

Price frames effect on consumer decision making



This Insight describes how assessing: (i) the prevalence of potentially misleading offers; and importantly (ii) their impact on consumer decision making can be important in relation to markets involving fast moving consumer goods (FMCG) using transaction data. We used a recent super-complaint by Which? to the CMA to motivate our approach. This Insight summarises our analysis.

Introduction

The way prices are presented (so-called price frames), as well as their levels, can affect competition and consumer welfare. This is because consumers take various 'short-cuts' when choosing between products and services. Price frames are used to inform those 'short-cuts'.

For example, consumers reasonably infer that a product is better value for money (per item) when it attracts a '2 for 1' offer than when it does not.

This is not a problem if such offers do represent better value for money, but it could be if offers are 'misleading'.

¹ See Which? (21 April 2015), "Which? super-complaint to the Competition and Markets Authority – Misleading and opaque pricing practiced in the grocery market."

Consumers taking short-cuts may not see through the offer and so could make poor decisions, distorting competition and reducing welfare.

Two questions need to be answered, to assess whether misleading offers actually distort competition and lead to consumer harm:

- is there a broad use of 'misleading' offers by the retailers in question?; and
- do consumers react to 'misleading' offers in the same way as they would to legitimate ones, i.e. is the promotional price frame effect over and above the price effect?

We describe how this can be done in relation to markets involving FMCG using transaction data, using the recent Which? super-complaint as motivation.

Overview of the Which? super-complaint

Which? claimed that supermarkets were misleading consumers by displaying¹: (i) potentially confusing and misleading special offers; (ii) not easily comparable unit prices; (iii) reductions in pack sizes without accompanying price reductions; and (iv) potentially complex and misleading price matching schemes.

The first issue raised by Which? - *confusing and misleading special offers* - relates to price framing issues. For example²:

- "Asda sold Andrex Bold and Bright toilet rolls for 49 days at the higher price of £2.24 and then on offer for 81 days at 'was £2.24 now £2'".

In its reply to Which?'s super-complaint, the CMA found that, in a limited number of cases, some pricing and promotional

² Ibid., page 11.

practices may be misleading and confusing consumers, and breaching consumer law³.

The CMA did not analyse how the prevalence of misleading offers affects consumer decision making and so the extent of any harm. We believe this is an important part of the analysis, because if consumers *see through* misleading offers, there is, in effect, no consumer harm. We discuss, below, how it can be done.

Assessing the effect of promotional price frames on consumer decision making

Our approach to analysing the impact of promotional price frames on consumer decision making rests on answering the following question:

» Do consumers react to promotional price frames over and above the price cut associated with them?

We used transaction data from mySupermarket on the toilet roll category to illustrate how this question can be answered. Which? cited toilet roll as a product where instances of misleading pricing practices had occurred, and as such we deemed this product category as fit for analysing the effect of promotional price frames on consumer decision making.⁴

Data

We used data for a single supermarket (anonymous) that covers:

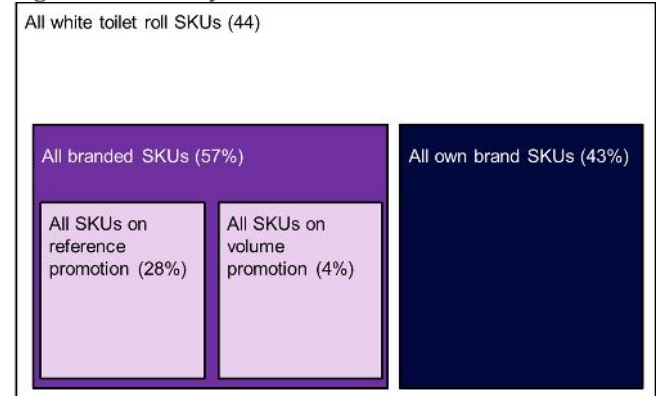
- the 104 weeks from the week beginning 27 June 2013;
- 77 unique products (SKUs); and
- ten 'brands', including the standard and discount own brand, plus Andrex, Cushelle, Inversoft, KittenSoft, Nouvelle, Sofcell, Velvet and a small 'unknown' category.

There are various potential 'segments' of the toilet roll market, for example in terms of quality, colour and enhancements such as moisturisers. We focused on standard quality white rolls without enhancements in our analysis.

Analysis

The data shows the prevalence of promotional price frames for branded products. The figure below summarises the promotional price frames for the week beginning 6 November 2014 across the white toilet roll category for our (anonymous) retailer.

