both prices and discount levels, would be interesting avenues to understand the coupon value effect. Such research also would elucidate whether the coupon value effect generalizes when the consumer decision is a buy/not buy versus a brand choice decision.

The steps a consumer goes through from coupon exposure to purchase (clipping and redeeming) were not investigated systematically. It was argued that consumers are more likely to clip a coupon if they do not make an unfavorable price inference. However, are customers who do clip the coupon more likely to redeem it when they have a higher initial price expectation due to a feeling of perceived "gain"? That is, could the coupon value effect be reversed in the store?

Finally, Study 1 results showed that the mere presence of the 20%-off coupon led to higher price perceptions. Additional research could examine how robust this finding is and the conditions under which it is reversible. For example, is it possible that coupon presence signals a higher price when coupon values are higher than expected (e.g., 30%), but a lower price when they are lower (e.g., 5%)?

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