

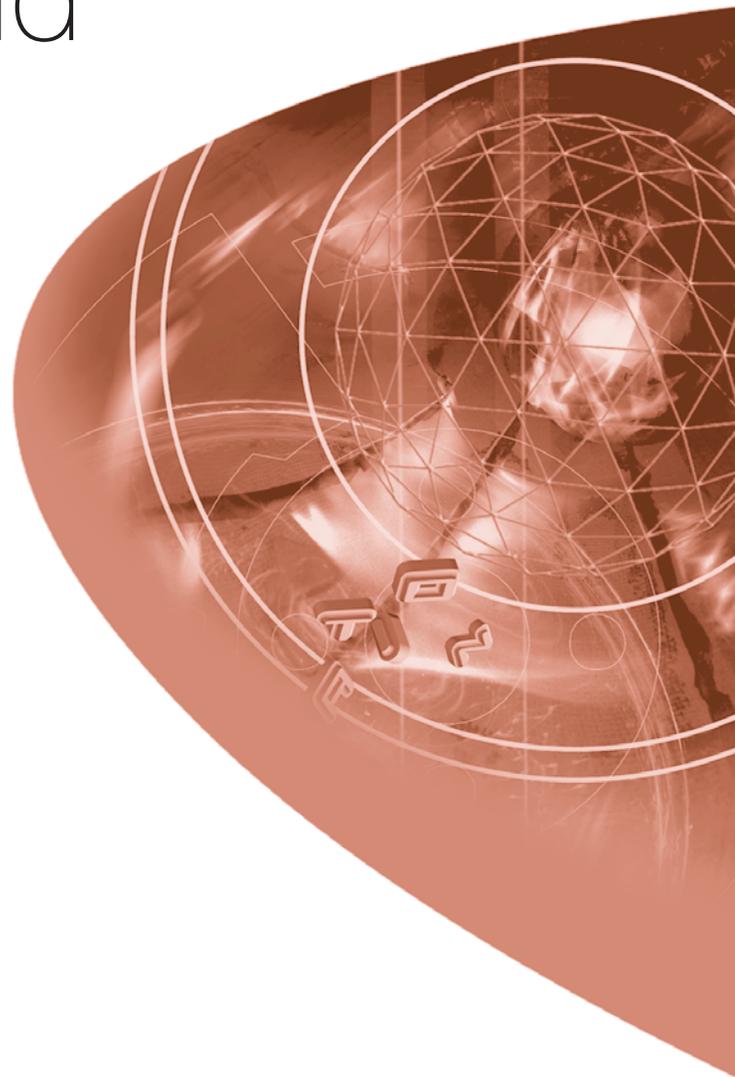
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*featuring Pricing Strategy & Practice*

**Behavioral pricing**

Guest Editors: Sarah Maxwell and  
Hooman Estelami



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# Journal of Product & Brand Management

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## Behavioral pricing

### Guest Editors

*Sarah Maxwell and Hooman Estelami*

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# Introduction

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In his book on *Pricing*, Kent Monroe (2003) opens with an old Russian proverb: "There are two fools in any market: One does not charge enough. The other charges too much." That adage continues to be true. Sellers are unsure of how high a price is high enough. How much is too much. As a result, many companies still use simplistic formulae to determine their pricing structures rather than struggle with the problem of getting the price right.

Getting the price right is, however, crucial to profitability. Just a small price increase can have a dramatic effect. In their book, *Power Pricing*, Dolan and Simon (1996) point out that a 1 percent price increase would boost net income by 6.4 percent at Coca-Cola, by 16.7 percent at Fuji Photo, by 17.5 percent at Nestle, by 26 percent at Ford and by 28.7 percent at Philips. These numbers indicate the critical need for astute price management.

Fortunately, we see signs that price management is becoming more sophisticated. In executive MBA courses, we now have students with "Pricing manager" titles. Business education is now including pricing courses, and there are at least five pricing textbooks on the market. Professional groups like Informa hold pricing workshops. And academic researchers spend more time investigating pricing problems. In 2004, ABI-Inform cited 475 marketing articles on pricing research compared to 354 in 1994.

A major change in pricing research has been the shift away from the economic assumption of a rational buyer, the self-interested profit maximizer who searches out all the necessary information to make an informed price choice. The new researchers recognize that consumers have difficulty processing prices accurately. They rely on cues to signal additional information and utilize heuristics to evaluate prices offered in the marketplace. They make comparative rather than absolute judgments and are influenced by subjective emotions as well as rational analysis.

These new pricing researchers, following the lead of Kent Monroe, have founded a new field of behavioral pricing. Their approach is based on the psychological principles of human perception and information processing as well as on sociological principles of human relations and social norms. In this special pricing issue of the *Journal of Product & Brand Management*, we feature several researchers who have contributed to this new field of behavioral pricing. Their research demonstrates the international scope of this emerging field and was conducted across the globe in countries such as Australia, France, Greece, and the USA.

In the first article, Donald Lichtenstein, reviews how sellers can take advantage of consumers' misperceptions. Based on his 2004 acceptance speech for the "Lifetime achievement in pricing research" at the Fordham Pricing Conference, in this paper he shows that, despite what your mother told you, you do not always get what you pay for. In addition, consumers' evaluation of a reasonable price is influenced by advertised

reference prices even when these prices are outside believable ranges.

The second article is an analysis of the differences between the marketing and economics approaches to price. Skouras, Avlonitis and Indounas compare the all-embracing approach of marketing to the narrow approach of traditional economics. Whereas marketing draws on psychology, sociology and anthropology, as well as economics, traditional economics has focused primarily on its own theoretical constructs. Traditional economics assumes that the consumer is rational, whereas marketing assumes anything but. Although the authors recognize the contribution of the new behavioral economists, they conclude it doubtful they will "make an impression beyond the fringe of the discipline."

In an invited response to Skouras, Avlonitis and Indounas, Donald Cox, himself a behavioral economist, spreads the good news that behavioral economics is not going away anytime soon. He cites the many interesting new questions that behavioral economists are posing and shows how they are using sound scientific methods to support their conclusions, as well as to challenge and refute them. From our viewpoint as Associate Editors of the *Journal of Product & Brand Management*, it seems that both marketing and behavioral economics have a lot to contribute to the difficult task of understanding consumers' pricing decisions.

One aspect of consumers' irrationality is investigated in the third article by Barat and Paswan. They research how coupons influence purchase intentions and find that a higher face value of a coupon results in higher purchase intention, but subject to a threshold. At that coupon face value threshold point, it appears that the high face value of the coupon acts as a cue for the price of the good and makes it appear expensive. Hence, purchase intentions level off. In addition, they have found that a higher exposure to coupons results in higher redemption rates, as if consumers learn the benefits of using coupons.

The next article demonstrates that consumers can also act rationally with economic self-interest as a primary motivation. The Mather, Knight and Holdsworth article reports research conducted in Australia where genetically modified produce has been highly controversial. The authors find, however, that when given a financial incentive, consumers will overcome their negative attitude and still purchase genetically modified food. The research demonstrates the unique role that price may have in shifting traditional consumer tastes and patterns of behavior.

The final article is by Desmet and Le Nagard examines the effects of specific forms of price guarantees on consumers' price perceptions. The paper extends current research on price-matching guarantees by studying the effect of price-beating guarantees whereby the retailer not only matches prices of competing stores, but also imposes a form of self-punishment by providing a refund in excess of the price difference. The authors find the disproportionate effect of price-beating guarantees on consumer post-purchase price perceptions and behavior and provide practical prescriptive directions on the use of price-beating guarantees.

The Associate Editors would like to take this opportunity to thank the many people, including our managing editor Richard Whitfield, who have helped us develop the Special Pricing Section of the *Journal of Product & Brand Management*. Our Editorial Board provides an invaluable service. Over the past few years, they have been instrumental in moving the pricing section of the journal forward, and as Associate Editors we could hardly complete our responsibilities without

their daily support. The support of the following reviewers is therefore gratefully acknowledged.

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Our Advisory Board has also provided a vital service in providing direction and offering advice so that the *Journal of Product & Brand Management* continues to provide pricing

research relevant to the needs of pricing managers as well as scholars today. Their support and thoughtful engagement is also greatly appreciated.

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- Joe Urbany (University of Notre Dame)
- Russell Winer (New York University)

We are also thankful to the readers of the Journal whose study and citation of the published articles has helped elevate *JPBM's* profile as a forum for the dissemination of behavioral pricing research.

**Sarah Maxwell and Hooman Estelami**

### References

- Dolan, R.J. and Simon, H. (1996), *Power Pricing: How Managing Price Transforms the Bottom Line*, The Free Press, New York, NY.
- Monroe, K.B. (2003), *Pricing: Making Profitable Decisions*, McGraw-Hill, New York, NY.

# Price perceptions, merchant incentives, and consumer welfare

Donald R. Lichtenstein

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## Abstract

**Purpose** – The purpose of this paper is to review the research demonstrating the consumer's erroneous and unfounded perceptions of prices, which can have severe negative consequences on consumer welfare.

**Design/methodology/approach** – This is a review paper of previous research on the price/quality relationship and the effects of advertised reference price on consumer's price acceptance.

**Findings** – The major findings are that you do not necessarily get what you pay for and your idea of what an item should cost is influenced by advertised prices even when they are totally unbelievable.

**Originality/value** – The value of this paper is in sensitizing the reader to the ways in which sellers, perhaps unconsciously, can take advantage of consumers' price misperceptions.

**Keywords** Quality management, Prices, Pricing

**Paper type** General review

I would like to take this opportunity to thank the Fordham Pricing Conference and selection committee for this really nice award. Under any circumstances I would be terribly honored and humbled; however, when I look at the names of the past recipients, I feel like Marv Thornberry on the old Miller Lite commercials – “what am I doing here?” I look at the three past recipients as the true heavyweights in pricing.

For example, many years ago when I was a PhD student interested in behavioral pricing, it was Kent Monroe's early and very influential works that set the agenda for pricing research. I read and reread his work, looking for areas where I might be able to make some contribution. His work clearly served, and still serves, as a point of orientation for anyone wishing to do behavioral pricing research. Let me tell you one short and perhaps humorous story. Kent's (Monroe, 1973) classic paper entitled “Buyer's subjective perceptions of price” really served as a state-of-the-art review paper about what was known about price perception. I didn't look up how many citations that paper has, but it's probably more than I can count. Anyway, in the early 1990s, some coauthors (one of whom is here) and I had the idea of writing the sequel to that paper. We worked diligently on this project, the outcome of which was an 87 page manuscript we sent to the *Journal of Marketing Research*. Believe it or not, they did review it for us, although in retrospect, I can't believe they did it. And, believe it or not, they asked us to cut it down – obviously, they did

not see it as the review we had set out to publish. I suspect it takes a Kent Monroe to do that.

I also remember when I first read Russ Winer's research; in particular his 1986 *Journal of Consumer Research* paper (Winer, 1986) using alternative reference price model conceptualizations to explain brand choice. Until that point in time, when I looked at modeling research in pricing, I could read the introduction, then a ton of Greek letters (and I had no idea what they meant), then I would read the conclusion and assume it was valid. After all, if it were not, the reviewers who spoke Greek would not have let it go through. Then I read Russ's research. In my view, there is nobody who does a better job of melding the modeling research with behavioral theory in a way that makes sense – modeling that begins with consumers.

And then there is Bill Bearden. I would like to save my comments regarding Bill until the end of my talk.

The title of my brief talk today is “Price perceptions, merchant incentives, and consumer welfare”. As price is the scarce resource that consumers must sacrifice in virtually all purchase transactions, erroneous and unfounded perceptions of price have large implications for consumer welfare. As such, the premise of my talk is that findings in several of the price perception domains have important implications for consumer welfare. These domains include price-quality inferences, advertised reference prices, displays, price-matching, quantity limits, and branded variants. This list is not meant to be exhaustive, and certainly it is not. Rather, it reflects a list of pricing topics where there is consumer research illustrating the negative effects of pricing practices on consumer welfare. Due to time considerations, I'll only talk about the first two and leave the others for later – sort of like a “future research” section of a manuscript.

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Acceptance Speech for 2004 Lifetime Achievement in Pricing Research, Fordham Pricing Conference, 29-30 October 2004

## Price-quality research

You've heard it as long as you've been living: "you get what you pay for". I still hear that phrase with all too much regularity, and every time I do, I cringe. Several researchers have examined the relationship between price and "objective" quality, i.e. quality as defined against some objective standard – most often Consumer Reports ratings (e.g. Gerstner, 1985; Morris and Bronson, 1969; Oxenfeldt, 1950; Riesz, 1978, 1979; Sproles, 1977). Based on consistent findings of very low, and often negative, correlations between price and quality across numerous durable and nondurable product categories, researchers have concluded that "results indicate that price and quality do correlate, but at a level so low as to lack practical significance" (Morris and Bronson, 1969, p. 33), "study results suggest that the consumer's conventional wisdom of 'you get what you pay for' suffers a challenge" (Sproles, 1977, p. 74), and "consumer reliance on price as an indicator of product quality is an unwise purchasing strategy" (Riesz, 1979, p. 246).

Note how long the lack of a relationship between price and objective quality has persisted. These quotes are probably as true today as they were when these researchers made them. Given these low price-objective quality correlations, what is going to happen when consumers operate on such a belief in general? They will be injured.

Further, there is a good deal of data that suggests that consumers will be more likely to rely on their price-quality beliefs for more expensive (durable) product categories, thereby accentuating the degree of injury. For example, Peterson and Wilson (1985) found that consumer propensity to rely on price to indicate quality was positively related to the price level of the product category. These findings are consistent with research that Scot Burton and I conducted in 1989. In our work, we had four different data collections (two student samples, two samples comprised of intercepted shoppers). For one student and non-student sample, we used 15 product categories, with approximately equal numbers of durable and nondurable product categories. For the second student and non-student sample, we used a different set of 18 product categories, equally split between durable and nondurable product categories. Regardless of sample or specific product categories employed, across all four studies, where you find meaningful variance among prices (i.e. in durable goods categories), consumer price-quality perceptions were strongly related to their estimates of the price level of the product category. Thus, it appears that consumers are basing their price-quality perceptions, in large part, on the price level of the product category rather than on the true price-quality relationship in the product category.

Why are the low and negative price-objective quality relationships so common? Why aren't high priced-low quality merchants forced out of the market? One reason is the folklore of "you get what you pay for". One colleague told me that his mom always referred to lesser priced options as "false economies". Beliefs rooted in what your momma tells you die hard. A second reason relates to advertisers capitalizing on price-quality perceptions – Meredith Baxter Birney says "it costs more, but I'm worth it". A third reason relates to low levels of consumer price search, even for very expensive durable goods. Another reason is that given that many products are difficult for consumers to objectively evaluate – are profit-maximizing corporations going to put emphasis on

quality or on factors that may be more linked to sales, such as image advertising? Given low levels of consumer price search, Curry and Riesz (1988) suggest that product managers may believe that greater returns are possible by increasing brand image via promotion than by improving products. Thus, we need research on how to get consumers to evaluate price and quality relationships on a product category level basis – doing so over time, as correlations within categories do change (Lichtenstein and Burton, 1989).

## Advertised reference prices (ARPs)

I have had a lot of fun doing pricing research because it is who I am – I focus on prices. However, it's odd, because as much research as I've read and done on ARPs, and as much as I may understand retailer motives and practices, I can't help but be influenced by ARPs. Urbany, Bearden, and Weilbaker's very nice 1988 paper makes an important point – just because consumers are skeptical of ARPs doesn't mean they won't be influenced by them. I'm a walking example of this (Urbany *et al.*, 1988).

As a representative story, this past summer, I went out to purchase a tennis racket (after not having played for years). I went to the sporting goods store and looked at the vast array of rackets they had, about half (35 or so) of which were on sale. When comparing the prices, I paid as much attention to the ARP as the purchase price. I knew better, but I just couldn't help myself. (I didn't end up buying a racket at that store, I went to a racket store and bought a demo racket – I'm also very cheap.) ARPs work not on me not only in the evaluation stage, but also in attracting my attention.

ARPs work, a lot of research shows they do, and retailer practice and returns shows that they do. This is nothing new – it is widely known. If I advertise a sale price of, say, \$29.95 and accompany it with an ARP of, say, \$39.95, in most contexts, sales will increase relative to a no ARP present situation. Sales will likely increase as I increase my ARP to \$49.95, to \$59.95, and to \$69.95. But what if the ARP is set at a level of \$129.95? What about \$329.95? And just to add some interest, what about \$5,000? Empirically speaking, I believe we are heading into uncharted territory.

Theoretically, applying assimilation-contrast theory (Sherif and Hovland, 1961) to the pricing context (as has been done many times, I believe first by Kent – what a surprise!), at some point, we should hit a contrast effect. What exactly a contrast effect means in ARP terms is really unclear (at least in my mind). Does it mean the contrasted ARP has less effect on price perceptions than some lower ARP would have, but it still has a positive effect relative to a situation where no ARP is used? Or, does it mean the contrasted ARP results in even less favorable price perceptions than when no ARP is used? Whatever it means, clearly we would hypothesize that at some point, ARPs would at least lose all additional impact. But how far can a retailer go and still have impact? What is the most impactful ARP?

I am aware of three studies that manipulate the ARP, holding objective price (OP) constant, and look at the impact on measures of internal reference prices (see Urbany *et al.* 1988; Lichtenstein and Bearden, 1989; Lichtenstein *et al.*, 1991). All three show largely positive linear effects on these price-based dependent variables for the ranges investigated – the highest was that of Urbany *et al.* where ARP was 2.86 times the OP. Very interestingly, this linear increase in internal

reference prices occurs while ARP believability is declining (see Table 2 of Urbany *et al.*, 1988). It should be recognized that these results are consistent with the research at large. So, the point here is the linear effects of ARPs on the price-related dependent variables, even when the ARP is 2.86 times the sale price (an ARP of \$799 and a sale price of \$279). Again, this finding is in the face of declining believability as the ARP increases (see Figure B of Urbany *et al.*, 1988).

How is it that we can get increasing effects on internal reference prices at ARP levels that increasingly become less believable? How can consumers be increasingly influenced by prices they find to be of decreasing believability? Findings from a few different research streams may serve to shed some light on this.

The very insightful information processing study conducted by Tybout, Calder, and Sternthal (1981) shows how consumers may believe a rumor is implausible and totally without merit but still be influenced by it. Tybout *et al.* (1981) address the actual rumor that circulated regarding McDonald's using red worm meat in its hamburgers. They note that although the rumor was not substantiated by fact and, in fact, was not something that consumers actually believed, sales were down as much as 30 percent in areas where the rumor circulated. McDonalds combated the worm rumor by directly refuting the rumor with credible spokespeople. However, despite presenting consumers with credible messages that contradicted the content of the rumor (i.e. that McDonald's hamburgers contained worms), the information did not seem to change their attitudes toward McDonald's hamburgers. Tybout *et al.* note that the failure of the persuasive refutation strategy runs counter to common sense as the rumor seems so intuitively implausible. However, using information processing theory as a framework, Tybout *et al.* argued that the negative rumor information was not impactful because it was believed, but rather, because it created an association in consumer's minds between the concepts of McDonald's hamburgers and worms. Thus, every time McDonald's hamburgers came to mind, so did the unappetizing concept of worms. Is it possible that the higher ARPs become linked with the advertised product in question and, while not believed, do influence price-related responses in a similar fashion?

Another explanation, and one consistent with that just discussed, for how an exaggerated ARP may influence consumer price perceptions is rooted in Norm Theory and the perseverance of discredited beliefs (Kahneman and Miller, 1986). According to this perspective, the introduction of the ARP lays down a memory trace to the distribution of prices that get evoked when a target product is considered. Thus, when the target product is contemplated, the target evokes its own exemplars and associated prices from memory, and given the memory trace to the exaggerated ARP, it too gets evoked and has influence on the target value. This process is illustrated by Kahneman and Miller (1986, p. 148) in the following example:

Imagine a discussion of a Canadian athlete, in which someone who is unfamiliar with the metric measures reads from a sheet: "Brian weighs 102 kg. That's 280 lbs, I think. No, it's actually about 220 lbs". Does the speaker's initial error affect listeners' subsequent response to questions about Brian's size and strength? The literature on perseverance of discredited beliefs ... (cites provided in original) suggests that it does. The message of this literature is that traces of an induced belief persist even when its evidential basis has been discredited. The discarded message is not erased from memory, and the norm elicited by a subsequent question about Brian's weight could therefore contain the original message as well as its correction.

Thus, a listener might "know" immediately after the message that Brian's true weight is 220 lbs., and this value would presumably retain an availability advantage, but the category norm associated with Brian's weight would still be biased toward the erroneous value of 280 lbs. Judgments that depend indirectly on the activation of the norm would be biased as well.

One might think that once consumers come to the conclusion that an ARP is exaggerated and without merit, they would be able to totally discount the ARP such that it would have no influence. However, there is rationale to the contrary. Kahneman and Miller (1986, p. 141) note that:

... voluntary control of invoked categories is of course not perfect. The idea that recruitment is controlled by selective activation rather than inhibition suggests that it might be difficult to exclude designated instances from a category norm – just as it is difficult to obey the instruction not to think of elephants. This reasoning entails an interesting asymmetry: An observer might be able to include selected elements in a norm by deliberately thinking about them but fail to exclude specified elements from a norm if they have been associatively activated.

A third theoretical foundation that may be useful for understanding the influence of exaggerated ARPs is the selective accessibility account of anchoring and adjustment (Mussweiler and Strack, 1999). In a typical anchoring task, subjects are asked to compare some unknown target value to a provided value and then provide a response regarding whether the target value is greater than or less than the provided value. A second question asks subjects to provide an estimate of the value of the target. For example, in one study, Mussweiler and Strack asked respondents if the Mississippi River was greater than or less than 30,000/3,000 miles. They were subsequently asked to provide an estimate of the length of the Mississippi River. Anchoring was evidenced in that the comparison value was positively related to the subsequently provided estimate. It is notable that this effect occurs even for implausible comparative values, and also for values where respondents are told that the comparative question value is randomly determined from spinning a wheel and therefore they should not give it any particular weight. The theory is that "participants solve the comparative task by selectively generating semantic knowledge that is consistent with the notion that the target's value is equal to the anchor (the Selectivity Hypothesis). Generating such knowledge increases its subsequent accessibility, so that it is used to form the final absolute judgment (the Accessibility Hypothesis) (Mussweiler and Strack 1999, p. 138)." The issue at hand is if ARPs act as inherent comparative questions to consumers such that the ARP impacts price perceptions.

So where does this leave us in terms of consumer welfare? Given the research evidence that implausible ARPs can exert significant influence on consumers, one response might be that consumers "should" just engage in more price search and this will address the problem. However, there is much research evidence that consumers do not engage in much pre-purchase search, even for expensive goods. Second, there is a cost to search and this response places the burden on consumers to absorb the costs in order to keep retailers honest. Third, retailers often use language to accompany the ARPs that connote a sense of urgency such that if consumers do engage in search, they may be too late to act on the "good deal". Finally, to inhibit consumer search, retailers often use ARPs on items or model numbers unique to the retailers, what Bergen, Dutta, and Shugan (Bergen *et al.*, 1996) call "branded variants". So, through their actions, many retailers attempt to create a context that inhibits consumer search.

So, this concludes my comments on pricing that I wanted to make today. However, I would like to take a few moments and add some personal comments. As I stated at the outset, I'm deeply humbled to have been recognized for this honor. I am deeply humbled and I would like to thank Dean Smith, the Fordham Pricing Center, and the selection committee for this very nice honor. However, there is no way that I would be standing here without the most unbelievable colleagues, co-authors, mentors, friends, and family that anyone in this business could have. I would like to give a brief chronology thanking those who have been so good to me.

First, at the age of 19, I was an undergraduate student at the University of Alabama taking consumer behavior from this new professor – Dr Bearden. He was, and is, an unbelievable teacher. He had such an impact on me that after a couple of years of industry work, I looked him up at South Carolina and he arranged for me to receive an assistantship there. While at USC, Bill was much more than my major professor. Bill, his wife Patti, and their two children Anna and Wallace, became my family away from home. I was so dang lucky – through no skill or insight on my part, I wound up in an incredibly great situation. If I were ever to doubt the impact that a professor can have on the lives of students that they teach, I need look no further than the impact that Bill has had on me. For that, and the love, friendship, and support that you and your family have shown me over the years, I am eternally grateful. Thank you Bill.

Regarding my co-authors, I suspect that many people have heard advice about choosing co-authors where there are research synergies, where each brings complementary talents to the table. Others may have heard to choose someone where you have overlapping substantive research interests. For me, I have hooked up with people who can make me laugh (it just so happens that they are also incredibly great scholars). In fact, I honestly believe that my co-authors and I are laughing half the time we are working on our projects. It makes research fun.

Speaking of laughter, during my third year at South Carolina, a new PhD student joined the program – a skinny kid who wore the skinniest ties. And he didn't talk much like me either – which for a Southerner goes to issues of trust. So, although I was very leery of this guy at first, it didn't take long before he had me laughing so much it hurt. After 20 some odd years, Rick Netemeyer still has me laughing, and he is among my dearest of friends and co-authors – thanks Rick and also thanks to your lovely wife Suzy for her friendship.

And there's this other dear friend and co-author I have – a co-author whose wife swears he looks like Omar Sharif – Scot Burton. Shortly after I went to LSU, Scot joined our faculty. Scot too is laughter – but most often times it's fun to laugh at him! What a great friend and co-author you've been, Scot, and for that I am very thankful – and I'm also very thankful for the great friend your wonderful wife Jana has been.

After leaving LSU and arriving at Colorado, I was fortunate to have a great student in my MBA research class – in fact, so great that I asked him to be my TA. In fact, so great that when he expressed an interest in getting a PhD, I thought to myself "Donnie, don't screw this up, don't try and do anything yourself, send him to Bill Bearden". This person and dear friend is Ken Manning. I'm grateful to have had him as a student, grateful to have him as a colleague, and even more grateful to have him and his wife Melanie as dear friends. Thanks for your friendship Ken.

Then there is this guy, Chris Janiszewski. I cannot believe how he can make me laugh – what a great smart ... aleck. Often times, I catch the brunt of his humor, but I must admit, he is unbelievably funny. Over the years, our friendship has grown so close. I was never so touched as when Chris and his lovely wife Liz asked me to be the godfather of their adorable daughter Nicole. For that, as well as for your friendship (and the JCR you put my name on), I am eternally grateful. (I must admit that I do go around bragging that Nicole is my goddaughter and will continue to do so).

And there is John Lynch. While I have never co-authored with John, I (along with hundreds of others) very much count on him for his professional insights. John's help with my papers, reviewer comments, teaching, and just general academic advice have been so helpful. However, even more valuable to me is the friendship he, his wonderful wife Patrice, and the rest of his family have shown to me (and my dog Guinness). Thanks John.

