Terms of reference and conduct of the inquiry

Terms of reference

1. On 13 February 2013 the OFT sent the following reference to the CC:

1. In exercise of its duty under section 33(1) of the Enterprise Act 2002 ('the Act') to make a reference to the Competition Commission ('the CC') in relation to an anticipated merger the Office of Fair Trading ('the OFT') believes that it is or may be the case that –

(a) arrangements are in progress or in contemplation which, if carried into effect, will result in the creation of a relevant merger situation in that:

(i) enterprises carried on by or under the control of AG Barr plc have ceased to be distinct from enterprises carried on by or under the control of Britvic plc; and

(ii) the value of the turnover of the enterprise being taken over exceeds £70 million; and

(b) the creation of that situation has resulted, or may be expected to result, in a substantial lessening of competition within any market or markets in the UK for goods or services, including the manufacture and supply of carbonated and non-carbonated soft drinks.

2. Therefore, in exercise of its duty under section 33(1) of the Act, the OFT hereby refers to the CC, for investigation and report within a period ending on 30 July 2013, on the following questions in accordance with section 36(1) of the Act –

(a) whether arrangements are in progress or in contemplation which, if carried into effect, will result in the creation of a relevant merger situation; and
(b) if so, the creation of that situation may be expected to result in a substantial lessening of competition within any market or markets in the UK for goods or services.

Amelia Fletcher
Senior Director, Office of Fair Trading
13 February 2013

Conduct of the inquiry

3. On 14 February 2013 we posted on our website an invitation to express views about the merger. Non-confidential versions of the initial submissions were posted on our website.

4. On 11 March 2013 we posted on our website an administrative timetable for the inquiry.

5. We invited selected competitors and customers of AG Barr and Britvic to comment and fill out a questionnaire on the merger. We gathered oral evidence through hearings with selected third parties. Summaries of these hearings are on our website.

6. On 25 March 2013 we posted an issues statement on our website.

7. Members of the Inquiry Group, accompanied by staff, visited the AG Barr site at Cumbernauld on 12 March 2013 and the Britvic site at Lutterworth on 15 March 2013.

8. We received a joint written submission from AG Barr and Britvic and posted a non-confidential version on our website on 19 April 2013. We also held hearings with AG Barr on 25 April 2013 and Britvic on 26 April 2013 in separate sessions.

9. A non-confidential version of the provisional findings was placed on our website on 12 June 2013. We received no substantial responses to the provisional findings.

10. We would like thank all those who have assisted with our inquiry.

Interim measures

11. On 11 April 2013 we accepted undertakings offered by AG Barr and Britvic and published them on our website.

Industry background

Sales channels and customers

1. Soft drinks companies do not sell directly to end consumers. Each customer category typically buys a range of product types in large quantities at wholesale prices in a variety of package sizes for onward sale to the final consumer.

2. The two main sales channels have historically been known as the 'off-trade'—which describes soft drinks purchased from a retail outlet for consumption off the premises (eg bought in a supermarket as part of the weekly shop); and 'on-trade'—which describes soft drinks consumed on premises (eg in pubs or restaurants). These sales channels can be further segmented into subcategories to identify the various customers who purchase soft drinks for onward sale to the final consumer (eg grocery and impulse).

Sales channel 1: the off-trade

3. The larger of the two sales channels in value and volume is the off-trade channel. It has the lowest average retail price per litre of product, indicatively £1 per litre. In 2012 the off-trade represented around 65 per cent of the soft drinks market by value, and 91 per cent by volume.[1] The wholesale price achieved by the soft drinks producers is currently in the region of £[✂] per litre.

4. Off-trade customers include:

   (a) Supermarket multiples such as Tesco, Asda, Sainsbury's and Morrisons (collectively known as multiples, given the number of retail outlets they operate). The supermarkets are collectively the largest customers. The larger groups have extensive distribution networks to support their multiple outlets. Supermarkets are sophisticated buyers.

   (b) Cash-and-carry companies, such as Booker, Costco and Bestway. Cash-and-carry stores operate large warehouse-style facilities and serve small retailers (eg convenience stores). The retailers buy products in bulk, for onward sale in smaller quantities to final consumers. Some cash-and-carry companies offer delivery services for their customers and employ sales representatives to visit independent stores, whereas smaller customers pick up goods themselves.

   (c) High street and discount retailers including buying groups representing smaller independent stores (eg Confex, Landmark, Musgrave, Nisa, Spar and Today's). These groups seek to achieve better prices from suppliers by aggregating demand to place larger orders. AG Barr offers direct delivery to independent retailers (not part of buying groups) across Great Britain.

Sub-segments within the off-trade channel

5. The off-trade channel can be further segmented between take home and impulse. This is important because pack sizes offered differ between segments. For example:

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[1] CC analysis on Britvic Soft Drinks Review 2013.

(a) The take-home segment describes the weekly shopping segment of the off-trade, including various package sizes (eg multi-packs of cans and bottles, 1-litre cartons, and 2-litre PET bottles). The take-home segment value was £5.4 billion in 2012.[2]

(b) The impulse segment historically comprised convenience stores and petrol forecourts, but the supermarket multiples have increasingly focused on this market to grow their business. Supermarkets may stock soft drinks in both the traditional supermarket aisle as well as in front-of-store refrigerators. The impulse segment represents an attractive segment of the off-trade market, as product stocked in refrigerators can command a higher price, though is generally in individual packs (eg a 330ml can or a 500ml PET bottle). This segment represented £1.8 billion of retail sales in 2012.[3]

Private-label soft drinks

6. In addition to purchasing branded soft drinks, the multiples generally stock private-label (own-brand) soft drinks, which are sold alongside the branded products. In 2012, private-label sales of soft drinks represented 21 per cent of the UK off-trade market by value, £1.5 billion.

