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Price lower and then higher or price higher and then lower? ☆

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ABSTRACT

The paper presents an experiment testing the hypothesis that, if consumers' valuation of a product is shaped by past experiences of prices, it may be more profitable for firms to follow the opposite strategy of pricing higher and then lower. We ran an individual choice experiment with a posted offer market setup, where different dynamic pricing strategies were implemented. Anchoring to the past two prices under simple rules can describe the behavior of 3 out of 4 subjects. We find evidence of preference shaping and the profitability of a 'high low' pricing strategy under a wide range of assumptions.

1. Introduction

This paper devises an experiment trying to test the intuition that it may be profitable for companies to choose to price a new product high and then reduce the price, rather than provide a low introductory price and raise the price later. There are reasons why the latter has often been considered a good strategy by economists: in the presence of switching costs by at least a fraction of consumers, a low introductory price may be used to 'lock in' consumers and the price may be raised afterwards (e.g., Cabral, in press); it may be used to signal low cost (Bagwell, 1987); it may be used to facilitate buyer experimentation when there is uncertainty about the product's quality (Schlee, 2001). We do not wish to deny that there are settings where a 'low price–high price' ('low high') strategy may be profitable. This paper, however, presents an experiment trying to test the opposite intuition: namely, that, when consumers face repeated purchases of the same product, it may be profitable for firms first to price high and then low. Reasons why this might be the case, which have been identified in the industrial economics literature, include special parameterizations of switching costs models, intertemporal price discrimination with durable goods (e.g., Conlisk, Gerstner, & Sobel, 1984).

☆ The experimental instructions can be found can be found online (http://www.uea.ac.uk/~ec601/).

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We aim to show that a 'high price–low price' ('high low') strategy may nevertheless be profitable for companies because of shaping effects: if consumers have unclear preferences, their willingness to buy may be affected by anchors provided either artificially or through the operation of markets (Ariely, Loewenstein, & Prelec, 2003; Loomes, Starmer, & Sugden, 2003; Tufano, 2010). Having observed high prices implies a high reference price acting as an anchor and a belief that a good deal is made when the price is decreased; conversely, having observed low prices implies a low reference price and a belief that a bad deal is made when the price is increased.[1] This psychological mechanism is consistent with adaptation theory in marketing (Morris & Gene, 1990) and bears a close analogy with the success of the so called 'black hat/white hat' strategy in negotiation experiments: one can get better bargaining outcomes by starting tough and then softening up in the negotiation process than starting soft and then hardening up (Hilty & Carnevale, 1993). Our behavioral mechanism may provide a powerful reason why 'high low' price strategies are observed, for example, in relation to appliances (Consumer Reports, 2008), video consoles (e.g., Fitzgerald, 1992), or color television sets (Krishnan, Bass, & Jain, 1999). It reflects the admonition by marketers that price discounts may undermine the perceived economic value of a good (Lucke & Hogan, 2007).[2]

Our experiment is the first that tries to systematically test the profitability of a shaping effect related 'high low' strategy in an experimental retail market. However this is not the only paper investigating the effect of price distribution on willingness to pay. Mazar Koszegi, and Ariely (2010) present an important experiment to test whether subjects' reservation prices are affected by low/high price distributions.[3] The focus of our experiment however is different. We are interested in *dynamic* changes in the price distribution, as implemented in price higher and then lower or price lower and then higher strategies. As a result, unlike theirs, our design has a within subject dimension by which subjects face different price distributions over time. We are also interested in the effect of such changes in posted offer markets of the kind that consumers face, which means that our focus is not on valuations but on quantities that subjects buy over time.[4] We can then analyze whether such dynamic price distributions can be profitable for a range of cost functions.

As in Sitzia and Zizzo (2011), an experiment testing the different question of how consumers respond to product complexity, we used lotteries of different degrees of complexity as products that consumers could buy. The choice of lotteries as products was to ensure the novelty of the product for all subjects, to ensure that it was a product that subjects could buy over a number of rounds without quickly and heterogeneously getting tired of it, and so ultimately to maximize experimental control. Experiments on reference dependent preferences have shown that similar behavioral features to those found with lotteries are found with real commodities (compare, e.g., Bateman, Munro, Rhodes, Starmer, & Sugden, 1997, with Kahneman and Tversky (1979)), and this, together with the danger of loss of control from other product choices (e.g., due to satiation), implies the usefulness of our choice. Another reason for having lottery products is the simple way we can control for level of complexity and therefore potential product value uncertainty using a lottery paradigm: we indexed complexity using the same procedure as in Sitzia and Zizzo (2011) and Sonsino, Benzion, and Mador (2002); research still needs to be conducted on how to index complexity with real commodities. Of course, lottery tickets are a real commodity by themselves and one that is in high demand in the real world.[5]

Our key finding is that shaping effects do matter, and that a high low strategy would indeed be profitable for firms under different assumptions about cost and volume of demand. This is true no matter the type of product employed. The rest of this paper is structured as follows. Section 2 provides a brief conceptual analysis of anchoring and shaping, Section 3 presents the experimental design, Section 4 discusses the results and Section 5 suggests directions for future research and concludes.

2. Shaping and anchoring

Anchoring is a psychological mechanism that affects individual's judgments of any sorts. Tversky and Kahneman (1974) refer to anchoring as that phenomenon whereby "people make estimates by starting from an initial value that is adjusted to yield the final answer" (p. 1128). The initial value is the so-called 'anchor' and the extent to which individuals' evaluation is affected by anchors depends on how precise the information they have on the quantity they are asked to estimate is (e.g., Ariely et al., 2003; Tversky & Kahneman, 1974). Shaping has been defined by Loomes et al. (2003) and Tufano (2010) as being connected, in market settings, to the convergence among market traders to the previous prices. As the previous price can be considered as an anchor, there is a clear sense in which the two concepts may be connected.

[1] Isoni (2011) contains a recent formalization of the idea of 'bad deal aversion,' which he employs to explain the willingness to pay – willingness to accept disparity observed in contingent valuation studies. Note that, although we talk here of 'high low' and 'low high', one could more precisely identify these strategies as price high and then lower vs. price low and then higher. We use the 'high low' and 'low high' terminology here simply as less cumbersome.

[2] There is a technical literature in marketing science that looks at optimal pricing strategies based on decreasing prices (e.g., Bass, 1980; Krishnan et al., 1999). This research, however, takes the empirical sales curve in time as a given rather than attempting to explain it as a function of price-dependent consumer preferences.

[3] They also devised a way to discriminate between different hypotheses as to what may be the reason why reservation prices are influenced by prices. They do so by using different elicitation procedures. They found that subjects' reservation prices are affected by observed prices and that the main reason for this was neither rational valuation driven by the lack of information on the product nor by context-dependent preferences; instead. They found evidence that reason for such a phenomenon was due to mistakes in the valuation of one's own preferences.

[4] Section 5 contains a further discussion of this point with respect to the alternative of instead using a Becker–De Groot–Marschak (BDM) preference revelation mechanism (Becker, DeGroot, & Marschak, 1964).

[5] For example, in the 2008/2009 financial year the UK National Lottery sold £5.15 billion in lottery tickets, up from £4.96 billion in 2007/2008 (source: Camelot Group Plc., 2009, p. 2).