I would also like to recognize a very special guest who is here with us today, a distinguished alumnus of the Leeds School of Business at the University of Colorado – Michael Leeds. (You can guess why he is so distinguished.) During the three year period from 1999-2002, I served as the internal dean at Colorado. During that time I had the incredible honor and privilege of interacting with Michael and his family on several occasions. Michael and his family created and grew a very successful publishing business built on principles of integrity, ethics, and social responsibility. When they sold the business, their vision was to have a positive influence on the values of young people today – so they donated \$35 million dollars to our School for the purpose of creating a more ethical and socially responsible student body. Michael, thanks for the support you have given us.

Finally, the two people to whom I owe the most are now with God. One is my father, who wore his 20-year old suits and drove his 20-year old car so that the funds would be available to send his kids to college. The other is my mother, who like my father, cared nothing of material things for herself, all she did was give and give and give to her kids and anyone else that was around. If I have just the smallest amount of their character flowing through my veins, then I consider myself very blessed. So I dedicate this very nice honor to them, I know they hear me. So with that I close and again say thanks.

## References

- Bergen, M., Dutta, S. and Shugan, S.M. (1996), "Branded variants: a retail perspective", *Journal of Marketing Research*, Vol. 33 No. 2, pp. 9-19.
- Curry, D.J. and Riesz, P.C. (1988), "Prices and price/quality relationships: a longitudinal analysis", *Journal of Marketing*, Vol. 52 No. 1, pp. 36-51.
- Gerstner, E. (1985), "Do higher prices signal higher quality?", *Journal of Marketing Research*, Vol. 22 No. 5, pp. 209-15.
- Kahneman, D. and Miller, D.T. (1986), "Norm theory: comparing reality to its alternatives", *Psychological Review*, Vol. 93, pp. 136-53.
- Lichtenstein, D.R. and Bearden, W.O. (1989), "Contextual influences on perceptions of merchant-supplied reference prices", *Journal of Consumer Research*, Vol. 16 No. 6, pp. 55-66.

- Lichtenstein, D.R. and Burton, S. (1989), "The relationship between perceived and objective price-quality", *Journal of Marketing Research*, Vol. 26 No. 11, pp. 429-43.
- Lichtenstein, D.R., Burton, S. and Karson, E. (1991), "The effect of semantic cues on consumer perceptions of reference price advertisements", *Journal of Consumer Research*, Vol. 18 No. 12, pp. 380-91.
- Monroe, K.B. (1973), "Buyers' subjective perceptions of price", *Journal of Marketing Research*, Vol. 10 No. 2, pp. 70-80.
- Morris, R.T. and Bronson, C.S. (1969), "The chaos in competition indicated by consumer reports", *Journal of Marketing*, Vol. 33 No. 7, pp. 26-43.
- Mussweiler, T. and Strack, F. (1999), "Hypothesis-consistent testing and semantic priming in the anchoring paradigm: a selective accessibility model", *Journal of Experimental Social Psychology*, Vol. 35, pp. 136-64.
- Oxenfeldt, A.R. (1950), "Consumer knowledge: its measurement and extent", *Review of Economics and Statistics*, Vol. 32, pp. 300-14.
- Peterson, R.A. and Wilson, W.R. (1985), "Perceived risk and price reliance schemata as price-perceived quality mediators", in Jacoby, J. and Olson, J.C. (Eds), *Perceived*

- Quality: How Consumers View Stores and Merchandise*, C.C. Heath and Company, Lexington, MA, pp. 247-68.
- Riesz, P.C. (1978), "Price versus quality in the marketplace, 1961-1975", *Journal of Retailing*, Vol. 54 No. 4, pp. 15-28.
- Riesz, P.C. (1979), "Price-quality correlations for packaged food products", *Journal of Consumer Affairs*, Vol. 13 No. 4, pp. 236-47.
- Sherif, M. and Hovland, C.I. (1961), *Social Judgment*, Yale University Press, New Haven, CT.
- Sproles, G.B. (1977), "New evidence on price and product quality", *Journal of Consumer Affairs*, Vol. 11 No. 2, pp. 63-77.
- Tybout, A.M., Calder, B.J. and Sternthal, B. (1981), "Using information-processing theory to design marketing strategies", *Journal of Marketing Research*, Vol. 18 No. 2, pp. 73-9.
- Urbany, J.E., Bearden, W.O. and Weilbaker, D.C. (1988), "The effect of plausible and exaggerated reference price on consumer perceptions and price search", *Journal of Consumer Research*, Vol. 13 No. 9, pp. 250-6.
- Winer, R.S. (1986), "A reference price model of brand choice for frequently purchased products", *Journal of Consumer Research*, Vol. 13 No. 9, pp. 250-6.

# Economics and marketing on pricing: how and why do they differ?

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## Abstract

**Purpose** – The purpose of this general review paper is to provide a comparison and evaluation of the treatment of pricing by the disciplines of economics and marketing.

**Design/methodology/approach** – It is from three perspectives that the marketing and economics approaches to pricing are reviewed, namely, buyers' response to price, firm's determination of price, and industry- or economy-wide role of price.

**Findings** – A comparative review of the relevant marketing and economics literature shows that there are important differences between the two disciplines in their treatment of pricing. Marketing demonstrates a richer and more empirically based treatment of the pricing issue from the buyer's perspective, while economics is unchallenged from the economy-wide perspective. The differences found between the marketing and economics approaches to pricing are mostly due to their different historical origins, primary concerns and doctrinal evolution. In contrast, interdisciplinary loans especially from behavioral science have made possible considerable advances in marketing, particularly in the understanding of the buyer's perspective.

**Originality/value** – Previous reviews of the pricing literature do not attempt to provide a direct comparison and evaluation and offer no explanation for the observed differences among the economics and the marketing disciplines regarding their treatment of the pricing issue. The value and originality of the current paper lies in the fact that it represents the first attempt to provide such a comparison and evaluation.

**Keywords** Pricing, Economics, Marketing, Comparative tests

**Paper type** General review

## Introduction

Price is a central issue both for marketing and economics. The determination of price and its importance not only for the firm and its customers but also for the whole economy have been investigated thoroughly and constitute the single most important issue of common interest and concern to both disciplines. Yet, there is little examination of the way that the two disciplines differ in their approach to this issue nor is there a clear understanding of their respective contributions.

The present paper aims to promote such understanding by attempting a comparison and evaluation of the treatment of pricing by the two disciplines. A comparative review of the relevant literature shows that there are significant differences in the approach adopted by the two disciplines. Previous reviews of the pricing literature such as the one developed by Diamantopoulos (1991) attest to this though they stop short of providing a direct comparison and evaluation and offer no explanation for the observed differences. It will be argued that these are due to the different origins and central concerns of the two disciplines as well as to their different doctrinal evolutions.

In reviewing and comparing the literature, the classification scheme adopted is based on the most fundamental and general aspects of a transaction, so as to eschew any arbitrary assumptions or distinctions. Thus, transaction on the basis of a price may be considered from three distinct sides: those of the buyer, the seller and the wider industry or economy as a whole. In the present context, the three distinct sides to a price transaction concern the:

- 1 buyers' response to price;
- 2 firm's determination of price; and
- 3 industry or economy-wide role of price.

It is from these three perspectives that the marketing and economics approaches to pricing are reviewed below, concluding with a comparative evaluation. Needless to say, economics throughout stands for neoclassical economics, which is clearly the discipline's mainstream.

## Buyers' response to prices

The two disciplines of marketing and economics differ markedly in the manner in which they perceive and analyse buyers' response to prices. The main difference concerns the treatment of rationality and the question of whether buyers are characterised or not by rational behavior. Thus, buyers' "rational" response to prices is the issue over which economics and marketing approaches seem to clash most directly.

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### Rationality in economics

Economists almost universally assume that buyers behave rationally, in the sense that their preferences are stable and self-consistent, so that the psychic satisfaction or “utility” they can derive from their purchases can be maximised. Thus, it is assumed, buyers always act so as to maximise their utility. The maximisation of utility is, of course, subject to certain constraints, prime among which is obviously the income or purchasing power at the disposal of the buyer. But other constraints are also recognised, such as inadequate or false information and cost of search-time, which lead to utility-maximisation albeit of a constrained character. Consequently, buyers’ response to prices is, according to economics, an exercise in utility-maximisation under constraints.

On the basis of this theory, it is possible to logically derive the “law” of demand, i.e. the quantity demanded of any good falls (rises) as its price rises (falls). The necessarily inverse relationship between quantity demanded and price (other things being kept equal), provides a clear measuring rod of a buyer’s response to price, as well as to any changes in price. Given this relationship (also known as a demand curve or schedule), the concept of price elasticity, which is often used by economists and marketers alike to describe buyers’ responses to price changes, is but a minor and simple further elaboration. Moreover, it is theoretically simple to aggregate individual demand curves to obtain market demand curves for any particular good or to arrive at demand curves concerning all potential customers for a firm’s products.

Nevertheless, the empirical estimation of a demand curve is not at all a simple matter. To start with, the “other things that must be kept equal” invariably keep changing. Real income, for one, is bound to be affected by price variations in the case of most goods that have some weight in the buyer’s budget; and the more so, the larger the range of prices for which the demand curve is to be estimated. It is not by accident, that Alfred Marshall (1890) in his monumental *Principles of Economics*, which firmly established the notion of demand curves and its foremost position in the economists’ toolkit, referred exclusively to the demand for pins and similar items with insignificant weight in the consumer’s budget.

Marshall was fully aware of this problem in the theoretical foundation of the demand curve. Moreover, he notes that, in the real world, *ceteris paribus* does not usually hold and it may well be that “every economic force is constantly changing its action” and “no two influences move at equal pace” (Marshall, 1920, p. 306). The effect on real income of a price variation, in the case of a good, which has important weight in a buyer’s budget, may invalidate the “law” of demand. These instances are known as Giffen goods, being named after the statistician who noticed that the demand for potatoes in nineteenth century Ireland (potatoes being a staple of considerable weight in most families’ budget) was positively rather than inversely related to the price of potatoes.

Another element that cannot be taken to stay “equal” in the construction of a demand curve for a good, are the prices of substitute goods sold by competitors. Though the exact response of competitors to any variation in price is not generally knowable, some response is certainly to be expected and, therefore, the *ceteris paribus* assumption cannot reasonably be justified. Consequently, demand curves cannot be estimated without further specific information, which often may be impossible to obtain, so that the “law” of

demand, i.e. the inverse relationship between changes in price and quantity demanded, may not be witnessed in practice.

Despite these difficulties in the empirical estimation of the demand curve, this part of the economists’ theoretical edifice is relatively sound. After all, an inverse relationship between the quantity demanded and the price of a good seems intuitively plausible and consistent with most everyday experience of business life. The weakest part is surely the notion of utility-maximisation by rational consumers. This is not only implausible as a general description of buyers’ behavior but there are many instances in the everyday experience of most people that seem to contradict it. Moreover, the work of psychologists and several psychological experiments have shown beyond any reasonable doubt that rationality and utility-maximisation can hardly be considered as universal and ever-present traits of consumer behavior (Kahneman, 1994; Kahneman and Tversky, 2000; Thaler, 2001).

Why is it then that economists still cling so tenaciously to such an empirically decrepit conception? Our conjecture is that, above all else, this is due to the centrality of the utility-maximisation assumption in the derivation of general equilibrium relative prices. This is the fundamental theoretical result of neoclassical economics, establishing logically the proposition that the “invisible hand” of perfectly competitive markets leads to a socially optimum configuration of relative prices. The general-equilibrium approach answers rigorously the question of how and under what conditions a decentralised market economy generates a configuration of relative prices, which are consistent with the independently formed plans of all economic agents. It thus provides the terms and specifications required for Adam Smith’s “invisible hand” to operate so as to bring about the socially most desirable allocation of products and resources. The theory of general equilibrium, initiated by L. Walras (1874), became increasingly influential among economic theorists from the 1930s onwards and was canonised by Schumpeter (1954) as the hard core of economic theory[1]. The implication of this is that the theoretical soundness of any conceptual construction in economics has come to be judged increasingly by its consistency with general equilibrium theory.

Another reason for not questioning a patently false assumption is the widespread influence within the economics profession of the methodological doctrine of Milton Friedman. Friedman (1953) has argued that the assumptions of a scientific theory should be evaluated and subjected to critical control neither empirically nor logically; only the inferences or predictions of a theory should be tested against empirical facts. This methodological stance, which is Friedman’s own simplistic yet immensely popular interpretation of Popper’s methodology (Popper, 1934, 1963), might have made some sense if there were enough instances of economic theories being tested and shown to be false. But, despite the growth of econometrics and endless empirical testing, tests that are crucial (in Popper’s sense) are lacking in the history of economic thought and no consequential economic theory has yet to be discarded as false. Friedman’s methodology thus is revealed to be simply a defensive ploy, which rules out of bounds criticism of central economic theories regarding the falsity of their assumptions.

A further factor buttressing the notion of rationality is the association of rationality with the “law” of demand and the

widely shared belief that the theoretical derivation of the “law” requires the assumption of rationality. Since the “law” of demand is plausible and seems to be empirically grounded, it lends its worth and solidity to the notion of rationality on which it is based. So, even if one does not accept Friedman’s methodological position, rationality is accepted as a necessary cost for the theoretical founding of the “law” of demand.

The belief that the rationality assumption is essential in establishing the logical necessity of an inverse relationship between the quantity demanded and the price of a good is quite mistaken. Gary Becker (1962) has shown that the “law” of demand does not require the assumption of rationality and that an inverse relationship may be inferred from a variety of behavioral assumptions, including habit and random buying. Moreover, Hildenbrand (1994) has shown that the “law” of demand can be obtained as a result of the aggregation procedure so long as the agents on the demand side are sufficiently heterogeneous. Hence, rational utility maximization is not necessary in order to establish an inverse relationship between market demand and price. But, in addition, it is not sufficient either, since it is known that it does not guarantee the “law” of demand at the aggregate market level (Kreps, 1990; Varian, 1992). Consequently, the association of rationality with the “law” of demand is merely of an historical character and does not constitute a logical necessity. The abandonment of the rationality assumption does not, therefore, imply any damage to the theoretical grounding of the “law” of demand.

It may be argued that the economists’ commitment to utility maximization is not universal, as the growing group of behavioral economists seems to indicate. Behavioral economists certainly reject the general applicability of strict rationality in human decision-making, founding their approach on the pioneering work of psychologists Kahneman and Tversky. But it is doubtful whether the vast majority of the economics profession has any awareness, let alone understanding and knowledge, of their research:

In fact, until about 1990, it was not uncommon to get a paper returned from a journal (usually after a delay of about a year) with a three sentence referee report saying “this isn’t economics” (Camerer *et al.*, 2004, p. xxi).

Camerer *et al.* (2004) believe that the profession’s initial hostility has disappeared and Kahneman’s recent Nobel Prize in Economics seems to support this view. But to infer from the award of a Nobel economics prize to a psychologist, who is critical of utility maximization and strict rationality that the acceptance of such views by the economics profession is imminent or even likely would be a mistake. To start with, another prominent psychologist, also strongly critical of utility maximization and strict rationality, was awarded the Nobel prize about a quarter century earlier (Herbert Simon in 1978) but this hardly shook the economics profession. Indeed, many hundreds of textbooks have been written since, without a mere mention not just of H. Simon but of even a doubt regarding the appropriateness of the utility maximization and strict rationality notions. Moreover, by far the great majority of Nobel prizes have been awarded for work that is firmly rooted and indissolubly linked to these notions. Characteristically, the most recent Nobel prize (2004) recipients, F. Kydland and E. Prescott, are well-known as theorists who would not dream, even in their worst nightmare, of “doing economics” on the basis of models that reject strict rationality.

Nobody knows the future and it is, of course, possible that Kahneman may make a difference where Simon failed to do so; but it is far from a sure bet. The behavioral economists’ bet is that they will construct tractable models, which will explain the anomalies of strict rationality while making interesting, counter-intuitive new predictions. Their models will therefore be accepted by mainstream neoclassical economics as equal if not more general and superior to the models based on strict rationality.

How warranted is such an optimistic outlook? Camerer *et al.* (2004) view neoclassical economics as a collection of tools, resembling a power drill with a wide range of drill bits to do different jobs and expect that their models will prove to be better drill bits than those presently available. Adopting their metaphor, the problem is that their drill bits seem quite incompatible with the power drill and may necessitate its abandonment. This may be of no particular consequence if the power drill and the drill bits are of equal standing. But if the tools of neoclassical economics are characterized by a hierarchical structure and the existence of a hard core, then the problem is a serious one. In this case, safeguarding of the hard core becomes of paramount importance and, to continue with the metaphor, the power drill is retained at all costs, while any incompatible drill bits are thrown aside. The general equilibrium model of relative prices is indeed the hard core or power drill of neoclassical economics, its bedrocks being utility maximization and strict rationality. Consequently, research and model-construction, which undermine and largely reject these notions, constitute effectively an attack on the hard core. It is, therefore, not surprising that such work is not warmly welcomed by the largest part of the profession and it is to be expected that it will have often difficulty in being recognised as valid or even considered to be “economics” for a considerable time in the future (at least so far as the present hard core is deemed worth defending). For this reason and despite our strong sympathy for behavioral economics, we find it hard to share the optimism of Camerer *et al.* (2004)[2].

### Imperfect rationality and buyers’ behavior in marketing

Contrary to economics, marketing has not been constrained or inhibited in its treatment of rationality. Lack of perfect rationality, as suggested by casual observation and introspection, is thus an obvious starting point for the study of consumer behavior to be investigated for its implications regarding the advantageous setting of prices by firms. Thus, the lack of perfect rationality, together with the absence of full information on which buyers’ rational decisions might be made, have been analysed extensively within the marketing literature through six different theoretical underpinnings, most of which have been borrowed from psychology and particularly the field of perception.

A first theoretical approach is associated with the concept that buyers tend to associate a higher price with a higher quality and thus there are certain circumstances that they might purchase a higher-priced product as an indicator and assurance of higher quality, contrary to what economic theory seems to suggest.

This issue has been investigated extensively through a number of empirical studies that tend to provide mixed results (e.g. Chen *et al.*, 1994; Tse, 2001). In particular, this relationship has been validated for particular categories of

products (e.g. food, beverages) but not for others (e.g. medicines). It is, however, a common belief in the marketing literature that price tends to be treated as an indicator of quality, especially when buyers do not possess any reliable information and knowledge for judging the quality of a product.

A second approach is based on the Weber-Fechner “law”, according to which buyers tend to perceive price differences in proportional rather than in absolute term. A particular example, cited by Nagle and Holden (1995, p. 299) concerning the opportunity to save \$400 on a new word processor, can illustrate this notion. If such a processor costs \$1,000 (scenario A), more buyers would be willing to go to another store in order to purchase it at a price of \$600 (save \$400) than if it costs \$20,000 (scenario B) and buyers are offered the opportunity to buy it at a price of \$19,600. “This can be attributed to the fact that buyers in scenario A perceive the price difference to be 40 per cent, whereas buyers in scenario B perceive the price difference to be just 2 per cent, even though the absolute difference in both scenarios is \$400” (Nagle and Holden, 1995). In contrast, and assuming that the inconvenience of shopping at the cheaper store were the same in both cases, the rational buyer would have no reason to distinguish and exhibit a different behavior between the two.

A third hypothesis that has received some confirmation in empirical studies suggests that buyers perceive prices from left to right and calculate differences between pairs of prices taking into account only the more important digits on the left (Suri *et al.*, 2004). Thus, although a discount from \$0.88 to \$0.72 is similar to one from \$0.94 to \$0.78 (\$0.16), the tendency of buyers to perceive prices from the left disregarding lower value digits to the right, implies that the second case is a better bargain than the first (since the left digit 9 is two units bigger than 7 in the second discount, while 8 is only one unit bigger than 7 in the first discount). Obviously, such a behavior is quite irrational by the strict definition of economic rationality, given that the buyer not only does not perceive that the difference between the two pairs of prices is the same in absolute terms but also misses the fact that the first case is a better bargain, since the discount is larger in percentage terms.

A fourth approach investigates how the presentation of prices to consumers may alter their reference prices (i.e. the price that a buyer considers to be reasonable or fair) in different purchase circumstances. Within this context, Simonson and Tversky (1992) have established empirically that the addition of a high-priced product to the top of a product line increases the buyers’ reference prices, making the remaining products in the product line look less expensive and consequently more worthwhile. Moreover, on the basis of the adaptation theory (Morris and Morris, 1990), it has been argued that buyers tend to form higher reference prices when they see the prices of a product line within a store in descending order (from high to low) than when they see them in ascending order (from low to high).

Additionally, a meta-analysis by Krishna *et al.* (2002) of the impact of price presentation on perceived savings has shown that the description of a deal presented either in-store or through advertisements can also influence the buyers’ reference price when the regular price or the competitors’ prices are also presented (e.g. “35 per cent off” or “was \$45 now \$35” or “our price \$40; their price \$47”). It is also interesting that an empirical study conducted by Monger and

Feinberg (1997) concluded that the mode of payment also influences the buyers’ reference prices. More specifically, those buyers that were paying by credit card tended to form higher reference prices than those that were paying by cash or check.

A fifth theoretical approach that examines how buyers react to different prices is the prospect theory, which suggests that buyers evaluate prices in terms of gains or losses relative to their present status, with a particular loss being judged as more painful than an equivalent gain. This is a theory about attitudes towards risk but may easily be exploited in the presentation of prices to buyers. An example of how this theory applies to buyers’ decision-making is provided again by Nagle and Holden (1995, p. 310), where they present two different types of gasoline-selling stations. “Station A sells gasoline for \$1.30 per gallon and gives a \$0.10 discount if the buyer pays with cash, while Station B sells gasoline for \$1.20 per gallon and charges a \$0.10 surcharge if the buyer pays with a credit card”. Although economic theory argues that the buyers would be indifferent among the two stations, prospect theory claims that Station A would be preferred, since purchasing from this station is associated with a gain (discount), while purchasing from Station B is related to a loss (surcharge).

A sixth theoretical strand, which also implies a degree of irrationality in strictly economic terms but one mostly due to lack of reliable information, is the assimilation and contrast effects theory, which stipulates that consumers either contrast or assimilate the price levels encountered in the market place with their reference prices (Morris and Morris, 1990). More specifically, according to standard economic theory (based as it is on the availability of reliable information for rational decision-making), an offer such as “Was \$90, Now \$50” will be more appealing than an offer such as “Was \$90, Now \$75”. However, when the buyers compare the two offers, in the first case, the contrast of such a high price cut with their reference price might lead them to think that the product is defective or that the product was not really worth \$90 to start with. On the other hand, in the second case, the buyers are more likely to assimilate the discounted price to their reference price and to believe that they are just getting a good deal. This has also been supported empirically by the study of Marshall and Leng (2002), where they found that over a specific level (20–30 per cent), a price cut might not be judged positively because it might signify a decrease in the product’s quality.

More generally, the notion that consumers have perfect knowledge about existing prices that are offered in the market is challenged by marketing academics. Both knowledge and capacity to process whatever information is available seem to be lacking. For instance, a study by McGoldrick and Marks (1987) has suggested an inability of buyers to accurately recall the prices of products that they purchase frequently. This can be partially attributed to the fact that they are not paying particular attention to the price, which they pay for a product in some cases (Dickson and Sawyer, 1990), along with the tendency to perceive prices in relative rather than absolute terms. Thus, they seem to form the belief that a product is just “cheap” or “expensive” without, however, being able to recall its exact price (Zeithaml and Bitner, 1996). A meta-analysis by Estelami *et al.* (2001) has attempted to investigate the macro-economic determinants of consumer price knowledge. The authors found that economic expansion as expressed by GDP growth rates and passage of time tend to

decrease consumer price knowledge and recall accuracy, while interest rates are more weakly related and unemployment rates along with country of origin are not related at all to price recall.

Furthermore, the results of the well-known PIMS study may also challenge the standard economic disposition, since companies that were levying higher prices than the competitors' ones and were offering a higher customer service than the market's average level were also found to have a higher increase in their annual sales and market share (in particular 9 per cent and 8 per cent more respectively) when compared with those companies with lower prices and lower customer service than the market's average level (Strategic Planning Institute, n.d.).

It is also important to mention that within the marketing discipline, pricing could hardly be discussed without taking into consideration the other elements of the marketing mix. Within this context, pricing should be in accordance with these elements suggesting the need for a coherent and integrated marketing strategy. Thus, a higher price may be in order if the marketing strategy targets, for instance, those customers that seek a prestige image or a higher quality and associate this with a higher price.

Given the lack of inhibition in discarding the rationality assumption, research in marketing has felt free to investigate how buyers actually perceive and process the prices around them, taking its cues mostly from psychology. Thus, a number of different models can be found in the marketing literature analysing the way that consumers evaluate the prices around them (Bagozzi *et al.*, 1998). Within the same context, a number of empirical studies have attempted to investigate issues that ill fit the demand of rationality and are thus quite alien to the economics literature. Such issues refer to: The attractiveness of odd prices (e.g. \$199) versus round even prices (e.g. \$200) (Coulter, 2001, 2002; Estelami, 1999; Gendall *et al.*, 1997; Gendall, 1998), the effectiveness of different kinds of price promotions such as price discounts and coupons on sales (Fearne *et al.*, 1999; Kendrick, 1998; Madan and Suri 2001; McGoldrick *et al.*, 2000), the role of mood in price promotions (Hsu and Liu, 1998), the way that the consumers' gender and culture affects their perception of price increases (Maxwell, 1999), the extent to which the acceptance of a price as fair and appropriate influences the buyers' level of satisfaction (Huber *et al.*, 2001), the extent to which the degree of awareness of banking charges influences the expectations and perceptions of quality (Kangis and Passa, 1997), the effect of price bundling of services on the perception of value (Naylor and Frank, 2001).

In borrowing freely from other disciplines for its research needs, marketing has also borrowed and adopted various ideas and concepts from economics. Thus, concepts such as consumers' surplus (i.e. the extra satisfaction afforded by the price actually paid as compared to the price the consumer would be willing to pay) and, of course, the concept of price elasticity may be found in many marketing textbooks and academic journal papers as useful tools in analysing the price of a product.

Moreover, these concepts and especially price elasticity have been used in a large number of studies to elucidate buyers' response to prices, on the basis of a variety of methods and techniques. Such methods include the company's historical record of sales (Mulhern and Leone, 1995), in-store audit data (Clodfelter, 1998; Garland and McGuinness,

1992; Kondo and Kitagawa, 2000), panel data (Burns and Bush, 2000), in-store experimentation (Kent, 1999), laboratory purchase experiments (Nagle and Holden, 1995), direct questioning by means of questionnaires (Cresswell, 1998; Kinnear and Taylor, 1997; Lewis and Shoemaker, 1997) and the construction of buy-response curves (Gabor, 1988), simulated purchase surveys (Zeithaml and Bitner, 1996), conjoint analysis, where buyers are asked to indicate their preferences regarding different combinations of product attributes and prices (Green and Srinivasan, 1990) and qualitative research through in-depth interviews, focus groups or projective techniques (Cresswell, 1998; Maycut and Morehouse, 1997).