Sales channel 2: the on-trade

7. The smaller of the two major sales channels in terms of volume and value is the on-trade channel. This channel includes soft drinks sold by pubs and bars, hotels and fast-food restaurants, leisure outlets and canteens for consumption on the premises. In 2012 the on-trade channel represented around 35 per cent of the soft drinks market by value, however, it represented 9 per cent by volume.[4] Indicatively, the average retail price per litre in the on-trade market in 2012 was just under £5.40 per litre.[5]

8. According to Britvic, the on-trade channel is expected to [✂] within this channel food-led pubs are expected to [✂] and managed pubs [✂].

9. On-trade customers include:

(a) The managed pub chains represent the largest group. Managed pub chains, leased/tenanted pubs (eg Mitchells & Butlers, Whitbread).

(b) Wholesalers and other companies in the supply chain for a range of leisure and catering activities (eg Brakes, Matthew Clark).

(c) Fast-food restaurant operators (eg McDonalds, KFC).

(d) Cash-and-carry companies (eg Booker and Costco) mainly serve independent traders in both the on-trade and off-trade segments.

10. Some soft drinks companies provide ‘direct delivery’ to specific customer groups (eg large customers including pub chains and wholesalers), whilst a variety of wholesalers and distribution specialists operate as intermediaries between the soft drinks

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[2] Source: Britvic Soft Drinks Review 2013.
[3] Source: Nielsen.
[4] CC analysis on Britvic Soft Drinks Review 2013.
[5] CC analysis on Britvic Soft Drinks Review 2013.

supplier and the customer. For example, Britvic offers direct delivery to larger on-trade customers including pub chains, breweries and fast-food restaurants.

Draught (dispensed product)

11. In the on-trade segment, soft drinks may be mixed and dispensed using dispensers, whereby syrup from a 'bag-in-box' is mixed with carbonated water. In total, draught represents approximately 54 per cent of value (59 per cent of volume) of CSDs sold by pubs and clubs.[6] This is equivalent to 13 per cent of the total value of the soft drinks market in 2012, and 4 per cent of total volume.[7] Alongside draught, packaged products (eg bottles or cans) are stocked behind the bar. This represents 46 per cent of the on-trade value of the soft drinks market in 2012. Pub chains offer both draught and packaged products from a range of suppliers.

12. Typically, the dispensers offer a range of CSDs flavours, but are generally either within the CCE or the Britvic brand portfolios. AG Barr does not offer a dispenser but has a long-term distribution arrangement with both Britvic and Cabana (another soft drinks company) to enable AG Barr to offer IRN-BRU on draught in pubs in Scotland and north of England where there is demand.

Soft drinks product segments

13. We next consider the product segments for soft drinks.

14. The majority of soft drinks companies supply a range of brands and products to their customers. There are also some smaller companies that specialize in a particular product sub-segment (eg Red Bull in energy drinks, Innocent in fruit juices and smoothies[8]), however, most major manufacturers provide both carbonated and still products.

15. For the purposes of estimating market shares and sizes, the generally accepted market segmentation distinguishes at a first segment level between CSDs and still soft drinks; at a second level between sub-segments (eg cola, fruit juice/drinks, water); and at a third level between the various brands and private labels. The products are also supplied in a variety of pack sizes, and packaging materials vary (eg cans and bottles). The product categories are summarized in Table 2 below.

Carbonated soft drinks

16. The main types of CSDs are cola, fruit, and other flavoured drinks. Of these, cola remains the most popular CSD, with the two most popular brands—Coca-Cola and Pepsi (Britvic)—representing over 16 and 5 per cent respectively of total off-trade value and 20 and 15 per cent respectively of total on-trade value.

17. Popular fruit flavours include orange and lemon, including various types of lemonade. CSDs are generally flavoured with sugar (regular) or artificial sweeteners (diet, light or sugar-free). In recent years, a number of new subcategories have emerged, including energy drinks and sports drinks.

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[6] Source: Britvic Soft Drinks Review 2013. Note this does not include on-trade sales made by hotels or restaurants.
[7] CC analysis on Britvic Soft Drinks Review 2013.
[8] Note: In February 2013, CCE announced that it intended to increase its stake in Innocent above 90 per cent.

Fruit and non-fruit carbonates

18. AG Barr's IRN-BRU is categorized by Nielsen as a 'non-fruit flavour' CSD in the off-trade market data. However, for the on-trade market data supplied by CGA there is not a clear distinction between fruit and non-fruit CSDs.

19. According to the Nielsen market data for the off-trade segment, the total sales (based on wholesale prices) in the 'non-fruit' sub-segment were £168 million and the 'other fruit' sub-segment were £543 million, totalling £711 million. In relation to the on-trade, the market analysis provided by CGA does not distinguish between fruit and non-fruit carbonates. Its 'flavoured carbs' category (which excludes lemonade) represented £154 million sales.

20. According to the product classification applied by Nielsen to the off-trade market, the highest selling 'non-fruit carbonate' is IRN-BRU, representing £102 million sales out of a total category size of £168 million. The other AG Barr brands included in this segment are Barr's Originals and KA, totalling £7 million in retail sales.[9] In the 'fruit carbonate' market the highest selling products are Fanta, Dr Pepper, Sprite and Lilt (all CCE brands); CCE generated £252 million of retail sales in total from fruit carbonates.

Still soft drinks

21. The still soft drinks market comprises a number of sub-segments including fruit juice, fruit drinks, dilutes (squash), bottled water and milk products. According to CGA data on-trade revenue in the 12 months ending July 2012 was £3.9 billion.

22. In the off-trade, the largest type of still drink is fruit juice,[10] which represented £1.2 billion of sales (at retail prices) in 2012. The second largest is fruit drinks, which represented £673 million of sales. Bottled water (including still or sparkling water and flavoured water) was third largest, at £658 million. Dilute (or squash)[11] achieved sales of £500 million.

