

## Coupons in context: discounting prices or decreasing profits?

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### Abstract

A coupon is a commonly used sales promotion device offering the user a discount on the purchase of a product. Consumer coupon offerings are also becoming increasingly diverse: from “% off” and “\$ off” to “Buy one, Get one free” (BOGO) offers and co-promotions (Buy X, Deal on Y). This paper reports the results of three experiments that examine whether the economic value of a coupon is a source of information to infer the price of the product/service, and the quality of the product/service, which inference can undercut the economic value, with resulting consequences for deal evaluations and purchase intentions. The framework predicts, and empirical results show, that increasing the value of the coupon does not always improve deal evaluations or purchase intentions. This could imply lower profits for the company. The presence of past price information about the brand, information about prices of other brands offered by the company, and information about competitors’ prices moderate the impact of coupon value on brand-related inferences. When such alternate sources of information are present and are diagnostic of the price of the promoted product, consumers are less likely to infer price and quality from the value of the coupon and higher coupon values are more likely to increase deal evaluations and purchase intentions. Implications for managers designing and communicating promotions are offered.

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Conventional wisdom maintains that coupon discounts promote sales as they lower the economic cost to the consumer. If higher coupon values do not favorably affect sales the retailer’s profitability may be eroded, as higher volumes will not compensate for lower margins (due to deep discounts). This paper examines the conditions under which consumers draw unfavorable inferences about a brand’s price or quality from coupon discounts, and whether these undercut the attractiveness of a coupon promotion.

There is substantial variation in the communication and context of coupon offerings that can affect consumers’ responses to promotions (Raghbir Das, 1992, for a review see Krishna, Briesch, Lehmann, & Yuan, 2002). Coupon drops can include a single offer in a coupon, or a number of different promotional offers on a single coupon. Further, coupons are both offered in coupon booklets along with other competitors’ coupon offerings, and in print advertisements where competitors’ prices and products are less salient. We develop a contextual framework to show how the presence of prices of the company’s other products, and the range of competitive prices that are present affect the

nature and strength of inferences a consumer draws from a coupon.

Results of three experiments support the prediction that high coupon values are more likely to translate into improved deal evaluations and purchase intentions when unfavorable inferences about price and quality are not drawn. Following a brief review on promotions, three experiments are described. They are followed by the theoretical implications for the informational effects of price promotions and implications for retailers.

### Coupon promotions

Price promotions offer an economic incentive to purchase a brand. The effect of coupon value on redemption has predominantly been demonstrated to be positive. For example, Della Bitta, Monroe, and McGinnis (1981) found that the greater the discount, the greater the perceived offer value, the less the intent to search and the greater the interest in the brand. Shoemaker and Tibrewala (1985) found that an increase in face value of a coupon had a direct effect on redemption rates and Bawa and Shoemaker (1987) found higher coupon redemption rates for coupons with medium or high (vs. low) face values (see also Shimp & Kavas, 1984).

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These findings suggest that the higher the coupon value, the higher the incentive to purchase. More recently, Ailawadi, Lehmann, and Neslin (2001) found that sustained reductions in promotions by Proctor and Gamble subsequent to their value-pricing strategy, led to reduction in market shares, although it did not increase customer retention.

However, Krishna and Shoemaker (1992) report that higher coupon face values do not advance category purchase timing any more than do lower face values (see also Chevalier, 1975). They also do not increase the number of units or the size of the package purchased. These results are understandable if one allows for an alternate route through which price promotions “work”—by providing information about the price or the quality of the brand offering the promotion.

The reason manufacturers offer high coupon values, is to increase the economic incentive to purchase a brand in the short-term. If you see a \$1.00 coupon for a brand you expect to pay \$4.00 for, one could then argue that you would be more likely to redeem it than you would a 50¢ coupon. Not surprisingly, there is evidence that coupons with higher values are more likely to be redeemed than those with low values (Bawa & Shoemaker, 1987; Shoemaker & Tibrewala, 1985). However, even if higher coupon values positively impact sales, do they do so to their maximum potential? If consumers infer that higher coupon values imply that the product has a higher price, then this perception of high price may make them less likely to clip a coupon, and purchase the brand than *if they had not made such an inference*, even given the high economic value of the coupon. Note that coupons with higher values may be more effective than those with lower values, without their being effective up to their potential if consumers expect brands offering higher coupon values to have a higher regular price.

Price expectations serve as an important frame of reference for consumers to evaluate price information prior to purchase (Jacobson & Obermiller, 1990). Typically, the presence of promotions reduces the sale price, and/or raises the expected price (see Grewal, Monroe, & Krishnan, 1998 for a review). However, if, as suggested by the coupon value effect (Raghurir, 1998), price promotions *increase* price expectations, then consumers may be less likely to *try* a product in the first place. Therefore, if price promotions lead to high price expectations, they could have a less positive effect on trial sales than if they did not lead to high expectations.

Despite the importance of price in a consumer’s purchase decision, there are numerous instances when consumers are not aware of actual product prices (new product introductions, introduction of an existing product to a new segment, tourist situations, infrequently and/or irregularly purchased products such as durables or entertainment). Even for frequently purchased products, consumers are typically not well aware of actual prices. Dickson and Sawyer (1990) surveyed over 800 supermarket shoppers, seconds after they had made a purchase. Less than half were aware of having purchased on promotion. Of those aware, more than half could

not estimate the amount of the reduction. Wakefield and Inman (1993) found similar effects with a sample of 289 shoppers at the point-of-purchase in three stores. Those shoppers who used price as a tool to help them make a purchase decision, and who were able to accurately recall whether or not a brand was on promotion, were more accurate than the others.