Despite the common use of price elasticity and other concepts originating in economics, a main point of difference between marketing and economics research is that, in general, economists have tended to confine their investigations to statistical data of actual market transactions, while marketing academics have shown no reluctance to generate data through experiments and especially questionnaires. More generally, a major difference between the marketing and economics approaches to buyers' response to prices is that marketing research considers price as one only of the elements of the marketing mix affecting buyers' decisions and, as a rule, not the most important one. The common tendency among economists to regard price as the most significant determinant of purchase decisions is challenged by empirical studies in marketing, which have shown that other criteria (especially in the business-to-business context) such as reliability, service quality, time delivery and fame are often regarded as more important than price when selecting a vendor (Ghymn *et al.*, 1999; Gil and Sanchez, 1997).

### Firms' determination of prices

The issue of price determination by firms has been investigated thoroughly both in the economics and the marketing literature. A review of the economics literature reveals a large number of models aiming at deriving optimal prices through the adoption of various mathematical methods under a set of different contextual conditions. A common feature of these models is the imposition of a price that yields the "optimum" or "maximum" possible result. What actually differs is which variable exactly is to be maximized.

In economic theory, profit maximization was traditionally assumed to be the single goal of the firm, which could be achieved by equating marginal cost and marginal revenue. Within this tradition, price determination is also analysed under different forms of competition (perfect competition, monopoly, monopolistic competition and oligopoly). The latter two do not admit of a general solution, as the behavior of competitors becomes of crucial importance in determining the potential outcome. Consequently, a number of different models have been developed, especially in the context of game theory, by postulating a variety of possible responses by competitors and of interactions among firms. This literature has investigated thoroughly the rather stringent conditions under which it is possible to determine a general result (Arrow, 2003; Halpern, 2003; Rankin, 2003). It is noteworthy that an important start has been made recently in the study of firms' interactions substituting strict optimisation by a behaviorist approach based on experimental design (Camerer, 2003).

However, the separation of control among managers and owners, which was brought about by the emergence and spread of the joint-stock company, led to the foundation of a new body of literature known as managerial theories. These theories suggested that the managers' motives were the ones that dominated the pricing behavior of large firms and these could diverge significantly from the owners' objectives, rendering profit maximisation unrealistic as an aim and unlikely as an outcome. Thus, new formal models emerged placing their emphasis on maximising different objectives, such as sales (Baumol, 1959), growth and security (Marris, 1964), managerial utility (Williamson, 1964) and many others that followed, most notably the extensive literature around the principal-agent problem.

These optimisation theories and models notwithstanding, the classic empirical study by Hall and Hitch (1939) showed that firms neither aim at profit maximisation (or any kind of maximisation) nor base their pricing behavior on marginal analysis. Instead, taking into account the competition they face, they try to achieve just a satisfactory profit through the imposition of a profit margin on their average costs. Based on these findings, Hall and Hitch (1939) developed their average cost theory, which was based on the concept that firms are using a full-cost pricing approach to set their prices. Andrews (1949) further developed this approach by introducing the concept of normal-cost pricing (prices are based only on variable costs at the targeted or normal level of capacity utilization).

The above efforts for the development of a more realistic theory of the firm (Boulding, 1952) fall under the general class of behavioral theories, which are relying on the principle that maximisation in reality is unattainable due to the "bounded rationality" that characterises human behavior (Simon, 1959). Thus, new theories came to the foreground (apart from the aforementioned average-cost theories) taking cues from biological analysis and organisational theories, which are based on objectives such as long-run survival and growth stability (Pickering, 1974).

Nevertheless, all the above work seems to have remained at the periphery of the economics profession and has never made a serious impact on popular textbooks and mainstream economic teaching and research. The reason is that, in the absence of optimisation, the results are generally imprecise if not indeterminate. Determinate outcomes are possible only on the basis of quite specific and mostly ad hoc assumptions, with the consequence that the economists' methodological aims of theoretical rigour and generality are compromised. Moreover, such approaches lack a normative dimension and can hardly provide guidance to good practice. Consequently, the economics literature has been dominated by "optimisation" approaches while profit maximisation has continued to retain a central place, especially in general economics textbooks.

Turning now to marketing, optimisation models may also be found in the marketing literature with respect to pricing in many different areas. These include, for instance, new product pricing (Prasad, 1997), price discrimination (Mitra and Capella, 1997), price bundling (Ansari *et al.*, 1996), determination of economic value for customers (Thompson and Coe, 1997), client-driven models (Ratza, 1990), pricing in an international context (Myers, 2002), non-linear pricing (Dolan and Simon, 1997) and pricing in a retail context (Subrahmanyam, 2000) among others. The approach here is

to maximise an objective function, very much in the manner of economics research. Although in most cases profit is the objective to be maximised, this might not always be the case (e.g. from the above models, Prasad attempts to derive the maximum sales volume for a new product, while Sewall provides a model for underbidding competitors).

Nevertheless, it should be noted that such models occupy a rather limited space within the marketing literature. Pricing research is characterised mainly by a behavioral approach and an emphasis on the actual process by which prices are determined in practice. Within this context, attention has been turned to the pricing objectives pursued, the pricing methods followed (cost-based, demand-based and competition-based), the pricing policies adopted (e.g. list prices, negotiated prices, differentiated prices, price bundling, efficiency pricing, competitive bidding, geographical pricing), the factors that influence pricing decisions (e.g. cost, competitors' prices, customers' characteristics, corporate objectives, product characteristics), the corporate departments that are responsible for pricing and the pricing of new products for which prior market feedback is lacking. Some of the concepts used have been borrowed, as in the case of buyers' response to prices, from the economics literature (e.g. differentiated pricing (Holdren and Hollingshead, 1999; Mitra and Capella, 1997, Monroe, 2003), public utility pricing (Hoffman and Bateson, 1997), cost-based pricing (Dolan and Simon, 1997; Zeithaml and Bitner, 1996), price leadership (Kotler, 1997), price collusion (Diamantopoulos, 1991), the impact of competitors' characteristics on the prices set (Hornby and MacLeod, 1996; Meidan and Chin, 1995), pricing strategies such as price skimming for pricing new products (Prasad, 1997)).

Other issues that have been investigated under this behavioral perspective refer to the pricing over a product's life cycle (Adcock *et al.*, 1998; Bagozzi *et al.*, 1998; Monroe, 2003), the pricing practices of service organisations (Hoffman *et al.*, 2002; Kurtz and Clow, 1998; Zeithaml and Bitner, 1996), the determination of prices in an international context (Dolan and Simon, 1997; Myers, 2002), the pricing of retail products (McGoldrick *et al.*, 2000; Subrahmanyam, 2000), the pricing of high-technology industrial products and services (Baltas and Freeman, 2001; Shipley and Jobber, 2001), and the pricing of on-line products (Ellsworth and Ellsworth, 1997; Hardaker and Graham, 2001; Monroe, 2003).

Additionally, regarding the objectives that firms pursue in setting prices, marketers seem to assume a variety of different objectives. It is characteristic that a number of different studies which have been conducted from a marketing perspective, have argued that firms rely either on non-profit oriented objectives, such as customer or competition ones (Meidan and Chin, 1995), or on satisfactory rather than maximum profits (Morris and Fuller, 1989), while at the same time they might pursue more than one objective (Hornby and MacLeod, 1996).

However, it needs to be mentioned at this point that despite its behavioral foundations, the empirical studies that have been conducted from a marketing perspective on the issue of how firms are actually formulating their pricing strategies and tactics are rather limited (Diamantopoulos, 1991). This lack of empirical studies has prompted marketing academics such as Nagle and Holden (1995) to suggest that price remains the most neglected element of the marketing mix. This is a

paradox for marketing, given its more behavioral approach to pricing compared to economics, suggesting that research in this field of marketing remains largely a priori conceptual or casual empiricist and is in need of empirically-based evidence and support.

A possible reason, if not justification, of the relative neglect of empirical research on pricing in the marketing literature may be that price is considered as part (and often the least important part) of a complex strategic decision involving all aspects of the marketing mix. Thus, there is a tendency within the marketing domain to suggest that a sustainable competitive advantage can be achieved by placing the emphasis not on price but on non-price elements, such as the effort to differentiate a product or a service, to add value to it, to offer increased service quality, to invest on branding, to promote the corporate image and fame, etc., which might even permit the imposition of a higher price than competitors (e.g. Walker *et al.*, 1999). This argument is supported empirically by studies, showing that pricing tends to be regarded by firms as less important than other marketing activities such as new product development, sales or advertising (e.g. Harris, 1978; Pass, 1971). It is also supported by the fact that buyers especially in the business-to-business sector tend to pay less emphasis on price, relative to other characteristics of the product or vendor, when they make their purchase decisions.

Although some, especially industrial, economists (Clarke, 1985; Milgrom and Roberts, 1986; Slade, 1995) have also recognised the interrelationship of price and the non-price elements of product development and advertising, the role of price within the marketing mix remains an issue that has been examined mainly by marketing academics. More specifically, marketing literature has underlined the need of pricing strategy to be incorporated into the overall marketing strategy. Thus, it has been argued convincingly that pricing decisions cannot be made in isolation without taking into consideration the product, distribution and promotion aspects of the marketing mix, indicating the need for a coherent and integrated marketing strategy (Adcock *et al.*, 1998; Kotler, 1997).

In evaluating the approach to firms' determination of prices taken by marketing and economics respectively, it has to be recognized that both approaches can make a valuable contribution. Marketing provides a view of pricing that seems closer to actual managerial practice by treating price as only one and not necessarily the most important of the elements that need to be considered in the strategic marketing decision. But such an approach is difficult to formalize, especially in a convincing manner that may have general applicability. In contrast, by adopting an optimisation approach, economics achieves a much sharper focus and can provide normative results that may inform and be of some use to decision-making, even if this is at a more mundane level than that of strategic marketing. It has also developed powerful econometric tools for testing empirically the extent of the optimisation models' applicability, when these are viewed as positive theory. Consequently, in this area, the economics optimisation approach can complement that of marketing by illuminating more sharply at least parts of the manifold set-up that marketing considers to be relevant. The prospects for collaborative work and convergence between the two disciplines are, therefore, quite favourable at the level of the firms' pricing decision.

## Industry and economy-wide role of prices

The industry and economic-wide significance of prices has been traditionally of great importance to economics while it has been practically of no interest at all to marketing.

A number of central questions have shaped economic research. At the sectoral level, the central question is how the structural characteristics, regarding the conditions and intensity of competition in a particular market or industry, affect the conduct and performance of firms in that market. This line of research constitutes a branch of economics known as industrial economics and its origin can be traced back to Marshall (1920), with important contributions made by American economists in the 1930s and 1950s, e.g. Chamberlin (1933), Mason (1939), Bain (1956, 1959). The main themes and concepts, some of which have formed an echo in marketing, refer to concentration, economies of scale, barriers to entry or exit from a market, governmental intervention through price and other controls, vertical integration, diversification, product differentiation and different forms of price competition in oligopolistic market situations (McGee, 1988; Scherer, 1980; Tirole, 1989). Although under this approach (also known as the structure-conduct-performance or industrial organisation approach) pricing is not examined at the individual firm level, it aims at providing an understanding of how the nature of competition in an industry affects pricing behavior (Sawyer, 1981).

At the economy-wide level, there are two approaches, general equilibrium analysis and macroeconomics, associated respectively with two different central questions. The first one concerns the determination of equilibrium relative prices throughout the economy. These are mutually compatible prices in the sense that all markets are cleared and all economic agents' production and transaction plans are realised. This set of general-equilibrium prices is based on a quite abstract theoretical construction that requires stringent conditions for the determination of the equilibrium prices (for example, no transactions must take place before an auctioneer finds and announces the equilibrium prices). Though prices and their determination are at the centre of this theory, which constitutes the hard core of neoclassical economics, it is clear that the relationship between the theory's general equilibrium prices and empirically observable prices in any actual economy is rather remote.

The second approach at the economy-wide level is more empirically oriented. The central question it addresses is how the general level of prices is determined and how the rate of change of the overall price level affects pivotal economic magnitudes such as consumption, investment, the rate of interest, income and employment. The specialised field associated with this approach is known as macroeconomics.

The central elements or variables focused on in macroeconomics are interrelated and in dealing with interrelationships within a general system, macroeconomic theory formally resembles general equilibrium theory. Nevertheless, the interrelated primary elements are very different in the two fields. In macroeconomics, the primary concerns are aggregates with empirically observable statistical counterparts, while in general equilibrium theory the primary building blocks are those of microeconomics (such as utility-maximising consumers and profit-maximising firms under perfectly competitive conditions) and neither these basic concepts nor the resulting interrelated prices are empirically

observable. Thus, any contact between general equilibrium theory and empirical data has to rely on the circuitous route of drawing appropriate inferences from the theory that may be matched with and tested against empirical data.

Nevertheless, the dominance of empirical evidence over general equilibrium theory is far from assured, given the lack of agreement as to what constitutes adequate matching of empirical data to theory. Moreover, there is no decisive or crucial testing of the theory against empirical data that might conceivably serve as proof of the theory's falsification. Consequently, there is a significant difference between macroeconomics and general-equilibrium theory in that the former is much more empirically rooted and orientated, even when it is based, as is the fashion in contemporary academic research, on microeconomic foundations.

### Comparative evaluation and conclusion

The purpose of this paper is to provide a comparative evaluation of the way in which pricing is treated in the marketing and economics literature. This has been examined under three headings:

- 1 buyers' response to prices;
- 2 firms' determination of prices; and
- 3 industry- and economy-wide role of prices.

Table I provides a simple summary of the comparison between marketing and economics under these three headings.

A deeper examination of (3) above provides the key to an understanding of the differences between marketing and economics in their treatment of pricing. The reason is that this reveals the basic difference in the fundamental nature of the two disciplines. Marketing has practically nothing to contribute to this issue while economics is most concerned about this question and especially its theoretical hard core is fully centred on it. This, of course, is not surprising given the origins of the two disciplines. Marketing arose out of a business concern to attune management with market requirements and had as its primary mission to improve business performance while economics has its historical roots in political philosophy and aimed at improving the organisation of society. Thus, marketing is a discipline concerned with business practice while economics is essentially a social science discipline.

Given the fundamental variance in the historical origin and nature of the two disciplines, the differences in their treatment of pricing fall into place. As regards (1) buyers' response to prices, marketing adopts a behaviorist approach, borrows freely from research in psychology and is open to cues and contributions to enhanced understanding from wherever they may come. Its approach is pragmatic, operational and flexible without any hint of dogmatic adherence to any particular theoretical view and doctrinal position.

In contrast, economics is committed to the doctrine of utility-maximisation, a theoretical stance that is clearly weak on empirical support and shows strong resistance in assimilating empirically well founded advances from psychology. The reason for this attitude is to be found in the role of utility-maximisation within the theoretical hard core of economics, viz. general equilibrium theory. Utility maximisation has been important in the historical development of the discipline and has served well in the

construction of the theoretical hard core but it is today an impediment to an understanding of human behavior, whether in the market place or more generally. Consequently, to understand buyers' response to prices, one may turn more reliably and fruitfully to marketing than to economics. This seems to be corroborated by the award of the 2002 Nobel prize in economics to D. Kahneman, a scientist better known to psychology and marketing academics than to economists, who is fond of saying that he has never attended a single course in economics (*Business Week*, 2002).

Despite the symbolic significance of the Nobel prize award (which may be viewed as an attempt to appropriate for economics Kahneman's work on economic agents' actual behavior and thus redress the deficiency in economists' own work in this field), it is doubtful that it will make an impression beyond the fringe of the discipline, since it poses a threat to and undermines the theoretical hard core of economics. This threat will be removed only if general equilibrium theory were to be reconstructed, while retaining its essential properties and desirable outcomes, on realistic psychological foundations rather than axiomatic utility maximisation. The fact that no such model or alternative general theory has appeared so far and that the increasing number of recognized anomalies (Thaler, 2001) is treated by epicycle-like refinements, indicates that the required task of reconstruction is difficult and problematic.

Whether an alternative general theory is feasible or not, it is to be hoped that at least the widely held view according to which rationality and utility maximisation are essential to the validity of the law of demand is abandoned as false. The realisation that rationality and utility maximisation are superfluous to the theoretical founding of an inverse relationship between price and quantity demanded (as shown by Becker (1962) and Hildenbrand (1994)) will remove an important, even if not the most compelling, obstacle to sound empirical research by economists on buyers' response to prices and consumer behavior. It will also facilitate the acceptance and assimilation within economics of relevant findings from psychological research.

Regarding (2) the determination of prices by firms, the difference between marketing and economics is not as pronounced as it is in the case of buyers' response to prices. Marketing again adopts a clearly more behaviorist approach than economics and, as a consequence, explores a more varied and generally richer range of possibilities in firm behavior. This tendency is further reinforced by marketing's concern to provide guidance to managerial decision-making and to consider pricing decisions as part of an interrelated decision package, comprising all the dimensions of the marketing mix.

On the other hand, economics has been hampered less in this area by its attachment to the primacy of the theoretical hard core. This is because there is no direct conflict between general equilibrium theory and firms' determination of prices in imperfectly competitive markets and on criteria other than profit maximisation. General equilibrium theory is based on perfect competition, which is compatible only with profit maximisation. Market structures characterised by other-than-perfect competition, in which firms' objectives may differ from profit maximisation, are outside the ambit of the theoretical hard core. Consequently, even though the existence of other-than-perfect competition may undermine general equilibrium as an empirically valid conceptual

**Table I** A comparison between the economics and the marketing literature on pricing

	Economics	Marketing
<b>Buyers' response to prices</b>	<p>Rationality assumed on the part of the buyer, which is essential to the utility maximization theory. Price is used as a determinant (i.e. independent variable in the function) of this utility</p> <p>Price is the most important criterion in buyers' decisions</p> <p>The focus is on rational buyers' behavior rather than on how actual buyers behave in reality</p>	<p>Rationality is not always evident as shown by research in psychology (price-quality relationship, Weber-Fechner Law, buyers' process prices from left to right, presentation of prices to buyers may alter their reference prices, assimilation and contrast theory, adaptation theory, difficulty in recalling prices)</p> <p>Price is not always the most important criterion in buyers' decision making especially in the business-to-business sector</p> <p>The emphasis is on how buyers are actually processing prices through empirical observation studies</p> <p>Some concepts such as reservation prices, price elasticity or consumer's surplus have been borrowed from economics</p>
<b>Firms' determination of prices</b>	<p>Emphasis on optimality issues through the use of formal models that attempt to maximise an objective function under certain constraints</p> <p>Profit maximisation has been the most common objective but a wide variety of other joint objectives have also been investigated</p> <p>Price is usually considered as the main business decision for gaining competitive advantage</p> <p>Theoretical concepts and econometric tools have been developed in the context of optimising models</p> <p>A large number of empirical studies have been conducted to test econometrically the range of applicability of various optimizing models</p> <p>Recent interest in behaviorist approaches seems likely to grow</p>	<p>Emphasis on how firms are actually behaving through the behavioral examination of issues such as pricing behavioral objectives, pricing methods, departments responsible for pricing decisions, pricing of new products and examination of the firm and business conditions that favour a price increase or decrease</p> <p>Firms are considered to pursue a variety of pricing objectives apart from profit with the emphasis being placed on achieving satisfactory rather than maximum results</p> <p>Price is regarded as a less important business activity compared with the other elements of the marketing mix</p> <p>Some issues such as pricing over the product life cycle stage, service pricing, retail pricing, online pricing have been examined mainly, if not exclusively, within the marketing literature</p> <p>Relatively few empirical studies have been conducted from a marketing perspective, while optimality models used tend to be less formal and incorporate managerial judgement</p> <p>Concepts such as price discrimination, price skimming, price leadership and cost-based pricing have been borrowed from economics</p>
<b>Industry- and economy-wide role of prices</b>	<p>Industrial economics examines how the nature of competition in a market affects pricing behavior</p> <p>General equilibrium theory shows how mutually consistent relative prices can be determined under conditions of perfect competition. It is the theoretical hard core of economics and provides an ideal standard for social organisation and a platform for political action</p> <p>Macro-economics focuses on the overall price level and its rate of change and studies their interrelationship with other central macroeconomic aggregates, such as income, employment, rate of interest, investment, savings and consumption</p>	<p>These issues have been examined almost exclusively within the economics literature</p>

representation, it does not affect its logical consistency. Within its self-proclaimed purview, general equilibrium theory not only preserves its internal coherence but also continues to provide an ideal standard for the organisation of society, as well as an orientation for political ideology and action. Thus, unlike the abandonment of rationality and utility maximisation which damage irreparably general equilibrium theory, other-than-perfect competition and firms' objectives other than profit maximisation leave intact not only the internal coherence of the theoretical hard core but also its social, political and ideological functions.

The absence of direct, fatal threat to the theoretical hard core of economics from firms' determination of prices on

criteria other than profit maximisation, has allowed economists considerable leeway in exploring various alternatives. A lot of this work is very valuable and tends to be both theoretically and empirically better rooted than comparable work in marketing. Its limits are only set by the predilection of economists for general models with determinate results, as well as theoretical or mathematical rigour, which has strongly favoured optimisation approaches often to the exclusion of alternative approaches. The insistence on rationality may have value as normative theory but from the viewpoint of positive theory it makes inadequate contact with and weakly corresponds to empirically observable behavior.

Thus, the procedures, interests and conflicts involved in the actual determination of prices are better understood through the behaviorist approach, even though the results are hardly generalisable and often lack rigour. The marketing discipline, which has predominantly adopted this approach, lacks a strong theoretical core and is largely characterized by a high degree of specificity both at the positive and the normative or prescriptive levels. On the other hand, as has been noted above with reference to game theory, a fringe of economists has begun recently to adopt a behaviorist approach to the study of firms' interactions (Camerer, 2003). Kahneman's Nobel award is likely to further encourage this research orientation. The appearance of an important new textbook on microeconomics from such a perspective (Bowles, 2004) might also provide an impetus in this direction. There is thus some evidence that in the area of firms' determination of price, economists not only feel less constrained by the dictates of their discipline's hard core but also that they are prepared to venture beyond strict rationality and optimisation towards an exploration of behaviorist approaches. It would seem, therefore, that in this area both disciplines not only have a worthy contribution to show to date but also show promise of some convergence in the future. In particular, their relative strengths and weaknesses, if properly understood and built on, could lead to their convergence to joint research goals and efforts.

The conclusion to be drawn is that the difference in the treatment of pricing between marketing and economics is largely explained by the differences in the origin, mission and centrality of theory and, of course, doctrinal evolution in the two disciplines. In particular, the absence of a strong theoretical hard core in marketing has permitted openness towards other disciplines, especially psychology, and a freedom to borrow findings and approaches, notably the behaviorist approach. On the other hand, the strong and mathematically highly developed theoretical hard core of economics has constrained the development of theories and research approaches that are in disaccord with and may threaten the hard core. The consequent weak correspondence between empirical data and the theoretical constructs dictated by the protection needs of the hard core, particularly in buyers' response to prices, has been buttressed by the adoption of a defensive scientific methodology (following Friedman) which, disallows testing and evaluation of the basic assumptions and conceptual building blocks of a theory. This, together with the requirements of generality and mathematical rigour, have blocked a behaviorist research approach and prevented an understanding of pricing based on close observation of actual responses and practices. This seems to be the opportunity cost, as economists would say, of the development of a theoretical hard core. Or, as others might put it, the strong theoretical hard core is for economics both a boon and a bane.

## Notes

- 1 The notion of the "hard core" of a scientific discipline is due to Imre Lakatos and has given rise to an extensive literature in the philosophy of science. Put simply, the hard core is the central theoretical element, which gives identity and direction to a research programme and which, most importantly, is not directly to be subjected to testing and potential falsification by empirical evidence.

Lakatos' views have gained wide currency in discussions of methodology in economics (see, for example, the papers from the economists' conference on Lakatos in deMarchi and Blaug, 1991).

- 2 The prospects of behavioral economics being accepted by the mainstream of the economics profession may be better than those of other heterodox schools such as the institutional, evolutionary, Marxist, Sraffian and Post-Keynesian, given that behavioral economists' research has been published by top mainstream journals. Yet, the impression remains that behavioral economists tend to converse more with psychologists and have an easier communication and intellectual discourse with them and others, who have no commitment to strict rationality than they have with neoclassical economists. Given the inertia and the tendency of the economics profession to defend their intellectual capital (which consists to a significant extent of the neoclassical hard core), it seems likely that behavioral economists will be more welcome in business, marketing and finance departments, as well as in graduate business schools, than they will be in pure economics departments. The easy absorption of their research results into business applications and especially marketing indicates that, irrespective of identity aspirations, self-labelling and name-calling, this research school has possibly a closer affinity with business than economics.

## References

- Adcock, D., Bradfield, R., Halborg, A. and Ross, C. (1998), *Marketing: Principles and Practice*, 3rd ed., Pitman Publishing, Swanscombe.
- Andrews, P.W.S. (1949), *Manufacturing Business*, Macmillan, London.
- Ansari, A., Siddarth, S. and Weinberg, C.B. (1996), "Pricing a bundle of products or services: the case of non-profits", *Journal of Marketing Research*, Vol. 33, February, pp. 86-93.
- Arrow, K.J. (2003), "Introductory remarks on the history of game theory", *Games and Economic Behavior*, Vol. 45, October, pp. 15-18.
- Bagozzi, R.P., Rose, J.A., Celly, K.S. and Coronel, F. (1998), *Marketing Management*, Prentice-Hall, Englewood Cliffs, NJ.
- Bain, J.S. (1956), *Barriers to New Competition*, Harvard University Press, Cambridge, MA.
- Bain, J.S. (1959), *Industrial Organization*, John Wiley & Sons, New York, NY.
- Baltas, G. and Freeman, J. (2001), "Hedonic price methods and the structure of high-technology industrial markets", *Industrial Marketing Management*, Vol. 30, October, pp. 599-607.
- Baumol, W.J. (1959), *Business Behavior, Value and Growth*, Macmillan, New York, NY.
- Becker, G. (1962), "Irrational behavior and economic theory", *Journal of Political Economy*, Vol. LXX No. 1, pp. 1-13.
- Boulding, K.E. (1952), "Implications for general economics of more realistic theories of the firm", *American Economic Review*, Vol. 42, May, pp. 35-44.
- Bowles, S. (2004), *Microeconomics: Behavior, Institutions and Evolution*, Princeton University Press, Princeton, NJ and Oxford.