Competitive landscape

23. CSD companies typically offer a range of brands spanning multiple product sub-segments. The two largest global soft drinks brands are Coca-Cola and Pepsi Cola. The owners of these brands also market and distribute a broad range of other branded soft drinks.

24. The table below summarizes the relative scale of the global leaders, as well as other companies operating in the UK soft drinks market.

[9] KA is described as a 'Caribbean cola'.
[10] Fruit juice is a non-carbonated 100 per cent pure juice or juice blend and a fruit drink is a non-carbonated drink which may or may not contain fruit juice (juice content must be 99 per cent or less).
[11] A product that needs to be diluted with water before it is consumed.

TABLE 1 **Competitors and other benchmark companies**

Company	*Description*	*Country*	*Market cap (£m)*	*P/E current year*	*Sales (£m)*	*Gross margin (%)*	*EBITDA margin (%)*
Active in UK							
Coca-Cola Enterprises Inc	Coke bottler	USA	9,988	14	5,087	36	16
GlaxoSmithKline*	Pharma	UK	71,620	13	26,431	70	32
Red Bull	Soft drinks	Austria	Private	N/A	N/A	N/A	N/A
Danone	FMCG	France	33,475	17	16,930	50	9
Cott Corp	Bottler	Canada	936	15	1,420	13	9
JN Nichols	Soft drinks	UK	322	21	98.8	47	19
Other soft drinks							
Coca-Cola	Brand manager	USA	172,654	18	30,300	60	16
Coca-Cola Hellenic	Bottler	USA	7,609	23	5,715	36	12
Dr Pepper Snapple	Bottler	USA	8,882	14	3,783	58	22
PepsiCo	Brand manager	USA	116,897	17	41,335	52	18

Source: Bloomberg, 1 March 2013.

*On 24 April 2013 GSK announced that following a strategic review it had made a decision to pursue divestment of Lucozade and Ribena subject to the realization of appropriate value for shareholders.
N/A = Not available.

25. The principal brands in cola, fruit and non-fruit CSD sub-segments are summarized in the table below.

TABLE 2 **Widely recognized brands in the CSD market**

Soft drinks group	*Coca-Cola*	*Britvic*	*AG Barr*	*Other manufacturers*
Sub-segment:				
Cola	Coca-Cola	Pepsi	Barr	
Fruit carbonates excluding lemonade	Sprite Fanta Lilt Appletiser	7UP Tango	Orangina Tizer Barr	Vimto Schloer
Non-fruit carbonates	Dr Pepper		IRN-BRU	
Lemonade	Schweppes	R Whites		

Source: CC.

26. The off-trade sales of these products vary considerably, with Coca-Cola outselling its closest cola rival, Pepsi, by more than three times in the UK. However, in the on-trade the market shares of Pepsi and Coca-Cola are similar.

Soft drinks business models

27. The soft drinks business model can be broadly segmented into three stages—brand development and management; manufacturing; and distribution. Soft drinks companies may be vertically integrated through all stages or may specialize in one or more stage. For example, a soft drinks company may market and manufacture its own-brand products and also manufacture branded products under licence or franchise.

Brand development and management

28. Soft drinks such as Coca-Cola and Pepsi are among the most widely recognized consumer brands in the world, and their respective trademarks have been developed and protected over many decades.

29. The development, promotion and protection of soft drink brands are managed by brand owners. There are many other well-known brands across the soft drinks markets, with regional or local recognition. For example:

(a) AG Barr owns IRN-BRU, a non-fruit CSD; Rubicon, Barr's Originals, D'N'B, KA and Tizer CSDs; Strathmore water and St Clements; and

(b) Britvic owns Robinsons, Fruit Shoot and J20, each of which is in the non-CSD sub-segment, as well as R Whites lemonade and Purdey's.

30. A key objective of the brand manager is to develop and promote new brands or product segments and support sales via advertising, sponsorship and marketing activities.

Manufacturing

31. Soft drinks are sold in various package sizes. In the off-trade these include 330ml cans and PET bottles (eg 500ml, 2-litre), cartons (eg for juice) and glass bottles. In the on-trade there is also draught solution—whereby the soft drink is supplied in a syrup form contained in a package (bag in box) which is mixed with carbonated water in a dispenser (also referred to as a 'fountain') to serve the drink at the point of sale.

32. Manufacturing and packing is carried out in highly automated production lines. Packing lines are dedicated to a single package type (eg 330ml cans or 2-litre PET bottles) but it is possible to change the CSD product (eg from cola to orange CSD) with a temporary halt in production.

33. Soft drinks manufacturers generally seek to maximize the utilization of their production facilities by operating them 24 hours a day, 7 days a week, with minimal downtime for maintenance or production changes.

34. A single manufacturing facility may contain multiple production lines to facilitate production of a range of package sizes from the same location (eg co-location of cans and bottles). This enables the supplier to provide a variety of package types to an individual customer, and can therefore improve efficiency (eg to provide a single delivery of multiple package sizes to an individual customer).

35. Manufacturing and packing takes place in multiple locations in Great Britain. For example:

(a) CCE has six Great Britain manufacturing plants each of which has a number of manufacturing lines dedicated to producing products in various pack sizes.[12]

(b) Britvic has six UK manufacturing plants with between one and eight production lines each.[13] Some facilities specialize in PET, whilst others offer a variety of pack types. In addition, Britvic has a national distribution centre in Lutterworth.

(c) AG Barr has four manufacturing plants in the UK (three in Scotland and one in Wales)[14] and is constructing a fifth site at Magna Park in Milton Keynes. This is a 75,000 sq ft production centre and 150,000 sq ft warehouse facility. It is expected to be operational in the late summer of 2013 and will initially support a canning

[12] East Kilbride, Edmonton, Milton Keynes, Sidcup, Wakefield and Morpeth.
[13] Beckton, Huddersfield, Leeds, Norwich, Rugby and Widford.
[14] Cumbernauld, Forfar, Tredegar and Pitcox.

production facility and warehousing, with subsequent PET capacity planned to be installed at a later date.