In many situations consumers are unaware of the price of the product for which a coupon is offered. If these effects are found at the time of shopping, they are likely to obtain to an even greater extent outside of the immediate shopping context—e.g., for a consumer deciding whether or not to clip coupons at home. This paper applies to these scenarios, rather than to situations where the price of product is available on the shelf, or when consumers have price knowledge.

If consumers are unable to recall price information from memory, they could use information available in their context to construct a price estimate. There is some evidence that they do this: Inman, McAlister, and Hoyer (1990) found that the mere presence of a display (end-of-aisle) led to consumers inferring a price cut. Raghurir (1998) showed that in the absence of alternate price information, consumers used the value of a coupon to estimate regular product price, leading to higher price estimates for products offering higher value coupons, when people were not aware of the regular price of the product. We now examine other conditions that could lead to similar effects (knowledge of past prices, presence of competitor’s prices, presence of prices of the company’s other brands). We further show that the coupon value effect can re-emerge even when price information is present, if it is not diagnostic: the situation where alternate prices have high variance. We extend the model to examine the consequences of price inferences, on quality inferences, and their combined, complex effect on deal evaluations and trial intentions. The overall framework is tested across three studies, and is depicted as Fig. 1.

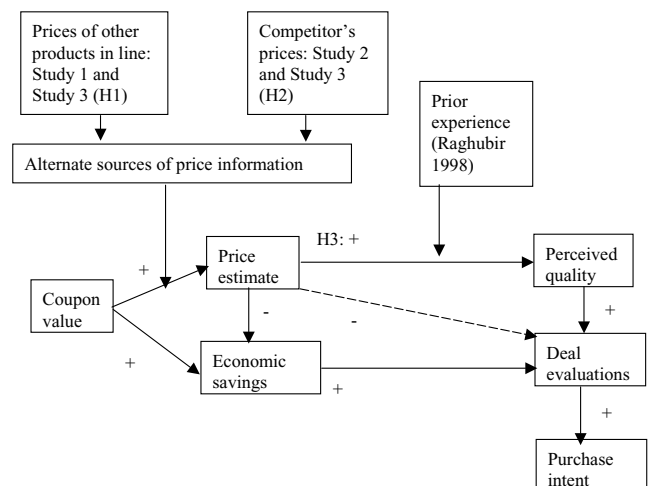


Fig. 1. Conceptual model of how coupon values affect intentions.

## Study 1: the moderating effect of price of non-promoted products on the coupon value effect

This study examines the manner in which prices of non-promoted products of a company affect whether the value of a coupon leads to price inferences. Such cues are directly within the marketer's control. Providing information to consumers about their other products is a managerial decision, easily and inexpensively implemented. This information should reduce the extent to which the value of a coupon is used to infer price. Formally:

**H1.** The effect of price information about non-promoted lines and coupon value will interact:

- a. When information is absent, higher coupon values will lead to estimates of higher prices, and be less likely to improve intentions.
- b. When information is present, higher coupon values will be less likely to lead to estimates of higher prices, and be more likely to improve intentions.

### Method

#### Experimental participants

Study participants were 76 students enrolled in an introductory marketing class at New York University who completed the experimental task for partial course credit during a regularly scheduled class session.

#### Design

A 2 (coupon value: US\$ 2 or US\$ 4)  $\times$  2 (price information on another brand of the company: present or absent) between-subjects design was employed.

#### Procedure

Participants were informed that there was a well-known entertainment show in New York offering a joint promotion along with the New York Subway (the city's public transport department). The promotion was a (\$2.00 or) \$4.00 discount per ticket if a token ten-pak wrapper was presented, that was, in fact, being advertised at the time by Barnum and Bailey Circus. We manipulated the presence of alternate price information through a promotional restriction. When it was present the restriction read "Not available for ringside seats (\$30)," and when it was absent it simply read: "Not available for ringside seats."

#### Measures

Price estimates for the tickets on which the discount was available were elicited using an open-ended format. Participants were asked to rate the promotion on two 7-point scales anchored at "Bad/Good," and "Worthless/Worthwhile." These were combined to form the *deal evaluation index* ( $r = .87$ ). They then rated their intention to go to the show and to buy a ten-pak using 7-point scales anchored at "Defi-

nately Not" and "Definitely." The two intent measures were correlated ( $r = .63$ ), and combined to form an *intention index*.

### Results

#### Price estimates

The 2  $\times$  2 analysis on price estimates revealed significant main and interaction effects ( $F(1, 72) = 6.09, 2.86$  and  $2.70$  for price information, coupon value and their interaction respectively,  $ps < .10$ ). Follow up tests for the effect of coupon value in the two price information conditions show that higher coupon values led to higher price estimates when the price of the restricted ringside seats was absent (means for \$2 vs. \$4 = \$34.53 vs. \$48.95;  $F(1, 36) = 4.30, p < .05$ ), replicating the coupon value effect. However, when information was present the effect was not significant (means for \$2 vs. \$4 = \$31.44 vs. \$31.16;  $F < 1$ ). Note that the interaction is driven by the higher price in the \$4 coupon condition when the price of the ring-side seats is absent as a price cue. The fact that price estimates are higher than that mentioned for the "ring-side" seats is indicative that participants may not have been aware that the ring side seats were the highest priced seats in the circus—however, despite being unaware of the specific term, they still used the price of the seats to estimate price. Means by condition are in Table 1.

#### Deal evaluation index

There were no significant main effects on subjects' overall ratings of the promotion (both  $F_s < 1$ ). This null effect is notable as doubling the value of the coupon did not lead to more favorable evaluations.