- Burns, A.C. and Bush, R.F. (2000), *Marketing Research*, 3rd ed., Prentice-Hall, Englewood Cliffs, NJ.
- Business Week* (2002), 21 October.
- Camerer, C.F. (2003), *Behavioral Game Theory: Experimental Studies of Strategic Interaction*, Princeton University Press, Princeton, NJ and Oxford.
- Camerer, C.F., Loewenstein, G. and Rabin, M. (2004), *Advances in Behavioral Economics*, Princeton University Press, Princeton, NJ.
- Chamberlin, E.H. (1933), *Theory of Monopolistic Competition*, Harvard University Press, Boston, MA.
- Chen, I.J., Gupta, A. and Walter, R. (1994), "A study of price and quality in service operations", *International Journal of Service Industry Management*, Vol. 5 No. 2, pp. 23-33.
- Clarke, R. (1985), *Industrial Economics*, Blackwell, Oxford.
- Clodfelter, G.R. (1998), "Pricing accuracy at grocery stores and other retail stores using scanners", *International Journal of Retail & Distribution Management*, Vol. 26, November, pp. 412-20.
- Coulter, K.S. (2001), "Odd-ending price underestimation: an experimental examination of left-to-right processing effects", *Journal of Product & Brand Management*, Vol. 10 No. 5, pp. 276-92.
- Coulter, K.S. (2002), "The influence of print advertisement organization on odd-ending price image effects", *Journal of Product & Brand Management*, Vol. 11 No. 5, pp. 319-34.
- Cresswell, J.W. (1998), *Qualitative Inquiry and Research Design: Choosing among Five Traditions*, Sage, Newbury Park, CA.
- deMarchi, N. and Blaug, M. (1991), *Appraising Economic Theories: Studies in the Methodology of Research Programs*, Edward Elgar, Aldershot.
- Diamantopoulos, D. (1991), "Pricing: theory and evidence – a literature review", in Baker, M.J. (Ed.), *Perspectives on Marketing Management*, John Wiley & Son, Chichester, pp. 61-193.
- Dickson, P.R. and Sawyer, A.G. (1990), "The price knowledge and search of supermarket shoppers", *Journal of Marketing*, Vol. 54, July, pp. 42-53.
- Dolan, R.J. and Simon, H. (1997), *Power Pricing*, The Free Press, New York, NY.
- Ellsworth, J.H. and Ellsworth, M.V. (1997), *Marketing on the Internet*, John Wiley & Sons, New York, NY.
- Estelami, H. (1999), "The computational effect of price endings in multi-dimensional price advertising", *Journal of Product & Brand Management*, Vol. 8 No. 3, pp. 244-56.
- Estelami, H., Lehmann, D.R. and Holden, A.C. (2001), "Macro-economic determinants of consumer price knowledge: a meta-analysis of four decades of research", *International Journal of Research in Marketing*, Vol. 18, pp. 341-55.
- Fearne, A., Donaldson, A. and Norminton, P. (1999), "Pricing strategy and practice: the impact of alternative promotion strategies on the spirits category: evidence from the UK", *Journal of Product & Brand Management*, Vol. 8 No. 5, pp. 440-3.
- Friedman, M. (1953), "The methodology of positive economics", in Friedman, M. (Ed.), *Essays in Positive Economics*, University of Chicago Press, Chicago, IL.
- Gabor, A. (1988), *Pricing: Concepts and Methods for Effective Pricing*, Gower, Aldershot.
- Garland, B.R. and McGuinness, D.E. (1992), "A study of price accuracy in the New Zealand supermarket industry", *European Journal of Marketing*, Vol. 26 No. 10, pp. 53-64.
- Gendall, P. (1998), "Estimating the effect of odd pricing", *Journal of Product & Brand Management*, Vol. 7 No. 5, pp. 421-32.
- Gendall, P., Holdershaw, J. and Garland, R. (1997), "The effects of odd pricing on demand", *European Journal of Marketing*, Vol. 31 Nos 11/12, pp. 799-813.
- Ghymn, K., Liesch, P. and Mattsson, M. (1999), "Australian import managers' purchasing decision behavior: an empirical study", *International Marketing Review*, Vol. 16 Nos 2/3, pp. 202-16.
- Gil, J.M. and Sanchez, M. (1997), "Consumer preferences for wine attributes: a conjoint approach", *British Food Journal*, Vol. 99 No. 1, pp. 3-11.
- Green, P.E. and Srinivasan, V. (1990), "Conjoint analysis in marketing research: new developments and directions", *Journal of Marketing*, Vol. 54, October, pp. 3-19.
- Hall, R.L. and Hitch, C.J. (1939), "Price theory and business behavior", *Oxford Economic Papers*, Vol. 2, May, pp. 12-45.
- Halpern, J.Y. (2003), "A computer scientist looks at game theory", *Games and Economic Behavior*, Vol. 45, October, pp. 114-31.
- Hardaker, G. and Graham, G. (2001), *Wired Marketing*, John Wiley & Sons, Chichester.
- Harris, C.E. (1978), "Stability or change in marketing methods?", *Business Horizons*, Vol. 21, October, pp. 32-40.
- Hildenbrand, W. (1994), *Market Demand: Theory and Empirical Evidence*, Princeton University Press, Princeton, NJ.
- Hoffman, D.K. and Bateson, J.E.G. (1997), *Essentials of Services Marketing*, The Dryden Press, Orlando, FL.
- Hoffman, D.K., Turley, L.W. and Kelley, S.W. (2002), "Pricing retail services", *Journal of Business Research*, Vol. 55, pp. 1015-23.
- Holdren, D.P. and Hollingshead, C.A. (1999), "Differential pricing of industrial services: the case of inventory financing", *Journal of Business & Industrial Marketing*, Vol. 14 No. 1, pp. 7-16.
- Hornby, W. and MacLeod, M. (1996), "Pricing behavior in the Scottish computer industry", *Management Decision*, Vol. 34 No. 6, pp. 31-42.
- Hsu, C. and Liu, B.S. (1998), "The role of mood in price promotions", *Journal of Product & Brand Management*, Vol. 7 No. 2, pp. 150-60.
- Huber, F., Herrmann, A. and Wricke, M. (2001), "Customer satisfaction as an antecedent of price acceptance: results of an empirical study", *Journal of Product & Brand Management*, Vol. 10 No. 3, pp. 160-9.
- Kahneman, D. (1994), "New challenges to the rationality assumption", *Journal of Institutional and Theoretical Economics*, Vol. 150 No. 1, pp. 18-36.
- Kahneman, D. and Tversky, A. (2000), *Choices, Values and Frames*, Princeton University Press, Princeton, NJ.
- Kangis, P. and Passa, V. (1997), "Awareness of service charges and its influence on customer expectations and perceptions of quality in banking", *Journal of Services Marketing*, Vol. 11 Nos 2/3, pp. 105-17.
- Kendrick, A. (1998), "Promotional products vs price promotion in fostering customer loyalty: a report of two controlled field experiments", *Journal of Services Marketing*, Vol. 12 Nos 3/4, pp. 312-26.

- Kent, R. (1999), *Marketing Research: Measurement, Method and Application*, International Thompson Business Press, London.
- Kinney, T.C. and Taylor, J.R. (1997), *Marketing Research: An Applied Approach*, 5th ed., McGraw-Hill, New York, NY.
- Kondo, F.N. and Kitagawa, G. (2000), "Time series analysis of daily scanner sales: extraction of trend, day-of-the-week effect and price promotions effect", *Marketing Intelligence & Planning*, Vol. 18 No. 2, pp. 53-66.
- Kotler, P. (1997), *Marketing Management: Analysis, Planning, Implementation and Control*, 9th ed., Prentice-Hall, Englewood Cliffs, NJ.
- Kreps, D.M. (1990), *A Course in Microeconomic Theory*, Princeton University Press, Princeton, NJ.
- Krishna, A., Briesch, R., Lehmann, D.R. and Yuan, H. (2002), "A meta-analysis of the impact of price presentation on perceived savings", *Journal of Retailing*, Vol. 78, summer, pp. 101-18.
- Kurtz, D.L. and Clow, K. (1998), *Services Marketing*, John Wiley & Sons, New York, NY.
- Lewis, R.C. and Shoemaker, S. (1997), "Price sensitivity measurement: a tool for the hospitality industry", *The Cornell Hotel and Restaurant Administration Quarterly*, Vol. 38 No. 2, pp. 44-54.
- McGee, J.S. (1988), *Industrial Organization*, Prentice-Hall, New York, NY.
- McGoldrick, P.J. and Marks, H.J. (1987), "Shoppers' awareness of retail grocery prices", *European Journal of Marketing*, Vol. 21 No. 3, pp. 63-76.
- McGoldrick, P.J., Betts, E.J. and Keeling, K.A. (2000), "High-low pricing: audit evidence and consumer preferences", *Journal of Product & Brand Management*, Vol. 9 No. 5, pp. 316-31.
- Madan, V. and Suri, R. (2001), "Quality perception and monetary sacrifice: a comparative analysis of discount and fixed prices", *Journal of Product & Brand Management*, Vol. 10 No. 3, pp. 170-84.
- Marris, R.L. (1964), *The Economic Theory of Managerial Capitalism*, Macmillan, London.
- Marshall, A. (1890), *Principles of Economics*, 8th ed. (1920), Macmillan, London.
- Marshall, A. (1920), *Industry and Trade*, Macmillan, London.
- Marshall, R. and Leng, S.B. (2002), "Price threshold and discount saturation point in Singapore", *Journal of Product & Brand Management*, Vol. 11 No. 3, pp. 147-59.
- Mason, E.S. (1939), "Price and production policies of large-scale enterprise", *American Economic Review*, Vol. 29, March, pp. 61-74.
- Maxwell, S. (1999), "Biased attributions of a price change increase: effects of culture and gender", *Journal of Consumer Marketing*, Vol. 16 No. 1, pp. 9-23.
- Maycut, P. and Morehouse, R. (1997), *Beginning Qualitative Research*, 3rd ed., Falmer Press, London.
- Meidan, A. and Chin, A. (1995), "Mortgage-pricing determinants: a comparative investigation of national, regional and local building societies", *International Journal of Bank Marketing*, Vol. 13 No. 3, pp. 3-11.
- Milgrom, P.R. and Roberts, J. (1986), "Price and advertising signals of product quality", *Journal of Political Economy*, Vol. 94, pp. 796-821.
- Mitra, K. and Capella, L.M. (1997), "Strategic pricing differentiation in services: a re-examination", *Journal of Services Marketing*, Vol. 11 No. 5, pp. 329-43.
- Monger, J.E. and Feinberg, R.A. (1997), "Mode of payment and formation of reference prices", *Pricing Strategy and Practice*, Vol. 5 No. 4, pp. 142-7.
- Monroe, K.B. (2003), *Making Profitable Decisions*, 3rd ed., McGraw-Hill/Irwin, Burr Ridge, IL.
- Morris, M.H. and Fuller, D.A. (1989), "Pricing an industrial service", *Industrial Marketing Management*, Vol. 18 No. 2, pp. 139-46.
- Morris, M.H. and Morris, G.P. (1990), *Market-Oriented Pricing*, Quorum Books, Westport, CT.
- Mulhern, F.J. and Leone, R.P. (1995), "Measuring market response to price changes: a classification approach", *Journal of Business Research*, Vol. 33, July, pp. 197-205.
- Myers, M.B. (2002), "Implications of pricing strategy-venture strategy congruence: an application using optimal models in an international context", *Journal of Business Research*, Vol. 30, pp. 1-10.
- Nagle, T.T. and Holden, R.K. (1995), *The Strategy and Tactics of Pricing*, Prentice-Hall, Englewood Cliffs, NJ.
- Naylor, G. and Frank, K.E. (2001), "The effect of price bundling on consumer perceptions of value", *Journal of Services Marketing*, Vol. 15 Nos 4/5, pp. 270-81.
- Pass, C. (1971), "Pricing policies and market strategies: an empirical note", *European Journal of Marketing*, Vol. 5 No. 3, pp. 94-8.
- Pickering, J.F. (1974), *Industrial Structure and Market Conduct*, Martin Robertson, Oxford.
- Popper, K.R. (1934), *The Logic of Scientific Discovery*, Hutchinson, London.
- Popper, K.R. (1963), *Conjectures and Refutations*, Routledge, London.
- Prasad, B. (1997), "Analysis of pricing strategies for new product introduction", *Pricing Strategy and Practice*, Vol. 5 No. 4, pp. 132-41.
- Rankin, F.W. (2003), "Communication in ultimatum games", *Economic Letters*, Vol. 81, November, pp. 267-71.
- Ratza, C.L. (1990), "A client-driven model for service pricing", *Journal of Professional Services Marketing*, Vol. 8 No. 2, pp. 55-64.
- Sawyer, M. (1981), *The Economies of Industries and Firms*, Croom Helm, London.
- Scherer, F.M. (1980), *Industrial Market Structure and Economic Performance*, Rand-McNally, Chicago, IL.
- Schumpeter, J.A. (1954), *History of Economic Analysis*, Allen & Unwin, London.
- Shipley, D.D. and Jobber, D. (2001), "Integrative pricing via the pricing wheel", *Industrial Marketing Management*, Vol. 30 No. 3, pp. 301-14.
- Simon, H. (1959), "Theories of decision making in economics and behavioral science", *American Economic Review*, Vol. 49, June, pp. 253-83.
- Simonson, I. and Tversky, A. (1992), "Choice in context: trade-off contrast and extremeness aversion", *Journal of Marketing Research*, Vol. 29, August, pp. 281-95.
- Slade, M.E. (1995), "Product rivalry with multiple strategic weapons: an analysis of price and advertising competition", *Journal of Economics, Management and Strategy*, Vol. 4, pp. 445-76.
- Strategic Planning Institute (n.d.), *The Pims Program*, Strategic Planning Institute, Cambridge, MA.
- Subrahmanyam, S. (2000), "Using quantitative models for setting retail prices", *Journal of Product & Brand Management*, Vol. 9 No. 5, pp. 304-15.

- Suri, R., Anderson, R.E. and Kotlov, V. (2004), "The use of 9-ending prices: contrasting the USA with Poland", *European Journal of Marketing*, Vol. 38 Nos 1/2, pp. 56-72.
- Thaler, R. (2001), "Anomalies", *Journal of Economic Perspectives*, Vol. 15 No. 1, p. 219.
- Thompson, K.N. and Coe, B.J. (1997), "Gaining sustainable competitive advantage through strategic pricing: selecting a perceived value price", *Pricing Strategy & Practice*, Vol. 5 No. 2, pp. 70-9.
- Tirole, J. (1989), *The Theory of Industrial Organization*, MIT Press, Cambridge, MA.
- Tse, A.C.B. (2001), "How much more are consumers willing to pay for a higher level of a service? A preliminary survey", *Journal of Services Marketing*, Vol. 15 No. 1, pp. 11-17.
- Varian, H. (1992), *Microeconomic Analysis*, 2nd ed., Norton, New York, NY.

- Walker, O.C., Boyd, H.W. and Larreche, J.C. (1999), *Marketing Strategy: Planning and Implementation*, McGraw-Hill, New York, NY.
- Walras, L. (1874), *Elements of Pure Economics*, 4th ed. of 1920 translated by Jaffée, W. and published in 1954 by R.D. Irwin, Homewood, IL.
- Williamson, O.E. (1964), *The Economics of Discretionary Behavior: Managerial Objectives in the Theory of the Firm*, Prentice-Hall, Englewood Cliffs, NJ.
- Zeithaml, V.A. and Bitner, M.J. (1996), *Services Marketing*, McGraw-Hill, Singapore.

### Further reading

- Hinterhuber, A. (2004), "Towards value-based pricing: an integrative framework for decision making", *Industrial Marketing Management*, Vol. 33, pp. 765-78.

# Good news! Behavioral economics is not going away anytime soon

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## Abstract

**Purpose** – The purpose of this paper is to defend the fast emerging field of behavioral economics which, like marketing, does not require that consumers be rational and, also like marketing, draws on multiple disciplines to answer research questions on consumers' economic behavior.

**Design/methodology/approach** – The paper presents recent work showing how behavioral economists are posing interesting and significant questions and answering them in novel ways.

**Findings** – The basic finding is that behavioral economics has already developed a rich research tradition. It has made a major contribution to understanding economic behavior. It will not soon disappear.

**Originality/value** – The value in this paper is in demonstrating that there are multiple approaches to understanding consumers' pricing behavior.

**Keywords** Behavioural economics, Pricing

**Paper type** Viewpoint

## Introduction

A new brand of economics that recognizes – indeed emphasizes – departures from strict rationality has been gaining accelerating attention of late. Much of this is apparently old hat to marketing experts, who have long since booted *homo economicus* out of their focus groups. How much will mainstream economists be willing to recognize, accept and welcome this new product line? How likely are old-guard, rationalist types to attack it? Answer: I do not care, and I submit that you should not either. The marketplace of ideas is not amenable to this kind of marketing analysis because the culture of science is profoundly different from the culture of consumerism. Consumerism is all about preferences, including a sense of what is fashionable versus what is gauche or offensive to entrenched sensibilities. Science is about something else entirely: the interplay of logic and evidence and the ability to explain and predict. By scientific ground rules, behaviorists, with their non-standard economic world view and their willingness to borrow ideas from other disciplines, are doing exceedingly well: they pose interesting, significant questions and attempt to answer them in novel ways with sound methods. And rationalists have thrown some effective counter-punches: not by turning up their noses in focus groups (because who cares about that?) but by marshaling countervailing logic and evidence of their own. High above the fray are gaggles of disinterested, but professionally trained, bystanders, who do not much care what the answers are but are having a great time watching the

contest. It is they who will ultimately judge who (if indeed anybody) wins and they will use only those criteria rooted in logic and evidence. Sure, there will be some players whose noses will get out of joint, whose careers will be harmed or even ruined, and there will be a great deal of hallway grumbling about the upstart discipline of behavioral economics. But unlike disgruntled consumers, who can move markets by voting with their feet, economist grumblers will have to marshal some logic and evidence of their own if they want to be heard outside their corridors. Scientific journals do not publish much in the way of pure kvetching, no matter how much of a big shot the kvetcher is. On the level playing field of science, where logic and evidence are coin of the realm, behavioral economists has been playing a remarkably good game so far, and I expect they will remain in the game for a goodly long time to come.

## Comments on "economics and marketing on pricing: how and why do they differ?"

As luck would have it, just as I finished reading this paper it was time for my family to troop off to Chuck E. Cheese's for my daughter's sixth birthday party. If you have never been to Mr Cheese's, picture a sort of Foxwoods for the kindergarten set, with ski-ball for blackjack and a floorshow provided by scary looking mechanical puppets instead of Earth, Wind and Fire. There's even a parallel in musical taste, which veers sharply toward hits of the 1970s. Go figure.

But what really got to me – having just been primed to be on the alert for it – was the Byzantine pricing. You exchange hard currency for tokens (for \$30 you get 120, with another 40 thrown in free!); insert tokens into video – and other

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Note from the Associate Editors: To defend the contributions of behavioral economists, we invited the above article from Don Cox, an economist at Boston College. We also invite any comments from readers as to the relative merits of the economic or marketing approach to the problems of pricing. Our own view is that the problems are so immense, the greater the diversity of approaches, the better.

games to win tickets; then feed tickets into an electronic ticket muncher to obtain a rather drab-looking but possibly valuable receipt. You then take the receipt to a prize counter to (hopefully) collect the goodies. My first receipt was for “11,” a tad short of the minimum price of 15, and 39 points shy of the price tag on the thing I suddenly had decided I really needed, which was a refrigerator magnet shaped like an ant.

No ordinary shopping experience, to be sure, but in fairness to Chuck E. we have to take into account the fun of playing the games and the general screaming madhouse atmosphere that even the old Filene’s basement could not match.

Still, I could not help thinking that I had been the perfect mark for ol’ Chuck: slightly compulsive, with a touch of talent deficit disorder in the hand-eye-coordination department. How quickly would ski-ball devolve into a parody of work – carpal-tunnel-inducing work at that? How foolish would I look at the end of the summer clutching a \$500 lava lamp in my palsied claws and grinning victoriously?

To add insult to injury, I’m an economist (damn it!) and should know better. But beneath my tough, rationalist exoskeleton beats the softest, most irrational heart – a Rube Goldberg plumb-works where hope springs eternal. Judging from the quality of the menu’s laminate, that tokens-free policy sure looks permanent ... but who knows ... maybe it is just that today is my lucky day ... Such were the impulses ping-ponging around my neocortex when my limbic system lit on the latter thought, grabbed the steering wheel and proclaimed *Carpe whatever!*

I can picture Chuck’s marketing expert in a Plexiglas observation booth high above the fray, clipboard in hand, checking off every irrational blunder in the book. (“Yep, looks like he fell for the old ‘40-tokens-free’ trick. Now watch me steer this here lab rat to ski-ball alley.”)

OK, I give up; on the charge of irrationality, I plead *nolo contendere*. Can I not at least take comfort in knowing that some of my economist compatriots are getting wise to the same human foibles that marketers have taken for granted for years?

Not according to the authors. The new wave of economic research that acknowledges (indeed, sometimes embraces) deviations from strict rationality, a sub-discipline a.k.a. behavioral economics, is apparently just a flash in the pan.

The reason, it seems, has to do with brand loyalty, with a vengeance. Rationality, being the foundation of mainstream economists’ stock in trade, will not be given up without a fight, and a bloody one at that. The majority old guard will circle the wagons (“... safeguarding the hard core becomes of paramount importance ...”) and the hypotheses of renegade upstarts will flunk old-fart focus groups (“It is, therefore, not surprising that such work is not warmly welcomed by the largest part of the profession and it is to be expected that it will have often difficulty in being recognized as valid or even considered to be ‘economics’ for a considerable time in the future (at least so far as the present hard core is deemed worth defending).” (p. 9)).

To invoke a nostalgic if somewhat garbled metaphor: it is as if a majority of Converse-All-Star-wearing playground bullies are about to beat the crap out of a couple of Reebok-wearing newcomers. Except with higher stakes, since we are not just talking fashion – there are careers at stake here!

Sorry, but I do not buy it. This sounds suspiciously like marketing analysis, which, despite its considerable virtues when applied in the right context, is grossly out of line here.

The behavioral economics genie is out of the bottle, and no amount of disgruntled hallway talk can stuff him back in. Why? Because the culture of science (if I may presume to use such an exalted term to describe my profession) operates by distinctly different ground rules than the cultures of fashion, politics, religion, or anything else. The former is supposed to rely strictly on logic and evidence, not loyalty, acceptance, welcomingness, recognition, faith, or any other such stuff. Further, not only is science supposed to just adhere to logic and evidence, oftentimes, it really does just adhere to them!

Not to be completely uncynical, of course; I am as familiar as you are with the old saw about science progressing one funeral at a time. And sure, there exist hidebound editors, lazy and prejudiced referees, non-scientific poseurs of every stripe. But thankfully, through the hundreds of years of its existence, science has proved to be remarkably corruption-proof.

The reason, I think, has to do with the legions of disinterested, ordinary practitioners – the random Greek chorus of bystanders just looking to re-do their graduate reading lists at the beginning of the semester. They do not give a hoot about the answers, they just care about the interestingness of the questions, the novelty of the ideas and the appropriateness of the methods.

Take the case of the allegedly short-sighted cabbies, for instance. Back in 1997, a group of behavioral types (Camerer *et al.*, 1997) published an intriguing study showing that inexperienced cab-drivers defied the dictates of rationality by quitting early on rainy days, exactly when they should have been working longer, since waiting times between customers were shorter and hence hourly wages higher. By failing (as it were) to make hay while the rain fell, cabbies were making irrational buying decisions, purchasing more leisure when its price (i.e. foregone wages) was highest.

To a bystander like me this was great reading list fodder. What better way to spice up my section on labor supply (too often a boring slog through predictably rationalizable first order conditions) with a piece with novel ideas (cabbies take things just one day at a time) and innovative methods (at least within economics) like conducting one’s own survey?

One of the great things about the marketplace for ideas is that it is competitive, and, as I argued earlier, logic and evidence are the coin of the realm. Publication of Camerer *et al.*’s results was like waving a red flag in front of a herd of bulls. Next up was economist Gerald Oettinger (1999), who pointed out that rain might induce more cabs to take to the streets, thus nullifying the original argument about rain-induced wage increases. Oettinger’s (1999) own analysis – this time, of stadium vendors – was immune to this problem and his results seemed to vindicate the conventional wisdom about labor supply: more vendors showed up for work for the big games, which had higher expected attendance.

Recently, elder statesman labor economist Henry Farber (2005) has weighed in: not with pronouncements about brand loyalty, of course, which by now are completely beside the point, but with – you guessed it – logic and evidence. The latter looks to have been quite costly to obtain, because Farber (2005) followed earlier leads by conducting a cab survey of his own, building on and improving earlier work. Farber’s painstaking work scored another point for the rationalist camp: the main reason drivers knock off at the end of the day, it seems, is that they are tired – an eminently reasonable motivation if I ever heard one.

For those of you scoring this match at home it might seem like it is Rationalists 2, Behaviorists 1. That would be technically wrong because it does not count other related studies (bike messengers, Singaporean cabbies) spawned by the original work of Camerer *et al.* But more to the point, I think behaviorists have an unshakeable lead. To my mind, regardless of how the cabbie controversy eventually plays out (if, indeed, it is ever resolved completely) the lion's share of the accolades should (and, I suspect, will) go to the them. They founded what is turning out to be a compelling sub-discipline and helped break the mold by conducting their own survey.

If that is not enough, these pioneers generously shared their hard-won data with Farber (2005), who in turn used it to undo some of their original assertions. I fully expect that had the shoe been on the other foot, Farber would have willingly shared as well. Hooray for the culture of science! And so much for "safeguarding", "defending" and "preserving at all costs".

To which the authors might sensibly counter: OK then, how do you explain the failure of early behavioralist Herbert Simon's theories to catch on decades ago? This insightful observation raises questions that are difficult to answer but irresistible to speculate about.

The biggest sea change in economics since the days when Simon wrote (indeed, since the day he got the Nobel prize back in 1978) is that the price of gathering evidence has fallen dramatically because of the revolution in information technology. Back then – and I am speaking from experience here – one lugged boxes of keypunch cards to the holy place known as the computer center, where they would be offered up on the altar of the card reader, after which the acolyte would wait hours or days for the oracle to speak the estimated coefficients of ordinary least squares regressions.

The steep price of evidence back then, I think, had a couple of pernicious effects on the profession. First, it induced the best and brightest to specialize in logic. Why waste valuable time wrestling with keypunch machines when you can complete your dissertation with pencils and legal pads? The only scarce resource for theorists was the limited supply of Greek letters. Second, logic devoid of evidence has a propensity to coalesce into self-contained bubbles that have a nasty tendency to float up and away from earth. (Conversely, evidence devoid of logic leaves a scattered mess of factoid confetti.) Logic plus evidence works much better. In particular, anomalous evidence forces theorists to think harder about things of real-world relevance.

Not that Simon had no truck with evidence; he did, and the way he blended it with logic is what made his work great. It is just that in his day the evidential spigots merely trickled, impeding the chances of his ideas catching hold.

Speaking of early modern behavioralists, I am surprised 2001 Nobelist George Akerlof's name did not come up in the authors' discussion. In the past 25 years or so, Akerlof (1982) has analyzed economic behavior from such (economically) non-standard perspectives as social norms, gift giving and procrastination. His current favorite topic is identity, of all things.

Akerlof (1982) makes an interesting case study for the authors' "brand loyalty" hypothesis for a few special reasons: he supervises a lot of PhD dissertations; in name, at least, he is a macroeconomist; and it is therefore possible to observe

how his putatively "macro" (but actually behaviorist) students do on the market.