36. The cost of building a manufacturing facility is several million pounds. For the Milton Keynes site [✂].

37. In some circumstances it is commercially attractive to use packing capacity in Continental Europe (eg the Netherlands and Germany), for example, for specialist packaging types (such as aseptic glass bottles).

38. In 2012, external packing represented [✂] per cent of AG Barr's total production.

39. A number of companies provide packing on a contract basis only. For example, in the past three years, AG Barr has contracted with [✂] contract packing companies for a variety of reasons and package types. Britvic has also used third party packing, [✂].

Manufacturing and distribution under licence

40. Manufacturing and distribution under licence (or franchise) from a brand manager is a long-established business model in the soft drinks industry. For example:

(a) Britvic is the exclusive bottler and distributor of Pepsi brands in the UK. Under the long-term agreement with Pepsi, Britvic buys concentrated syrup from PepsiCo and participates in joint marketing programmes and initiatives. Syrup forms part of Britvic's cost of goods sold. Britvic is responsible for all other activities in relation to the sales, customer marketing and distribution of these brands in the UK.

(b) AG Barr is a franchisee of the Orangina Schweppes Group[15] in the UK, where AG Barr manufactures and sells Orangina products under licence. AG Barr also has a franchise arrangement with Rockstar, Inc to sell and distribute Rockstar energy drinks throughout the UK and Ireland.

(c) Coca-Cola Enterprises, Inc (CCE) is the world's third-largest independent Coca-Cola bottler. CCE is the sole licensed bottler for products of The Coca-Cola Company in Belgium, Continental France, Great Britain, Luxembourg, Monaco, the Netherlands, Norway, and Sweden. There are several Coca-Cola bottling companies around the world, some of which are listed companies. CCE is an independently owned, separate entity from The Coca-Cola Company, the world's largest soft drink company, which is listed and traded on the New York Stock Exchange under the ticker symbol 'KO'.

Private-label manufacturing

41. As described in paragraph 6, the retail multiples also supply private-label soft drinks. Companies such as Cott Beverages specialize in the supply of private-label soft drinks to the multiples.

Distribution

42. In order to address demand patterns (eg seasonality) and avoid shortages, production is stored in a warehouse for onward shipping to customers. Storage may be co-

[15] Orangina Schweppes is part of the Suntory Group.

located with the manufacturing plant or on a separate site. Distribution is then carried out by in-house or third party logistics providers, via a vehicle fleet.

Quantitative assessment of final consumer preferences and their impact on the merger

Introduction

1. Our first theory of harm is based on the theory of unilateral effects in differentiated goods markets where competition is in prices. When the price of a good in such a market is increased, some consumers switch to other goods. If firms that produce sufficiently close substitutes merge, some of that diversion is captured by the merged firm. This means that increased prices post-merger will attract a profit increment that they did not incur pre-merger, and this additional profit represents the unilateral incentive to raise prices as a result of the merger.

2. This appendix describes the empirical work we have done to estimate the size of the unilateral incentive to raise prices as a result of the merger. The procedure we follow, in summary, is to:

   (a) estimate diversion ratios econometrically (and compare them to estimates based on survey responses); we are principally interested in the diversion from IRN-BRU to Britvic brands;

   (b) estimate the margins of the goods to which consumers divert;

   (c) make assumptions about the nature of consumers' demand as prices are increased; and

   (d) infer the theoretically optimal price rise after the merger based on a simplified representation of competition in the market and use the statistical properties of the econometric estimation to estimate confidence intervals around the prediction. Our methodology is explained in Annex 4.

3. The Appendix also considers the evidence derived from the consumer survey in Annex 3. Although we have some reservations about the survey, we conclude that it is informative and contributes to our overall assessment of consumer behaviour.[1]

Introduction to demand estimation

4. The demand estimation is motivated by the need to come to a view about the substitutability between different products. In particular, we can estimate the own- and cross-price elasticities of the major CSDs. In particular, we are interested in the:

   (a) own-price elasticity of IRN-BRU: X, where X is defined as the percentage change in IRN-BRU volume of sales when the IRN-BRU price rises by 1 per cent; and

[1] The parties offer an additional source of evidence on consumer behaviour and its constraint on IRN-BRU pricing—[✂]. The parties have shown that when [✂] made all Britvic CSDs unavailable in its [✂], there was no discernable impact on IRN-BRU sales. We note that this is consistent with the survey evidence which showed just [✂] per cent diversion from Pepsi to IRN-BRU when respondents were asked what they would do if Pepsi were not available. The actual [✂] and the hypothetical survey question seem to be consistent. The parties argued that this provided information about the extent to which Britvic's portfolio constrains IRN-BRU. The constraint on IRN-BRU pricing comes from the impact on Pepsi volumes of changes in the price of IRN-BRU. However, the [✂] did not change the price of IRN-BRU. Moreover, we have seen no evidence that the IRN-BRU to Pepsi diversion and the Pepsi to IRN-BRU diversion are symmetric. Our demand modelling work (see Appendix C, Annex 1) provides evidence that they are not symmetric. We therefore reject the parties' argument that the [✂] episode provides information for the IRN-BRU to Pepsi diversion.

(b) *cross-price elasticity of Pepsi with respect to IRN-BRU:* Y, where Y is defined as the percentage change in the Pepsi volume of sales when the IRN-BRU price rises by 1 per cent.

5. These elasticities allow us to compute the diversion ratio from IRN-BRU to Pepsi:

> Diversion ratio (IRN-BRU to Pepsi) = ((Cross-price elasticity of Pepsi with respect to IRN-BRU)/(Own-price elasticity of IRN-BRU)) × (Volume of Pepsi/Volume of IRN-BRU)

6. In the following sections, we first outline the economic model and the econometric specification. After that, we describe the data sets used and the main econometric results. We then discuss the limitations of the analysis and the comments made by the parties on an earlier version of the analysis. The technical details of our model and estimation results are set out in Annexes.

