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OFFICE OF FAIR TRADING

Pricing Practices: Their Effects on Consumer Behaviour and Welfare

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1. Executive summary

- The pricing practices discussed in this paper are highly prevalent in today's society. While classical economic theory suggests that people will act rationally, using cost benefit analysis to make choices, scientific research shows that this is not the case. Humans do not have the capacity to recognise and evaluate all the available information in today's complex environment, nor the time or motivation. Instead, people use mental short-cuts, or *heuristics*, to deal with this complexity.

- Whilst heuristics can usefully guide our behaviour and allow humans to function in the world, they are not perfect calculations and are subject to occasional and sometimes costly mistakes. Importantly, heuristics leave people exposed to external influences, including pricing cues. The literature on pricing practices suggests that pricing cues provided by retailers can affect consumer behaviour and value perceptions.

- Compared to presenting a total price *partitioning prices* into a base price and surcharge can significantly increase consumers' positive evaluations and purchase intentions, and can lower search intentions. This is because consumers may fail to fully adjust from the initial (lower) price of the base good and therefore underestimate the total price of the product.

- Evidence suggests that people tend to stick with the *default option*, even when this option has major, long-term consequences.

- There is a large body of evidence to show that the presence of an advertised *reference price* increases consumers' valuations of a deal and purchase intentions, and can lower their search intentions. Reference prices can have a significant impact *even* when these are disproportionally large and when consumers are sceptical of their truthfulness. The effects of reference prices are stronger when consumers are not readily able to compare them to an industry price, such as with unbranded, or retailers 'own brand' goods, and with less frequently purchased and more expensive items.

- The available evidence on the effect of offering a *"free"* product in a bundle (e.g. 'buy one get one free') is mixed. While some studies show that this practice can increase consumer valuations and demand, others show that a freebie designation does not increase consumers' perceptions or willingness to pay for the bundle.

- One large scale study suggests that the *bait-and-switch* practice may have a substantial (negative) impact on consumers. Moreover, consumers are drawn in to promotions and where the item is out of stock, they predominantly switch to another item within the same store, due to lowered search intentions.

- Compared to a single unit price promotion, a *multiple unit price promotion* (volume offer) increases the quantity consumers buy, even when the discount does not differ and consumers do not receive an incremental saving. This effect can be substantial. Importantly, a bundle discount can increase quantity decisions relative to per unit discounts even when consumers may not purchase enough of the products to qualify for the bundled discount.

- The effects of bundles (pure or mixed) are partially explained by confusion in that consumers generally believe that bundles involve discounts (i.e. *infer* savings) even when they do not and no such information is presented. Bundling can also influence choices because it decreases cognitive effort.

- Evidence specifically looking at the effect of *time-limited advertising* is inconclusive. However, it seems that under conditions in which time-limited offers *do* trigger feelings of scarcity, consumers are more likely to overestimate the product quality, or the value of the deal, lower their intentions to search, and have higher intentions to buy. Shorter time limits may augment this effect (though very short time limits may have an opposite effect).

- Research suggests that pricing practices may be less effective in conditions where consumers are readily able to make memory based price comparisons, or have quick and easy access to price information, such as in online environments. On the other hand, pricing cues put forward by sellers both online and offline may still influence consumer behaviour, indicating that learning and/or easy access to information does not eliminate the impact of these practices.

2. Introduction

Pricing practices used to advertise products and services to consumers such as ‘3 for £5’, ‘60% off’ or ‘sale - one week only’ are highly prevalent in today’s society indicating that they are beneficial for businesses. There are now price consultants who advise retailers on how to price their products and brands. Rooted in behavioural decision theory the new psychology of pricing dictates the design of price tags, rebates, sale adverts, cell phone plans, bundle offers, and more.

Whilst manufacturers and retailers invest a considerable amount of time and money in opportunities to differentiate their products, leverage brands, set strategic prices, and reduce the effectiveness of consumer search, little attention has been devoted to this topic from the viewpoint of the consumer. From this consumer perspective, some important questions remain to be addressed. In particular, it is important to attend to the following matters:

1. Which types of pricing practices are most likely to give rise to consumer detriment?
2. In what circumstances are these practices most likely to give rise to detriment?
3. What form may detriment take for each practice? and
4. When consumers have a bad experience, do they learn from it?

The Office of Fair Trading launched a high profile study in October 2009 in an attempt to address these questions. This report is a detailed review of the behavioural psychology and marketing literature on the impact of different price advertising practices on consumer behaviour. The aim of this review is to provide a deeper understanding of how, and to what extent these practices affect consumers’ decisions. This review will assist the OFT in drawing conclusions in regards to which practices are most likely to result in consumer harm, and under what circumstances this is most likely to occur.

The review is laid out in the following way: we first present a quick background as to *why* these practices may be detrimental (from a rational economic point of view they *shouldn’t* be) by reviewing the psychology of decision making. Next we deal with each of the practices separately by a) explaining the psychological principle underlying the practice (i.e. why it works), b) reviewing the literature on the effects of this practice on consumer behaviour (and judgements), c) discussing limitations of the research, and d) providing a general conclusion and discussing its implications. Finally we discuss how learning and transparency might play a role in these practices and conclude with some recommendations.

1. 1 Background: The Psychology of Pricing Practices

Do pricing practices affect consumer decisions and how? In order to answer these questions we first need to understand some fundamental human decision making processes. Classical economic theory suggests that people act rationally, using cost benefit analysis to make choices and come to conclusions. According to this theory people will always choose the option that is objectively best for them (optimal option). Yet, after decades of scientific research, conducted by behavioural psychologists, behavioural economists and marketers, it is now well-established that this notion is incorrect. It is easy to demonstrate this with an example. Consider a customer in a hypermarket. An average hypermarket offers approximately 50,000 Stock Keeping Units (SKUs). Evaluating in full the costs and benefits of even a fraction of the options would take far too long to be practical.

This choice scenario may seem extreme, but in reality it is not too far from the amount of information we must analyse in everyday life. We live in an extraordinarily complicated environment. It would be impossible to recognise and evaluate all the aspects of each person, event, situation and product we encounter in one day. We do not have the capacity for it, let alone the time and motivation. As a result, we have developed mechanisms to deal with this complexity (and scenarios like the hypermarket). One way people deal with the immense amount of information around them is to use mental shortcuts, or *heuristics*. These are rules of thumb people use to make quick judgements and come to conclusions. For instance, we use an unlit shop as a sign that it is closed, we associate suits with professionalism, and we equate expensive products with higher quality. We classify things according to a few key features and then respond automatically and without thinking, when one or another of these features (or cues) is present.

Automatic and unconscious decision making is present in much human action. In most cases it is beneficial, and in some, it is necessary. In a hypermarket (with 50,000 SKUs), the average shopping time is 50 minutes, and the average basket at the counter contains 50 products. This means that a shopper has located, identified and selected 1 from 1,000 products per minute. Without short-cuts this would not be possible.

Whilst heuristics can usefully guide our behaviour and allow us to function in the world, they are not perfect calculations and are subject to occasional and sometimes costly errors in judgement (for example, expensive is not always better quality). Importantly, heuristics leave us open to external influences. For instance, studies have shown that restaurants are able to systematically influence customers' choice of wine, simply by manipulating the background music; stores have been able to influence people to buy the more expensive of two microwaves by adding a third even more expensive option; and researchers have been able to influence whether people choose a Sprite or an Orangina simply by manipulating the colour of the pen people are writing with.

It is reasonable to expect, therefore, that at least some pricing practices will have an effect on consumer decisions and behaviour as they serve as cues that simplify decisions. A rich literature on sales promotions has shown that short-term sales are positively affected by offering promotions (for a review, see Blattberg & Neslin, 1990). As a consequence, empirical investigation into the various pricing practices used in these promotions is warranted. In particular, it is important to determine a) which practices of interest - if any - are having an effect, b) what particular aspect of behaviour they affect (e.g. buy more, search less etc.), c) the extent of this effect, and d) under what conditions the specific effect is present versus absent.

In the following sections the available academic evidence will be reviewed in an attempt to address these questions in regards to six pricing practices: drip pricing, reference pricing, the use of the word 'free', bait pricing, complex pricing, and time limited offers.

3. The Effect of Pricing Practices on Consumer Decision Making:

Evidence from the Literature

3.1. Drip Pricing (Partitioned Pricing)

What it is:

Drip pricing mainly refers to purchases where consumers only see an element of the price upfront, and where either optional or compulsory price increments are revealed as they 'drip' though the buying process (e.g. airline taxes or charges to pay using credit cards). That is, the total price is only revealed (or can only be calculated) later on in the purchasing process. When price is separated in this way, it is also called 'partitioned pricing'.