If brand loyalty counts for anything it is surely at the dissertating stage. Like partially informed customers putting their trust in a brand name, graduate students depend on advisors to illuminate the fine line between the frontier and the deep end. No worse a fate could befall a student than to labor for years in obscurity, suit up for a job interview, only to be confronted with "Why is this economics?" and not have a compelling answer.

For this reason, I watched with interest one day as an Akerlof student gave a decidedly behaviorist seminar on what looked, in the beginning, to be a standard macro issue. "But (to quote the authors) if the tools of neoclassical economics are characterized by a hierarchical structure and the existence of a hard core ... " what are poor grad students, arguably denizens of the lowermost reaches of the status hierarchy, to do? Well at least in this case there were happy landings; the student handled questions superbly and beguiled a mostly mainstream audience into distinctly uncharted waters (macro-economic effects of the sexual revolution), into which they gleefully waded.

The reason the seminar succeeded is that – to repeat – economists like logic and they like evidence. Rationality might be in the mix, but it does not have to be, since something does not have to be rational (in the sense that I the consumer do what is best for me) in order for it to be systematic and logical. For instance, if utility functions evolved by natural selection, an idea that several economists have now begun pursuing, then the door is open to systematically dysfunctional behavior like spite and violence. The most rational of us will work hard to squelch these emotions but we may not be able to afford to obliterate them. Still, as long as there exists systematic logic that enables economists to connect the dots, new and testable behavioral theories will be born.

One of my gripes with some behavioral economics is that, at least for a while, it seemed a pure exercise in anomaly hunting. Anomalies are great because they are necessary for progress; science would quickly settle into stasis if every experiment worked out exactly as predicted. But they are not sufficient for progress because eventually new theories are needed to supplant older ones recently debunked. (A reason, I think, that the old Marxist Radical critique never caught on – critiquing is great but it is not enough.)

But behavioral economics has matured rapidly – again, thanks to logic and evidence. An example of the former is a recent survey by Larry Samuelson (2005) in the *Journal of Economic Literature*, which describes how evolutionary thought is being pressed into the service of constructing better utility functions (a personal favorite of mine since that is part of my own research agenda concerning the economics of the family). An example of the latter comes from the same issue of the *JEL*: a paper on the emerging science of "neuroeconomics", a sub-discipline that uses modern technology like brain imaging to peer inside what used to be the "black box" of consumer preferences.

But even before such technology was available economists like Akerlof were already combining logic and evidence to gain radically new insights into *Homo economicus*. More than 20 years ago he wrote what could turn out to be one of the best economics/marketing papers ever: "Labor contracts as partial gift exchange". The idea is that there is more to a

paycheck than just purchasing power – it is partly a gift from the employer. And there is more to the workday than cranking out widgets – good work is partly a gift to the employer. Though the paper is about wages, the parallels to consumer product pricing are, I think, compelling.

Take those free tokens that Chuck E. gave me, for instance. I think the dude is trying to bond with me. Really, I do. Will I ever manage to count a pizza-loving mouse of team-mascot proportions as one of my very best pals? I will let you know after my son's birthday; those leftover tokens (at least I think they are the free ones ... but maybe they are the ones I paid money for; they all look the same) are burning a hole in my pocket as we speak.

## References

Akerlof, G. (1982), "Labor contracts as partial gift exchange", *Quarterly Journal of Economics*, Vol. 97 No. 4, pp. 543-69.

- Camerer, C., Babcock, L., Loewenstein, G. and Thaler, R. (1997), "Labor supply of New York City cabdrivers: one day at a time", *Quarterly Journal of Economics*, Vol. 112 No. 2, pp. 407-41 (in memory of Amos Tversky (1937-1996)).
- Farber, H.S. (2005), "Is tomorrow another day? The labor supply of New York City cabdrivers", *Journal of Political Economy*, Vol. 113 No. 1, pp. 46-82.
- Oettinger, G.S. (1999), "An empirical analysis of the daily labor supply of stadium vendors", *Journal of Political Economy*, Vol. 107 No. 2, pp. 360-92.
- Samuelson, L. (2005), "Economic theory and experimental economics", *Journal of Economic Literature*, Vol. 43 No. 1, pp. 65-107.

## Further reading

- Camerer, C., Loewenstein, G. and Prelec, D. (2005), "Neuroeconomics: how neuroscience can inform economics", *Journal of Economic Literature*, Vol. 43 No. 1, pp. 9-64.

# Do higher face-value coupons cost more than they are worth in increased sales?

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## Abstract

**Purpose** – Given that coupons are one of the most popular promotional tools, this paper aims to investigate how intention to redeem the coupon is affected by the face value of the coupon for most common grocery items.

**Design/methodology/approach** – Data were collected using a self-administered questionnaire from a convenience sample of students and non-students (total sample size 425) at a south-western metropolitan university campus town.

**Findings** – The results suggest that, for low face values of coupon, intention to redeem is positively associated with face value, whereas, for the higher face values of the coupon, the intention remains more or less unchanged. The correlation between intention to redeem the coupon and the perceived sticker price of the product is positive at the lower levels of coupon face value, but becomes negative for higher face values.

**Research limitations/implications** – One major limitation is the narrow choice of grocery products. Moreover, this study explored intention to redeem a coupon but does not consider the actual purchase behavior. Future studies might test whether the results extrapolate to other products.

**Practical implications** – The findings are critical for the manager who may be cautioned against indiscriminate issuance of coupons. Specifically, keeping in mind the possible negative effects of a coupon, the manager might contemplate introducing customer segment-specific coupons. The findings also suggest that coupons may be used for repositioning.

**Originality/value** – This research partially fills a void about lack of research on coupons from a price perspective. Negative effects of a coupon explained in terms of both marketing and economic theory may be appealing across different disciplines.

**Keywords** Coupons, Promotion, Prices

**Paper type** Research paper

Brand managers use (price and non-price oriented) sales promotion as a tool for adjusting prices, and hopefully influence the value perception and purchase intention (Alpert *et al.*, 1993; Dodds *et al.*, 1991; Munger and Grewal, 2001). This is particularly important, since these decisions influence the bottom line and market share of a brand by influencing consumer demand (Low and Mohr, 2000). However, the exact relationship between price promotion, perception of quality, and purchase intention is still not very clear (Chatterjee *et al.*, 2000; Mitchell and Papavassiliou, 1999). Lee (2002) suggests that brand managers tend to use price promotions (particularly coupons) more than non-price promotions for various reasons, e.g. short term gain, brand switching, and trial usage. However, the study also suggests that managers are not too sure whether the use of coupons actually helps the firm achieve its objectives (Ailawadi *et al.*, 2001; Lee, 2002). This study focuses on promotion through coupons and investigates the relationship between the face value of the coupon and consumer's intention to purchase by redeeming the coupon, and the effect of face value of the coupon on the strength of relationship between the perceived sticker price and intention to redeem the coupon. The study

also investigates the frequency of exposure to coupons as contingent variable, since we are inundated with coupons for virtually every product.

It does not require a lot of statistics to convince one about the popularity of coupons. In the North American subcontinent – as many as 3.8 billion coupons were redeemed last year; 79 per cent of the US population uses coupons; shoppers saved about \$3 billion last year by using coupons (Coupon Council, 2003 report). Since the official “birth” of the concept of coupons in 1894 (according to the Coupon Council) this innovative promotional strategy has come a long way – as much as \$7 billion has been pumped into this industry in 2003 (Promotional Marketing Association, 2004 Press Release). Moreover, contrary to common belief, coupons are used not just by the economically weaker segment: while 77 per cent of consumers with an income of under \$25,000 use coupons, about 74 per cent in the \$75,000 plus category also do so. Similarly, 68 per cent and 78 per cent of consumers in the 18–24 and 35–44 age groups respectively, used coupons (Coupon Council, 2003).

In terms of its effectiveness, it is taken for granted that a coupon will have a positive impact, e.g. increase in sales, brand switching, and new customers, on the future prospects of the product and help firms achieve their goal (see Anderson and Simester, 2004; Heilman *et al.*, 2002; Leone and Srinivasan, 1996). However, there remains the possibility that coupons might also have a negative effect on the promoted products for a variety of reasons (Papatla and Krishnamurthi, 1996). Among other things, the product may get devalued in the consumer's perception. For example, Raghuram *et al.* (2004) suggests that sales promotions affect consumers positively or negatively through three routes –

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economic, informative, and affective route. Nonetheless, there appears to be very little research, which deals exclusively with the fact that the effect of coupons on purchase intention may not necessarily be always positive, especially in the grocery industry.

This line of investigation is critical both from the marketing and manufacturing perspectives. Failing to realize the potential negative effects of coupons might result in dollars lost in manufacturing, distributing and processing redeemed coupons and might also lead to stagnant – or even worse – reduced sales. From a manufacturing standpoint, it may lead to unplanned accumulation of inventory for which, further promotional measures will have to be taken in order to dispose off the excess stock. Specifically, the current paper investigates how face value of coupon might affect:

- coupon-redemption rate;
- the strength of association between the perceived sticker price and the intention to redeem the coupon; and
- whether these are influenced by frequency of exposure to coupons.

The article is organized as follows: this section precedes a review of literature on the perception of coupons by buyers, their behavioral response, and the hypotheses. Then we discuss the methodology, which is followed by a discussion of the results. The final section points out some of the limitations along with both research and managerial implications.

## Literature review

Extant literature has looked at various effects of coupons on consumer purchase behavior (Nevo and Wolfram, 2002; Raghurir, 1998; Taylor, 2001; Cronovich *et al.*, 1997; Bawa and Srinivasan, 1997; Leone and Srinivasan, 1996). While there is general agreement among academicians as to the positive influence that coupons have on the sale of products, another stream of research questions this view and argues that the positive effect may not be unconditional and universal.

For example, it has been suggested that the positive relation between the face value of the coupon and the likelihood of redemption is likely to hold true for low and medium face value range, but not beyond that (Bawa and Srinivasan, 1997). In a study titled “Coupon value: a signal for price” Raghurir (1998) argues that consumers generally associate a higher discount with a higher price of the product and that, this effect is contingent on availability of secondary sources of information. The author also suggests that higher the percentage discount or cents-off on a coupon, higher is the perceived price of the promoted product. Going by the simple law of demand (Monroe, 2003), such perception – as mentioned earlier – may be an impediment to sales. Krishna and Shoemaker (1992) found that even though a higher face value appears to increase redemption rates, it has little effect on the package size purchased, the number of units purchased, or the total quantity (package size times units) purchased. Similarly, Dodson *et al.* (1978) invoke self-perception theory to show that the consumer’s perception of a brand’s equity is lowered due to promotion, for the simple reason that consumers attribute the purchase more to the promotion than to the inherent qualities of the brand. Guadagni and Little (1983) and Doob *et al.* (1969), using dissonance theory, arrive at similar conclusions as to the

effects of promotions through coupons. Research also shows that “something for free” is viewed more favorably than “rebates” in producing favorable purchase intention (Munger and Grewal, 2001). Low and Moody (1996) found that an increase in the coupon’s amount resulted in an increase in consumer’s internal reference price. However, this relationship was negative when a rebate was used. Similar suggestions were made by Fraccastoro *et al.* (1993).

Based on these studies, it can be argued that from the consumer’s perspective, a higher face-value coupon is likely to be perceived as associated with an expensive item. In addition, it has been argued that this increase in face value of coupon is likely to generate a feeling of increased savings and hence, lead to an increase in intention to redeem the coupon. However, we propose that this increase in consumer’s intention to redeem (associated with an increase in the face value of the coupon) is unlikely to be constant or indefinite. Instead, we contend that as the face value of the coupon increases beyond a certain threshold level, consumers may perceive the product to be too expensive for the value it would provide. In other words, consumer’s intention to redeem the coupon will reach a threshold point beyond which, this intention may not increase any further. This line of reasoning has been alluded to by authors such as Bawa and Srinivasan (1997) and Raghurir *et al.* (2004). These arguments motivate the following hypotheses:

*H1(a)* The behavioral intention to redeem the coupon will increase as the face value of coupon increases, up to a point.

*H1(b)* Beyond the threshold point, the behavioral intention to redeem the coupon will either decrease or stagnate with an increase in the face value of coupon.

Economic theories suggest a negative relationship between price and demand or intention to purchase, i.e. a negatively sloped demand curve (Monroe, 2003). Dodds *et al.* (1991) found that while price had a positive influence on perceived quality, it was negatively related to perceived value and consumer’s willingness to buy. Thus, if the perceived price of the product increases in response to the face value of coupon (as suggested in the extant literature), it is likely to lead to a reduction in demand – operationalized as the intention to redeem the coupon. Similar negative relationship between price promotion and brand equity and purchase intention has also been suggested by Yoo *et al.* (2000).

On the other hand, Raghurir *et al.* (2004) suggest that sales promotion affects consumers positively or negatively through three routes – economic, informative and affective. Specifically, considering a case for promotion of potato chips, the authors argue that a price promotion may either reduce the cost of chips (positive economic effect); simplify the consumer’s decision-making process as to which chips to buy (positive economic effect of reducing info-processing costs of time/effort to make a decision); make the consumer buy and/or eat more than he generally does (negative economic effect); make the consumer believe that chips are overpriced (negative industry-related informative effect); make the consumer believe that he/she does not really like the taste of chips (negative product-related information effect); make the consumer feel smart (positive effect); or feel irritated towards the manufacturer and/or brand at having to clip the coupons and take it to the store (negative effect). Such conflicting results associated with price promotion have

also been alluded to by Bawa and Srinivasan (1997) and Dodds *et al.* (1991).

Based on these results, we argue that for coupons with relatively lower face value, the associated perceived sticker price levels would be seen as normal or not out of range. Thus, at the lower end of the coupon face value, the effect of associated perceived sticker price of a product on consumer intention to redeem the coupon will be positive. This could be attributed to positive economic effect or income effect. However, as the face value of the coupon increases beyond a certain threshold level, it is likely to signal an exorbitantly high sticker price, especially for common grocery items. As a result, people will buy less of the promoted product. This could be attributed to negative affective and economic influences (Raghubir *et al.*, 2004). We believe that this negative relation will be more pronounced for the high face value coupons.

*H2.* The relationship between the perceived sticker price of the product and the consumer's behavioral intention to redeem the coupon will become increasingly negative, as the face-value of coupon increases.

## Contingency variables

In this study, we focus on the consumer's exposure to coupons as a contingent variable, because coupons are very prevalent in grocery product category. Four out of the top ten industry-wide products in 2003 on which coupons were issued most frequently, were grocery products. Further, coupons are issued much more regularly on certain items than on others: a cursory glance at one of the most popular web sites ([www.couponing.com](http://www.couponing.com)) for electronic coupons revealed the following data on grocery coupons: Product category (# coupons available): snack foods (18,980); frozen foods (14,948); bread (6,396); beverages and related (5,993); cereal (4,104); sauces (4,083); meat department (3,572); pasta (2,648); canned vegetables (556). One implication of this is that, for certain products (particularly the grocery items), consumers get "used to" receiving coupons and hence, attach a lower sticker price to the product in question (Reibstein, 1982). It becomes a part of their routine and in their mind, their reference price becomes the discounted price, i.e. they automatically discount the sticker price with the face value of the coupon. On the other hand, consumers who are heavily exposed to coupons become used to the savings and are likely to redeem it more often. This line of thinking has been supported by studies by Ailawadi *et al.* (2001); Kwong (2003); Monroe (2003); and Munger and Grewal (2001). Based on these arguments and evidence, we hypothesize that:

*H3.* Frequency of exposure to coupons will be negatively associated with the perceived sticker price of the promoted products.

*H4.* Frequency of exposure to coupons will be positively associated with the intention to redeem the coupon.

## Research method

Data for this study was collected from a convenience sample at a metropolitan university in south-west USA. Responses were obtained from students (32.6 per cent) and their non-

students acquaintances (67.4 per cent), adding up to a sample size of 425. The inclusion of student population was deemed appropriate because students have access to and uses coupons on a regular basis, thanks to the flyers and free newspapers that are overflowing on campus. Trade estimates suggest that 80 per cent of students with some college or a graduate degree used coupons in the year 2003 (Promotion Marketing Association, 2004). Moreover, this study focuses on grocery products because it is one of the major consumer products for the student, as well as, the non-student population. In fact, out of all coupons distributed in 2002, as much as 75.7 per cent were redeemed in grocery stores, and condiments, gravies, frozen prepared foods, prepared foods and cereals were among the top ten products that consumers used coupons for purchases in 2002 (Coupon Council, 2003).

A data collection instrument was designed after five rounds of revision and valuable input from experts. The responses to price and coupon related questions pertained to a basket of grocery items, i.e. milk, bread, snacks, juice, frozen ready-to-eat, cheese, meat and drinks. The respondents were asked to answer the questions while keeping in mind the above-mentioned basket of goods. This set of items represents the most frequently purchased grocery products (Barat, 2004) and also those on which coupons are most commonly issued (please look at the list in the literature review section, compiled from some of the most popular internet coupon-sites).

A five-point scale – Always (1) – Never (5), was used to measure exposure to coupons (i.e. how often the respondents saw coupons) for the products in the basket of goods, i.e. milk, bread, snacks, juice, frozen ready-to-eat, cheese, meat and drinks. The respondent's perception of the sticker price of the product was measured on a seven-point ordinal scale (<\$1, \$1-\$2, \$2-\$3, \$3-\$5, \$5-\$8, >\$8, and not applicable) and the stimulus was the different face values of the coupon (i.e. 5 cents off, 25 cents off, 50 cents off, \$1 off, \$2 off, and \$3 off). These different face values were decided after considering existing market data. Trade research shows that for grocery products, coupons are mostly under or around the \$1 range, with the average face value at 85 cents ([www.couponmonth.com](http://www.couponmonth.com)). A quick glance at some grocery products coupons on some internet coupons web sites also reveals similar trends regarding the face value of coupons. Moreover, occasionally we come across coupons with face values as high as three dollars. However, most of them come with strings attached in terms of buying restrictions. The respondent's behavioral intention (to redeem the coupon) associated with the different face values of the coupon was measured on a five-point scale – Never (1) to Always (5).

After the data was collected, it was first tested for stability across student versus non-student population. All three focal variables, i.e. exposure to coupons, perceived sticker price, and behavioral intention, were found to be invariant across these two groups. These variables were also tested across early versus late respondents and were found to be similar, thus indicating an insignificant non-response error. Next, for the ranges used for the consumer's perception of different sticker prices, we assigned the mid point for each response interval and this assigned value was used for further analyses i.e. (<\$1=\$ 0.50, \$1-\$2=\$ 1.50, \$2-\$3=\$ 2.50, \$3-\$5=\$ 4.00, \$5-\$8=\$ 6.50, and >\$8=\$9.50). Finally, questions measuring consumer exposure to coupons for the eight focal products (milk, bread, snacks, juice, frozen ready-to-eat,

cheese, meat and drinks) were used to cluster the sample into high coupon exposure and low coupon exposure groups.

The hypotheses were tested next. For *H1* (a and b), we used the ANOVA tests and the results are presented in Table I. In addition, we estimated the best fit for a model with the mean scores for behavioral intention (to redeem the coupon) as dependent variable and the face value of the coupon as independent variable.

*H2* was tested by first calculating the correlation-coefficient between perceived sticker price and the behavioral intention to redeem the coupon associated with a particular face value of a coupon (see Table II), and then plotting these correlation coefficients against the face value of the coupon. Once again, we estimated the best fit model (see Figure 1 for the plot) to see if the strength of correlation coefficients in fact does decrease with increase in the face value of the coupon.

**Table I** Behavioral intention (to redeem the coupon) and the face value of the coupon – ANOVA

When you see a coupon valued at ... You redeem a coupon				
Coupon value	n	Mean	Std. Dev.	ANOVA test
5 cents off	414	1.80	1.16	Levene's statistics = 11.14 p-value = 0.00
25 cents off	415	2.33	1.18	
50 cents off	415	2.79	1.24	Brown-Forsythe statistics = 104.31 p-value = 0.00
\$1.00 off	414	3.36	1.27	
\$2.00 off	414	3.32	1.34	
\$3.00 off	416	3.29	1.43	
<b>Total</b>	<b>2,488</b>	<b>2.82</b>	<b>1.40</b>	

**Notes:** Scale range for measuring consumer's intention to redeem the coupon: 1-Never, 2-Rarely, 3-Sometimes, 4-Almost always, and 5-Always; *Post hoc* analyses using games Howell indicate that the scores for "the intention to redeem the coupon" (i.e. 3.36, 3.32, and 3.29) corresponding to the coupon face values of \$1.00, \$2.00, and \$3.00 off are statistically the same

*H3* and *H4* were tested using ANOVA procedure (means are plotted in Figures 2 and 3 respectively). In addition, using the analysis of covariance, we tested the main, as well as, the interaction effect of face value of coupon and exposure to coupons on both perceived sticker price and the behavioral intention to redeem the coupon. This provided further support for *H3* and *H4*.

**Results**

The results of ANOVA in Table I provide clear support for *H1(a)* and *H1(b)*. The intention to redeem the coupon (and hence purchase the product) does increase, as the face value of the coupon increases, until it reaches the value of \$1.00. After that, the intention to redeem the coupon remains unchanged for the next three face values of coupon (i.e. no difference in intention to redeem the coupon for \$1.00, \$2.00, and \$3.00 off coupon face values). This finding is also supported by model fitting exercise. We conducted a regression analysis with the behavioral intention (to redeem the coupon) as dependent variable and the face value of the coupon as independent variable, and tried to find a model that best fits the data. The results indicate that the best model to fit the data is a cubic curve ( $R = 0.999$ ;  $R-Sq. = 0.999$ ;  $Adjusted\ R-Sq. = 0.999$ ; and the estimated model (using beta estimates) is  $Y = 5.585(X) - 9.468(X^2) + 4.705(X^3)$ ; where Y is the score for behavioral intention to redeem the coupon and X is the face value of the coupon in cents). In comparison, the quadratic and logarithmic models have relatively smaller R (0.955 and 0.96) and R-Sq. (0.912 and 0.921).

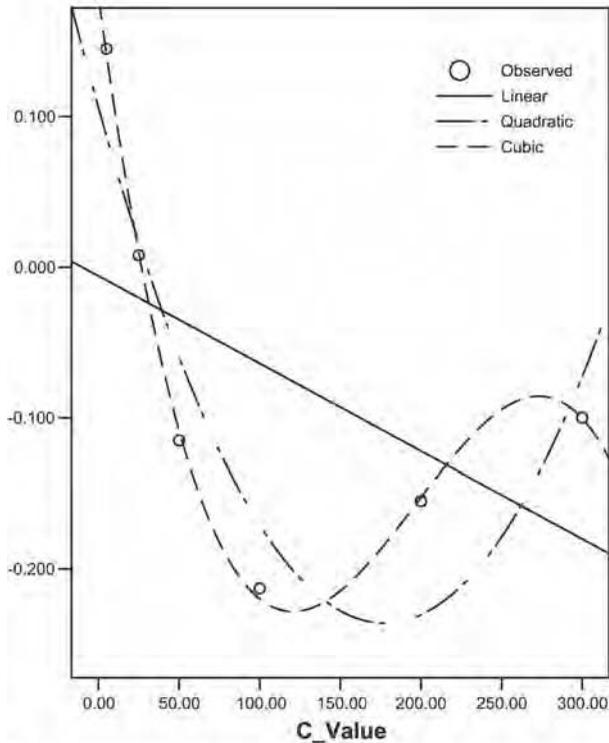
The results of the correlation analysis provide support for *H2*. The strength of correlations between the behavioral intention to redeem the coupon and the perceived sticker price starts out as positive (0.145 for the face value of 5 cents off) and then reduces in size and becomes negative (-0.115 for the face value of 50 cents off mark). In addition, the results indicate that the decline is not-linear (see Table II and Figure 1). In order to get a better understanding of the

**Table II** Effect size (correlation between the redemption intention and the perceived sticker price corresponding to different coupon face value) for different levels of coupon face-value

	RI1	RI2	RI3	RI4	RI5	RI6	Mean	SD
SPC1 Sticker price corresponding to a 5 cents off coupon	0.145	0.04	-0.088	-0.079	-0.077	-0.101	1.08	1.36
p-value	0.009	0.466	0.113	0.152	0.167	0.068		
SPC2 Sticker price corresponding to a 25 cents off coupon	0.052	0.008	-0.112	-0.16	-0.151	-0.154	1.77	1.18
p-value	0.332	0.877	0.036	0.003	0.005	0.004		
SPC3 Sticker price corresponding to a 50 cents off coupon	-0.006	-0.014	-0.115	-0.142	-0.123	-0.122	2.56	1.41
p-value	0.917	0.794	0.031	0.008	0.021	0.022		
SPC4 Sticker price corresponding to a \$1 off coupon	-0.111	-0.09	-0.13	-0.213	-0.232	-0.214	4.42	2.14
p-value	0.035	0.087	0.014	0	0	0		
SPC5 Sticker price corresponding to a \$2 off coupon	-0.139	-0.079	-0.072	-0.154	-0.155	-0.142	6.28	2.42
p-value	0.009	0.138	0.173	0.004	0.003	0.007		
SPC6 Sticker price corresponding to a \$3 off coupon	-0.213	-0.123	-0.117	-0.138	-0.128	-0.1	7.87	2.41
p-value	0	0.022	0.03	0.01	0.017	0.062		
Mean	1.8	2.33	2.79	3.36	3.32	3.29		
SD	1.16	1.18	1.24	1.27	1.34	1.43		

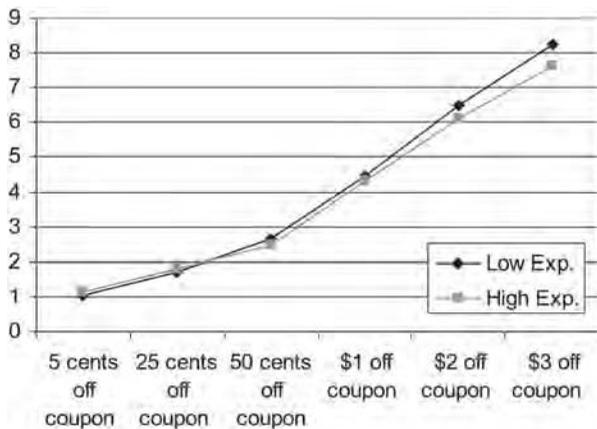
**Notes:** RI = redemption intention corresponding to different stimulus – face values of coupon are set at (1) 5 cents off; (2) 25 cents off; (3) 50 cents off; (4) \$1.00 off; (5) \$2.00 off; and (6) \$3.00 off; Levels of perceived sticker price choices set at: (1) 50 cents, (2) \$1.50, (3) \$2.50, (4) \$4.00, (5) \$6.50 and (6) \$9.50; Scale range for measuring consumer's intention to redeem the coupon: 1-Never, 2-Rarely, 3-Sometimes, 4-Almost always, and 5-Always

**Figure 1** Effect size (association between the redemption intention and the perceived sticker price corresponding to different coupon face value) as a function of the coupon face-value



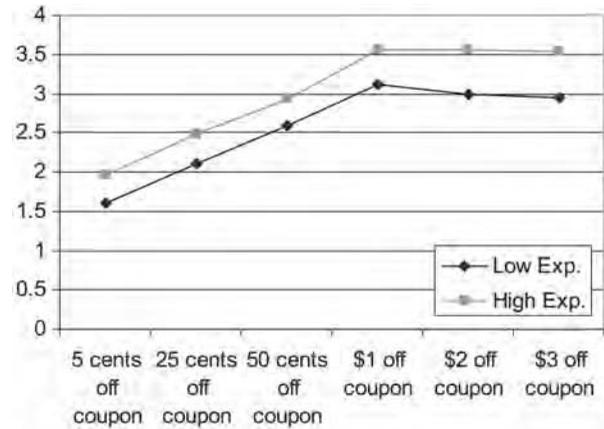
- Face values of coupon are set at (1) 5 cents off; (2) 25 cents off; (3) 50 cents off; (4) 100 cents off; (5) 200 cents off; and (6) 300 cents off
- Levels of perceived sticker price choices set in cents at: (1) 50 cents, (2) \$1.50, (3) \$2.50, (4) \$4.00, (5) \$6.50 and (6) \$9.50
- Scale range for measuring consumer's intention to redeem the coupon: 1-Never, 2-Rarely, 3-Sometimes, 4-Almost always, and 5-Always

**Figure 2** Perceived sticker price of a product corresponding to the face value of the coupon – exposure to coupons as moderator



**Note:** Both the main effects are significant, but the interaction effect is not

**Figure 3** Behavioral intention (to redeem the coupon) corresponding to the face value of the coupon – exposure to coupons as moderator



**Note:** Both the main effects are significant, but the interaction effect is not

decline pattern, we ran a regression analysis with the correlation coefficients (between perceived sticker price and intention to redeem the coupon) as the dependent variable and the face value of the coupon as the independent variable, and tried to find a model that best fits the data. The results of this curve-fitting process indicate that the best model to fit the distribution of correlation coefficients (between intention to redeem the coupon and perceived sticker price of a product in response to the face value of the coupon) is a cubic curve ( $R = 0.999$ ;  $R\text{-Sq.} = 0.998$ ;  $\text{Adjusted } R\text{-Sq.} = 0.997$ ; and the estimated model (using beta estimates) is  $Y = -0.7.089 (X) + 13.173 (X^2) - 6.697 (X^3)$ ; where  $Y$  is the correlation coefficient and  $X$  is the face value of the coupon in cents). In comparison, the quadratic model, although has a high  $R$  and  $R\text{-Sq.}$  (0.906 and 0.822), the  $p$ -value associated with the model was 0.075. The linear curve has the poorest effect size ( $R = 0.518$  with a  $p$ -value of 0.29). The linear, quadratic and the cubic plots are presented in Figure 1. This procedure provides further support for  $H2$  and presents an interesting perspective. The correlation between intention to redeem the coupon and the perceived sticker price of the product is positive at the lower levels of coupon face value. As the face value of the coupon increases, this relationship declines and becomes negative. This decline continues until the face value of the coupon reaches \$1.00. After that we notice a slight increase in the correlation, although it does not become positive.