Theory and econometric specification

7. In this section, we briefly describe the economic model that provides the framework for our econometric specification, before describing the model's econometric specification.

Economic model

8. Our model assumes that households decide to allocate their disposable income on a large range of goods, of which the drinks market is just one. We assume that CSDs are a separate market within soft drinks and that consumers do not substitute CSDs with non-CSDs. This market segmentation is consistent with the parties' submissions and those of third parties. In paragraphs 42 to 44 we discuss the implications of relaxing this assumption.

Econometric specification

9. Following Deaton and Muellbauer (1980), our economic model gives rise to an 'Almost Ideal Demand System'.[2] We estimate this system on different data sets of the multiples and impulse chains.

10. The AIDS system has two main desirable properties. First, even if the actual demand framework does not constitute an AIDS system, it is nevertheless likely to be adequately approximated by an AIDS system.[3] Second, the AIDS system can be derived by aggregating the demands of individual consumers. The AIDS system can therefore be used to estimate demand for a 'representative consumer' using aggregated data.[4]

11. The AIDS system does not restrict the cross-price elasticities to be positive. Indeed, the literature usually finds some negative (and statistically significant) cross-price

[2] Deaton, A, & Muellbauer, J (1980): An Almost Ideal Demand System, *The American Economic Review*, 70(3), 312–326.
[3] Hausman & Leonard (2005): Competitive Analysis Using a Flexible Demand Specification, *Journal of Competition Law and Economics*, vol 1, issue 2, p25. Cited after Deaton and Muellbauer supra note 10, at 312.
[4] ibid, p26. Cited after Deaton and Muellbauer supra note 10, at 312.

elasticities.[5] The overall results are commonly still regarded as sensible if the number of negative cross-price elasticities is not too large.[6]

12. Our model aggregates individual household expenditures on the different brands within the CSD segment. We then examine how the Great-Britain-wide aggregate expenditure share for each brand in the CSD segment varies with its own price and the prices of the potentially competing brands. We expect the own price to affect the expenditure share of product *i* negatively, whereas the competitor drinks' prices should affect the expenditure share of product *i* positively (if brands are substitutes).

13. In our baseline specification, we pool the time series of different multiples together. This assumes that consumers do not switch between multiples in response to price changes. In paragraphs 36 to 37 we discuss the potential effects of this assumption.[7] The estimated parameters allow us then to construct price elasticities.[8]

14. In the following, we describe the key choices that lead to our econometric specification:

(a) Aggregation and averaging

(i) *Brand versus individual products.* A given brand typically offers a large number of different products (often referred to as stock-keeping units (SKUs)). These SKUs differ by bottle/can size, package size and flavour/ sugar content. We must apply some form of aggregation over different product characteristics because it is not technically feasible to estimate a demand system at the SKU level. In our baseline specifications, we therefore aggregate expenditure shares and average prices over all SKUs of a given brand.[9]

(ii) *Selection of brands.* We incorporate all SKUs of brands with at least a 1 per cent share of total CSD value sales in 2011 in our estimations: Coca-Cola, Dr Pepper, Schweppes, Relentless, Red Bull, Pepsi, 7UP, Tango, Lucozade and IRN-BRU. This is consistent with the approach taken by the parties in their initial submission. Annex 1 contains a discussion of the brands not included into the model.

(iii) *Price indices.* For a given brand, we calculate a weighted average price over all SKUs at each point in time, using time-invariant expenditure share weights. For example, the price of IRN-BRU at time t is calculated as $P_{IRN\text{-}BRU,\ t} = \sum_j w_j * p_{jt}$, where w_j is SKU j's share of expenditure on IRN-BRU over the whole time period used for the estimation and P_{jt} is the price of SKU j at time t. We have chosen time-invariant weights in order to avoid spurious variation in the price indices, ie variation that does not reflect actual price changes but changes in volumes/product mix.[10] It should be noted that each price index has its advantages and disadvantages and that it is difficult to

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[5] ibid, pp31/32.
[6] To evaluate whether this number is large, one can compare it against the overall number of estimated cross-price elasticities or the number of cross-price elasticities that are positive and statistically significant.
[7] Specifically, we estimate the following equation (explanations of variables are contained in Annex 2):

$$\Delta w_{ift} = \alpha_i + \sum_j \gamma_{ij} \Delta lnp_{ift} + \beta_i \Delta lne_{ft} + \theta_i \Delta month_t + \Delta \varepsilon_{ift}$$

[8] The uncompensated price elasticities (which contain both substitution and income effects) are derived following Green and Alston (1990). The details of the elasticities are contained in Annex 2.
[9] As a robustness test of this aggregation, we have implemented our model on one of the available data sets on the 2-litre bottles segment only.
[10] When two SKUs are priced differently, but the prices remain stable over time, one would still observe variation in a price index based on time varying weights if relative volumes vary over time.

determine the 'best' price index for a given model and data.[11] Therefore, we have also implemented our models with time varying expenditure weights as a robustness test (see paragraph 32).

(iv) *Frequency of the observations.* All available data sets report sales and volumes at a weekly frequency and we have implemented our models on this frequency. An alternative approach would be to aggregate the data set at a lower frequency, eg monthly (see paragraph 32).

(v) *Panel data vs separate time series.* We have implemented our model on both pooled time series of the different multiples/impulse chains and separate time series by retailer.[12] Data sets containing information on several retailers are more representative than those that contain data of a specific retailer only. We therefore regard the estimation results on pooled data sets as more reliable than those on separate time series of single retailers.