#### Intention index

A 2  $\times$  2 ANOVA including ratings of the promotion as a covariate, revealed a significant effect of the covariate ( $F(1, 70) = 43.03, p < .001$ ), while the expected interaction was significant ( $F(1, 70) = 7.40, p < .001$ ). As expected, there was a null effect of coupon value when price information was absent ( $M_s = 3.79$  vs.  $3.90$ ;  $F < 1$ ): the condition where a price inference had been made. On the other hand, when a price inference was not made (price information present), higher coupon values led to more favorable intentions ( $M_s = 3.17$  vs.  $4.11$  for \$2 vs. \$4 respectively,  $F(1, 36) = 3.45, p < .05$ ; one-tailed), supporting H1.

### Discussion

This study, using a manipulation of price information that is within the manager's control, supports the hypothesis that higher coupon values will be less effective at improving sales when consumers use them to infer higher prices. Consumers inferred that prices were over 40% higher when they had no access to the parenthetical price of the restricted (non-discounted ring-side seats). Their deal evalua-

Table 1  
The effect of presence of price information on the effect of coupon value: Study 1<sup>a</sup>

	Means ( <i>SD</i> ) by dependent measure by condition			
	Price information absent		Price information present	
	\$2	\$4	\$2	\$4
Maximum price (US\$)	34.53 (15.58)	48.95 <sup>b</sup> (26.02)	31.44 (15.22)	31.16 (16.74)
Deal evaluation index	3.97 (1.47)	4.50 (1.36)	4.31 (1.07)	3.97 (1.57)
Intent index	3.79 (1.63)	3.90 (1.23)	3.17 (1.16)	4.11 <sup>b</sup> (1.45)
Sample <i>n</i>	19	19	18	19

<sup>a</sup> Coupon value (either US\$ 2 or US\$ 4).

<sup>b</sup> Coupon contrast is significant.

tions were unaffected by the higher coupon value, and this higher coupon value neither improved purchase intentions for the circus, nor for the subway. On the other hand, higher coupon values were more effective than lower coupon values when there was a reference price present as evidenced by improved trial intentions for the circus and the subway promotion.

The mediation results of this study were disappointing and may have been due to low sample size. The next study uses a larger sample to better test mediation as well as test the entire model (Fig. 1). Specifically, we examine if consumers infer quality from price, leading to higher coupon values leading to perceptions of higher quality, particularly when the product category is relatively unknown. Through this indirect route, higher coupon values could lead to a positive effect on purchase intentions. To explore this route, the context chosen is fairly artificial, and one where experimental participants could be expected to have very little actual knowledge of prices and products. We also directly explore how alternate price information available through the range of competitors' prices may itself be differentially informative, and under certain conditions, may be ignored. Finally, we examine these predictions in the context of a BOGO coupon, to examine whether proposed effects are robustness to different promotional frames that can lead to different types of inferences (Krishna et al., 2002).

## Study 2: competitive price variance

This study examines the case of a "Buy one, Get one free" (BOGO) offer, where the value of the discount is equivalent to the price of the product. Such BOGO offers are frequently encountered in coupon booklets where the final price of the product is not always given. We propose that the type of other offers in the booklet could contextually determine the use of a particular company's BOGO for its prices. When there are no other BOGO offers present, then the BOGO offer by the company is distinctive, and therefore, informative of price. The mere presence of such an offer should lead to higher price estimates. On the other hand, if a number of other companies also offer BOGO coupons, then the coupons are attributable to competitive intensity, and will be less

informative of a product attribute (Raghurir & Corfman, 1995, 1999). In such a case, the presence of the offer should not lead to higher price estimates. Raghurir and Corfman (1995, 1999) only examined the attenuating effect of dealing intensity in the industry; but did not predict differences due to the range of deals that were offered in the industry.

We now argue that the range of competitor's BOGO offers makes a company's promotion differentially informative. As the value of a BOGO is equal to the price, the greater the range of competitors' prices, the less informative the coupon value cue should be. Consider BOGO offers in a coupon booklet where prices are in a narrow range of \$1 to \$2, as compared to when they are in a wide range from \$1 to \$50. In the former case, people could infer the price of a product offered using a BOGO from the value of the competitors' prices (i.e., between \$1 and \$2). The presence of a BOGO offer would not lead to higher price inferences. On the other hand, when competitors' prices were present but were across a wide range of prices, then the relationship between competitors' prices and the brand's price is weak. In such a case, consumers would use whatever cues were available to infer price, and the coupon value effect would recur.

The presence of competitors' prices should also affect confidence in price judgments. To the extent that people believe that a cue is informative, they should be more confident of their judgments. They should believe the coupon value cue is more informative when they have no alternate sources of information to use to make a price judgment. Therefore, the mere presence of competitor prices should reduce confidence in price judgments. Based on the above we propose:

**H2.** Information about competitive products will interact with the presence of a coupon:

- When competitive information is not available, the presence of a BOGO will lead to higher perceived price and greater confidence in the price estimate.
- When competitor information has high variance, the presence of a BOGO will lead to higher perceived price but not affect confidence in the price estimate.
- When competitive information has low variance, the presence of a coupon will not affect perceived price or confidence in the price estimate.