The results of the ANOVA tests provide some support for  $H3$ . Frequency of exposure to coupons has no impact on consumer's perception of sticker price of a product except for the very high coupon face value of \$3.00 ( $p$ -value = 0.02). At this face value of coupons (i.e. \$3.00 off) the respondents with high coupon exposure attribute lower sticker price to the grocery products than respondents with low coupon exposure (as hypothesized). Analysis of covariance indicates that the main effects of the face value of the coupon and the exposure to coupons on the perceived sticker price are significant, but the interaction effect is not (Figure 2). Finally, the ANOVA results (means plotted in Figure 3) provide clear support for  $H4$  (all the  $p$ -values are  $< 0.02$ ). Consumers who have high exposure to coupons do indeed have higher intention to

redeem the coupon for all face values, in comparison to respondents who are less exposed to coupons. Once again, analysis of covariance indicates that the main effects of the face value of the coupon and the exposure to coupons on the intention to redeem the coupon are significant ( $p$ -value  $< 0.05$ ), but the interaction effect is not (see Figure 3).

## Discussions

Support for our first set of hypotheses indicates that an increase in the face value of the coupon does lead to an increase in the intention to redeem the coupon (and purchase the product). However, the result also indicates that there is a threshold point beyond which the consumer's intention to redeem the coupon (and hence purchase the product) plateaus. Support for this line of thinking comes from studies such as Lichtenstein *et al.* (1993) and Bawa and Srinivasan (1997). In our research, this threshold is the face value of \$1 for the focal grocery products. It is not surprising that for grocery products, coupons are mostly under or around the \$1 range, with the average face value at 85 cents ([www.couponmonth.com](http://www.couponmonth.com)). We can explain this phenomenon from an economics standpoint. For lower face values of coupons, the consumer not only perceives that the sticker price of the product is low, but also enjoys the savings resulting from redeeming the coupon, both of which are motivations to redeem the coupon (and purchase the product). However for higher face value of the coupon, the sticker price of the product is also perceived to be very high. Law of demand suggests that higher prices are associated with lower purchases (other things remaining constant) – in this case, the discouragement to redeem the coupon is strong enough to offset the corresponding feeling of “savings” generated by the high face-valued coupon.

These arguments also provide an explanation in support of our second hypothesis, capturing the effect of coupon face value on the relationship between perceived sticker price and the intention to redeem the coupon. For higher coupon face value, it is possible that the anticipation of out of pocket expenses outweighs that of savings from redemption of the coupon. The slight increase (although still negative) in the correlation between perceived sticker price and the intention to redeem the coupon may be attributed to consumers perceiving the product to be of great value (substantial deal). However, this slight positive boost is not enough to shift the association into the positive range. At the lower face value of the coupons, the relationship between perceived sticker price and the intention to redeem the coupon is positive. This indicates that for lower coupon face values the consumers' perception of savings from redeeming the coupon may be higher than the out of pocket expenses.

Our third hypothesis posits that higher frequency of exposure to coupons is likely to be associated with a lower perceived sticker price of the product, but we were unable to find a clear support for this. It appears that consumers' frequent exposure to coupons does not lead to clarity of perception regards reference price, i.e. sticker price, at least for the lower coupon face values. It is possible that a clutter effect (among the high exposure group) suppresses cognitive processing and hence, the customer's response to the sticker price associated with different face value of coupon is similar to low exposure group. However, as the face value of the coupon increases, the high coupon exposure group does

attribute a lower sticker price than the low coupon exposure group. This difference at the higher face value levels contributes to the significant main effect, but not to the interaction effect. Finally, support for  $H4$  suggests that higher exposure to coupons leads to higher redemption rates, which is very intuitive. As mentioned earlier, higher exposure to coupons may result in consumers using the coupons more often and hence, realizing that the coupons do, in fact, benefit them. As a result, they are more likely to redeem those. In contrast, consumers who are seldom exposed to coupons probably have not had the opportunity to redeem those and enjoy the benefits. This precludes them from enjoying the benefit of savings associated with redeeming a coupon. As such, they do exhibit lower levels of intention to redeem one, even when they see a coupon. Once again, the interaction effect between the face value of the coupon and the exposure to coupons on the intention to redeem the coupon is insignificant.

## Limitations

One key limitation of this study is the focal product category – grocery items consisting of products such as milk, bread, snacks, cheese, juice, meat, frozen ready-to-eat and drinks. However, industry data suggests that four out of the top ten industry-wide products in 2003 on which coupons were issued most frequently, were grocery products. Further, coupons are issued much more regularly on grocery items such as cheese, snack foods, frozen foods, bread, beverages, cereal, sauces, meat department, pasta, and canned vegetables ([couponing.about.com](http://couponing.about.com)). Hence, we feel that this limitation, although a potential hindrance to generalizability to other product categories such as cars, clothes, etc., is not too serious, since it captures the group of products where price-promotion is used to boost sales to the largest extent.

A second limitation pertains to measurement of perceived sticker price of the product. We used ordinal categories to capture the responses. Asking the respondents to tell us the dollar value pertaining to their perception of the sticker price would have given us a more continuous data. However, we are not too sure if it would have affected our response rate in a negative manner, and whether the responses would have been closer to the truth.

Finally, this study did not separate the effect of a strong brand (in our basket of goods) on the intention to purchase irrespective of the face value of the coupon and the direct effect of the coupon's face value on behavioral intention to redeem the coupon. However, because both strong and weak brands use coupons extensively and when one looks at the total basket of consumer staple goods, their effects may have a balancing effect on one another. In addition, we felt that focusing on a single brand may compromise generalizability.

## Future research implications

Future researchers should investigate this phenomenon in a different context and using different operationalizations of perceived sticker price (i.e. a more continuous measure of perceived sticker price). Future research should further explore the phenomenon of both positive and negative outcomes of coupons, as well as, the notion of threshold levels. Consumers may feel that the price-promotion is going to save them some money and they may feel richer because of

it. A counter argument would be that too high a coupon face value might make the consumers feel suspicious about the product quality and the intention of the marketer, and hence might result in lower redemption, purchase intention, and actual purchase behavior. Another research implication would be to investigate the effect of overexposure to coupons on both the cognitive processing by consumers and the outcome variable – intention to redeem, in a more detailed manner.

It will also be interesting to explore how intention to redeem coupon corresponds to actual behavior of the customer. There may be a host of environmental and economic factors such as past experience or brand recognition of the product, disposable income of the individual, whether the product is classified as necessity, normal or luxury and whether the feeling of savings associated with the redemption of the coupons is stronger than the perception of higher sticker price or vice versa (Barat, 2004; Pindyck and Rubinfeld, 1998; Varian, 1999). Another area of future research investigation would be the interaction effect of brand equity and the face value of the coupon on the redemption intention and behavior.

Finally, it may also be worth focusing on differences in behavior (and/or intention to redeem) between cents off and % off coupons. Literature suggests that there are both similarities and differences in the way they affect purchase behavior (Chen *et al.*, 1998; Raghuram, 1998; Taylor, 2001).

### Managerial implications

In terms of managerial implications, the findings of this study are interesting, especially for the grocery product (the largest group to use price-promotions) managers. The study indicates that coupon value is positively associated with the intention to redeem those. However, the results also indicate that there is a threshold, beyond which the intention to redeem becomes static. Managers must be aware of this threshold otherwise precious resources may be wasted. They should also note that for lower coupon face value, they are sending the right signals and consumers are likely to use the coupons because they see the price to be right. However, at the higher end, there is a danger that consumers may not see the perceived sticker price of a product as fair or affordable. In any case, at the higher end it has a negative effect on redemption intention, and the whole purpose is defeated.

This line of thinking – consumers interpreting the face value of the coupon as a signal for price in the absence of any other clue – has been alluded to in the earlier studies such as Low and Moody (1996), Munger and Grewal (2001), and Raghuram (1998). Given these evidences, the relationship between coupon face value, perceived sticker price, and intention to redeem the coupon may have both negative and positive consequences. At the higher end, the consumers may feel that the product is priced out of their reach and hence, such coupons negatively influence the purchase intention. On the other hand, it may shift the product into a different market segment. It may also give the consumers a feeling that they might be able to get a very good value for money and hence, high face-valued coupons have the potential to increase their purchase intention. A managerial implication of this finding is that price-promotion such as coupons may be used to reposition a brand or a product, since it is used as a signal by consumers.

Finally, the overexposure to coupons may actually suppress the value signal, if it is the intention of the brand manager, and may confuse the consumers. However, it does not diminish their intention to redeem the coupon. So the end result is in the desired direction, but the process is somewhat confusing in the sense that the interaction effect of exposure to coupons and the face value of the coupon is insignificant. The exposure to coupon lowers the perceived sticker price (particularly at the higher end of the coupon face value), and increases the intention to redeem the coupon and hence purchase the promoted product. In summary, while coupons could be used to stimulate immediate sale, they could also be used for repositioning a product. Brand managers should be aware of these findings before they make decisions about sales promotional campaign and brand building activities.

### References

- Ailawadi, K.L., Lehman, D.R. and Neslin, S.A. (2001), "Market response to a major policy change in the marketing mix: learning from Procter & Gamble's value-pricing strategy", *Journal of Marketing*, Vol. 65, pp. 44-61.
- Alpert, F., Wilson, B. and Elliott, M.T. (1993), "Price signaling: does it ever work?", *Journal of Product & Brand Management*, Vol. 2 No. 1, pp. 29-42.
- Anderson, E.T. and Simester, D.I. (2004), "Long-run effects of promotion depth on new versus established customers: three field studies", *Marketing Science*, Vol. 23 No. 1, pp. 4-20.
- Barat, S. (2004), "Are coupons really that effective?", *Proceedings-Winter AMA Conference of AZ*.
- Bawa, K. and Srinivasan, S.S. (1997), "Coupon attractiveness and coupon proneness: a framework for modeling coupon redemption", *Journal of Marketing Research*, Vol. 34 No. 4, pp. 517-25.
- Chatterjee, S., Heath, B.T. and Basuroy, S. (2000), "Cross-coupons and their effect on asymmetric price competition between national and store brands", *Advances in Consumer Research*, Vol. 27, pp. 24-9.
- Chen, S.S., Monroe, K. and Lou, Y. (1998), "The effects of framing price promotion messages on consumers' perceptions and purchase intentions", *Journal of Retailing*, Vol. 74 No. 3, pp. 353-72.
- Coupon Council (2003), available at: [www.couponmonth.com](http://www.couponmonth.com)
- Cronovich, R., Daneshvary, R. and Schwer, R.K. (1997), "The determinants of coupon usage", *Applied Economics*, Vol. 29 No. 12, pp. 1631-41.
- Dodds, W.B., Monroe, K.B. and Rewal, D. (1991), "Effects of price, brand, and store information on buyers' product evaluations", *Journal of Marketing Research*, Vol. 28 No. 3, pp. 307-19.
- Dodson, J.A., Tybout, A.M. and Sternthal, B. (1978), "Impact of deals and deal retraction on brand switching", *Journal of Marketing Research*, Vol. 15 No. 1, pp. 72-81.
- Doob, A.N., Carlsmith, J.M., Freedman, J.L., Landauer, T.K. and Solong, T. Jr (1969), "Effect of initial selling price on subsequent sales", *Journal of Personality and Social Psychology*, Vol. 2 No. 4, pp. 345-90.
- Fraccastoro, K., Burton, S. and Biswas, A. (1993), "Effective use of advertisements promoting sale prices", *Journal of Consumer Marketing*, Vol. 10 No. 1, pp. 61-70.

- Guadagni, P.M. and Little, J.D. (1983), "A logit model of brand choice calibrated on scanner data", *Marketing Science*, Vol. 2, pp. 203-38.
- Heilman, M.C., Nakamoto, K. and Rao, G.A. (2002), "Pleasant surprises: consumer response to unexpected in-store coupons", *Journal of Marketing Research*, Vol. XXXIX, pp. 242-52.
- Krishna, A. and Shoemaker, R.W. (1992), "Estimating the effects of higher coupon face values on the timing of redemptions, the mix of coupon redeemers, and purchase quantity", *Psychology & Marketing*, Vol. 9 No. 6, pp. 453-67.
- Kwong, L.M.K. (2003), "Coupons and 'everyday low prices': price competition with multiple instruments", *Canadian Journal of Economics*, Vol. 36 No. 2, pp. 443-62.
- Lee, C.W. (2002), "Sales promotions as strategic communication: the case of Singapore", *Journal of Product & Brand Management*, Vol. 11 No. 2, pp. 103-14.
- Leone, R.P. and Srinivasan, S.S. (1996), "Face value: its impact on coupon redemption, brand sales, and brand profitability", *Journal of Retailing*, Vol. 72 No. 3, pp. 273-89.
- Lichtenstein, D.R., Ridgway, N.M. and Netemeyer, R.G. (1993), "Price-perceptions and consumer shopping behavior: a field study", *Journal of Marketing Research*, Vol. 30 No. 2, pp. 234-45.
- Low, G.S. and Mohr, J.J. (2000), "Advertising vs sales promotion: a brand management perspective", *Journal of Product & Brand Management*, Vol. 9 No. 6, pp. 389-409.
- Low, G.S. and Moody, R.T. (1996), "The effect of sales promotion type and amount on internal reference price", *Pricing Strategy & Practice*, Vol. 4 No. 1, pp. 21-7.
- Mitchell, V. and Papavassiliou, V. (1999), "Marketing causes and implications of consumer confusion", *Journal of Product & Brand Management*, Vol. 8 No. 4, pp. 319-39.
- Monroe, K.B. (2003), *Pricing: Making a Profitable Decision*, 3rd ed., McGraw-Hill/Irwin, New York, NY.
- Munger, J.L. and Grewal, D. (2001), "The effects of alternative price promotional methods on consumers' product evaluations and purchase intentions", *Journal of Product & Brand Management*, Vol. 10 No. 3, pp. 185-97.
- Nevo, A. and Wolfram, C. (2002), "Why do manufacturers issue coupons? An empirical analysis of breakfast cereals", *Rand Journal of Economics*, Vol. 33 No. 2, pp. 319-39.
- Papatla, P. and Krishnamurthi, L. (1996), "Measuring the dynamic effects of promotions on brand choice", *Journal of Marketing Research*, Vol. 33 No. 1, pp. 20-35.
- Pindyck, R.S. and Rubinfeld, D.L. (1998), *Microeconomics*, 4th ed., Prentice-Hall, Englewood Cliffs, NJ.
- Promotional Marketing Association (2004), available at: [www.pmalink.org](http://www.pmalink.org)
- Raghubir, P. (1998), "Coupon value: a signal for price?", *Journal of Marketing Research*, Vol. XXXV, pp. 316-24.
- Raghubir, P., Inman, J.J. and Grande, H. (2004), "The three faces of consumer promotions", *California Management Review*, Vol. 46 No. 4, pp. 23-42.
- Reibstein, D.J. (1982), "Factors affecting coupon redemption rates", *Journal of Marketing*, Vol. 46 No. 4, pp. 102-14.
- Taylor, G.A. (2001), "Coupon response in services", *Journal of Retailing*, Vol. 77 No. 1, pp. 139-51.
- Varian, H.R. (1999), *Intermediate Microeconomics: A Modern Approach*, 5th ed., W.W. Norton & Co., New York, NY, imprint.
- Yoo, B., Donthu, N. and Lee, S. (2000), "An examination of selected marketing mix elements and brand equity", *Academy of Marketing Science*, Vol. 28 No. 2, pp. 1-19.

# Pricing differentials for organic, ordinary and genetically modified food

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## Abstract

**Purpose** – Aims to conduct research on consumer willingness to buy genetically modified (GM) foods with a price advantage and other benefits, compared with organic and ordinary types of foods, employing a robust experimental method. The importance of this increases as the volume and range of GM foods grown and distributed globally increase, as consumer fears surrounding perceived risk decrease and consumer benefits are communicated.

**Design/methodology/approach** – In contrast with survey-based experiments, which lack credibility with some practitioners and academics, customers chose amongst three categories of fruit (organic, GM, and ordinary) with experimentally designed levels of price in a roadside stall in a fruit-growing region of New Zealand. Buyers were advised, after choosing, that all the fruit was standard produce, and the experiment was revealed. Data were analysed with multi-nomial logit models.

**Findings** – Increasing produce type and price sensitivity coefficient estimates were found in order from organic through ordinary to spray-free GM produce, requiring market-pricing scenario simulations to further investigate the pricing implications.

**Practical implications** – The real market experimental methodology produced robust, useful findings.

**Originality/value** – It is concluded that, when the GM label is combined with a typical functional food benefit, GM fruit can indeed achieve significant market share amongst organic and ordinary fruit, even in a country where the GM issue has been highly controversial; GM fruit can gain a sustainable competitive advantage from any price reduction associated with production cost savings; and market shares of organic fruit are least sensitive to pricing and the introduction of GM fruit.

**Keywords** Organic foods, Genetic modification, Pricing, Experimentation

**Paper type** Research paper

## Background

Resistance to GM foods is decreasing over time in most European countries and it is likely that this food technology will find some level of acceptance in many markets in the medium term (Gaskell *et al.*, 2003; Knight *et al.*, 2003). Only a limited amount of research that could inform practitioners on the pricing of GM foods has been published (Boccaletti and Moro, 2000, Burton and Pearse, 2003, Moon and Balasubramanian, 2003).

These studies' designs are based on theories that consumer acceptance of GM food is based on knowledge, awareness and price of GM food (Boccaletti and Moro, 2000), including a focus on the source of the genes used in the GM process (Burton and Pearse, 2003) and ethical beliefs about the use of GM in food (Moon and Balasubramanian, 2003)

The results of these studies in aggregate suggest that:

- 1 There is significant resistance to GM foods compared to ordinary and organic foods.
- 2 Ordinary and organic foods can be successfully priced at a premium to GM foods.

- 3 GM foods can gain reasonable market shares if priced lower than ordinary and organic foods.

This current study advances pricing knowledge by applying a more robust methodology capable of challenging these three assertions.

## Limitations of the existing research

Usually, revealed preference choice studies have been limited to existing, operational markets and products (Louviere *et al.*, 2000). Some innovative authors have administered experiments designed to address the generic issue of differences between revealed and stated preference or willingness-to-pay studies involving:

- choice of a public good where hypothetical and actual purchases were made (Bishop and Heberlein, 1979; Bohm, 1972);
- both hypothetical and actual purchase choices of an existing private good (Dickie *et al.*, 1987); and finally
- hypothetical and actual purchase choices of both public and private goods (Kealy *et al.*, 1990).

A unifying issue in this research is how the public or private nature of the good or service might affect the validity of models derived from hypothetical stimuli.

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All but one of these studies involved existing products and markets. Only one research team (Bishop and Heberlein, 1979, 1986) explored new products or services, albeit via the innovative but expensive method of creating an artificial market for various hunting licenses. The present study is unique in that this is an experiment containing new products administered to an existing market.

Limitations on the direct applicability by practitioners of published research include:

- Price differences used in the research experiments (Boccaletti and Moro, 2000; Burton and Pearse, 2003; Moon and Balasubramanian, 2003) were presented as whole dollar amounts with no reference to actual market prices. There were no market criteria presented by these prior studies for the prices used.
- The aggregate results of the studies cited above are derived from multiple studies comprising conditional logit or probit model parameters. However, these are not directly comparable, owing to unmeasured and confounded model scale parameters related to each study's residual variance (Louviere *et al.*, 2000) and also variations in the sample populations and product categories among the studies.
- There is a boundary to the application of hypothetical choice stimuli but there is no agreement based on research on where that might be: despite some positive conclusions (Bishop and Heberlein, 1979; Bohm, 1972; Dickie *et al.*, 1987, Kealy *et al.*, 1990), the reliability of inferences for product and portfolio pricing, taken from the regression parameter estimates generated from survey-based choice and contingent valuation studies, has been criticised by several authors. The grounds for the criticism are that actual buying behaviour may differ significantly from what respondents say they will do, i.e. the stated-to-revealed preference bias does exist (Cummings *et al.*, 1995; List and Gallet, 2001; Loomis *et al.*, 1996; Lusk, 2003; Neill *et al.*, 1994). Lusk's use of a "cheap talk" approach to reducing this stated-to-revealed preference bias was highly, but not completely, successful: "cheap talk did not reduce willingness-to-pay for knowledgeable consumers" (Lusk, 2003).

## Methodology and approach

To address the limitations outlined above, and to run an experiment containing new products administered to an existing market, a robust and efficient study was developed incorporating:

- 1 A designed experiment comprising three levels of price among three alternative categories of fruit. The design of the three price levels, specific to each category was implemented as:
  - 15 per cent price premium above the average market price;
  - average price on the day; or
  - a 15 per cent price reduction below the average price.

The average price was based on local market prices on the starting day of the experiment. The +15 per cent variation covered typical seasonal and product variety price fluctuations observed prior to the research being undertaken in the local fruit market.

- 2 A highly realistic choice setting of an actively trading and attractively advertised roadside fruit stall. An established (but disused) fruit stall was rented near a popular fruit-growing region during the time of year when the fruit is typically available, advertised and frequently purchased from local roadside stalls.
- 3 Cherries were chosen because they are a popular fruit when in season and commonly consumed without preparation. This characteristic makes the issue of topical spray residue highly salient.
- 4 An efficient experimental design, enabling alternative-specific coefficients for the three food categories and three corresponding alternative-specific price parameter coefficients, to be estimated simultaneously.

In order to successfully administer an experimental design on price into an actual retail outlet the design must be blocked into single runs. That is, each customer only makes one purchase choice in a single natural buying occasion. This is necessary to fully address limitation three: the stated-to-revealed preference bias. The choice set comprised four options. Three options were made up of the cherry produce presented for sale, differentially labelled on their price and produce type. The fourth option was for the buyer not to buy any fruit at all. This contrasts to the usual choice experiment application where complete designs or larger blocks of multiple scenarios are sequentially presented to the same respondent. The single purchase buying occasion technically limits the modelling to a single aggregate model for the whole market rather than multiple individual or several segment-aggregated choice models. However this does not limit the generalizability or applicability of the research inferences derived from the aggregate market model.

An efficient resolution III, or main-effects-only, design for three levels of alternative-specific price was found using SAS® based on its endogenous design efficiency measures, with nine runs of different price scenarios. This is a significant efficiency gain on the full factorial design of  $3^3 = 27$  runs, and greatly reduces the costs of this type of experimental test market research. Dominated and implausible alternatives in the choice sets may occur as a consequence of the attribute combining process to form choice options (Morrison *et al.*, 1996). Cautions against using designs that include dominated alternatives because "the respondent choices do not reveal information about trade-offs between the levels of different attributes" do exist (Carson, 1997). However, what might appear to be a dominated or implausible alternative to the researcher or a respondent may not be for another, so the options generated by the design were used as generated. This led in one run to a two-dollar price difference between two alternatives, reflecting the two extreme price points. This reflects actual market pricing that would apply where the organic product has little visual appeal and is priced accordingly, and strengthens the estimate of the maximum market demand for "organic", realised at a significant discount.

## Choice experiment stimuli

A locally grown premium cherry variety was bulk purchased for the research and used as the basis for all the produce presented in the experimentally design fruit stall. These cherries, although they were all the same, were presented to

shoppers in the fruit stall as three different types of cherry produce labelled as follows:

- 1 organic bio-grow certified;
- 2 low residue Cromwell cherries; and
- 3 100 per cent spray-free genetically engineered cherries.

“biogrow” is an intentional mis-spelling of the “Biogro”® registered trademark for organically certified food to avoid trademark infringement.

“Cromwell” is the area local to the fruit stall location well known for good eating cherries, which are grown under integrated pest management conditions and are assured to only retain, at most, very low pesticide residue.

The “100 per cent spray-free” designation was based on a scenario where cherries were grown from trees incorporating the *Bacillus thuringiensis* toxin (Bt) gene so that they made their own natural insecticide, and therefore did not require spraying. The produce was described to the customers as genetically engineered (GE) because this term is more widely used and understood than GM in this market.