- *Compulsory drips*: This refers to the price of a single product, in which the charge represents an additional amount inherent to the purchase situation (e.g., shipping and handling for online or mail order purchases, airline taxes, processing fees etc.), and consumers cannot opt out of them. These are usually *surcharges*.

- *Optional drips*: This is often a partitioned presentation of prices in the context of product bundling, price bundling, or both. It involves presenting prices separately for each component of a multicomponent product bundle (e.g., refrigerator, ice-maker, and warranty) or as a consolidated total price for the bundle. Either way, consumers may select items from the bundle or purchase them together (see also mixed bundling). The consumer can choose whether to purchase these options. The items are usually *add-ons*.

- *Multiple/Single Drips.* In some cases consumers may face a single drip, for example postage and packaging, whereas in other cases there may be several drips (components) throughout the process (e.g. tax, luggage, booking fee etc.).

Drip prices can be presented to consumers in a number of ways:

- *Opt-in.* Consumers are automatically opted-out of all compulsory and optional charges and services and have to choose to opt-in to each of them.

- *Opt-out.* Consumers are automatically opted-in to all compulsory and optional charges and services and have to choose to opt-out of each of them.

- *No default.* Consumers are faced with two boxes – one to opt-in to a product or service and one to opt-out and are not allowed to move on to the next stage of the booking or purchasing process until they make a decision on each element of the drip.

Why it should work:

The most dominant theory for explaining the effects of drip and partitioned pricing on consumer purchasing is anchoring and adjustment theory (Tversky and Kahneman 1974). This theory suggests that the buyer anchors on the piece of information he or she considers most important (e.g., base price) and then adjusts *insufficiently* for one or more items (e.g., the surcharge), thus underestimating the total price. In addition, attending to more than one price requires more cognitive effort. As a result, consumers may ignore the surcharge completely, by either not noticing it or noticing it but not incorporating it into the base price. Furthermore, because people have a desire to be consistent with what they have already done (see 'bait pricing' for more a detailed explanation of this principle), *drip* pricing may also reduce the extent to which people search around once they have started the purchasing process for a particular product.

The evidence:

While there are very few studies specifically examining drip pricing (i.e. looking at temporal price separation), several studies have examined the effect of 'price partitioning' (price separation), on consumer decision making. Below the findings will be divided in two parts: a) price partitioning (which partitions (compulsory) surcharges, such as shipping and tax), and b) partitioned presentation of bundles (which usually involves various (optional) add-ons).

a) Partitioning of surcharges

Retailers often partition prices of advertised products into a base price and a surcharge. In a now widely quoted study, Morwitz, Greenleaf and Johnson (1998), show that partitioning prices this way may lead to a bias in behaviour such that consumers end up paying more and searching less when price-parts are partitioned as opposed to presented as a total price. In their auction experiment the authors found that separating a buyers' premium, which is a surcharge of 15% of the buyers bid price, significantly increased demand for the good as compared to the situation where the buyers' premium was included in the buyers bid price. In a second experiment, they tested the effect of price partitioning on the recall of prices. Participants were shown the price of telephones – either partitioned or not - and later asked to recall the total price of the different phones. Participants in the partitioned price group consistently recalled lower total prices as compared to those in the total price group.

Lee and Han (2002) replicated these results (using computer and stereo hi-fi as products) and found that a partitioned price with two components (base plus surcharge) led to underestimation of the total price. In their study they found consumers exposed to partitioned prices recall total costs that are approximately 8% lower than the actual amount.

In a comprehensive study, Xia and Monroe (2004) examined the effect of price partitioning on the Internet (in a scenario where participants were asked to buy a PC). Their results showed that partitioning the price (base plus surcharge) significantly increased consumers' purchase intentions, satisfaction with price, perceived value, as well as reduced search intentions, as compared to a total price alone. They also examined 3 additional factors (called moderators) that may influence these effects:

- First, they examined the effect of the size of the surcharge. As expected, a small surcharge (6%) increased evaluations of the product. However, interestingly, while a *large* surcharge (12%) led to lower perceived value and reduced acceptance of surcharge, it did not lower consumers' *intentions to buy* the product.

- Second, they examined the effect of the number of surcharges. They found that one large surcharge was more effective than two smaller surcharges of the same amount, indicating that increasing the number of surcharges to cut perceived costs may not be effective). Consistent with this, Carlson and Wheathers (2008) found that a larger number (9 vs. 2) of price components lowers perceived fairness and purchase intentions for less trustworthy sellers, *when the total price is not presented.* Interestingly, however, when a total price *was* presented, a larger number of price components led to higher perceptions of fairness, as well as a lower recalled total price, resulting in increased purchase intentions (regardless of seller trustworthiness).

- Finally, Xia and Monroe also found that even when presenting the total price upfront, additional information on the composition of the price still increased demand and evaluation. Accordingly, the authors attribute the effect of price partitioning to both consumers' insufficient price adjustment (anchoring) and the clarity of the price structure that partitioning provided. Note, however, that this means that presenting the full price leads people to believe that the offer is more valuable when it is, in fact, economically identical.

In a more recent study, Burman and Biswas (2007) examined the boundary conditions for the effectiveness of partitioned pricing by examining the role of the reasonableness of a surcharge and the need for cognition in consumers' (i.e. the need to acquire and fully understand the costs prior to purchase). The authors found that for consumers with a high need for cognition partitioned pricing increased perceptions of value and willingness to purchase compared to combined pricing when the surcharges were reasonable. However, these effects reverse when participants considered the surcharges to be unreasonable, indicating that facing unreasonably high surcharge costs, consumers may engage in further processing and question the offer. Thus,

it could be that the 12% charge in Xia and Monroe's study may have been larger but not considered unreasonable. Interestingly, Burman and Biswas results also show that partitioning prices has no effect on evaluations and intentions for low need for cognition consumers indicating that some individuals may be more prone to influence than others.

b) Partitioning of additional products and services

Several studies have looked at the effect of partitioning additional products and services and their associated prices in multicomponent bundles. Consistent with studies in the partitioned pricing literature, they find that anchoring and (insufficient) price adjustment may underlie the effects.

For instance, Chakravati, Krish, Paul, & Srivastava (2002) examined price partitioning on evaluation and choice in a pure bundle (compulsory package) deal in two experiments. In experiment 1, participants were asked to choose between two refrigerators which both came with compulsory add-ons of warranty and icemaker. Option A had a total price of $499.95, and option B had a total price of $429.95 (slightly smaller sized). Both options thus included 3 components – the focal product (refrigerator), an ice-maker and a service warranty. For option A the price was presented either as a total price ($499.95), or partitioned ($399.95 plus $100 for one compulsory add-on – either warranty or icemaker).

The results of the study showed that the bundle was evaluated higher and chosen more often when the price was partitioned rather than consolidated. Note that, here, the price of the focal product of option A was lower than the total price of option B. In order to establish the mechanisms behind these results, in experiment 2, the authors examined the role of the price of the focal product on evaluations and choices. They found that when the price split made the focal product price higher ($424.95) relative to that of a comparison option ($419.95) that had an identical total price the bundle was evaluated lower and chosen less often. This is in line with the hypothesis that the price of the focal product anchors bundle evaluations and choice. The results also have important implications in that they show that consumers' evaluations and choices of two competing (bundled) products can be altered simply by manipulating the price of the focal product, even when the total bundle price remain constant.

It should be noted that additional features seem to play an important role in partitioned presentations of bundles. For instance, in Chakravati et al.'s study the effects of partitioning were moderated by the component partitioned. Specifically, it was found that valuations and choices increased when the add-on was consumption related (ice maker) but not when it was performance related (warranty).

Bertini and colleagues examined the moderating effects of various additional features in partitioned prices. They found that partitioning a bundle into its component products and prices

can make an offer look more appealing when the secondary attribute represents a good deal rather than a bad deal, and that the all-inclusive price can make the offer look more appealing when the secondary attribute is represented a bad deal rather than a good deal (Bertini & Wathiu, 2008). Bertini, Ofek, and Ariely (2009) also found that alignable add-ons (those that enhance an existing feature) can render base goods less appealing, while non-alignable add-ons (those that introduce a new capability) can make the base product more appealing.

The evidence suggests that whilst partitioning surcharges benefits sellers fairly consistently (to the detriment of consumers), the effects of partitioning add-on products (optional or compulsory) seems to be more complex and depend on numerous features of the add-on(s), which may or may not be beneficial for sellers. Thus, whilst the price of the focal product may serve as an anchor in product partitioning, there seems, at present, to be no general answer as to whether partitioning optional or compulsory products will be detrimental to consumers. Rather this will depend on the particular product(s) added/partitioned, as well as the context.