In this study we also examine whether coupon values can signal product quality. There is a rich literature showing that consumers infer quality from price particularly in the absence of other cues (Etgar & Malhotra, 1981; Olson, 1977; Rao & Monroe, 1989). This would imply that higher coupon values may lead to perceptions of better quality via the route of raising perceived prices (see Fig. 1). However, there is also evidence that suggests that promotions are associated with poor quality (Dodson, Tybout, & Sternthal, 1978; Doob, Carlsmith, Freedman, Landauer, & Tom, 1969; Scott, 1976; but see Davis, Inman, & McAlister, 1992 for null results). In such a case, the presence of the coupon should lead to perceptions of poorer quality; and through this route adversely affect trial intentions. However, the effect of promotions on product quality judgments has been shown to be contingent on the distinctiveness of the promotion: when promotions are offered by others in the industry, the promotion is not distinctive and does not lead to lowered brand evaluations (Raghurir & Corfman, 1995, 1999). Thus, the effect of coupon values on product quality judgments is likely to be a direct one, via price, with higher coupon values leading to perceptions of higher quality in the conditions where they are associated with higher prices: when competitive price information is either unavailable, or available but with a high variance. To the extent higher coupon values signal better quality as well as higher prices, the net effect on purchase intention will be contingent on the strength of these two effects.

**H3.** Higher price inferences due to higher coupon value will lead to higher quality inferences.

### Method

Experimental participants were 295 undergraduates enrolled in an introductory marketing class at the Hong Kong University of Science and Technology who participated in the study for partial course credit during a regularly scheduled class.

A 2 (coupon: present/absent)  $\times$  3 (information about competitor's: absent, high variance in prices, low variance in prices)  $\times$  2 (target of judgment: Earth Exchange, National Maritime Museum) mixed design was employed, with the first two factors administered between subjects and the third administered within-subjects (with the order of administration counterbalanced).

Participants were asked to imagine that they had gone to Sydney for a conference and had half a day free to sightsee, during which they visited the Avis car-rental company and were presented with a coupon booklet. The study context was deliberately chosen to be one with which experimental participants were unfamiliar. This was because we wished to assess whether price inferences could lead to quality inferences, and such inferences are especially likely to occur when alternate cues to form quality judgments are absent (Rao & Monroe, 1989).

In the conditions where competitors' prices were provided, subjects were shown three BOGO coupons that mentioned the value of the coupon (=price). All coupons were actual coupons drawn from an Avis booklet in Sydney, Australia. In the "low variance" condition, these coupons were for the Sydney Tower (value: A\$6); the Australian Reptile Park (value: A\$8); and The Rocks Walking Tour (value: A\$9). In the "high variance" condition, we replaced coupons for the Australian Reptile Park and the Rocks Walking Tour with coupons for the Old Sydney Town (value: A\$13.90), and the Gledswood Homestead (value: A\$50). No competitor coupons were shown in the condition where alternate price information was not available.

Two target coupons were used: one for the National Maritime Museum and the other for the Earth Exchange (actual price = A\$7, both used BOGO offers). Presence of coupon value was manipulated by showing the picture of the museum either with or without its accompanying BOGO coupon offer. The order of the two target coupons was counterbalanced.

The primary dependent measure used was the estimated price of a ticket in Australian \$ (HK\$–A\$ exchange rate was provided). Participants then completed three 7-point semantic differential scales to measure (i) their confidence in their price estimates ("Not at all/Very Confident"), (ii) the perceived quality of the museum ("Poor/Excellent"), and (iii) their intention of visiting the museum ("Not at all/Very Likely") for each of the museums in turn and were then debriefed. The study took 15 min.

### Results

The means by measure by experimental cell are presented in Table 2.

#### Price estimates

A 2 (coupon)  $\times$  3 (competitor information)  $\times$  2 (target) repeated measures analysis of variance on the price estimates of the two targets (which were a replicate factor) yielded a main effect of competitor information ( $F(2, 288) = 27.18, p < .0001$ ), a main effect of presence of coupon ( $F(1, 288) = 58.57, p < .0001$ ), and an interaction between these two factors ( $F(2, 288) = 19.85, p < .0001$ ). Simple effects tests on the effect of the coupon factor in each of the three conditions showed that, as expected, while the presence of the coupon led to estimates of higher prices when competitor information was not present ( $M_s = A\$12.32$  vs.  $A\$24.68$  for no coupon and coupon, respectively; contrast  $F(1, 288) = 62.81, p < .0001$ ), it did not when competitor information was present and in a narrow range ( $M_s = A\$9.15$  vs.  $A\$9.40; F < 1$ ). However, when competitor information was present but in a wide range (high variance condition), the coupon value effect re-emerged ( $M_s = A\$20.19$  vs.  $A\$24.82$ ; contrast  $F(1, 288) = 15.63, p < .0001$ ). This latter is an important result as it shows that the effect of coupon value on price

Table 2  
The effect of availability and range of competitors' prices on the coupon value effect: Study 2

	Means by measure						
	Competitor price information absent			Competitor price information present			
				High variance		Low variance	
	No coupon <sup>a</sup>	Coupon		No coupon	Coupon	No coupon	Coupon
Price (A\$)	12.32	24.68 <sup>b</sup>		20.19	24.82 <sup>b</sup>	9.15	9.40
Confidence in price estimate	3.97	4.67 <sup>b</sup>		4.20	4.29	4.34	4.32
Rating of museum quality	3.94	5.92 <sup>b</sup>		4.30	4.73 <sup>b</sup>	4.45	4.50
Likelihood of visiting the museum	3.48	4.47 <sup>b</sup>		3.92	4.48 <sup>b</sup>	4.21	4.08

<sup>a</sup> Coupon value: Buy one, get one free.

<sup>b</sup> Coupon contrast is significant.

perceptions is not merely dependent on the *presence or absence* of alternate information; but on the *range of prices* available to make a judgment. When prices are in a wide range they are less effective at substituting for the coupon value cue. This pattern supports H2.