The fruit stall was staffed by carefully briefed and trained postgraduate marketing students employed as research assistants. If shoppers asked about the 100 per cent spray-free GM fruit, the research assistants provided the scenario information described above.

Similarly, if shoppers asked about the spray status of the “organic” cherries, then they were advised that Bt natural insecticide could have been sprayed onto the organic fruit to inhibit insect damage, a standard pest management practice in organic fruit production.

The cherries were pre-packaged in 250 g, 500 g and 1 kg bags and the advertised prices were the best “odd” price closest to the experimentally designed unit price level. To implement the designed experiment in the retail purchase context, all prices were changed to the next design run after approximately every 50 customers, contingent on being able to change the labelling when no customers were present. Dates and times of the changes along with the actual prices used were carefully recorded and are reproduced in Table I.

### Extending revealed preference studies into the new product and feature domain

In the buying situation created by the fruit stall experiment, shoppers were temporarily guided in their choice by the experimentally designed labels until they presented at the cash register with their chosen fruit. At that stage in the choice experiment, shoppers were informed of the experimental

**Table I** Nine-run, three-price, three-level design showing the nearest odd price per 250 g of cherries

Run	Organic price (\$)	Ordinary price (\$)	Spray-free GM price (\$)
1	4.45	5.45	5.45
2	6.45	5.45	6.45
3	6.45	6.45	4.45
4	4.45	4.45	4.45
5	5.45	6.45	5.45
6	4.45	6.45	6.45
7	6.45	4.45	5.45
8	5.45	5.45	4.45
9	5.45	4.45	6.45

nature of the fruit stall, that ethical approval had been given for this experiment by a respected university, and assured that the cherries were all the same – the usual low residue local type. They were then offered the opportunity to continue with their purchase at the lowest of the prices on display. If other shoppers were present, customers presenting at the cash register were silently informed by the presentation of a laminated card so as not to alert the other shoppers.

### Data collection

Data collection was undertaken using an electronic cash register, which automatically time-stamped the data, allowing the individual shopper’s choice and demographic data to be linked to the experimental price design shown in Table I for analysis. Shoppers’ actual cherry choice was recorded as part of the cash register operation, but the final traded price, i.e. the lowest price of the design offered to compensate the buyers for their involvement, was also entered as the cash register transaction amount. In addition the shopper’s gender and approximate age were observed, and country of residence was determined by enquiry. This information was entered by the research assistants using additional register codes associated with each transaction. Non-choice stall visits were also recorded using the same system. All register mis-key mistakes were carefully corrected and all the register transaction records were securely stored for analysis. Choices of 414 subjects were observed and recorded in this way.

### Data analysis

The discrete choice data was analysed using: a conditional multinomial logit, or MNL, model (McFadden, 1973); and a more general heterogeneous, or random-slopes, logit model (Boyd and Mellman, 1980), implemented as linear and non-linear mixed models (Chen and Kuo, 2001) with further extensions (Mather, 2003). These latter models are much more general than the simpler conditional MNL model, as they have the desirable property of fitting a wide range of more general random utility maximisation models to an arbitrary accuracy, restricted only by mild assumptions and notably not constrained by the strict assumption of independence of irrelevant alternatives (IIA). This broader class of models controls for unobserved sources of variation associated with conditional MNL models (McFadden and Train, 2000).

Demographic variation among buyers was explicitly modelled as stratifications or mixed effects and the three alternative-specific coefficients, or fruit produce intercepts, and their three alternative-specific price effects were estimated as significantly different from zero at the 95 per cent confidence level.

For the heterogeneous, i.e. mixed multi-nomial logit models, a range of variance structures were modelled. This range included a “variance component” structure, where each alternative has a different variance estimate, and an “unstructured variance” structure, where, in addition to the alternative variance estimates, co-variances between alternatives are also modelled. Research has shown that where significant variance structures exist it is important to include them in a mixed model specification to avoid bias in the fixed effects estimates (Jain *et al.*, 1994).

Additional contrasts were estimated among the three alternative-specific coefficients and among the three alternative-specific price effects. For these estimations, prices were coded as dollar price amounts, rather than dummy level coding, so the price parameter estimates reflect the effect of a unit dollar difference on the utility of the cherry varieties. The contrasts, or differences, between cherry produce type part-worths and cherry produce type price sensitivities were tested at the 95 per cent confidence limit. Due to the compensatory gradients of increasing cherry produce value and increasing price sensitivity estimates from organic through ordinary to spray-free cherry produce, market simulations were necessary to evaluate and highlight the combined effects on expected market share of these parameter estimates.

**Results**

The ordinary, fixed-slopes multinomial logit model was estimated from 1,656 observations. These comprised four observations for each of the 414 respondents, corresponding to one observation per possible alternative choice among the three fruit options and including the “no choice” option.

The dimensions of the demographic subject effects were reduced using principle component analysis, and the resulting orthogonal principle components were specified as alternative-specific “random coefficient” subject effects in all models, using a similar approach to that taken for specifying random coefficient structural equation models (Elrod, 2004). The four component subject effects that were significant at the 95 per cent confidence level were included in all models but are not reported on here as they only serve to control for subject demographic effects in a parsimonious way to improve the generalisability of the subsequent model inferences (see Table II).

However all produce and price parameter estimates were significantly different from 0 at the 99.98 per cent confidence level or better. The overall fit of the model is best summarised by a generalised Psuedo-R-squared statistic (Wright, 1998), based on the best performing model selection information criteria for both linear and non-linear models, the corrected Akaike’s information criteria, or AICC (Hurvich and Tsai, 1989). The AICC-based Psuedo-R-Squared statistic for this model is 0.095, which is a generally acceptable level for this type of statistic (Wright, 1998). This is similar to 0.100, the unadjusted Psuedo-R-squared statistic more frequently stated for this type of model, which is also considered in the acceptable range (Burnham and Anderson, 1998).

**Table II** Multinomial logit parameter estimates for cherry type and price sensitivity

Parameter	Estimate	Std error	Chi-square	Significance level
Organic type	4.01712	0.75064	28.6394	<0.0001
Ordinary type	4.90652	0.88467	30.7601	<0.0001
Spray-free GM type	6.81226	0.82164	68.742	<0.0001
Price organic	-0.50451	0.13748	13.4666	0.0002
Price ordinary	-0.76204	0.16151	22.2614	<0.0001
Price spray-free GM	-1.1112	0.15742	49.825	<0.0001

Contrasts or differences between pairs of relevant product part-worth and price sensitivity parameter estimates were also tested for significance (see Table III).

From these results an increasing value gradient in the aggregate market can be seen, from organic through ordinary to spray free GM produce, controlling for, or taking out, the effect of price. Increasing price sensitivity in that same direction can also be seen, making it difficult to qualitatively judge the combined impact on relative value at market prices for the three alternatives without further numerical calculations. The differences between organic and ordinary parameters are the least significant, around 60 per cent to 80 per cent confidence levels, the differences between ordinary and GM parameters are more significant, around 88-89 per cent confidence level, and the differences between organic and GM parameters are highly significant, around 99.5-99.8 per cent confidence levels.

These general inferences are supported by the parameter estimates of the random slopes or mixed multinomial logit models within the fixed MNL parameter estimate standard errors specified above. Several variance structures were modelled. Through the model selection process only a single-banded or variance component variance structure, i.e. a set of variance components, one for each of the produce type intercepts, without any covariances, was supported. The random intercept variance estimates in the mixed MNL models were approximately equal to unity, and the extra-dispersion scale factor (Mather, 2003) was within a binary order of unity, both confirming the functional form suitability of a single-stage, i.e. non-nested, MNL model kernel. Taken together, these results indicate that the impact of either potential unobserved variations or heterogeneous variance structures in the data is not enough to change the broad inferences gleaned from the fixed MNL model (McFadden and Train, 2000). Note that with single-run-blocked experimental studies and supermarket scan data and short-run scan panel data studies, it is essential to check for bias due to confounded sources of unobserved variations using these mixed MNL model formulations as the lack of a repeated subject structure in the data makes it impossible to otherwise control for bias due to un-partitioned within-subject and between-subject variance. Further results from the mixed MNL models are omitted, because in this study they do not alter the inferences generated by the fixed MNL model and therefore do not add additional information.

**Table III** Multinomial logit parameter contrasts between pairs of types and price sensitivities

Test of difference between estimates for	Wald Chi-square	Significance level
Organic and ordinary types	0.6208	0.4308
Ordinary and spray-free GM types	2.5605	0.1096
Organic and spray-free GM types	6.0822	0.0137
Organic and ordinary price sensitivities	1.4933	0.2217
Ordinary and spray-free GM price sensitivities	2.3826	0.1227
Organic and spray-free GM price sensitivities	7.7911	0.0053

### Market-pricing share simulations

Instructive aggregate market shares can be simulated from the varied market pricing scenarios using the logit functional form. These simulations assume full distribution and awareness. That is, the model strictly reflects a market situation where all three alternatives as specified are available at all outlets, and where all potential customers are aware of the availability and price.

Simulations were calculated using the multinomial logit form as follows:

$$\hat{M}_{s_{jk}} = \frac{e^{\hat{\alpha}_j + \hat{\beta}_j x_{jk}}}{\sum_i e^{\hat{\alpha}_i + \hat{\beta}_i x_{ik}}}$$

where:

- i* is the index over all the alternative fruit types, varying from 1 to 3.
- j* is the index for the *j*th alternative for which the market share is to be simulated.
- k* is the index over the four pricing scenarios simulated varying from 1 to 4. Each scenario is defined by a vector of three given prices for each of the three alternative cherry types.
- $\hat{M}_{s_{jk}}$  is the estimated market share for the *j*th. alternative of fruit type for the *k*th scenario to be simulated.
- $\hat{\alpha}_j$  ( $\hat{\alpha}_i$ ) is the fruit type intercept estimate for the *j*th (*i*th) alternative, or fruit type.
- $\hat{\beta}_j$  ( $\hat{\beta}_i$ ) is the price sensitivity parameter estimate for the *j*th (*i*th) alternative or fruit type.
- $x_{jk}$  ( $x_{ik}$ ) is the level of price, in dollars, simulated for the *j*th (*i*th) alternative or fruit type, defining part of the *k*th scenario.

While the significance of the differences between these market share estimates varies throughout Table IV, all of the differences are at least significant at the 80 per cent confidence level except for the differences between ordinary and GM in the first simulation row and organic and ordinary in the second simulation row of Table IV. These two pairs of market share estimates are similar as the differences in value between fruit types are almost exactly compensated for by differences in value owing to price sensitivities.

The first simulation demonstrates the implication of the higher intercept estimate for “organic” produce and “average” market pricing, resulting in a much higher, almost dominant, market share. This is unlikely to be realised in many actual markets due to a typical lack of production volume and distribution as well as the trend to premium pricing of organic produce, due in part to higher labour costs, lower yields and reduced economies of scale.

The second simulation demonstrates the implication of the increased price sensitivity of the market to the “100 per cent spray-free” GM pricing. If sprays are a significant proportion

of total conventional production costs, this pricing strategy may be a source of sustainable competitive advantage for GM produce with a spray-free positioning since GM produce is likely to be cheaper to produce than either organic or ordinary produce.

The third scenario demonstrates the robustness of the market shares of all three produce types in the face of a simulated price war.

The fourth scenario also highlights another impact of the increased price sensitivity for the spray-free GM produce. This shows that cartel pricing or a premium pricing strategy across all three produce types is unlikely to be a successful pricing strategy for spray-free GM produce even if sprays are a significant proportion of production costs. This may however be a beneficial strategy for organic produce, depending again on organic production cost structures and economies of production scale.

### Conclusions

This study provides further evidence of relative resistance to GM produce, even when combined with a positive functional benefit of “100 per cent spray-free”, compared to ordinary and organic foods. However this resistance appears to be compensated by competitive pricing strategies. Depending on associated cost structures, this may lead to a sustainable competitive advantage for spray-free GM produce and reasonable market share.

Several potentially viable pricing strategies appear to exist for organic and ordinary produce such that they may maintain price premiums and reasonable market share advantages in the presence of each other and spray-free GM produce in the market.

In summary, the potential for GM produce with functional consumer benefits and reduced production costs appears promising, as does the ability of producers to maintain price premiums for organic produce, and to a lesser extent, ordinary produce. The research has successfully tested a robust methodology using an experiment containing new products administered into an existing market to generate results which practitioners can apply with some validity.

### Limitations and future directions

This study used only one type of fruit, cherries, and further generalisations of these results are desirable. Researchers are encouraged to investigate other foods using the techniques developed in this study.

A limitation of the sampling and data collection technique described here is that the sample is not a true random sample of the cherry-buying population in an area but is similar to a mall-intercept sampling scheme.

Another limitation is that these experimental stalls or retail outlets are limited in operation to areas where there is little or

Table IV Market share simulations

Index	Scenario	Organic (%)	Ordinary (%)	Spray-free GM (%)
1	Average market prices for all three produce types	46	27	27
2	15 per cent premium organic, average ordinary, 15 per cent discount spray-free GM	20	20	60
3	15 per cent discount price war on all three produce types	35	27	38
4	15 per cent cartel or premium pricing on all three produce types	56	26	18

no resistance from regulatory bodies, surrounding stallholders or other retailers to the retail operation described. It is possible that existing retail operations could be used, but the necessary experimental market and possible loss of reputation would pose problems for a retailer.

The amount of detailed planning, preparation and initial financial resources necessary to field an experimental study of this type is much greater than that for a typical survey-based, new product pricing study. Future research might profitably combine several typical surveys with one set of data gathered using this method to augment the reliability of the combined inferences without unacceptable increases in research costs and resources.

## References

- Bishop, R.C. and Heberlein, T.A. (1979), "Measuring values of extramarket goods: are indirect measures biased?", *American Journal of Agricultural Economics*, Vol. 61 No. 5, pp. 926-30.
- Bishop, R.C. and Heberlein, T.A. (1986), *Does Contingent Valuation Work?*, Rowman and Littlefield, Totowa, NJ.
- Boccaletti, S. and Moro, D. (2000), "Consumer willingness-to-pay for GM food products in Italy", *AgBioForum*, Vol. 3 No. 4, pp. 259-67.
- Bohm, P. (1972), "Estimating demand for public goods: an experiment", *European Economic Review*, Vol. 3 No. 2, pp. 111-30.
- Boyd, J. and Mellman, J. (1980), "The effect of fuel economy standards on the US automotive market: a hedonic demand analysis", *Transportation Research*, Vol. 14A Nos 5-6, pp. 367-78.
- Burnham, K.P. and Anderson, D.R. (1998), *Model Selection and Inference: A Practical Information-theoretic Approach*, Springer, New York, NY.
- Burton, M. and Pearse, D. (2003), "Consumer attitudes towards genetic modification, functional foods, and micro-organisms: a choice modeling experiment for beer", *AgBioForum*, Vol. 5 No. 2, pp. 51-8.
- Carson, R.T. (1997), "Contingent valuation surveys and tests of insensitivity to scope", in Kopp, R., Pommerehne, W. and Schwarz, N. (Eds), *Determining the Value of Non-Market Goods: Economic, Psychological, and Policy-Relevant Aspects of Contingent Valuation Methods*, Kluwer, Boston, MA, pp. 127-63.
- Chen, Z. and Kuo, L. (2001), "A note on the estimation of the multinomial logit model with random effects", *The American Statistician*, Vol. 55 No. 2, pp. 89-107.
- Cummings, R.G., Harrison, G.W. and Rutstrom, E.E. (1995), "Home-grown values and hypothetical surveys: is the dichotomous choice approach incentive-compatible?", *American Economic Review*, Vol. 85 No. 1, p. 260.
- Dickie, M., Fisher, A. and Gerking, S. (1987), "Market transactions and hypothetical demand data: a comparative study", *Journal of the American Statistical Association*, Vol. 82 No. 397, p. 69.
- Elrod, T. (2004), "Random coefficient structural equation models", *Proceedings of the Conference on Recent Development of Statistical Modeling in Marketing*, Institute of Statistical Mathematics, Tokyo, pp. 155-63.
- Gaskell, G., Allum, N. and Stares, S. (2003), "Europeans and biotechnology in 2002", *Eurobarometer*, Vol. 58, pp. 1-69.
- Hurvich, C.M. and Tsai, C.L. (1989), "Regression and time series model selection in small samples", *Biometrika*, Vol. 76 No. 2, pp. 297-307.
- Jain, D., Vilcassim, N. and Chintagunta, P. (1994), "A random-coefficients logit brand-choice model applied to panel data", *Journal of Business and Economic Statistics*, Vol. 12 No. 3, pp. 317-28.
- Kealy, M.J., Montgomery, M. and Dovidio, J.F. (1990), "Reliability and predictive validity of contingent values: does the nature of the good matter?", *Journal of Environmental Economics and Management*, Vol. 19 No. 3, pp. 244-63.
- Knight, J., Holdsworth, D. and Mather, D. (2003), *Trust and Country Image: Perceptions of European Food Distributors regarding Factors that Could Enhance or Damage New Zealand's Image – Including GMOs*, University of Otago, Dunedin, pp. 1-89.
- List, J.A. and Gallet, C.A. (2001), "What experimental protocol influences disparities between actual and hypothetical stated values?", *Environmental and Resource Economics*, Vol. 20 No. 3, pp. 241-54.
- Loomis, J., Brown, T., Lucero, B. and Peterson, G. (1996), "Improving validity experiments of contingent valuation methods: results of efforts to reduce the disparity of hypothetical and actual willingness to pay", *Land Economics*, Vol. 72 No. 4, pp. 450-61.
- Louviere, J.J., Hensher, D.A. and Swait, J.D. (2000), *Stated Choice Methods*, University Press, Cambridge.
- Lusk, J. (2003), "Effects of cheap talk on consumer willingness-to-pay for golden rice", *American Journal of Agricultural Economics*, Vol. 85 No. 4, pp. 840-56.
- McFadden, D. (1973), *Conditional Logit Analysis of Qualitative Choice Behavior*, Academic Press Inc., New York, NY.
- McFadden, D. and Train, K. (2000), "Mixed MNL models for discrete response", *Journal of Applied Econometrics*, Vol. 15, pp. 447-70.
- Mather, D. (2003), "Simple and improved heterogeneous MNL model estimation", *Proceedings of the Australia and New Zealand Marketing Academy Conference 2003*, University of South Australia, Hyatt, Adelaide, pp. 2486-91.
- Moon, W. and Balasubramanian, S. (2003), "Is there a market for genetically modified foods in Europe? Contingent valuation of GM and non-GM breakfast cereals in the United Kingdom", *Journal of Agrobiotechnology Management & Economics*, Vol. 6 No. 3, pp. 128-33.
- Morrison, M.D., Blamey, R.K., Bennett, J.W. and Louviere, J.J. (1996), *A Comparison of Stated Preference Techniques for Estimating Environmental Variables*, Australian National University, Canberra, pp. 1-34.
- Neill, H.R., Cummings, R.G., Ganderton, P.T., Harrison, G.W. and McGuckin, T. (1994), "Hypothetical surveys and real economic commitments", *Land Economics*, Vol. 70 No. 2, pp. 145-54.
- Wright, P. (1998), "Multivariate analysis using the MIXED procedure", *Proceedings of the 23rd annual SAS Users Group International conference*, SAS Institute, Opryland Hotel, Nashville, TN, p. 5.

# Differential effects of price-beating versus price-matching guarantee on retailers' price image

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## Abstract

**Purpose** – Seeks to study the effect of a low-price guarantee (PG) on store price image and store patronage intention. Two kinds of low-price guarantee are studied: a price-matching guarantee (PMG) where the price difference is refunded and a price-beating guarantee (PBG) where a retailer offers an additional compensation.

**Design/methodology/approach** – A questionnaire is used to collect information on 180 non-student respondents in an experimental framework where low-price guarantee dimension is manipulated through three advertisements for printers.

**Findings** – Findings are: first, that PG indeed lowers store price image, increases the confidence that the store has lower prices and increases patronage intention; second, that, compared with a PMG whose effects are positive but rather small, a PBG further lowers the store price image on the low prices dimension without increasing the intention to search for lower price, this intention being already rather high in the PMG condition; third, that a larger effect is observed for non-regular customers.

**Research limitations/implications** – Research limitations are associated with the data collection. For greater reality the study uses an existing retail chain, so specific effects coming from this chain could influence the results but this bias cannot be evaluated as the experiment involves one retailer only.

**Practical implications** – Practical implications are that price image can be manipulated without any change in pricing policy by a low-price guarantee and that the interest to adopt a price-beating guarantee is real.

**Originality/value** – The contribution of this study lies in its focus on a large PBG level that retailers already apply and in demonstrating that a PG depends on the relationship between the consumer and the retailer with a stronger effect on non-regular customers.

**Keywords** Pricing policy, Corporate image, Experimentation, Competitive strategy

**Paper type** Research paper

## Introduction

Price image is an important determinant for store patronage and retailers seek to influence their price image by pricing and communications decisions (Cox and Cox, 1990). To lower price image, reducing margin is very costly and not always noticed by customers. Claims of “low prices” in advertisements are not sufficient, however the strength of a “low prices” claim can be reinforced by an offer of price alignment; the low-price guarantee.

A low-price guarantee (PG) is an advertised contingent offer in which the retailer promises that the price paid will be the lowest available. When the customer provides the required proof either the price is immediately matched for a purchase or the price difference is reimbursed post-purchase.

From a financial point of view, a low-price guarantee is a liability contingent on whether buyers identify a lower price and claim a refund and its optimal design can be guided by the option pricing literature (Mazumdar and Srivastava, 2001). When offered by a retailer not having the lowest price, this offer is carrying important financial liabilities depending on the retailer's promises and of the number of customers successful in finding lower prices and claiming the refund. Timing of consumer requests for PG refund is related to price search (Kukar-Kinney, 2005).

As PG is becoming more and more common, in various sectors and between competitors in the same market (Arbatskaya *et al.*, 2004), the signal sent to consumers is less credible and sales signs could have a weaker effect on customer cognitions (Anderson and Simester, 2001). Willing to differentiate from their competitors, some sellers self-impose a penalty beyond the price difference: this potential loss is the bond at stake if a false signal is presented.

Two types of price guarantees can therefore be identified in the market place: the price matching guarantee (PMG), where the retailer promises to match any lower price, and the price beating guarantee (PBG) where the consumer is refunded more than the price difference. For example, recently Carrefour, the second largest worldwide retailer chain, offered up to ten times the price difference on toys

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during the Christmas period. The value of this offer is very high as it means that the product is offered for free if the customer can provide evidence of a 10 per cent price difference.

With a high penalty, controlling the reimbursement request level is a critical point. Conditions for proof acceptability are defined very precisely: type of product (e.g. identical, available in stock), kind of price (e.g. posted price, advertised price), acceptable competitors (e.g. geographical zone, internet) post-purchase delay and process to valid the proofs (in store, by mail. . .). This penalty is flat (e.g. \$200 per bottle of champagne) or variable as a percentage of the price (e.g. alignment with competitor price minus 2 per cent) or a percentage of price difference (e.g. two to ten times the price difference). Furthermore, several restrictions, often written in “fine print”, may be added to the promotional conditions for the contract to be valid. An abundance of literature exists on current practice on price guarantee in the USA (Arbatskaya *et al.*, 2004).

A large stake could increase believability as customers perceive that market forces will make it unprofitable if the retailer does not have low prices (Srivastava and Lurie, 2004). On the contrary, increasing PMG to PBG could have two negative consequences: first, it increases the cost of the offer as it stimulates search for lower prices (Srivastava and Lurie, 2001) and second, it could reduce the effect on consumer’s cognitions as increasing the penalty to an extreme level reduces believability which decreases the perceived value of the offer (Kukar-Kinney and Walters, 2003). One important moderating effect of the PG offer is the retailer and its image (Biswas *et al.*, 2002). However, the effect of the interaction between consumer and retailer on PG perception has not yet been reported in the literature.

This study focuses on differential effects of a price-beating guarantee with a large penalty over a classical price-matching guarantee on perceptions (retailer price image) and behavioral intention (store patronage). We also investigate the moderating effect of the relationship between the consumer and the retailer, looking at differential effects between regular and non-regular customers.

In the next section, literature relevant to defining price guarantees is reviewed, and a theoretical framework is developed. This is followed by a discussion of the methodology, which involves a field experiment that compares the effects of price guarantees (PMG/PBG) with a control (PG absent) on retailer’s price image and intention to visit. The article concludes with a discussion of the results, and potential directions for future research.

## Conceptual background and hypotheses

A number of propositions have been explored to explain why firms offer a PG. The first approach has studied the PG consequences on markets and competition. Economic literature indicates that a price guarantee is an anti-competitive price-collusion strategy: it facilitates monopoly pricing by preventing rival firms from gaining market share by cutting prices (Hess and Gerstner, 1991; Edlin, 1997). Under specific circumstances a PG policy can also be an entry deterrent on a market (Arbatskaya, 2001). However economic theories rely on very specific assumptions and a price guarantee is much more viewed as a competition enhancing tool driving prices lower (Chen *et al.*, 2001). Evidence

suggests that consumers prefer markets where sellers offer a PG (Chatterjee *et al.*, 2003).

A second approach views price guarantee as a screening device for price discrimination. Retailers use it to price discriminate consumers based on their search costs (Corts, 1997; Png and Hirshleifer, 1987) and the perceived cost of claiming a refund (hassle costs) induced by the restrictions (Hviid and Shaffer, 1999). A third approach justifies the use of a price guarantee by its effects, direct and indirect, on consumer behavior, and it is this perspective on which we will focus.

Signaling theory is the most predominant theoretical framework used to explain PG value for the consumer (Spence, 1973). As a marketing communication, a PG is a signal sent by a seller to buyers to provide information on a partially observable attribute (price). In offering a PG, a retailer claims formally, or otherwise, that it has low prices and so provides information on price dispersion. This information reduces the costly pre-purchase price search that a consumer has to undertake in order to decrease their perceived risk associated with price uncertainty and is considered as a cost (Zeithaml, 1988).

Signaling is a viable strategy (separate equilibrium) when it is simultaneously profitable for a low-price retailer and unprofitable for a high-price retailer to send a signal. A low-price guarantee belongs to the cost-risking default contingent signal category. A low-price retailer willing to signal has to increase the costs associated with signaling until it separates itself from the high-price retailers (Kirmani and Rao, 2000) giving the signal its credibility.

Conditions for successful signal transmission have been identified by Kirmani and Rao (2000): pre-purchase information scarcity with consumers relatively uninformed but quality sensitive; post-purchase information clarity; payoff transparency and bond vulnerability. The last condition means that the bond advertised is truly at risk because the market will discover price differences and because the retailer will fulfill its promises (legal enforcement, reputation).

Several experimental studies have already demonstrated PG effects on retailer’s image, intention to visit the store and intention to search. We build on these results to formulate our hypotheses. In signaling theory, a seller provides useful free information to the consumer and consequently a PG has a positive value for the consumer (Kukar-Kinney and Walters, 2003). It influences cognitions: a store offering such a policy is perceived as having lower prices inducing a lower price image (Srivastava and Lurie, 2001, 2004; Jain and Srivastava, 2000). The signal value is nevertheless limited as consumers also believed that stores offering a PG do not necessarily have the lowest prices (Srivastava and Lurie, 2004). Fortunately, other dimensions of consumer’s store perceptions (overall quality and service quality) are not influenced by a PG. Therefore we propose:

*H1a.* A PG lowers retailer’s price image.