Figure 1: Summary of results

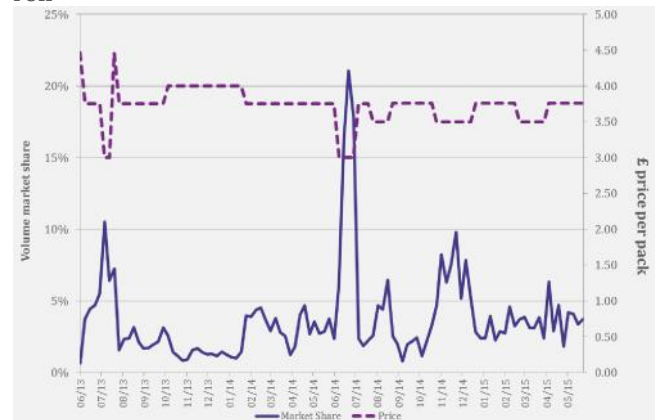


Source: mySupermarket data, Economic Insight analysis

18% (32% x 57%) of products were on offer and all of them were branded products. In the white toilet roll category reference price promotions are more widespread than volume offers – at 16% (28% x 57%) and 2% (4% x 57%) respectively.

As expected, the data also shows that a product's share tends to rise when the price falls (and vice versa). The figure below illustrates this with respect to a branded white toilet roll. As can be seen, a decrease (increase) in price (regardless of whether it is framed as a promotion or not) leads to an increase (decrease) in volume market share.

Figure 2. Market share and price for branded white toilet roll



Source: mySupermarket data, Economic Insight analysis

One cannot infer from the figure the effect of promotional price frames on volume market share over and above the price cut associated with them. The type of analysis described below can be used to do this.

Do consumers react to promotional price frames over and above the price effect?

We used statistical analysis to identify the drivers of volume market share for various white toilet rolls. Specifically, we sought to explain the volume market share of a product

³ See CMA (16 July 2015), "Pricing Practices in the Groceries Market – Response to a super-complaint made by Which? on 21 April 2015.", paragraph 1.8.

⁴ See Which? (21 April 2015), "Which? super-complaint to the Competition and Markets Authority – Misleading and opaque pricing practiced in the grocery market."

using: (i) its price and the prices of competitor products; and (ii) whether it is framed as a 'was-now' or volume promotion and/ or whether competitor products are framed as a 'was-now' or volume promotion.

The statistical analysis allows us to isolate the effects of price changes from the effects of promotional price frames.⁵ The results of our analysis show large and statistically significant price and promotional price frame effects, which we summarise below.

Price effects

The analysis shows a large and statistically significant relationship between the price of a product and its volume market share.

- » It shows that, on average, a 1% increase in the price of a given toilet roll reduces its volume market share by about 6% all other things equal.
- » Similarly, an increase in the price of competitor products causes an increase in a product's volume market share.

The results suggest that consumers are relatively responsive to changes in the prices of standard white toilet rolls, with a 1% increase in prices giving rise to a 6% reduction in volume market shares. This degree of price responsiveness is at the higher end of what would be typical for FMCG (figures of around 3-4% are fairly typical). Perhaps this responsiveness reflects the perceived similarity of standard white toilet rolls and the popularity of supermarket own brands.

Overall, this suggests that consumers buying via mySupermarket are responsive to price changes – and might also suggest that they might see through any potentially confusing and misleading special offers.

Promotional price frame effects

The analysis confirms that some promotional price frames have a large and statistically significant effect on buying behaviour, which is over and above the price cut associated with them.

- » It shows that 'was-now' promotions increase the market share of a product by around 60% all other things equal (i.e. in addition to any price changes).⁶ Based on the results cited above, this is equivalent to around a 10% relative price cut. Similarly, competitor 'was-now' promotions cause a reduction in a product's volume market share.
- » Volume promotions do not appear to have a statistically significant effect on buying behaviour. This could be because toilet rolls are bulky, limiting the willingness of

households to 'stock-up', or because volume offers occur relatively infrequently in the data.

These results show evidence of a promotional price frame effect (for 'was-now' offers). That is, consumers buying via mySupermarket buy more when a given price cut is accompanied by a 'was-now' promotional label than when it is not. It suggests that the consumers' buying behaviour is not driven exclusively by relative prices and product characteristics alone. One behavioural explanation for this pattern in the data is that consumers use the presence of a 'was-now' frame as an indicator of a product representing particularly good value at a point in time, irrespective of its price relative to its competitor prices – a kind of decision making short-cut, as discussed previously.

The implication is that, to the extent that a special offer is *misleading*, it may still attract attention and materially affect buying behaviour even if it is not really that special.

Conclusion

Price frames are prevalent everywhere - not only in grocery stores and supermarkets and as such there has been an ongoing interest in the role of price frames in the context of consumer welfare and competition policy.

The CMA has set a precedent with respect to the evidence required to "dig deeper" into price framing issues. As this Insight demonstrates, evidence based analysis will matter in understanding consumers' reactions, as well as prevalence of problems.

Economic Insight undertakes statistical techniques and analysis in order to assist clients involved in competition investigations.

⁵ Similar techniques are sometimes used in merger control to estimate own-price and cross-price elasticities of different brands.

⁶ For example, a product with a 10% market share increasing to 16%.

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