3.2.Opt-in/Opt-out

There is little direct evidence on opt-in/opt-out practices in retail situations. However, evidence from related fields, examining the psychology and decision-making processes of people in similar situations, demonstrate that these practices may bias people's decisions. Several studies show that, when a default is set, people tend to stick with this (default) option, even when there are major, long-term consequences. For instance, Johnson & Goldstein, (2003) demonstrate that changing the organ-donation policy from opt-in to opt-out can cause a large, significant increase in a country's donor rate, despite the relative emotional and cognitive costs. Furthermore, Madrian and Shea (2001) looked at a change in a company's savings plan from opt-in (where employees had to actively select participation in the plan) to opt-out. This change significantly increased participation in the plan, showing people choose the default. In fact, this effect was such that employees even tended to stick with the default levels of contribution rate and investment allocations.

Madrian and Shea (2001) suggested the default effect may be due to both inertia and the tendency to take the default as a recommendation. In line with this, McKenzie, Liersch & Finkelstein (2006) found that participants did indeed rate the default option as the one best recommended. In other words, people may stick with the default option because they believe that the company which has set it recommends the default as the best course of action. Another reason people may choose the default is due to the cognitive effort involved in decision-making. An examination of savings behaviour shows that people tend to choose the path of least resistance (Choi et al., 2002). Another explanation may be omission bias. It has been found that people prefer inaction to action and react more strongly to adverse outcomes when they are a result of action than inaction (Baron & Ritov, 1994; Ritov & Baron, 1992). This may be explained by loss aversion theory. People are more sensitive to losses than gains, so may be afraid to take action in case they incur losses as a result. One final explanation may be the status quo bias. As well as a preference for inaction, there is a preference to maintain the current or previous state of affairs (Schweitzer, 1994). This was first identified by Samuelson and Zeckhauser (1988), when they asked participants to imagine they had inherited either a sum of money or a portfolio of investments. When asked to choose an investment plan, those with the pre-made portfolio tended to stick with the plan they had already been given. Thus people may stick with the default out of a desire to maintain the status quo.

In summary, the available evidence suggests that people tend to choose the default, for better or worse, even those with major, long-term consequences. This may be due to favouring inaction, avoiding cognitive effort, inferring that the default option is the best recommended, or tending to favour the status quo. The default effect may, therefore, be detrimental for consumers where an opt-out policy is used to get consumers to buy additional products or services they

might not necessarily want or need. Additional research examining this hypothesis in relevant contexts is, nevertheless, needed.

Limitations

Limitations of the studies in this area involve methodological issues, such as the ability to generalise some findings due to laboratory (as opposed to real life) conditions, the use of student samples, and the limited amount of actual sales data/purchase behaviour. Another limitation of the literature is that it cannot determine whether *multiple* drip pricing further reduces the extent to which consumers search for other options because of the time already invested (most studies examine partitioned pricing in a technical way).

Conclusions and generalisations for Drip pricing and Opt-in/Opt-out

The available evidence on drip pricing suggests that it does have a significant impact on consumer behaviour and attitudes. Specifically, studies show that:

- Partitioning prices into a base price and surcharge can significantly increase consumers perceived value and purchase intentions for products, and can lower search intentions compared to combined pricing. This is because consumers may fail to adjust from the initial (lower) price of the base good and underestimate the total price of the partitioned-priced product.

- While large as opposed to small added surcharges may not decrease purchase intentions, exaggerated surcharges may have negative effects on consumers' intentions to purchase.

- Increasing the number of surcharges to cut *perceived* costs may not necessarily increase demand.

- Even when a total price is presented upfront, additional information on the composition (various parts) of the price still increases demand and evaluation. Thus, it may be argued that in addition to insufficient price adjustment (i.e. calculations), the clarity (or transparency) of the price structure that partitioning provides also increases value perceptions. It should be noted that this means price partitioning (even if transparent) may lead people to believe that the offer is more valuable when it is, in fact, economically identical.

- Partitioning bundles (even when they have compulsory additional products or services) may also have a similar anchoring-adjustment effect, particularly in instances where the focal product in the bundle is priced lower than that of a comparison bundle (even if the total price remains constant). However, this effect may be contingent upon various

features of the additional product or service (e.g. quality, value, alignability etc.), and in some cases, these add-ons can lower perceptions of value.

- Taken together, the evidence suggests that drip/partition pricing may lead to a bias in behaviour such that consumers end up paying more and searching less, particularly when surcharges are partitioned as opposed to presented as a total price. This may potentially be detrimental to consumers. One way to reduce consumer detriment may be to present the total price upfront (where appropriate), followed by the composition of the price, as this increases clarity while keeping valuations and demand high.

- Finally, the available evidence suggests that people tend to choose the default for decisions, even those with major, long-term consequences. The default effect may therefore be detrimental for consumers where an opt-out policy is used to get consumers to buy additional products and services they might not necessarily want or need. Additional research examining this hypothesis is warranted.

3.3. Reference pricing

What it is:

A reference price, simply stated, is a price that is communicated to the consumer as being the 'normal', most commonly charged, or un-discounted price (e.g. was £199, now £169). There are three basic types of retail reference pricing practices: (1) comparing an advertised price to a price the retailer formerly charged for the product; (2) comparing an advertised price to a price presumably charged by other retailers in the same trade area; and (3) comparing an advertised price to a manufacturer's suggested retail price. Retailer-supplied comparative prices (2) are often referred to as external reference prices (ERPs), or advertised reference prices (ARPs) because they provide an external reference against which an offered price can be judged. Prices recommended by a manufacturer (3) are typically called a Recommended Retail Price (RRP).

Fake reference prices

Fake reference prices include prices that are compared to either an 'original' or 'recommended' price, which may not be accurate or verifiable. For example, the advert may say 'X was £1000 now £100!' where product X was never sold at £1000, or was sold at that price for only a short period of time.

Why it should work:

As with drip pricing, the fundamental psychological principle (heuristic) underlying reference pricing is *anchoring*. It is well-documented that during normal decision making (including estimating value), an initial value (an anchor) serves as a mental benchmark or starting point for estimating 'real' value. A reference price may therefore serve as an anchor that consumers make adjustments to in order to reach their final price estimate. Because anchoring effects occur unintentionally and unconsciously, it is difficult for people to know the extent to which an anchor value influences their estimates.

The evidence:

There is an abundance of evidence to show that advertised reference prices (ARPs) influence a range of consumer price- related responses, including increasing perceptions of the fair price, the normal price, the lowest available price in the market, the potential savings, the purchase value, and also that they decrease additional search effort (e.g., Ahmed & Gulas 1982; Bearden, Lichtenstein, & Teel 1984; Berkowitz and Walton 1980; Biswas & Blair 1991; Blair & Landon 1981; Burton, Lichtenstein, & Herr 1993; Darke, Freedman, & Chaiken, 1995; Della

Bitta, Monroe & McGinnis, 1981; Grewal et al. 1998; Lichtenstein & Bearden 1988, 1989; Lichtenstein et al 1991; Urbany, Bearden, and Weilbaker 1988).

In the 1980's, numerous studies were conducted in this area, some of which were field studies. For instance, Blair and Landon (1981) ran a field experiment in a shopping centre. The experiment used presentation cards to obtain respondents' estimation of savings on electrical goods when exposed to an offer price with a reference price (shown as, for example, list price $69.95 - sale price $44.95) as compared to an offer price with no reference (shown as sale price $44.95). In this study the authors found that consumers' who were exposed to a reference price estimated that they were receiving 75% higher savings than consumers who were not exposed to a reference price[1].

Lichtenstein and Bearden (1988) examined the role of merchant-supplied reference prices in influencing consumer perceptions where the product studied was an automobile. Consumers were exposed to a test automobile advertisement and then asked to estimate the "normal price" that the advertising merchant charged for the automobile. The reference price treatment conditions they used were: "Was $8,215, Now Only $7,272" for the high condition, and "Was $7,414, Now Only $7,272" for the low condition. Their manipulation had a strong effect on consumers' valuations. Their results showed that the resulting mean scores were $8,043 and $7,382 for the high- and low-reference-price conditions, respectively. In addition, the reference price accounted for 27% of the variability in consumer behaviour (a relatively large effect).

Urbany, Beardon, and Weilbaker (1988) investigated whether consumers can view APRs with scepticism and still be influenced by them. In their study they showed participants an advertisement for a television in which the ARP was manipulated as low, average, or high, versus no ARP. Their results showed that an advertisement with a plausible reference price increased participants' estimates of the product's regular price and the perceived offer value, as compared to an advertisement which had no reference price. They also found that an exaggerated reference price generally had the same positive effect, even amongst sceptical consumers.

These and other field and experimental studies indicated a significant and substantial impact of reference pricing on consumer value estimations. In 1993 Biswas, Wilson, and Licata decided to conduct a meta-analysis (quantitative review) of the available research on the effects of reference pricing on consumer behaviour and attitudes. They found that effects in the majority of the studies (72%) were statistically significant, and that the amount of variance explained in these studies (i.e. the degree of the effect) was, on average, higher than that of consumer behaviour studies.