A price image is among others, an important determinant of store patronage and a PG policy induces an increase in intention to visit or to buy in the store (Jain and Srivastava, 2000; Srivastava and Lurie, 2001; Kukar-Kinney and Walters, 2003). Specifically when consumers are engaged in active price search, the presence of a PG induces consumers to accelerate their purchase decision. Indeed it negates several reasons that drive consumers to postpone their decision: if the

consumer thinks the product may be on sale in the future, or if they wait for finishing their comparison shopping (Arbatskaya *et al.*, 2004). Therefore we postulate that:

*H2a.* A PG increases intention to patronage the store.

### Price-matching versus price-beating guarantee

Transferring signaling theory from product quality to price, we postulate a two step process whereby signal credibility is foremost in the customer's mind, and then signal strength is evaluated (Boulding and Kirmani, 1993). Increasing the penalty could be ineffective for retailers with a weak reputation as it decreases credibility and reduces perceived value (Kukar-Kinney and Walters, 2003). So under a high credibility assumption, increasing the penalty offers a better value to the guarantee. This increased value should lower price image and convince consumers to purchase immediately (e.g. Srivastava and Lurie, 2004; Biswas *et al.*, 2002). So we assume that, compared to a PMG, the additional penalty included in the PBG will increase the PG's effects.

*H1b.* A PBG has a stronger positive effect on retailer's price image than a PMG.

*H2b.* A PBG has a stronger positive effect on patronage intention than a PMG.

*H3a.* PBG is perceived as a more valuable offer than a PMG.

*H4.* A PBG has a stronger positive effect on confidence in finding low prices in the store than a PMG.

The concept of ad credibility encompasses truthfulness and believability and is quite close to the level of message acceptance (Goldberg and Hartwick, 1990). Signal credibility is influenced by several elements (Kirmani and Rao, 2000):

- strength of disciplinary mechanisms and market conditions that make the guarantee enforceable;
- retailer's reputation and trust;
- guarantee statement by itself (depth and scope).

Source credibility has been found to moderate the effect of claim extremity on attitude change: with a low-credibility source, a curvilinear relationship is found (maximum change for intermediate level of claim extremity); with a high credibility source a positive relationship is found (Goldberg and Hartwick, 1990). Indeed, experimental results show that refund depth (120 per cent of the price difference) negatively affects the believability of a PG but a retailer with a strong reputation could experience either no effect, or a smaller negative effect (Kukar-Kinney and Walters, 2003). In using a strong claim (e.g. refund ten times the price difference) we expect that a price-beating policy is less believable and the hypothesis is as follows:

*H5.* A PBG is less believable than a PMG

A low-price guarantee influences price search. Under the assumption that a consumer minimizes the overall cost of their buying process including price paid and searching costs, they will have to decide when to stop the searching process and when and where to buy (Stigler, 1961). The two kinds of price search (pre-purchase and post-purchase) can be influenced by a PG offer and are related to the moment at which the PG will be requested. More often the reimbursement is requested at purchase time (Kukar-Kinney, 2005).

Prior to store visit, a PG advertisement influences the pre-purchase search process and the willingness to visit the store

first (Srivastava and Lurie, 2001; Dutta and Biswas, 2005). After the purchase, it also increases the likelihood of stopping the search and reduces willingness to price search and to visit additional stores (Srivastava and Lurie, 2001, 2004). However, moderator effects of price consciousness and deal proneness have been demonstrated and a PG stimulates price search for low search cost consumers (Dutta and Biswas, 2005; Alford and Biswas, 2002; Srivastava and Lurie, 2001). This additional search is justified either because the price search is a rewarding activity providing specific hedonic benefits or because the PG is a signal that indeed the store has lower but not the lowest prices, inducing a potential benefit for additional research for low search costs consumers. Looking at the pre-purchase price search, a larger penalty will provide benefits even for consumers with high search costs, which is what one would expect.

*H6.* A PBG has a stronger positive effect on intention to search for a lower price than a PMG.

### Effects of PG for regular customers

PG effects are moderated by several factors including retailer characteristics. Retailer type (Kukar-Kinney, 2005), retailer reputation or trust (Goldberg and Hartwick, 1990; Kukar-Kinney and Walters, 2003; Estelami *et al.*, 2004), retailer price image (Biswas *et al.*, 2002) have been suggested as moderators of PG effects. Relationship between customer and retailer has been observed to influence reference price use (Biswas and Blair, 1991) but its effect on the use of PMG information has not yet been studied. PG could have differential effects depending on the relationship between the customer and the retailer. A rationale would be that store patronage acts as a revealed preference: regular customers have better direct information on price policy and a higher level of trust. On the contrary, non regular patrons only have an indirect experience of the retailer's price policy.

As price image is an important determinant for patronage, it can be expected that regular patrons already have a lower price image and a congruence with the PG message. Actual beliefs will increase the likelihood of assimilation even for low penalty PG which results in a smaller decrease in low-price image and a higher confidence in the retailer having low prices.

Frequent visits to the store from regular patrons also have other consequences:

- intention to visit the store is already high and an increase in intention to visit should be lower for regular customers;
- perceived cost of claiming a reimbursement is lower as it does not dictate a specific trip (Kukar-Kinney, 2005); and
- PG perceived value is higher because higher trust in the retailer increases trust in advertising claims and offers believability that increases perceived value of the PG (Kukar-Kinney and Walters 2003).

Consequently, we expect that:

*H7.* Non regular patrons are more sensitive to a penalty increase (PBG versus PMG).

### Methodology

A between-subjects experimental design was used with three conditions: without PG, with PMG (price difference  $\times$  1) and with PBG (price difference  $\times$  10).

The treatment is a colored one-page (A4) retailer advertisement. Everything except the treatment has been maintained equally during data collection. The common part of the stimuli presents, on a white background, pictures of six printers for several brands (e.g. LexMark, HP and Epson) with their prices (from \$122 to \$282), a headline at the top (“Printers”) and retailer logo at the bottom left. The treatment is at the bottom right of the advertisement. In the control condition (PG absent) nothing appears. In the PG condition, a text is inserted in a frame. For PMG it quotes: “If you can find a lower price elsewhere, (retailer name) will reimburse the difference” followed by several lines of information on restrictive conditions in fine prints. In the PBG condition, the same information is presented but “ten times the difference” is substituted for “the difference”.

The interview procedure has four steps:

- 1 questions are asked regarding printer prices and general consumer price sensitivity;
- 2 the advertisement is shown;
- 3 for PG conditions only, questions are asked about PG perceptions and patronage intent; and
- 4 actual store patronage and store price image are measured along with sociodemographic information.

### Subjects and procedures

A total of 180 consumers participated in the study (60 per cell). The respondents were successively assigned to one of the three conditions. The survey was conducted in face-to-face interviews in four shopping malls in May, 2004. The mean age is 36 years old (std = 12.3, minimum = 19, maximum = 68). The sample is split evenly by gender (50 per cent male, 50 per cent female) and the respondents are mainly active professionals (64 per cent), with others being unemployed, students and retired people.

Research has shown that price search is affected by the base price of the product (Smith, 2000), a higher base price being associated with higher perceived price dispersion leading to relatively more price search (Grewal and Marmorstein, 1994). Electronic goods are appropriate for studying PG because this product category combines expensive products with a high likelihood of perceived price variations across stores (Sivakumar and Weigand, 1996). Indeed, an internet search revealed that maximum price differences for the chosen printers range from 3 per cent to 14 per cent of the mean price. Precedence exists for the use of this category with printers having already been used in an earlier study (Kukar-Kinney and Walters, 2003).

The retailer in this case is a large mass-merchandise chain selling a very large product assortment (hypermarket), and that has over 90 per cent awareness in France.

### Operationalization of the variables

Offer perceptions are measured only for the two PG treatments with responses collected on a seven-point Likert scale (1 = fully disagree; 7 = fully agree). Perceived value of the guarantee is the mean of three items starting with “For this offer to reimburse the price difference...”: “The offer is valuable”, “The offer brings something to you”, “The offer influences your choice”. Scale reliability is good as measured by Cronbach’s alpha coefficient (0.83). Believability was measured by Kukar-Kinney and Walters (2003) with a three items scale (believable, credible and likely). Here we used a reduced version with the mean of two items: “The offer is

believable” and “The offer is sincere” with a Cronbach’s alpha coefficient of 0.91.

Other responses are collected on a five-point Likert scale (1 = fully disagree; 5 = fully agree). Confidence of finding lower price has been measured by Srivastava (1999) and Jain and Srivastava (2000) by two items “How certain are you that (retailer) has low prices?” and “I am quite confident that (retailer) has low prices.” Here we use quite a close measure with two items: “The store which proposes this guarantee is certain to have the lowest prices” and “You are sure to always pay less if you buy in this store” with Cronbach’s alpha coefficient of 0.89. Finally, price search intention is measured by one item: “It drives you to continue price comparison to save some money.”

Questions on price image perceptions and patronage intention are measured for the three treatments. Store price image is a composite perception organized around the value obtained by the store patronage. The value is provided by the pricing policy either with very low prices for low quality products resulting in a low basket amount, or by a lower margin coefficient inducing lower prices for every product whatever the quality level. The value is also provided by temporary price cuts on selected good quality products offered by an active promotional policy. Retailer price image has been measured on two dimensions (good deals, and low prices). The first dimension (“low prices”) is the mean of two items: “There are many products with very low prices,” and “Generic products are really cheap,” with a Cronbach alpha of 0.71. The second dimension (“good deals”) was the mean of two items: “One can have lower prices for quality products”, and “One can find good deals”. Since the Cronbach’s alpha of this second dimension was very low, (0.65) it was withdrawn from the analysis.

Patronage intention is measured by the mean of three items: “To buy a printer, you would definitely visit this store”, “It is probably in this store that you will buy your printer” and “You would not buy before visiting this store”. Scale reliability is good as measured by Cronbach’s alpha coefficient (0.92). Actual store patronage is collected by the nomination of the most patronized store (=1 if most patronized store is the retailer studied, = 0 elsewhere).

### Results

Additional questions indicate that PG offers are rather well known by consumers: 50 per cent know at least one retailer offering a PMG. From the 17 per cent that have already asked for a price guarantee, 80 per cent have received a refund. Perceived price dispersion is confirmed on the sample: for “for printers price differences are high”, the mean is 3.19 (over 5) and standard error is 1.119. Price differences are more attributed to difference in product quality (“price differences are mainly explained by differences in product quality”), 3.45 (1.18) than to difference in retailer’s margins (“for the same printer, price differences between stores are high”), 3.06 (1.08).

The means of dependent measures are displayed in Table I with statistical tests (F, *p*) for a model with the three conditions and for contrasts between the two PG. Due to missing data, respondent numbers can vary and GLM analyses are substituted to the usual ANOVAs.

As Table I indicates, a PG policy significantly improves retailer low-price image (F = 5.39, *p* = 0.0056). The “PG

Table I Means of dependent measures by conditions

Dependent measures	Absent		PMG ( × 1)		PBG ( × 10)		Model		Contrast PMG/PBG	
							F (2,179)	p	F (1,119)	p
Intention to patronize	2.89	(1.05)	3.19	(1.01)	3.48	(0.97)	5.08	0.0072	2.63	0.1063
Price image: low prices	3.98	(0.56)	4.00	(0.61)	4.34	(0.61)	5.39	0.0056	7.65	0.0064
Customer value			4.34	(1.05)	5.05	(0.80)			17.14	<0.0001
Confidence of finding low prices			3.53	(0.89)	4.13	(0.71)			16.25	<0.0001
Believability			3.70	(1.23)	3.40	(0.63)			2.83	0.095
Intention to search			4.22	(0.87)	4.22	(0.83)			0.0	1.0

Note: Standard deviations in parentheses

absent versus PG” contrast is marginally statistically significant (means = 4.00 and 4.34;  $F = 3.30$ ,  $p = 0.0712$ ) so *H1a* is only marginally supported. In contrast, “PG absent versus PMG” is non-significant (means = 3.98, 4.00;  $F = 0.03$ ,  $p = 0.865$ ) and we cannot conclude that the mere offering of a PG policy will improve the price image. However, in contrast “PMG versus PBG” is significant ( $F = 7.65$ ,  $p = 0.0054$ ) and a PBG significantly improves the low price image (*H1b* supported).

PG treatment has a significant effect on intention to visit the store ( $F = 5.08$ ,  $p = 0.0072$ ) and the means are in an expected increasing order. The “PG absent versus PG” contrast is statistically significant ( $F = 7.71$ ,  $p = 0.0061$ ) supporting hypothesis (*H2a*). The contrast “PMG versus PBG” (means = 3.19 and 3.48;  $F = 2.63$ ,  $p = 0.1063$ ) is marginally statistically significant as the difference (0.289) is higher than the critical value at a 6 per cent unilateral risk (critical value Scheffe 0.283) (*H1b* supported).

Offering a PBG brings value to consumers (means = 4.34 and 5.05;  $F = 17.14$ ,  $p < 0.0001$ ) and significantly increases confidence in finding low prices at the store (means = 3.53 and 4.13;  $F = 16.25$ ,  $p < 0.0001$ ). These results support (*H3*) and (*H4*). As expected the offer believability is decreased in a PBG (means = 3.70 and 3.40;  $F = 2.83$ ,  $p = 0.095$ ). This decrease (0.30) is significant at a 5 per cent unilateral risk (critical value Scheffe 0.2955) and supports hypothesis (*H5*).

Offering a PBG has no influence on intention to search: the means are equal (means = 4.22 and 4.22;  $F = 0.0$ ,  $p = 1.0$ ) and *H6* is not supported. However intention to search in the PMG condition is already rather high. As we do not have measures for price search in a PG absent conditions, this result is not contradictory with former results concluding that in a PG condition (versus PG absent) intention to search for lower price is higher (Dutta and Biswas, 2005).

Means and statistical tests for contrast (PMG/PBG) are presented for groups segmented by the most often visited store (regular versus non regular patrons) in Table II. As expected regular patrons have a higher intention to patronize (3.78 versus 2.82 in PMG condition,  $F = 22.59$ ,  $p < 0.0001$ ) but they do not have a significantly better price image of their usual store (4.10 versus 3.90;  $F = 0.53$ ,  $p = 0.458$ ). If customer value is also higher (4.60 versus 4.18,  $F = 3.48$ ,  $p = 0.048$ ), differences regarding the PG offer are smaller and not statistically significant: confidence that the store has low prices (3.73 versus 3.40;  $F = 1.19$ ,  $p = 0.277$ ) or offer believability (3.72 versus 3.69;  $F = 0.46$ ,  $p = 0.508$ ).

Does the PBG have a specific influence on each group? We observe that a PBG effect is stronger for non-regular patrons

who significantly increase their intention to patronize for ( $F = 4.10$ ,  $p = 0.045$ ), perceive a lower price image for the retailer ( $F = 6.80$ ,  $p = 0.010$ ) and have a much higher confidence in the retailer’s low prices ( $F = 15.46$ ,  $p < 0.001$ ). On the contrary, these effects are not significant for regular patrons (respectively  $F = 0.36$ ,  $p = 0.549$ ;  $F = 1.34$ ,  $p = 0.250$ ;  $F = 2.47$ ,  $p = 0.118$ ).

Perceived offer value is significantly higher in a PBG for the two groups ( $F = 4.88$ ,  $p = 0.029$  for regular patrons and  $F = 13.61$ ,  $p < 0.001$ ). Believability is not significantly reduced for regular patrons (3.71 versus 3.55) but the decrease is larger for non regular patrons (3.69 versus 3.32) and reaches unilateral marginal statistical significance. A summary of hypothesis outcomes is presented in Table III.

## Discussion

Before discussing the implications, the limitations of the research should be noted. First, external validity is conditional to the sector and retailer studied here, a mass-market discount retailing chain in Europe. Interaction between the results and this particular chain, for example its actual price policy, cannot be ruled out. Second, the questions asked in the questionnaire are centered on price perceptions and this concentration would be expected to heighten respondent price consciousness.

The results did not rule out a positive effect of a price-beating guarantee for a retailer even with a very large penalty (ten times the price difference). Price dispersion and price uncertainty are perceived as costs by consumers who try to reduce this uncertainty by a search for price information, either by visiting stores or by surfing on the Internet. Price guarantees are costly signals sent by retailers to customers on their low-price level. When accepted by consumers as a credible offer, price guarantees influence their cognitions, change their perceptions towards a lower level for store price level and modify consumer behaviors either for an earlier stop in their buying process or for their store choice and their search process.

Contrary to results coming from experimental studies, in this research we cannot conclude that a mere PMG has a significant effect on price image. One reason could be that as PG are becoming more prevalent in many sectors and adopted by several competitors they are losing their capacity to differentiate retailers.

To restore signal credibility, a retailer has to increase the stake by promising an additional penalty over the price difference. This price-beating guarantee can be very strong increasing to two, three (Arbatskaya *et al.*, 2004) or even ten

Table II Effect of regular/non-regular customers

Dependent measures	Model		Regular patron				Non regular patron			
	F (3,116)	p	Means PMG	Means PBG	Contrast F	Contrast p	Means PMG	Means PBG	Contrast F	Contrast p
Intention to patronage	8.79	<0.001	3.782	3.950	0.36	0.549	2.825	3.250	4.10	0.045
Price image: low prices	2.86	0.041	4.108	4.346	1.34	0.250	3.903	4.346	6.80	0.010
Customer value	7.23	<0.001	4.606	5.233	4.88	0.029	4.180	4.958	13.61	<0.001
Confidence of finding low prices	6.26	<0.001	3.729	4.125	2.47	0.118	3.405	4.125	15.46	<0.001
Believability	1.17	0.323	3.717	3.550	0.31	0.578	3.689	3.325	2.64	0.106

Table III Synthesis

H1a A PG lowers retailer's price image	Marginal support
H1b A PBG has a stronger positive effect on retailer price image than a PMG	Supported
H2a A PG increases intention to patronize the store	Supported
H2b A PBG has a stronger positive effect on patronage intention than a PMG	Supported
H3 A PBG is perceived as a more valuable offer than a PMG	Supported
H4 A PBG has a stronger positive effect on confidence in finding low prices in the store than a PMG	Supported
H5 A PBG is less believable than a PMG	Supported
H6 A PBG has a stronger positive effect on intention to search for a lower price than a PMG	Not supported
H7 Non-regular patrons are more sensitive to a penalty increase (PBG versus PMG)	Partially supported

times the price difference as has been observed in the marketplace. As penalty increases, the potential loss incurred by a retailer can be very important either because it often does not have the lowest price or because of price variations. Thus PG can be analyzed as a financial option of which the characteristics have to be precisely specified (Mazumdar and Srivastava, 2001).

In this paper we wanted to check several consequences of a PBG policy. A previous study (Kukar-Kinney and Walters, 2003) demonstrated that a moderate PBG (+20 per cent) provides value and an overall positive effect on patronage intention but also this effect is reduced by a negative impact through a reduction in claim believability. We found that for a large very well known retailer, even a very high level of penalty is still credible and has positive effects in line with those formerly observed for PMG in an experimental setting. The positive effects on store price image, value and confidence in finding low prices in the store are once more validated; however the final effect on store patronage is only marginal.

A PBG therefore has positive effects but the results should not be interpreted as an overall conclusion on the profitability of these offers. Indeed, on the cost side, former results have shown that a PG is a "double edged sword" as it also stimulates after purchase price search. The higher the penalty, the more customers are likely to find it profitable to pursue both search and price comparison after purchase. We did not observe an increase in intention to search for lower prices but the measured level of intention is already very high in the PMG condition.

Finally, we studied differences in behaviors following the relationship between the retailer and its customers. We found that a PG as a defensive tool aiming at reassuring current customers does not benefit from an increase in penalty level. Going from PMG to PBG does not have a significant effect on store image or store patronage for regular patrons. As expected, the offensive usage of a PG towards non-regular patrons has a strong significant effect, the size of the stake

being perceived as a very strong commitment from the retailer.

So depending on the real price gap with competitors, offering a price-beating guarantee policy could be a good tactic as long as the reimbursement request level is low. With higher elaboration for distinctive cues, PMG effects could even be larger for a high price image store (Biswas *et al.*, 2002) as long as the price search remains low.

Further research should be directed towards the backlash effect of the incidental discovery that the retailer has higher prices. The customer's price consciousness could be increased by the size of the reward and could keep a customer in an active or passive price search for a longer time. A clear disconfirmation of the retailer promise could hurt not only its price image but also the trust in the retailer's communication.

A second opportunity for further research is the moderating role of the consumer's price consciousness. We could expect that a large penalty would be less credible for a high price conscious consumer and that it could induce a more extensive price search.

## References

- Alford, B. and Biswas, A. (2002), "The effects of discount level, price consciousness and sale proneness on consumers' price perception and behavioral intentions", *Journal of Business Research*, Vol. 55 No. 9, pp. 775-83.
- Anderson, E. and Simester, D. (2001), "Are sale signs less effective when more products have them?", *Marketing Science*, Vol. 20 No. 2, pp. 121-42.
- Arbatskaya, M. (2001), "Can low-price guarantee deter entry?", *International Journal of Industrial Organization*, Vol. 19 No. 9, pp. 1387-406.
- Arbatskaya, M., Hviid, M. and Shaffer, G. (2004), "On the incidence and variety of low-price guarantees", *Journal of Law & Economics*, Vol. 47 No. 1, pp. 307-32.

- Biswas, A. and Blair, E. (1991), "Contextual effects of reference prices in retail advertisements", *Journal of Marketing*, Vol. 55 No. 3, pp. 1-12.
- Biswas, A., Pullig, C., Yagci, M. and Dean, D. (2002), "Consumer evaluation of low price guarantees: the moderating role of reference price and store image", *Journal of Consumer Psychology*, Vol. 12 No. 2, pp. 107-18.
- Boulding, W. and Kirmani, A. (1993), "A consumer-side experimental examination of signaling theory: do consumers perceive warranties as signals of quality?", *Journal of Consumer Research*, Vol. 20 No. 1, pp. 111-23.
- Chatterjee, S., Heath, T. and Basuroy, S. (2003), "Failing to suspect collusion in price-matching guarantees: consumer limitations in game-theoretic reasoning", *Journal of Consumer Psychology*, Vol. 13 No. 3, pp. 255-67.
- Chen, Y., Narasimhan, C. and Zhang, Z.J. (2001), "Consumer heterogeneity and competitive price-matching guarantees", *Marketing Science*, Vol. 20 No. 3, pp. 300-14.
- Corts, K. (1997), "On the competitive effects of price-matching policies", *International Journal of Industrial Organization*, Vol. 15 No. 3, pp. 283-99.
- Cox, A. and Cox, D. (1990), "Competing on price: the role of retail price advertisements in shaping store-price image", *Journal of Retailing*, Vol. 66 No. 4, pp. 428-45.
- Dutta, S. and Biswas, A. (2005), "Effects of low-price guarantees on consumer post-purchase search intention: the moderating roles of value consciousness and penalty level", *Journal of Retailing* (forthcoming).
- Edlin, A. (1997), "Do guaranteed-low-price policies guarantee high prices, and can antitrust rise to the challenge?", *Harvard Law Review*, Vol. 111, pp. 528-75.
- Estelami, H., Grewal, D. and Roggeveen, A. (2004), "The effect of retailer reputation and response on post-purchase consumer reactions to price-matching guarantees", *MSI Report*, Vol. 3 Nos 04-03, pp. 27-47.
- Goldberg, M. and Hartwick, J. (1990), "The effects of advertising reputation and extremity of advertising claim on advertising effectiveness", *Journal of Consumer Research*, Vol. 17 No. 2, pp. 172-9.
- Grewal, D. and Marmorstein, H. (1994), "Market price variation, perceived price variation and consumers' price search decisions for durable goods", *Journal of Consumer Research*, Vol. 21 No. 4, pp. 453-60.
- Hess, J. and Gerstner, E. (1991), "Price-matching policies: an empirical case", *Managerial and Decision Economics*, Vol. 12, pp. 305-15.
- Hviid, M. and Shaffer, G. (1999), "Hassle costs: the Achilles' heel of price-matching guarantees", *Journal of Economics & Management Strategy*, Vol. 8 No. 4, pp. 489-521.
- Jain, S. and Srivastava, J. (2000), "An experimental and theoretical analysis of price-matching refund policies", *Journal of Marketing Research*, Vol. 37 No. 2, pp. 351-62.
- Kirmani, A. and Rao, A. (2000), "No pain, no gain: a critical review of the literature on signaling unobservable product quality", *Journal of Marketing*, Vol. 64 No. 2, pp. 66-79.
- Kukar-Kinney, M. (2005), "An investigation into the timing of consumer requests for price-matching refunds", *Journal of Product & Brand Management*, Vol. 14 No. 3, pp. 197-205.
- Kukar-Kinney, M. and Walters, R. (2003), "Consumer perceptions of refund depth and competitive scope in price-matching guarantees: effect on store patronage", *Journal of Retailing*, Vol. 79, pp. 153-60.
- Mazumdar, S. and Srivastava, J. (2001), "The 'cost' of offering price-matching refund policies: a contingent-claims perspective", *Research in Finance*, Vol. 18, pp. 133-51.
- Png, I. and Hirshleifer, D. (1987), "Price discrimination through offer to match prices", *Journal of Business*, Vol. 60 No. 3, pp. 365-83.
- Sivakumar, K. and Weigand, R. (1996), "Price match guarantees: rationale, implementation and consumer response", *Pricing Strategy & Practice*, Vol. 4 No. 4, pp. 4-13.
- Smith, G. (2000), "Search at different price levels: the impact of knowledge and search cost", *Journal of Product & Brand Management*, Vol. 9 No. 3, pp. 164-78.
- Spence, M. (1973), "Job market signaling", *Quarterly Journal of Economics*, Vol. 87 No. 3, pp. 355-74.
- Srivastava, J. (1999), "Price-matching refund policies as signal of store price image", *MSI Report*, Nos 99-128, pp. 1-37.
- Srivastava, J. and Lurie, N. (2001), "A consumer perspective on price-matching refund policies: effect on price perceptions and search behavior", *Journal of Consumer Research*, Vol. 28 No. 3, pp. 296-307.
- Srivastava, J. and Lurie, N. (2004), "Price-matching guarantees as signal of low prices: survey and experimental evidence", *Journal of Retailing*, Vol. 80 No. 2, pp. 117-28.
- Stigler, G. (1961), "The economics of information", *Journal of Political Economy*, Vol. 69, pp. 213-25.
- Zeithaml, V. (1988), "Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence", *Journal of Marketing*, Vol. 52 No. 3, pp. 2-22.

### Further reading

- Kukar-Kinney, M. and Grewal, D. (2005), "Consumer willingness to claim a price-matching refund: a look into the process", *Journal of Business Research* (forthcoming).