(b) Variables in first differences vs variables in levels. We estimate our model in first differences in order to account for possible serial correlation.[13]

Data

15. We received EPOS scanner data on sales and volumes (in litres) by SKU for CSDs from the data providers Nielsen and Litmus. In addition, we obtained EPOS scanner data from the multiples Tesco and Co-op. In this section, we first provide an overview over the main features of these data sets (source, time dimension, fascias and regional coverage). We then provide summary statistics. Our treatment of gaps in the SKU level price series and the procedure applied to clean SKU names are described in Annex 4.

16. Table 1 describes the main features of our data sets.

TABLE 1 **Description of the data sets**

Source	*Time*	*Retailers*	*Region*
Nielsen Scantrack	2010–2013, 156 weeks	Asda, Waitrose, Co-ops, Morrisons, Tesco Express, Tesco Extra, Tesco Metro, Tesco Superstores, Sainsbury Local and Sainsbury Superstores	GB
Nielsen Scantrack	2010–2013, 156 weeks	Aggregated over impulse chains	GB, Scotland
Litmus impulse	2010–2013, 156 weeks	BP, Esso, Londis, McColls, Mulhurst Pace, Shell, Total, WH Smith High Street, WH Smith Travel and Welcome Break	Scotland
Tesco	2011–2012, 104 weeks	Tesco Express, Tesco Extra, Tesco Metro and Tesco Superstores	Scotland
Co-op	2011–2013, 114 weeks	Co-op Convenience, Co-op Mainstream, Co-op Premium and Co-op City	Scotland & Northern Ireland

Source: CC analysis.

[11] For a discussion on this, see Davis and Garces (2010), p244.
[12] Pooled data sets contain the data of various retailers, whereas separate time series consist only of data from a single retailer (eg Tesco).
[13] Regression diagnostics show that our first difference equations do not exhibit serial correlation.

17. The following tables contain summary statistics (arithmetic mean and standard deviation) on the expenditure shares and prices per litre by brand (all numbers are rounded to the second decimal point, so some of the statistics take values of zero).[14]

18. Table 2 shows that IRN-BRU has the second highest mean expenditure share in the Scottish data sets and that Coca-Cola has the highest the mean expenditure share across all data sets.

19. Table 3 shows that prices per litre are lower in the multiples compared with impulse chains, which may partly reflect differences in product mix (smaller-sized cans/bottles at the impulse chains compared with the multiples). Moreover, the table also shows that energy drinks are more expensive than non-energy drinks, which may again partly be explained by different bottle/can sizes.[15]

TABLE 2 **Expenditure shares by brand**

expenditure share

	Nielsen Scantrack/GB		*Litmus/Scotland*		*Tesco/Scotland*		*Co-op/Scotland & NI*	
	Mean	*Std dev*	*Mean*	*Std dev*	*Mean*	*Std dev*	*Mean*	*Std dev*
IRN-BRU	0.03	0.02	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Pepsi	0.14	0.06	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Tango	0.01	0.01	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
7UP	0.02	0.01	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Lucozade	0.11	0.03	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Coca-Cola	0.49	0.07	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Dr Pepper	0.03	0.01	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Schweppes	0.08	0.05	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Monster	0.02	0.01	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Relentless	0.02	0.01	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Red Bull	0.05	0.01	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CC analysis and data sources as specified.

TABLE 3 **Prices per litre by brand**

price per litre

	Nielsen Scantrack/GB		*Litmus/Scotland*		*Tesco/Scotland*		*Co-op/Scotland & NI*	
	Mean	*Std dev*	*Mean*	*Std dev*	*Mean*	*Std dev*	*Mean*	*Std dev*
IRB-BRU	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Pepsi	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Tango	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
7UP	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Lucozade	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Coca-Cola	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Dr Pepper	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Schweppes	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Monster	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Relentless	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Red Bull	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CC analysis and data sources as specified.

[14] Given national pricing and similar expenditure shares by brand across the different store formats, we have aggregated all Tesco sales and volumes (in litres) as well as all Sainsbury's sales and volumes (in litres). That is, we have aggregated the sales and volumes of Tesco Express, Tesco Metro, Tesco Extra and Tesco Superstores into a single time series. Similarly, we have aggregated the sales and volumes of Sainsbury's Local and Sainsbury's Superstores into a single time series. The same procedure was applied to the different Co-op formats (City, Convenience, Premium and Mainstream).

[15] However, as we believe the market to be CSD wide, we include them into our model.

Econometric results

20. We divide our estimations into two groups. The first group contains the estimations that we implement on data sets that pool the time series of the different multiples/ impulse chains together (Nielsen Scantrack, Tesco and Co-op) and Litmus impulse data sets). That is, the Nielsen Scantrack data set contains the expenditure shares and corresponding prices of the six different multiples; similarly, the Litmus impulse data includes the expenditure brands and prices of the ten different impulse chains.

21. The second group consists of the estimations that we implement on data of individual retail chains, eg Tesco. Compared with the first group, these estimations are based on less representative data sets and we therefore did not put as much weight on these results in our assessment of the merger.

Pooled data sets

22. We implement our model on the following three pooled data sets: the Nielsen Scantrack (Great-Britain-wide) data set, which consists of 936 observations (156 weeks × 6 fascias); the pooled Tesco (Scotland) and Co-op (Scotland & Northern Ireland) data sets, which contains 218 observations (104 weekly observations of Tesco and 104 of Co-op);[16] and the Litmus impulse (Scotland) data set that contains 1,560 observations (156 weeks × 10 fascias).[17]

23. Table 4 gives an overview of the estimation results. The table states the data source, the own-price elasticity of IRN-BRU, the cross-price elasticities between the Britvic brands and IRN-BRU, and the resulting diversion ratios from IRN-BRU to the Britvic brands.[18]

TABLE 4 **Estimation results on pooled data sets**

Data set	*IRN-BRU own-price elasticity*	*Cross-price elasticity Pepsi volume—IRN-BRU price*	*Cross-price elasticity Tango volume—IRN-BRU price*	*Cross-price elasticity 7UP volume—IRN-BRU price*	*Diversion from IRN-BRU to Britvic (%)*
Nielsen	[✂]***	[✂]	[✂]	[✂]	[✂]
Litmus/Scotland	[✂]***	[✂]**	[✂]**	[✂]***	[✂]
Tesco & Co-op/ Scotland	[✂]***	[✂]	[✂]	[✂]	[✂]

Source: CC analysis.