#### Confidence in price estimates

Further, as per H2, confidence in price estimates was affected by the presence of the coupon ( $F(1, 292) = 13.06$ ,  $p < .0001$ ), but this was contingent on competitor information (Interaction  $F(2, 292) = 8.16$ ,  $p < .0001$ ). Simple effects tests show that when competitor information was not present, participants were more confident of their price estimates in the condition when they had seen a coupon ( $M = 4.67$ ), as compared to when they had not ( $M = 3.97$ ; contrast  $F(1, 292) = 22.20$ ,  $p < .0001$ ). This increased confidence suggests that people use a coupon to estimate price as they believe it is informative of price.

#### Quality perceptions

To test H3, perceptions of museum quality were subjected to the same ANOVA. This analysis showed significant main effects (Competitor Information:  $F(2, 292) = 6.01$ ,  $p < .01$ ; Coupon:  $F(1, 292) = 68.06$ ,  $p < .0001$ ), qualified by a significant interaction ( $F(2, 292) = 29.08$ ,  $p < .0001$ ). This interaction showed that the presence (vs. absence) of a coupon led to perceptions of higher quality in the condition when competitor information was present and in a wide range ( $M_s = 4.30$  vs.  $4.73$ ; contrast  $F(1, 292) = 7.81$ ,  $p < .001$ ), as well as in the condition when competitor information was absent ( $M_s = 3.94$  vs.  $5.92$ ; contrast  $F(1, 292) = 90.48$ ,  $p < .0001$ ). These are the two conditions in which the coupon was associated with higher prices. However, in the condition where coupon values were not associated with higher price estimates, they also had no effect on quality perceptions: when competitor information was in a narrow range ( $F < 1$ ). The pattern is identical to that of price estimates.

#### Purchase intentions

Intentions to visit the museum showed the same pattern as price and quality perceptions: a main effect of coupon

( $F(1, 292) = 41.28$ ,  $p < .0001$ ), qualified by a significant interaction with competitor information ( $F(2, 292) = 20.96$ ,  $p < .0001$ ). Again, while the presence of a coupon had no effect in the condition where competitive information was present and in a narrow range ( $F < 1$ ), i.e., where the price inference had not been made, it led to *higher* intentions to visit the museums in the other two conditions ( $M_{\text{Information Absent}} = 3.48$  vs.  $5.21$  for no coupon and coupon, respectively; contrast  $F(1, 292) = 54.78$ ,  $p < .0001$ ;  $M_{\text{Wide Range}} = 3.92$  vs.  $4.48$  for no coupon and coupon, respectively; contrast  $F(1, 292) = 10.66$ ,  $p < .001$ ). This is consistent with our suggestion that, in these conditions, the higher coupon values affect purchase intentions not only directly (through providing an economic incentive to purchase) but also indirectly via their effect on perceived price and its effect on perceived quality. The following analyses examine the mediating route proposed in H3.

#### Mediating paths

To assess if price perceptions affected subjects intentions, we performed mediation tests as per Baron and Kenny (1986). We first examine whether the route to more favorable evaluations of the museums is via price perceptions. An ANCOVA on deal evaluations incorporating price perceptions as a covariate shows that the covariate is significant ( $F(1, 287) = 37.01$ ,  $p < .0001$ ), implying that price and quality perceptions are positively related. However, the main effect of competitor information ( $F(2, 287) = 5.56$ ,  $p < .01$ ), coupon ( $F(1, 287) = 30.29$ ,  $p < .001$ ), and their interaction remain significant ( $F(2, 287) = 15.90$ ,  $p < .0001$ ), though smaller in size, suggesting a pattern of partial mediation. Next, a  $2 \times 3$  ANCOVA on the intentions measure, incorporating price estimates as a covariate showed a significant effect of the covariate ( $F(1, 287) = 32.37$ ,  $p < .0001$ ). The two effects involving the coupon factor diminished, though remained significant (Main  $F(1, 287) = 14.76$ ,  $p < .0001$ , Interaction  $F(2, 287) = 10.01$ ,  $p < .0001$ ), also suggesting a pattern of partial mediation. Results suggest that the presence of the coupon led to perceptions of higher price and these partially flowed through to higher quality perceptions, and through this route favorably impacted trial intentions as predicted by H3.

## Discussion

This study extended results from the previous study in a number of directions: (i) it extended the finding that people use the presence of a coupon to make price judgments to the case of BOGO coupons, where the value of the coupon is equal to the price of the product; (ii) results provide convergent evidence that the use of coupon information as a source of information to make price judgments is inversely related to the availability of alternate sources of price information by studying the use of coupon information in the presence and absence of information regarding competitors' prices; (iii) it fleshes out the inference model, by incorporating the effect of price inferences on quality inferences, and through that route on purchase intentions; (iv) by examining confidence in price estimates, study results provide evidence that consumers appear to use coupon values to make price inferences because they believe them to be indicative or diagnostic of prices; (v) finally, and perhaps, most importantly, it extends the theory regarding the conditions under which coupons are used as a source of information by demonstrating that their use is not merely a function of availability of alternate sources of price information, but is contingent on the range of alternate sources of information.

The study had a few limitations. One, it is unclear whether the effects noted are robust across categories with which consumers have prior experience, i.e., are the effects of competitors' variance due mainly to the lack of familiarity or will they extend to regularly purchased products using coupons? Two, the study was conducted with a Hong Kong sample, using Australian currency. Either or both of these factors could have led to the effects, leading to the question whether the effects will be noted with a US sample using US\$ prices. Three, the study results used a BOGO coupon, while the earlier studies used \$ off coupons. To assess the robustness of the effects it is important to replicate the findings of Study 2 using a \$ off coupon, especially as BOGO offers may lead to additional factors creeping in that may not be apparent in price off settings (Krishna et al., 2002; Raghuram Das, 1992). Four, the higher competitor variance condition also had a higher mean coupon value which could account for some of the results. Finally, the competitor price variance across the two conditions used different attractions, and these could have led to an additional confound. The next and final study examines the robustness of these effects using a commonly purchased product category, pizza, with real \$ off coupons, offered by local pizzerias, holding competitor information constant across the high and low variance conditions.