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[1] This observation held across well known brands as well as lesser known brands.

The effect of reference pricing on consumer deal evaluations and behaviour have been replicated fairly consistently since the Biswas et al.'s meta-analysis (Alford & Engelland, 2000; Ang, Leong, and Tey, 1997; Blair, Harris, & Monroe, 2002; Chandrashekaran & Grewal, 2006; Chernev & Wheeler, 2003; Kopalle & Lindsay-Mullikin, 2003; Trifts & Haubl, 2003; Wolk & Spann, 2008). As, Lichtenstein notes:

> '*ARPs work, a lot of research shows they do, and retailer practice and returns show that they do. This is not 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 increase as I increase my ARP to $49.95, to 59.95, to 69.95* (Lichtenstein, 2005).

A number of studies have since focused on the mechanisms through which reference pricing might work, as well as the conditions under which it has the most/least impact (i.e. moderator variables). Several moderator variables have been put forward, the most widely studied being the effects of *exaggerated reference prices* and the role of *consumer knowledge* of competitive market prices. These are briefly reviewed below:

<u>Moderator variables:</u>

a) Exaggerated reference prices

One variable that is of obvious interest is the actual *size of the reference*. Can retailers display an exaggerated reference price in order to augment consumers' perception of value? If this works, a retailer may be able to increase margins to the detriment of the consumer. But will exaggerated reference prices influence consumers to value an offer more, or will it result in less favourable value perceptions (or not change their estimate)?

A fair amount of research has been carried out to address this question. Empirical studies show that an exaggerated ARP, even though often discounted by consumers, may still increase their perceptions of the product value (Ang et al., 2002; Blair and Landon 1981; Copmpeuau & Grewal, 1998; Kopalle & Lindsey-Mullkin, 2003; Lichtenstein and Bearden 1989; Lichtenstein, Burton, and Karson 1991; Monroe, 2003; Urbany et al. 1988). Furthermore, Urbany et al. (1988) reported that the relationship between the reference price and the perceived value for the consumer good is almost linear, even when the reference price is as much as 2.86 times the usual market value. That would correspond to a $279 item being advertised as selling for $799 elsewhere. Kopalle and Lindsey-Mullkin (2003) showed that consumers may believe pricing claims even when they exceed their initial price expectation by over 200%. As noted by Blair and Landon (1981, p. 62), "consumers may understand that a reference price is inflated or be

sceptical of it, yet may not completely discount the claim; that is, consumers may be influenced even if they are sceptical. It should be noted, however, that in contrast to offline environments, in an online environment, exaggerated reference prices only positively influence consumers' value estimations when these references are believable; when they are not believable they may influence perceptions negatively (Wolk & Spann, 2008)[2]. .

b) Knowledge of competitive prices

Another variable of interest is *price knowledge*. Does knowledge of competitive prices moderate the effect of comparative advertising or reference prices? The literature provides mixed results. For instance, Lichtenstein and Bearden (1989) find that effects of reference prices are smaller when consumers have knowledge that other stores frequently offer similar savings on similar items. Similarly, Blair, Harris, and Monroe (2002) show that shopping information – i.e. access to competitive price information or competing advertisements - reduces the effect of reference prices, and may even prove counterproductive by leading consumers to believe that the store's regular prices are high but not that the sale price is low.

On the other hand, Fry and McDougall (1974) and Liefield and Heslop (1985) found that shopping experience had no effect on consumers' acceptance of reference price claims. The discrepancy between these studies is likely to be due to the difference in the remoteness of the experience and the amount of information the consumer had. That is, recent and/or ample price knowledge may reduce the effect of ARPs more than distant and/or relatively little price knowledge. As Blair et al. noted, it is likely that the effects of reference prices may be more detrimental to consumers when comparisons are more difficult to make, such as with unbranded or unstandardised goods.

Consistent with this hypothesis, Biswas and Blair (1991) found that the effects of comparative claims are larger for unfamiliar than for familiar brands. Furthermore, a study conducted by the Nottingham University Business School (2005) found that a high reference price increases consumers' value perceptions and purchase intentions for expensive products (e.g. TVs and holidays) but not for cheaper products (chocolates and books). It could be argued that because higher priced products are in general less frequently encountered, consumers may have less knowledge about their competitive price, and are therefore more easily influenced by retailer provided ARPs.

It is also interesting to note that when buyers are exposed to an ARP, their willingness to conduct additional searches decreases (Della Bitta, Monroe, & McGinnis, 1981; Urbany,

[2] Further details can be found in the 'learning effects and transparency' section.

Bearden, & Weilbaker, 1988). Thus, in addition to value perceptions, ARPs may actually influence the amount of knowledge a consumer obtains in the first place[3].

Limitations:

While there is an abundance of research to show that reference prices have an effect on consumers' valuation of an offer, as well as decreasing search and heightening purchase intentions, there are relatively few studies that look at actual purchasing behaviour. That is, most studies are experimental in nature. Thus, some caution is needed in interpreting the data.

Conclusions and future steps:

- There is a large body of evidence to show that the presence of a reference prices increases consumers deal valuations and purchase intentions and can lower their search intentions as compared to when a reference price is absent.

- Reference prices can in some instances influence consumers even when these are very large and when consumers are sceptical of their truthfulness

- This suggests that sellers may be able to exploit reference prices in a manner that may be detrimental to consumers. Consumers may be particularly harmed if: a) these prices are not genuine, b) have been there for short periods of time but later abandoned, c) are misleading in the sense that they largely exceed the average competitive price, d) consumers are not readily able to compare them to an industry price, such as with unbranded or retailers 'own brand' goods, and e) with less frequently purchased and more expensive items.

- Taken together, where the advertised reference price is misleading or not a genuine offer, it could result in consumers spending more or failing to buy from the lowest cost supplier. Consumers may also fail to shop around as they believe they already have a good enough deal. Thus, while reference prices, where clear and honest, can be beneficial for consumers, it may be imperative to monitor the use of fake and/or misleading reference prices, as well as the use of ARPs in instances where comparisons are more difficult to make.

[3] Note that this may not be the case in an online environment (see section on transparency).

3.4. The use of the word 'Free'

What it is:

There are different ways in which the term 'free' is used in advertising, for example: 'Buy one Get one Free'; 'Free Laptop' with a given broadband package; or 'kids go free'.

Why it should work:

While there is little research that directly examines the effect of the *word* 'free' on behaviour and attitudes, several theories have been posited to explain why a product offered as 'free' should affect consumer behaviour. One theory suggests that this is due to the certainty effect. Any purchase carries a risk of buyer's regret (e.g. 'the chocolate did not taste as good as I'd thought'), whereas free things escape such regret as nothing was spent on it,causing people to overvalue anything that is free (Shampanier, Mazar, and Ariely, 2007). Another theory suggests that people choose the benefit which avoids trade-offs (including calculating discounts that require cognitive effort). Because free is an absolute price, we know exactly what it means. There is no relative thinking, and no calculation required, and most of all, no fear of loss.

Caveats: Discounts, including free gifts, may actually undermine the product's perceived quality and lower purchase intentions.

The evidence:

No studies to the authors' knowledge have specifically examined the 'priming' effect of the word free (as in 'kids go free') on consumer behaviour. However, a few studies have examined the effect of free gift offers.

For instance, Raghubir (2004) shows that once a "free" product has been bundled together with another product and offered for one price, consumers are willing to pay less for the free product when it is sold alone. Similarly, in a recent field study Kamins, Folkes, and Fedorikhin (2009) found that describing one of the products in a bundle as free decreased the price consumers were willing to pay for each product when these were sold individually. However, other studies have shown positive valuations of the overall bundle when one of the items is described as free, at least relative to when it is offered at a price discount (Chandran and Morwitz 2006; Dark and Chung, 2005; Nunes and Park 2003).[4]

[4] It may be that the use of the word 'Free' attracts extra consumer attention and that this may lead to sales that might not have taken place had the extra attention not been provoked. However, this is likely to function in much the same way as bait pricing and discounting which are covered elsewhere in this document

This discrepancy creates a degree of uncertainty about the effect of a free designation and the underlying mechanism at work. Thus, free offers can have seemingly inconsistent effects, suggesting the presence of moderator variables and suggesting this is an area that warrants further research.

Limitations

There are no studies examining the effect of the actual word ‘free’ (as in buy one get one free, or kids go free). Similarly, there is a limited number of research studies examining moderator variables.

Conclusions and generalisations

- The available evidence on the effect of offering a “free” product is mixed. While some studies show that this practice can increase consumer valuations and demand, others show that a freebie does not increase consumers’ perceptions or willingness to pay for the bundle.
- Considering the limited amount of evidence, it is difficult to make a recommendation on a course of action. Future research is warranted to investigate the effects of this practice.