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.01.

24. Table 4 shows that there are no statistically significant cross-price elasticities between the Britvic brands and IRN-BRU on the Nielsen (Great-Britain-wide) and Tesco & Co-op (Scotland and Northern Ireland) data sets. This implies that there is no statistically significant diversion ratio from IRN-BRU to Britvic brands when we analyse these data sets. By comparison, the results for the Litmus data set suggest that a 1 per cent increase in the price of IRN-BRU is associated with statistically significant increases in Pepsi, Tango and 7UP volumes of [✂], [✂] and [✂] per cent

[16] The database that we received from Co-op does not separate out Scotland from Northern Ireland. However, given Co-op's stronger presence in Scotland compared with Northern Ireland, this data can still be regarded as a mostly Scottish data set.
[17] To the extent that the prices and expenditure share series are similar among the WH Smith (WHS) store types, this approach may give too much weight to WHS in the estimation. In addition, the error terms among the different WHS store types may be correlated. An alternative approach would therefore be to aggregate sales and volumes (in litres) over the different WHS store types. The Stata code used to implement the model on the Litmus data was written by the parties.
[18] Estimated diversion ratios are only presented if they are statistically significantly different from zero (at least at the 10 per cent level). Asterisks indicate the strength of the statistical significance.

respectively. This implies statistically significant diversion ratios from IRN-BRU to Pepsi ([✂] per cent), Tango ([✂] per cent) and 7UP ([✂] per cent).[19]

25. The complete elasticity matrices are contained in Annex 3. In summary, these tables show that:

(a) all own-price elasticities are negative and statistically significant;[20]

(b) there are relatively low ratios of (statistically significant) negative to (statistically significant) positive cross-price elasticities; and

(c) substitution effects are present where one would expect them a priori (positive and statistically significant cross-price elasticities between Pepsi and Coca-Cola (and vice versa)).

26. In addition, it also appears sensible to us that the results show systematic substitution patterns between the energy drinks (Monster, Relentless and Red Bull) and often a less elastic demand for Coca-Cola compared with the other brands (according to the point estimates), which may reflect Coca-Cola's brand strength.

27. Finally, comparing the results on the Scottish data sets (Litmus, and Tesco and Co-op) show that the price of IRN-BRU has a statistically significant impact on the volumes of several competing brands, while there was only one such effect in the estimation on the Great-Britain-wide data set (Nielsen).[21] This appears to be sensible, given IRN-BRU's much stronger presence in Scotland compared with Great Britain wide.

Data sets of single retailers

28. Table 5 gives an overview of the estimation results on data sets of single retailers.

TABLE 5 **Estimation results on data sets of single retailers**

Data set	*IRN-BRU own-price elasticity*	*Cross-price elasticity Pepsi–IRN-BRU*	*Cross-price elasticity Tango–IRN-BRU*	*Cross-price elasticity 7UP–IRN-BRU*	*Diversion from IRN-BRU to Britvic (%)*
Tesco Scotland	[✂]***	[✂]**	[✂]*	[✂]	[✂]
Tesco England & Wales	[✂]***	[✂]	[✂]	[✂]	[✂]
Co-op Scotland & Northern Ireland	[✂]***	[✂]	[✂]**	[✂]**	[✂]

Source: CC analysis.

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.01. Diversion ratios are only shown where these are statistically significant.

29. Table 5 shows that there are no statistically significant cross-price elasticities and accordingly no statistically significant diversion ratios between the Britvic brands and

[19] In the estimations on Nielsen and Litmus data, we cluster standard errors by fascia to account for serial correlation. Due to the low number of clusters, the resulting standard errors may be underestimated. In addition, the clustered standard errors do not take account of potential between-fascia correlation of the error terms. In the estimation on Tesco and Co-op data, we use Newey West standard errors with lag length of 4 according to the rule of thumb presented in Greene (2008): *Econometric Analysis*, p643.

[20] This may be qualified to the extent that on the Litmus data, the estimated parameter on the Schweppes price in the Schweppes share equation is not statistically significant (p-value of 0.34), suggesting that the estimated own-price elasticity of Schweppes is partly imposed by the model in this specific instance.

[21] Leaving the negative effect on Schweppes aside.

IRN-BRU on the Tesco (England and Wales) data set.[22] By comparison, the results for the Tesco Scotland data set suggest that a 1 per cent increase in the price of IRN-BRU is associated with a statistically significant increase in Pepsi and Tango volume of [✂] and [✂] per cent respectively. This implies diversion ratios from IRN-BRU to Pepsi and Tango of [✂] and [✂] per cent respectively. Moreover, the results on the Co-op (Scotland and Northern Ireland) data set show diversion ratios from IRN-BRU to Britvic brands of [✂] per cent.[23]

30. The elasticity matrices for all data sets are contained in Annex 3. In summary, these tables show:

(a) relatively high ratios of (statistically significant) negative to (statistically significant) positive cross-price elasticities and sometimes implausibly high diversion ratios;[24] and

(b) that Coca-Cola is the closest competitor to Pepsi, but not the other way around.

31. These estimations are based on less representative data sets than the pooled data sets. In addition, the high ratio of negative to positive cross-price elasticities suggests that the model may not perform as well. For these reasons, we did not put as much weight on these results in our assessment of the merger.[25]

Methodological issues

32. We have identified some limitations of our estimation methodology, which we have taken into account in our overall assessment of the results of this analysis. In this section, we assess as far as possible their significance and describe how we have dealt with them. In particular, we set out our views regarding the influence that these limitations may have on the estimated parameters and note that in general, in multivariate environments it is not straightforward to determine the effects of econometric limitations.