### Study 3: the interaction of presence of price of other brands and competitor price variance

Pizzas are a commonly consumed product category for university students. Pizzerias frequently offer promotions

in coupon booklets so the choice of the category was realistic. A number of pizzerias offer coupons in the same booklet so the manipulation of competitor price variance is also believable. A given pizzeria also offers a range of offers on the same "coupon" in a booklet, allowing for a realistic manipulation of the presence of price of other brands with \$ off coupons for some products, and a "Only \$" frame for other products on the coupon. Actual coupon promotions were used to manipulate the independent variables, adding to the realism of the study. These were "\$ off" coupons, so as to generalize the effects of Study 3 that used BOGO coupons (note however, that many pizzerias, in fact, use BOGO coupons). Finally, to examine the generalizability of the conceptual arguments proposed in Studies 1 and 2, we manipulated both the presence of alternate price information of the company's own products, as well as the variance of competitor's prices simultaneously. This design allows us to replicate the findings of Study 1 and 2, while examining how these factors interact with each other.

## Method

### Participants

Study participants were 121 undergraduate students at the University of California at Berkeley who participated for partial course credit. Due to partial non-response, the data of three individuals was discarded, leaving a usable sample size of 118.

### Design

The design was a 2 (coupon value: High/Low)  $\times$  2 (competitor price variance: High/Low)  $\times$  2 (prices of other products: present/absent) between subjects design.

### Procedure

Study participants were informed that we were interested in examining their usage and liking for various types of coupon offers that they receive. They were asked to assume that they had received a booklet with five pizzeria coupons. The names of the target pizzeria were chosen from an actual coupon drop: Lamorinda Pizza. Two of the remaining were national chains: Round Table Pizza, and Pizza Hut, and two were fictional: Walnut Creek Pizza, and Piedmont Pizza. The coupon values manipulated the independent variables.

In the low coupon condition, the coupon values of an extra large pizza, a large pizza and a medium pizza were \$3 off, \$2 off and \$1 off, respectively (these are frequently used coupon values in the area the study was conducted). In the high coupon condition, the corresponding coupon values were doubled to \$6, \$4, and \$2, respectively. The values of competitors' pizza coupons were chosen to reflect high and low levels of contextual variance. In the high variance condition, these ranged from \$7.87 (Walnut Creek Pizza: Large pizza one topping pick up special), \$10.99 (Round

Table Pizza: Medium single topping pizza), \$13.89 (Piedmont Pizza: Large Works or Vegi) and \$15.99 (Pizza Hut: Large Specialty Pizza). In the low variance condition, the analogous prices were: \$11.87 (Large pizza one topping pick up special), \$11.99 (Medium single topping pizza), \$12.89 (Large Works or Vegi) and \$13.99 (Large Specialty Pizza). Including or excluding a fourth coupon for the target “Lamorinda” pizzeria manipulated the presence of other prices of the company. This was a “Large 2-toppings + 4 cokes” dinner special for \$12.94. All coupon promotions were based on actual coupons used in a coupon booklet in the area that the study was conducted.

Subsequently, all participants were told, “You are planning to order a pizza from Lamorinda Pizza (as that is close to where you are meeting some friends to watch the NCAA Basketball March Madness on TV).” (The study was conducted the week the NCAA Championship begins in March, and is a scenario that many could relate to.) They were then asked to complete the dependent measures.

#### Dependent measures

As in previous studies, they were asked to estimate the price of the pizzas. We asked them to estimate the prices of the extra large, large and small pizzas using an open-ended measure. They used 7-point semantic differential scales to judge the quality of the pizza (“1 = Good quality” and “7 = Poor quality”), the coupon promotion (“1 = Good” and “7 = Bad,” as well as “1 = Worthwhile” and “7 = Worthless”), and rated their intention to clip the coupon (“1 = Definitely clip the coupon” to “7 = Definitely not clip the coupon”) and try the pizza (“1 = Definitely try the pizza” to “7 = Definitely not try the pizza”). We believed that intentions to clip the coupon and try the pizza were appropriate dependent variables despite participants being informed that they were “planning to” order a pizza from Lamorinda as they had not been informed that they had *decided* to order the pizza from there, however, weak factor loadings and results on this measure may be due to lower than desired variation on this measure.

A factor analysis on the five ratings scales revealed that three items loaded onto one factor (factor loadings  $>.80$  for each, Eigen value = 2.66, 53.21% variance explained, second component included quality perceptions and the inter-item correlation between the two components = .079). These were the two measures assessing the value of the coupon promotion, as well as the intention to clip the coupon. Accordingly, these three measures were combined into a single index referred to as the *deal evaluation* index ( $\alpha = .82$ ). It is possible that the intention to try the pizza did not load onto the same factor due to the instructions given to participants that they were planning to order a pizza from Lamorinda. These variables were reverse scaled so that higher numbers reflect better deal evaluation. As the price measures were also highly correlated they were averaged into a single *price index* ( $\alpha = .97$ ).

#### Results

Analyses are  $2 \times 2 \times 2$  (coupon value  $\times$  variance  $\times$  other price) ANOVAs followed by coupon value contrasts in each of the four variance-other price conditions. Means by condition are provided in Table 3.