3.5.Bait pricing

What it is:

This covers a range of practices, but essentially involves consumers being enticed with a discount, but subsequently ending up purchasing a more expensive product because there are very few, or indeed no, items available at the discounted price.

Why it should work:

Psychologists have long recognised that once people have committed to an action, they are more likely to be consistent with that particular deed. This 'commitment and consistency' principle (Cialdini, 1999) stems from three sources: it generally simplifies daily life; it affords a valuable shortcut through the complexity of modern existence; and it is highly valued by society. By being consistent with earlier decisions, one reduces the need to process all the relevant information in future similar situations (Cialdini, 2009). Thus, bait sales may result in consumer detriment where consumers have been enticed with discounts and are then reluctant to continue searching elsewhere even where the offer is no longer available. It should also be noted that preference for consistency increases with age, with those beyond the age of 50 displaying the strongest inclination of all to remain consistent with their earlier commitments, arguably rendering them more vulnerable to the practice (Brown, Asher, & Cialdini, 2005).

Caveats: Not all commitments are equally effective in producing consistent future action. Commitments are most effective when they are active, public, require effort, and are internally motivated (unforced).

The evidence:

Only one study to our knowledge has directly addresses the effect of bait sales on consumer behaviour. There are, however, a number of studies that have examined the effect of the separate components of a bait sale, namely: a) the bait (i.e. the discounted offer), and b) the unavailability of the good (the stock-out), on consumer behaviour. While the latter do not provide direct evidence of the impact of this practice they make it possible to infer tentative conclusions.

The direct evidence in support of the supposition that bait pricing may be detrimental to consumers comes from Ellison and Ellison's (2009) using data from an online price comparison site. Ellison and Ellison concluded that the practice of bait and switch - offering a low-quality product at a low price to attract consumers and subsequently trying to convince them to pay more for a superior product – has a strong effect on behaviour.

In regards to the indirect evidence: a rich literature on sales promotions has shown that short-term sales are positively affected by offering promotions (for a review, see Blattberg & Neslin, 1990). Consumer promotions are informative and affect sales through more than offering a monetary incentive to purchase (Inman, McAlister, & Hoyer, 1990; Inman, Peter, & Raghubir, 1997; Raghubir, 1998). Furthermore, Darke and Freedman (1995) show that consumers use the size of a percentage discount as a heuristic cue to help decide whether a better price is likely to be available elsewhere. This line of research indicates that promotions can serve as baits such that they attract customers in the short-term.

In a review of the literature on stock-out behaviours Mijeong (2004) observed that the way consumers respond to stock-outs varies significnatly (Andersen Consulting, 1996; Emmelhainz et al., 1991; Progressive Grocer, 1968a, 1968b; Schary & Christopher, 1979; Walter & Grabner, 1975; Zinn & Liu, 2001). Yet, across several empirical studies, he found that between 20 and 80 percent of consumers substitute for the out of stock item, between 5 and 25 percent delay the purchase, and between 15 and 50 percent leave the store without a purchase. Thus, while there is variability, substitutions seem to be the most dominant behavioural response to stock-outs. For instance, in the most recent of these studies, Zinn and Liu (2001) found that more than 60 percent of customers who experienced stock-outs substituted for the item by switching within the same store, whereas only about 20 percent were willing to go to another store, and 15 percent to delay the purchase until a next trip. Consumers are more likely to delay the purchase if they are in a hurry or brand-loyal, but more likely to shop elsewhere if surprised or the shop has high prices.

Limitations

The limited amount of direct evidence, particularly in offline settings, leaves several questions open to debate. For instance, how will consumers react to stock-outs, shortly after having been exposed to a bait sale (enticed to the store)? As noted above, the commitment and consistency principle states that commitments are most effective when they are active, public, require effort, and are internally motivated. It is important to determine empirically whether the common behavioural patterns in stock-outs (i.e. substituting) are similarly observed, in light of the externally motivated commitment (i.e the consumer was influenced by the bait price).

Conclusions and generalisations

- More direct evidence of the impact of bait sales is needed. However, at least one study suggest that this practice may have a substantial negative impact on consumers.

- Evidence derived from examining the independent effects of discount offers (baits) and consumer behavioural patterns in stock-out situations (predominantly switching within store) make it possible to infer that bait and switch practices are likely to be detrimental to customers, particularly in situations where personnel encourage the customer to switch to a higher value product. Nonetheless, we concede that this is at present an assumption that requires further research.

- In general, even if a bait does not work in that it does not result in a sale, it may still result in consumer detriment in terms of wasted time and effort. It may also be detrimental to competitors who may miss out on sales or store traffic if it had not occurred.

3.6.Complex Pricing

What it is:

Complex pricing covers a range of practices which may make it more difficult for the consumer to assess or compare prices (consciously or subconsciously). These include:

- Volume Offers. This covers practices such as '3 for 2', 'Buy one get one half price' or 3 for £8 etc.

- Multi-part pricing. Where the product or service is comprised of two or more parts, each with a separate unit price, for example mobile phone packages which may include separate prices for the phone, calls, texts, internet access etc.

- Comparative bundles. Where comparisons are made across a bundle or 'basket' of goods, e.g. Pay-TV packages or supermarket baskets. Bundles can adopt two strategic forms: pure or mixed bundle. *Pure bundling* (sometimes called "tying") is a strategy in which a firm sells only the bundle and not (all) the products separately. *Mixed bundling* is where the buyer may choose to purchase the bundle or purchase individually priced items. Unlike pure bundles, mixed bundling may involve products or services that are also commonly purchased individually. Bundles may or may not offer a discount.

- Adverts where pricing is dependent on several clauses and conditions such as thresholds, minima and maxima, and inter-temporal price differences, which do not relate to the underlying nature of the product. This may include some mobile phone tariffs and financial products.

Why it should work:

Most of these practices will be based on the anchoring heuristic described in the reference price section. A shopper often needs to decide how much to pay and how many to buy. In the absence of such information, people may be consciously or subconsciously influenced by any numbers provided as cues (or anchors). Volume offers are likely to serve as mental shortcuts for numerical, or quantity, decisions. In addition to numerical cues, bundle offers may be preferable because a) a single albeit larger loss is less punishing than the multiple separate losses (this is based on loss aggregation theory), and b) they signal a saving (even if there isn't one) simply because shoppers consider that bundles usually offer such savings (i.e. this inference may have become a shortcut in itself). Furthermore, when people are faced with a large amount of

information (as with certain complex pricing scenarios) they tend to look for ways to economise mental effort, which leads to a decrease in the quality of decisions made.

The evidence:

There is a good amount of research investigating volume and bundled offers on consumer behaviour and attitudes. However, there is less academic literature on the effects of other complex pricing structures - most of the evidence here is based on case studies. Below, the various complex pricing practices are divided into three components: a) volume offers, b) comparative bundles, and c) complex prices.

a) Volume offers (multiple unit price promotions)

Multiple unit price promotions (such as buy 3 for 2) are popular among retailers of packaged goods. Evidence regarding the influence of multiple unit price promotions (volume offers) on sales was first provided by Blattberg and Neslin (1990) in a field study. Using an econometric approach to control for baseline sales and marketing variables, their results showed that multiple unit price promotions increased sales by 12% across seven brands in three categories as compared to single unit promotions.

As part of a paper that developed and tested a generalized anchoring and adjustment model regarding purchase quantity decisions, Wansink et al. (1998, Study 1) conducted a field experiment to assess the impact of multiple unit price promotions on the sales volume of thirteen products across a grocery chain's 86 stores. The authors found that for nine of the thirteen items tested, multiple unit price promotions (e.g. "4 units for £2") increased sales by a greater percentage than single unit price promotions (e.g. "50p per unit"), which employed the same percentage discounts. On average the single unit price promotions increased sales volume by 125 percent, while the multiple unit price promotions increased sales by a significantly larger 165 percent.

In a more recent study, Manning & Sprott (2007) directly examined the conditions under which multi-unit pricing is most effective. Their results were in line with previous studies in that they showed that multiple units offered in the bundle increased quantity purchase intentions compared to a single unit discount (even when the discount was the same). However, this effect was significant only for the largest unit bundles (8), and not the others (2 and 4). More importantly, the presence (versus absence) of the single unit price in a bundle did not alter this effect.

This finding is consistent with previous research which indicates that a large proportion of the population do not use unit prices (see Steven, McGoldrick, & Mitchell, 2003 for a review). Thus, the effect of bundling does not seem to be caused by consumers' inability to calculate the

relative value of the offer. Examining the possible effect of confusion, Manning and Sprott found that 29.2% of the consumers believed they had to purchase the quantity specified in order to receive the reduced price (even when no such information was presented). This shows that about one third of consumers believe they will get a discount (even when they do not), and that two thirds of consumers are influenced by the actual anchor (numeric cue). The above findings are consistent with previous research. For instance Steven et al. (2003) found that the majority of consumers believe that bulk-buying is the most cost-effective way of shopping, and that the unit price of products packaged in larger bundles is less than those in smaller bundles[5].

More support for the effectiveness of multi-unit pricing also comes from a comprehensive study by Foubert and Gijsbrechts (2007). The research used consumer panel data from a single product category, including 17 different brands, and a substantial sample size (1181 shoppers) across 8 different store chains. Their results showed that a bundle discount increases the probability of switching to the bundle, more so than per unit discounts (again with an identical saving). More importantly, they found that even when the consumer did not purchase enough of the product to qualify for the discount, they would still switch to the promoted items. This reveals that the mere communication of a bundle discount is enough to attract consumers to the promoted items, even they are not obtaining any savings, and potentially incurring a loss.

b) Comparative (mixed) bundles

In a similar vein, a number of studies conducted in recent years show that mixed bundle promotions can have a significant effect on consumer choices. For instance, Johnson et al. (1999) conducted experiments in which respondents evaluated car offers that varied in bundling. They found that the respondents' positive evaluations of the offers increased as component price information was progressively bundled.

Similarly, Arora (2008) presented participants with a brochure of the products (in this case teeth whitening products) with either individual prices or a bundle. They measured participants attitudes (good idea, beneficial and desirable) and intentions (how likely they were to choose the product if they decided to whiten their teeth), and found that the bundle offer, but not individual pricing, increased purchase intentions.

While Johnson (1999) and others have explained their findings through mental accounting's loss aggregation principle (see section '*why it should work*'), other researchers argue that effects are due to consumer assumptions that bundles involve a discount; that is, that

[5] Steven et al. shows that unit pricing is not used because consumers may lack the cognitive ability to use it, may find it confusing, or it requires too much effort.

they *infer* savings when presented with a bundle offer, even when no such information is presented (similar to multiple unit pricing). Evidence for this hypothesis was provided in two recent studies. In the first study, Heeler, Nguyen and Buff (2007) used two different scenarios: one involving a car offer with various optional extras presented as both a bundle and unbundled; and the other involving skiing tickets, 4 one day skiing tickets versus a single ski pass for 4 days (with the total price of goods in each scenario being the same). Consumers where then asked to estimate the price of each offer (i.e. bundled versus unbundled). In both scenarios participants estimated the price of the bundled offer to be significantly lower than the unbundled offer. Subsequent open ended questioning showed that consumers did infer savings from bundles (i.e. bundles were thought to be cheaper).

The second study (Nguyen, Heeler, and Buff, 2009), tested this theory further. Again, automobile offers - bundled or unbundled - were used. However, this time the researchers added a third, no inferred saving bundle condition. This offer was identical to the bundled offer except that respondents were also told that the price of the bundled offer was the same as the unbundled offer. As expected, their results showed that evaluations (satisfaction and recommendation) were higher for bundled than the unbundled offer. Interestingly, however, they found that when consumers were made aware that the bundled price did not offer savings, they did not rate it higher than the unbundled offer, and even rated it lower. This provides support for the theory that consumers generally infer savings from bundled offers.

Bundling may also influence consumers simply because it decreases cognitive effort. For instance, in a recent study, Andrews, Benedicktus, and Brady (2010) looked at the effect of *service* bundling in the domain of telecommunication services. Specifically, they examined the effects of bundle incentives (i.e. one-bill convenience, cost savings, and service upgrades) on consumers' value perceptions, intentions to search for and compare alternative service providers, and willingness to switch to a competitor. Their results showed that service bundling significantly improved perceived value and switching intentions (to the bundle), and reduced search intentions. This was found to be due to the convenience associated with consolidating charges onto one bill. Importantly, they found that adding saving or free upgrade incentives had generally no effect on consumers' search and switching intentions beyond the convenience effect. This means that service providers may be able to convince consumers to stay or entice them to switch service providers, not by offering the best or cheapest option, but simply by promoting the convenience of having bundled services billed on a single statement.

Taken together, the results of these studies indicate that multiple unit price promotions and bundled offers are often effective; and that this may be due to several causes, such as the anchoring heuristic, the inferred savings heuristic, and/or lower cognitive effort provided by bundles.

c) Complex pricing signals

There is limited academic research directly examining the effect of complex prices. However, industry reports indicate that it may be detrimental to consumers for similar reasons as mentioned above. For instance, research within the telecommunications industries has suggested that customers are rarely very accurate in their estimate of call charges – often overestimating the price of a given call by up to a factor of three (Ovum, 1998). The research also reveals that many, if not most, customers are not sure which tariff would be most advantageous to them and that a substantial minority have consciously chosen to opt for simplicity while recognising that they might not be getting the cheapest deal (FDS International, 2001).

Similarly, studies show that within the utility sector, customers tend to remain with the supplier they have always had rather than switch to a more beneficial supplier. People seem to find it hard to understand the differences in tariffs charged by different companies and are unwilling to spend the time making the necessary comparative calculations. Together, these studies suggest that complex prices may indeed be detrimental to consumers, simply because these practices prevent or discourage consumers from analysing the costs and benefits needed to choose the optimal option.

Limitations

Several studies are experimental and use student samples. However, this is rectified by some large scale field studies, which support the experimental findings.

Conclusions and generalisations

- Evidence suggests that people may be induced to buy higher quantities, as a result of certain complex pricing practices even in the absence of any incremental savings.

- The presence of a multiple unit price promotion (volume offer) can increase the quantity consumers buy to a greater degree than would be expected with single unit promotions even when the discount does not differ (i.e. there is no incremental saving). This effect can be substantial.

- Importantly, bundle discounts can increase switching, that is, the probability of switching to the bundle items, relative to per unit discounts even when consumers may not purchase enough of the product to qualify for the discount (and thus incur a loss).

- The effects of bundles (pure or mixed) are partly explained by confusion in that consumers generally believe that a bundle involves a discount (i.e. *infer* savings) even when it does not, and no such information is presented.

- Mixed bundling can, in addition, significantly impact upon value perceptions, switching intentions and search intentions, simply because it decreases cognitive effort. Importantly, in service bundling, such as telecommunications, adding a saving or a free upgrade incentive does not increase consumers' search and switching intentions above and beyond the convenience of having the service bundled. This means that service providers may be able to entice consumers to switch service providers, not by offering the best option, but simply by promoting the convenience of having bundled services billed on a single statement.

- Taken together, it may be important for regulators to monitor certain complex pricing practices. Particularly, multiple unit offers or bundles that do not offer incremental discounts may need particular attention as they may alter consumers' choices, either by anchoring or by confusion. The size of volume offers may also need to be monitored as they are likely to bias consumers towards higher quantity purchases.

3.7.Time limited offers

What it is:

Time limited offers generally refer to offers which only last for the immediate period of negotiation and the customer is advised that the price will not be available at a later date.

Why it should work:

Time limited offers are based on a psychological principle called scarcity (Cialdini, 2009). According to this principle, people assign more value to opportunities/items when they are (or are becoming) less available. The principle is founded on two components: 1) because things that are difficult to obtain are typically more valuable (Lynn, 1989), the availability of an item can serve as a short-cut cue to its quality, and 2) when a product becomes less available, free choice is limited or threatened (Brehm, 1966), and this makes people want the product significantly more than they would have otherwise. Furthermore, people are more motivated by the thought of losing something than by the thought of gaining something of equal value, and the threat of potential loss plays a powerful role in human decision making (Tversky & Kahneman, 1981). Note that these principles underlie any pricing practice that indicates scarcity (including volume offers which are accompanied by a statement such as ‘hurry while stocks last’, or 'maximum 12 per person').

Caveats: The scarcity principle is most likely to hold true for things that have become scarce recently, rather than for things that have been restricted all along; and the effect is biggest when there is competition for the item in question. Importantly, for this principle to hold a consumer must *believe* or *feel* that his/her ability to carry out a particular action is threatened. If consumers do not feel that their ability to purchase is compromised by time limits, then theoretical predictions will not apply.

The evidence:

While there is an abundance of evidence on the effect of scarcity (in general) on consumer behaviour, studies specifically examining time limited offers are somewhat mixed and suggest the presence of moderator variables.

Early research found strong support for the impact of scarcity (though not restricted to time-limited offers) on consumer behaviour. For instance, Mazis et al. (1973) found that scarcity had a significant impact on consumer purchase behaviour in the face of a *product ban*. In a meta-analysis, Lynn (1991) found a strong and reliable (positive) relationship between scarcity and *value* perceptions. Lessne and Notarantonio (1988) found general support for the hypothesis that

placing limits on the *amount* of a product that can be purchased increased the attractiveness of the offer. Simonson (1992) found that consumers were more likely to purchase an item available at a promotional sale price when asked to imagine how they would feel if they had waited until a later date to make their purchase and then missed out on the offer as a result. Various articles have also found that time pressure or time constraints can increase consumer perceptions of value (Vermeir and Van Kenhove, 2005; Tan & Chua, 2004; Suri and Monroe, 2003; Dhar and Nowlis, 1999; Kumar et al., 1998), as well as 'drive' their choice to high quality/low risk brands (Nowlis, 1995). However, these studies are only useful in so far as they describe how people would react if they actually *felt* the time pressure in an advertised time limited offer.