#### Price index

The ANOVA revealed a significant three-way interaction ( $F(1, 110) = 4.19, p < .05$ ) and a main effect of coupon value ( $F(1, 110) = 7.63, p < .01$ ). There was no coupon value effect when variance was low and the price of the other product was absent ( $M_s = \$14.98$  vs.  $\$15.66$  for low vs. high coupon values,  $F < 1$ ). This replicates the results of Study 2’s “low variance” condition. On the other hand, when the variance was low, even when the company’s other prices were present, the price index was over 20% higher when the coupon values were doubled ( $\$2.78, M_s = \$13.76$  vs.  $\$16.54; F(1, 113) = 6.87, p < .01$ ). This could be due to consumers feeling confident of their knowledge of market prices, and using the price of the other product along with coupon value to infer actual price.

Table 3  
Study 3 results: means by dependent measures

Dependent measures by condition <sup>a</sup>	Price of other product absent			Price of other product present		
	Low coupon value	High coupon value	Coupon contrast	Low coupon value	High coupon value	Coupon contrast
Low variance in competitor’s prices						
Price index	14.98 (2.13)	15.66 (3.12)	No	13.76 (1.82)	16.54 (2.61)	Yes
Deal evaluation	4.22 (.99)	4.78 (1.70)	No	4.82 (.93)	4.93 (1.02)	No
Quality perception	4.40	4.60	No	3.60	3.57	No
Trial intention	3.60	3.73	No	4.20	4.29	No
High variance in competitor’s prices						
Price index	15.19 (2.06)	17.50 (2.82)	Yes	15.13 (3.36)	15.21 (4.36)	No
Deal evaluation	4.69 (1.34)	5.83 (0.76)	Yes	4.51 (1.25)	5.41 (1.09)	Yes
Quality perception	4.50	4.43	No	4.13	3.93	No
Trial intention	4.44	5.21	Yes	3.73	3.93	No

<sup>a</sup> Higher numbers reflect more favorable judgments and intentions.

When people did not have the company's other price to make a judgment the coupon value effect emerged when the variance of competitor's prices was high. The price index was over 15% higher when the coupon values were doubled (\$2.31,  $M_s = \$15.19$  vs. \$17.50;  $F(1, 113) = 4.38$ ,  $p < .05$ ). Again, this result replicates the results of Study 2's "high variance" condition. However, when people had information about the company's other product prices and the variance among competitor's prices was high, coupon values were not informative about the price of the product ( $M_s = \$15.13$  vs. \$15.21 for low vs. high coupon values, respectively,  $F < 1$ ).

Comparing the results of the two high-variance conditions above to the results of Study 1, it is clear that in both situations the presence of prices of other products offered by the same company attenuates the coupon value effect, and in the absence of price information, higher coupon values lead to inferences of higher price. While the variance of circus prices was not specified in Study 1 this is an industry where a reasonable amount of price variance exists.

To summarize, people appear to use the value of a coupon as a cue when they have little other information that they can use to make a decision. This is the condition where the price of the company's other products is absent, and the variance of prices in the industry is high. Conceivably, the absence of alternate easy-to-use heuristics encourages the use of the coupon value heuristic as a cue to construct a price judgment. The surprising effect was the re-emergence of the coupon value effect under conditions of low variance of competitors' offering and when price information was present. This could mean that consumers continue to use coupon values as a cue when alternate cues are present and consistent with each other. However, this finding requires replication prior to drawing conclusions from it.

#### *Deal evaluation index*

A similar ANOVA on the deal evaluation index revealed a significant main effect of coupon value ( $F(1, 110) = 9.59$ ,  $p < .01$ ), and marginal effects of variance ( $F(1, 110) = 3.70$ ,  $p < .06$ ) as well as their interaction ( $F(1, 110) = 2.62$ ,  $p < .10$ ). Table 3 shows that higher coupon values are associated with improved deal evaluations under "high competitor variance" conditions, but not under low competitor variance conditions.

#### *Trial intentions*

The ANOVA on trial intentions revealed an interaction between the competitor's price variance and the presence of the other product's price ( $F(1, 110) = 8.31$ ,  $p < .01$ ). When the company did not include another price, trial intentions were higher under conditions of high competitor variance ( $M_s = 3.67$  vs. 4.80 for low vs. high variance, respectively). On the other hand, when the company also advertised its "dinner special," trial intentions were higher when competitors' prices were in a narrow range ( $M = 4.24$ ), as compared to a wide range ( $M = 3.83$ ). This effect could be due to the

specific price point chosen for the product advertised, and needs to be replicated prior to drawing conclusions from it. No other effects were significant. Simple effects tests for the coupon contrast in each of the three between-subjects cells (see Table 3) show that higher coupon values lead to higher trial intentions in only the condition where a price inference has been made and has percolated to a quality inference: the high-variance, price absent condition.

#### *Discussion*

The null effect of trial intentions in three cells despite a doubling of coupon values could be due to the instructions to participants that they were planning to order a pizza from the target pizzeria. However, if it is indicative of potential efficacy of a coupon drop and affects coupon redemptions, it could lead to lower profits. Overall, this study replicated some key effects of earlier studies with a product category where subjects had experience.

#### **General discussion**

The three studies presented in this paper systematically examined the effect of coupon value (the depth of a discount) on purchase intentions as a function of the presence and type of contextual information. We examined two types of contextual sources of information: information about the price of other products in the product line offered by the same company and information regarding the prices of competitors' products. We demonstrated that people perceived price to be higher the deeper the coupon when the company did not provide the price of a non-promoted product in the offer: an alternate source of information that could have served as a price anchor (Study 1). It weakened when competitors' prices were available but were in a wide range, and disappeared completely when competitors' prices were present but in a narrow range (Studies 2 and 3). In the absence of contextual sources of information consumers appear to use coupon value to infer product price. It appears that they do so not because there is no other price-related information available, but because they believe it to be indicative of prices. This is because coupon values continue to be used as a cue even when contextual price information is present, just not highly diagnostic of price.