Inman, Peter, and Raghubir (1997) conducted a series of experiments and concluded that imposing a restriction (minimum purchase limit, *time limit,* and purchase precondition[6]) on a product[7] consistently increased the choice probability and the perceived deal value for the product. However, this was only the case when the discount was high (either 20% or 50%). When the discount was low (5%), restrictions were rated lower in value and produced lower purchase intentions than no restriction condition. Thus, *discount level* (whether high or low) seems to moderate the effect of restrictions.

In another study, Swain, Hannah, and Abendroth (2006) examined 3 mechanisms (deal evaluations, anticipated regret, and urgency) through which time restrictions influence consumer choices, as well as moderator variables such as the duration of the discount (long or short). Their results show that shorter time limits create a greater sense of urgency thereby leading to higher purchase intentions. They suggest that giving consumers more time may lead to more delay and, in effect, shorter time limits cause promotions to gain priority on consumers' "to do" lists. However, they also found that *too* short a time limit can increase perceptions of inconvenience, leading to lower deal evaluations and ultimately lower purchase intent. Thus, in addition to discount level, *limit length*, or duration, seems to have an impact on consumer reactions to time limited promotions.

One recent study that specifically examined time-limited promotions in the context of durables (TVs), however, did not find support for the scarcity hypothesis. Devlin, Ennew, McKechnie, and Smith's (2007) results showed that time-limited price offers do not impact upon consumers perceptions of a good's value, nor do they have an impact on consumers' behaviour in terms of search and choice of purchase. The authors rightly observe that a time limit restriction would only increase perceptions of scarcity if consumers treat it as a genuine offer as opposed to a mere marketing ploy. If consumers do not expect time limits to be honoured, or

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6 For example, "Restricted Offer. Only Available with a Minimum Purchase of $25".

7 Products included AA Kodak alkaline batteries, a Sony UX 90-minute audiocassette, or an Oral B Indicator toothbrush

they expect the offer to reappear quickly after expiry, then perceptions of unavailability will be limited. Their results are thus indicative of consumer cynicism towards time limited advertising and an unwillingness to view such advertising and promotion as a genuine restriction (note, however, that they did not examine this explicitly).

Delvin et al. go on to argue that given the prevalence of time-limited advertising and promotion, consumers may quickly be desensitized to its impact, to a large extent discounting such information when processing offers, and as such, policy makers and regulators should not be concerned about this form of pricing.

While the logic of this argument is sound, the argument itself is speculative. Considering that previous studies have found a significant effect of time-limited offers on consumer behaviour (see above), it would be premature to conclude that no such effect exists, based on Delvin et al.'s study alone. It is, in addition, not clear whether their results generalise to other product categories (i.e. beyond TVs). Besides, desensitization to time-limits on its own does not refute the scarcity principle.

Thus, overall, it is reasonable to assume that under conditions in which time-limited offers actually do generate perceptions of unavailability (scarcity), or when cynicism is absent, consumers may be affected (also see section on learning). Future research is therefore warranted, to find out exactly under which conditions scarcity is felt and under which conditions it is not, and its effect on purchasing behaviour.

Limitations

The literature specifically examining time-limited advertising is relatively scarce and available studies present conflicting results. This makes it is difficult to generalise any significant or non-significant results. It is likely that situational variables moderate these results.

Conclusions and generalisations

- There is an abundance of evidence to support the hypothesis that scarcity – real or perceived – has a significant effect on consumer purchasing behaviour. However, evidence specifically looking at the effect of time-limited advertising is less conclusive. This is presumably because this type of advertising may not always trigger feelings of scarcity in consumers (e.g. due to desensitisation or perceptions that the time limit is not genuine). While this makes it difficult to present a universal conclusion, the following inference can be made with a reasonable amount of confidence: under conditions in which time-limited offers *do* trigger feelings of scarcity, consumers are more likely to

overestimate the product quality, or the value of the deal, lower their intentions to search, and have higher intentions to buy.

- Some parameters under which time-limited offers do trigger feelings of potential unavailability need to be set. The available evidence suggests that time limited offers with low discount offerings generally do not increase purchase intentions or lower search intentions. Thus, it is reasonable to believe that the OFT should not be concerned about this form of pricing. However, time limited offers with high discounts (e.g. over 20%), at least in some product categories, may cause overestimation of value and increase purchase intentions. Similarly, if the duration of the time limit is short, this may cause overestimates of value and increases in purchase intentions (though very short time limits may have an opposite effect).

4. Learning effects and transparency caused by the internet

This section describes the effects of learning on consumers' choices and decisions. It also discusses how the advent of the internet may affect the effectiveness of pricing practices employed by sellers.

Do consumers learn/know from past experience?

To what extent do consumers learn from their past experiences with prices and pricing practices that they encounter? It seems obvious that consumers will judge a seller's pricing policy by comparing its prices (including its various pricing claims) to previously encountered prices of other sellers. Accordingly, several researchers have suggested that consumers may use memory-based price benchmarks, referred to as internal reference prices, to make price comparisons and valuations, which may lower the effectiveness of pricing strategies employed by retailers (Monroe 2003; Winer 1986). Yet, several early price recall surveys brought the concept of a memory-based reference price into question.

Recall of prices

For instance, Dickson and Sawyer (1990) approached customers while they were in the supermarket and asked them to recall the prices of products that they had just put in the shopping cart. Less than half the respondents (47.1%) could accurately recall the prices of the products they had purchased. Krishna, Currim and Shoemaker (1991) found that only 34% of buyers were correct within 20 cents of the actual price. More recently, Vanhuele and Dreze (2002) observed that only 21.3% of their respondents could recall prices within five per cent of actual prices. This line of research suggests that consumers' knowledge of prices is considerably lower than necessary for them to have accurate internal reference prices for products (Zeithaml, 1988).

On the other hand, and contrary to the above findings, results from other studies suggest that consumers have *brand-specific* internal price benchmarks for all major brands in most product categories that they frequently buy. For instance, based on scanner panel data for peanut butter, coffee, and tissue, Briesch et al (1997) inferred that consumers behave *as if* they remember the past prices of all the major brands in these categories. In addition, several studies have shown that internal reference prices have some effect on price evaluations (e.g. Adaval and Monroe 2002; Janiszewski and Lichtenstein 1999; Kalyanaram and Winer 1995; Mayhew and Winer 1992; Winer, 1988).

Explaining the discrepancies

One explanation of the discrepancy between these findings is that they employ different methodologies; that is, one examines recall, while the other examines actual behaviour. Studies where consumers are asked to explicitly recall a product price are relying on consumers' declarative price knowledge. However, Thomas & Menon (2005) suggest that consumers learn to evaluate new prices without explicitly recalling past prices from memory. Instead they learn to rely on implicit, or non-declarative, memory. In other words, consumers do not have to *verbally* rehearse the past price to evaluate a new price; rather they learn to *associatively* evaluate prices, through repeated evaluations of the same product (Anderson 1993).

In a series of experiments employing response-time measures, testing consumers' non-declarative memory, Thomas and Menon (2005) found support for the above hypotheses. First, they found that participants who were given prior experience in price evaluations of the target products had significantly lower response time for evaluations than those who were evaluating the prices for the first time. However, response time for price recalls was unaffected by prior experience in price evaluations. This suggests that associative evaluations do not entail explicit recall of past prices. Second, they observed that for *infrequent buyers* of a product, the smaller the distance between the stimulus price and internal price benchmark, the greater the response time for evaluations. But for frequent buyers, the distance between stimulus price and the internal price standard does not affect response time. Finally, they found that frequent buyers are relatively more sensitive to price increases and less influenced by contextual price information than infrequent buyers. The authors conclude that these results show that while infrequent buyers construct their evaluations at the point of purchase, frequent buyers retrieve pre-existing evaluations associated with price magnitudes.

Thus, while previous studies show that consumers' *conscious* recall of past prices may be poor, learning may still take place; and it is likely that more price exposures and associations for more frequently purchased products may lead to better price and value estimations, ultimately leading to a lower ability for pricing practices to influence the consumer. This may explain Biswas and Blair's (1991) findings that the effects of ARPs are larger for unfamiliar than for familiar brands. It may also explain the limited impact of time-limited offers in Devlin et al.'s (2007) study.