Price inferences were also found to carry through to quality perceptions and purchase intentions. Study 1 found that it was only when alternate sources of price information were present did deep discounts lead to higher purchase intentions. Study 2 extended the model to examine the effect of price perceptions on quality perceptions, and through this route, on purchase intentions. We found that when consumers infer higher quality from their inferences of higher price, then higher coupon values are once again effective—but this is because they work not only through a direct economic route, but also through a more complicated route

Table 4  
Summary of the effect of higher coupon values by study, by construct

		Higher coupon values . . .					
		Price of other product absent			Price of other product present		
		Competitors' prices					
		Absent	Low variance	High variance	Absent	Low variance	High variance
Study 1	Lead to higher price estimates, and do not affect intentions				Do not affect price estimates and lead to more favorable intentions		
Study 2	Lead to higher price estimates, quality ratings and intentions		No effect on price estimates, confidence, quality or intentions	Lead to higher price estimates, quality ratings and intentions			
Study 3			No effect	Lead to higher price estimates and deal evaluations		Higher price estimates	Do not affect price estimates and lead to more favorable deal evaluations

of inferences of regular price and product quality. Study 3 showed the effects of Study 2 held when alternate prices were not available, but reversed when they were. A summary of the empirical results by study is given in Table 4. The results are robust across different types of coupon offers: \$ off, Buy one, get one (BOGO) and co-branding (brand X, get deal on Y).

#### Theoretical implications

Results suggest that the face value of a coupon and contextual cues surrounding the manner of its communication can diminish its perceived economic incentive. We demonstrate that offering coupons to consumers to encourage trial (low-price awareness scenario) may lead to higher price expectations and depress trial intent. This paper also suggests another reason why the inclusion of an external reference price may be beneficial to sales. This stream of research has found that, when a reference price is provided, consumers' perceive that the deal is better (e.g., Della Bitta et al., 1981). It is possible that one of the routes through which the provision of a reference price had a positive effect on sales was by curtailing the inference of a high price.

Sales promotions undoubtedly provide an economic incentive for consumers to purchase a brand. This paper explored whether they may serve a secondary function—an informational aspect. We studied the effects of coupons on regular price perceptions. We showed how the informational value of a coupon moderated its economic value. Our results suggest that the face value of a coupon, and the manner in which it is communicated, can enhance or diminish the perception of the economic incentive it provides the consumer (see also Inman, Peter, & Raghurir, 1997). Recent research on free gift promotions shows that offering a product for free as part of a promotion for another product can lead to lower future sales of the freebie as consumers infer that it is of lower value (Raghurir, in press). Raghurir (1998) docu-

mented the fact the coupon values can lead to price inferences when consumers are knowledgeable about past prices, and Raghurir and Corfman (1999) showed that the presence of promotions can lead to quality inferences when others do not promote. This paper extends these findings by showing that the coupon value effect can be found even when alternate sources of information are available; that the effect on price perceptions percolates to quality inferences; and the combined effect of coupon value on price perceptions and quality inferences affect deal evaluations and intentions.

The primary theoretical limitation of this paper is the lack of process evidence for the proposed conceptual framework (Fig. 1). Future research can examine the robustness of the mediating paths proposed here, but for which only weak evidence was obtained. Such research could also examine verbal protocols to assess whether consumers can explicate their inferential process, and if they can, whether it is of the form proposed in Fig. 1.

#### Managerial implications

The primary managerial implication of this paper is that doubling coupon values may neither profitably, nor reliably increase a product's sales. However, small changes in the manner of communication of a coupon may instead be not only efficient (in terms of maintaining profitability), but also effective (in terms of increasing purchase intentions). Study 1's results showed that incorporating the price of a product (where the deal was unavailable) on the coupon offer made the doubling of the coupon value effective. Understanding the effect of coupons on perceptions of regular price provides managers with a simple and cost-effective way to minimize deleterious effects: when possible, provide information regarding non-discounted prices along with a promotional offer. Where managers are able to control the final retail price, information regarding the final price should be provided along with discount information. In the manufacturer

distributed coupons for frequently purchased products it is more difficult to specify final retail price as these products are sold through a multi-level channel to which the manufacturer cannot dictate prices. In this scenario “manufacturer suggested retail prices” may serve the same purpose, even if consumers do not believe that MSRP’s are the regular price of the brand.

Another set of implications pertains to the choice of coupon communication strategy as a function of the couponing context. When there is low variation in prices and coupon offers in the industry (as experimentally manipulated in Study 2), then coupon value is not necessarily indicative of price, and managers need to worry less about consumers making a price or quality inference from the value of the coupon. On the other hand, if there exists substantial variation, then consumers may use the value of the coupon as a cue. If they are using the value of the coupon to infer price, managers should provide some content-based information on the coupon offer to allow them to also make the secondary inference of high quality. If so, then the inference of high price may not lead to lowered purchase intentions. Providing rich pictorial information about the product may be one way in which managers could achieve this. Alternately, providing information (e.g., a reason) why a deep discount in being offered would be another way.

Finally, the value of the coupon to be offered should also be contingent on the competitive coupon offers that provide the context in which any single coupon offer will be evaluated. Study 3 results show that any couponing activity should be pre-tested prior to launch as there may be complex interactions between the value of the coupon, the competitive context, and the coupon communication of price. Future research should attempt to incorporate the inferential effects of coupon values while studying redemption.

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