Nevertheless, as presented in this report, there is an ample amount of evidence to show that the pricing practices discussed in this paper do work. They do alter consumers' behaviour and valuations. What this suggests is that, while associative (implicit) learning takes place, it does not always reach a level which allows consumers to readily make memory-based comparisons and subsequent optimal decisions - even in the most basic comparison scenarios,

such as with ARPs. It also indicates that learning (or memory) may have less of an impact with those pricing practices that make it difficult to make implicit comparisons, such as drip pricing and complex pricing (where price benchmarks may fluctuate greatly while keeping the total price the same). The notion is that pricing practices are likely to have more of an impact for less frequently encountered product categories and brands, with more complex pricing structures, and/or with novel uses of pricing practices that consumers have not been desensitized to.

The impact of transparency

Of course, price comparisons do not always have to be based on memory. Consumers may want to conduct an external price search to compare prices of competing sellers for their purchase decisions (Yadav & Seiders, 1997). The frequency with, or the extent to which, this price search occurs will depend on environmental factors, such as convenience and ease of obtaining the information. Accordingly, the effects of various pricing strategies are likely to be different in online environments than the ones found in offline studies (Jensen et al. 2003). It could be argued that since the internet provides easy access to abundant price information and consumers can compare prices with greater ease in online environments, the effects of various pricing practices may be reduced or eliminated online.

While research in this field has been scarce, there is some evidence to support this notion. For instance, Jensen et al. (2003) in their study found that while reference prices are capable of inducing positive effects on price perceptions in offline environments, these effects may not be as strong for the internet channel . Similarly, Wolk and Spann (2008) found that the in the context of an online name-your-own price auction, the presence of a reference price decreases searches only to a limited extent and only when it is perceived as believable. In fact, if an exaggerated ARP was provided, it motivated consumers to search more. Their results also show that in online environments, an ARP does not increase purchase intentions, but can even decrease them.

Findings from the economics of information literature also provide evidence for the impact of information availability on pricing strategies. Evidence shows that the advent of the internet (and thus, price transparency) has made consumers more price sensitive (Lynch & Ariely, 2000; Ellison & Ellison, 2001), increased price competition and lowered prices (Ellison & Ellison, 2009; Morton, Zettelmeyer, & Silva-Risso, 2001; Brown & Goolsbee, 2002; Smith & Brynjolfsson, 2001).

However, the transparency and lowered search costs brought by the internet has not completely overthrown sellers' ability to use strategic pricing practices to influence consumers. As mentioned before, more complex pricing practices where information is not readily

comparable (and requires more effort), such as with drip prices, may still have an impact on consumers. This notion is supported by Xia & Monroe's (2004) study (reviewed in the section on Drip Pricing), which shows that partitioning prices on the internet may enhance purchase intentions, perceived value, and price satisfaction, and reduce intentions to search for further information. Similarly, Jensen et al. (2003) and Wolk & Spann (2008) found that the online environment *reduces* the influence of reference prices, but does not eliminate it.

Strong evidence on the ability of retailers to influence consumers online through strategic pricing practices also comes from another line of research. For instance, Baye, Morgan, and Scholten (2004) show that there is substantial price dispersion in online markets for consumer electronics. This is inconsistent with the notion that prices on the internet are converging to the 'law of one price'. In a review of the academic literature on the impact of shopbots (price comparison sites), Smith (2002) found that retailers, through various strategies, are often able to differentiate their products, leverage brand names, set strategic prices, and reduce the effectiveness of consumers search at shopbots. In the same vein, Ellison and Ellison (2009) show that retailers engage in obfuscation practices that complicate consumer search or make it less damaging to firms, resulting in much less price sensitivity on some products. They also find that common practices such as drip pricing, bait-and-switch, and complex pricing can be effective strategies in online environments.

Taken together, it is clear that while learning and transparency may reduce the effect of pricing practices it does not eliminate them, and certain practices may still cause consumer harm.

Conclusions:

- Consumers learn to associate products with prices implicitly and have memory based price benchmarks upon which they can base subsequent purchase decisions. These memory-based benchmarks *help* consumers decide whether deals they encounter are good or bad. Evidence suggests that in some conditions some pricing practices may be ineffective because consumers have enough information, based on past experience and memory.

- However, external pricing cues or practices put forward by sellers may still have significant influence on value perceptions and consumer behaviour, indicating that learning does not eliminate the impact of these practices; rather it reduces it under *certain circumstances*.

- It is important to establish under what conditions learning is likely to be least effective. While more research is needed to set clear parameters evidence suggests that the ability and accuracy of people to make value judgements based on past experience (learning)

will be influenced by the frequency of encounter with the item. In other words, learning is likely to have less impact with unfamiliar brands, and/or for infrequent buyers of a product (or product category). It is reasonable to assume that pricing practices that make it more difficult to compare benchmarks (such as partitioning or bundling) are less susceptible to learning effects and therefore more likely to influence consumer valuations and choices. However, this warrants further examination.

- The internet has brought several advantages for consumers in terms of readily available information and reduced search costs. As a result of this transparency, some markets have observed decreased prices. However, it is clear that retailers have reacted to this and have found ways to keep margins up without reducing costs. Retailers are able to use various pricing practices online to maximise consumer perceptions of value. Despite the pressure of price comparison sites retailers are able to differentiate their products through various obfuscation strategies, such as setting hard-to-compare prices, thereby reducing the effectiveness of consumer search at these sites. From a consumer welfare perspective, the internet may have provided some benefit. However, clearly this has not eliminated strategic pricing practices that may be detrimental to consumers. It is therefore important that regulators are up to date with and closely monitor these practices as they are likely to lead to consumer harm.

5. General Conclusion

The Office of Fair Trading launched a high profile study in October 2009 to assess the impact of different price advertising practices on consumer behaviour and welfare.

This review of the academic psychology and marketing literature suggests that a significant amount of research has been conducted to examine the effects of those pricing practices being studied by the OFT. Reference pricing, complex pricing, and drip pricing (in this order) have received the most amount of attention and the evidence is relatively consistent regarding their impact. Below are conclusions and recommendations for each of the practices:

- Partitioned prices: the evidence shows that partitioning prices does effect consumers in a significant and potentially harmful way. Accordingly, the various components of a partitioned price should be easy for the consumer to see and calculate. While this may not completely offset the psychological mechanisms that make partitioning 'work', consumers should at least be fully informed of the total price.

- Opt-in / Opt-out: the available evidence suggests that people tend to choose the default for decisions, even those with major, long-term consequences. The default effect may, therefore, be detrimental for consumers where an opt-out policy is used to get consumers to buy additional products they might not necessarily want or need.

- Reference prices: the evidence suggests that reference prices heighten consumer perceptions of value. However, they are, in many cases, legitimate mechanisms for firms to call attention to a reduction in the selling price of an item. The real danger for consumers from reference price advertising is when the reference price is factually inaccurate or misleading and this is where consumers need protection.

- The word 'free': there is insufficient available evidence on the use of the word 'free' to form firm conclusions about the effect on consumer decision making.

- Bait-and-switch: the available evidence suggests that bait pricing is likely to have a strong effect on consumer behaviour and has the potential to cause consumer detriment.

- Complex pricing: the available evidence suggests that bundled pricing has the potential to induce consumer purchase, as consumers consider the bundle represents extra value even if it does not.

- Time-limits: there is limited available evidence on time-limited offers, although related evidence on the effect of scarcity suggests time-limited offers should heighten consumer demand.

From a bottom-up, tactic-by-tactic perspective, there is a lot of evidence that these strategies work. It is, however, also clear that there are a range of variables that may moderate their effect. Specifically, multi-component products, products which are purchased infrequently purchased or have a relatively high ticket price, and new, novel, unique, or highly customised offers are most likely to lead to consumer detriment. Whereas unbundled, established or standardised offers on cheaper or more frequently purchased items are likely to be less susceptible to price manipulation.

There are also categories of people who are likely to be more influenced by some of the pricing practices discussed. For example, those over 50 are likely to value consistency in their decision making more than younger people and hence are more susceptible to bait pricing. Similarly, those who have a high need for information and understanding (cognition), appear to be influenced more by drip pricing. The evidence also suggests that pricing practices may be less effective in conditions where consumers are readily able to make memory based price comparisons, or have quick and easy access to price information, such as in online environments. On the other hand, pricing cues put forward by sellers both online and offline may still influence consumer behaviour, indicating that learning and/or easy access to information does not eliminate the impact of these practices.

Taken together, the academic psychology and marketing literature suggests that, under certain circumstances, the pricing practices reviewed here can have a substantial impact on consumer behaviour and valuations. This impact may be detrimental in certain circumstances. From a consumer welfare perspective, the use of some of these practices by retailers, where factually inaccurate or misleading, may certainly deserve close attention. Future research may also be beneficial for additional situation-specific conclusions.

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