Omitted variables

33. The expenditure shares can be affected by factors that are unobservable to the econometrician and thus are not included in the analysis, eg in-store advertising.

34. For example, in-store advertising may be correlated with the own price and prices of the substitute goods. If price promotions are accompanied with 'feature and display' advertising, then the own-price elasticity may be overstated (ie it may be too negative). The Nielsen Scantrack (Great-Britain-wide) data contains information about the percentage of sales that was made on 'feature and display' promotions. In principle, this information could be used to construct control variables for in-store advertising.

35. In their reply to an earlier draft of this appendix, the parties stated that the model may suffer from the omission of temperature. It is not immediately clear why this should be the case, as the dependent variable is the expenditure share of a brand (and not

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[22] In all estimations, we use Newey West standard errors with lag length of 4 according to the rule of thumb presented in Greene (2008): *Econometric Analysis*, p643.
[23] Specifically, the diversion ration from IRN-BRU to 7UP is estimated at [✂] per cent. Because of the small Tango volumes at Co-op, the diversion ratio from IRN-BRU to Tango is [✂].
[24] In the estimation on Tesco England and Wales, the estimated diversion ratios from IRN-BRU to Schweppes and Dr Pepper exceed 100 per cent.
[25] For the same reasons, we do not give any weight to separate estimations by store format (Express, Metro, Extra and Superstores).

litres sold). Moreover, the monthly dummy variables, which are included in the model, are likely to capture potential temperature effects. Nevertheless, we included temperature variables as controls into our two main estimations (Nielsen Scantrack (Great-Britain-wide) and Litmus impulse (Scotland)) as a simple robustness test.[26] The estimated effects of these variables in the IRN-BRU, Pepsi and Tango share equations are usually insignificant.[27] Moreover, inclusion of these variables does not change the other parameter estimates not significantly. This indicates that our results are robust to in-/exclusion of temperature variables as controls.

Model restrictions—switching between stores

36. The model does not take into account that consumers may to some extent substitute between multiples to take advantage of promotions. Although such consumer behaviour is not impossible, it is debatable how significant it will be, especially between impulse chains, because of the strong presence of petrol stations in this segment (where the main purpose is buying petrol and not soft drinks).[28]

37. If consumers do switch between multiples, and promotions across multiples do not take place at the same time, then the model may overstate both the cross- and own-price elasticities (in absolute value).[29]

Short-run buying elasticity versus long-run consumption elasticity

38. The model is estimated on weekly data. The argument for using weekly prices is that they reflect consumer prices better. However:

    (a) producers do not price on a weekly basis; and

    (b) some consumers may react to promotions by building up inventories.

39. If there are inventory effects, then the estimated short-run elasticities may overstate the long-run consumption elasticities (which may be more relevant for antitrust analysis).

40. One way to account for possible inventory effects is to estimate the model at a lower frequency, eg on monthly data. However, in addition to reducing the sample size, this comes at the cost of possibly averaging out a significant part of the within-month price and volume variation that is not related to stocking-up effects.

41. The parties supplied us with evidence which identified stocking effects following promotional periods. Although it was not clear which brand or what sort of promotion was involved, the inventory effect was small. In our view, this suggests that any inventory effects are unlikely to bias our results significantly.

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[26] For the model on the Nielsen Scantrack (Great-Britain-wide) data, we included the mean daily maximum temperature at Heathrow weather station. For the model on the Litmus impulse Scotland data, we included the same variable collected at Paisley weather station. See www.metoffice.gov.uk/climate/uk/stationdata/ (29.5.2013).
[27] One exception is the IRN-BRU share equation on the Litmus impulse (Scotland) data set. Here, temperature has a positive effect on the dependent variable (statistically significant at the 10 per cent level).
[28] Similarly, we would not expect a large number of consumers who buy small packs (ie single cans or bottles) for immediate consumption (eg people on their commute to work or leisure activities) to switch between impulse chains.
[29] One way to account for possible switching between stores is to aggregate sales and volumes over the different multiples. However, the higher the aggregation, the more one departs from the actual prices that consumers face.

Inclusion of additional brands/switching to another segment

42. The estimated model treats the carbonated drinks as a separate market, ie it assumes that consumers do not change their total expenditure on carbonated drinks in response changes in prices of carbonated and other drinks. There is some qualitative evidence that supports this view.

43. If consumers significantly decrease their total CSD expenditure when prices increase, or if they substitute to drinks outside CSDs, then the own-price elasticities may be biased towards zero and the cross-price elasticities may be overstated.

44. We note that one way in which it may be possible to account for switching from and to drinks outside CSDs would be to set up a multi-budgeting model, in which a 'top-level' equation is specified to estimate the substitution patterns between CSDs and non-CSDs.[30] We have not been able to implement this approach and have taken this possible limitation into account in our overall assessment of the results.

Price exogeneity

45. Firms' pricing decisions depend on factors that affect demand but are unobservable to the econometrician. We may expect that companies would increase prices when they experience high demand conditions for their brands. This would mean that goods would appear less elastic than they actually are.[31]

46. The likely bias in the cross-price elasticities depends on the correlation of prices.

47. However, we have received evidence suggesting that promotions at the multiples are set well in advance and hence prices do not respond to short-term demand shocks. Given that most price variation seems to be caused by promotions, we believe that the model should not suffer significantly from this limitation.

Reply to the parties' comments

48. The parties have submitted comments on an earlier version of this analysis. The parties stated that our analysis may be biased because of *(a)* the use of time-invariant weights in the price index and *(b)* a simultaneity bias. We discuss these statements in this section.

'Bias due to the use of time-invariant weights in price index'

49. The parties identified four areas of concern related to the use of time-invariant weights in the price index.

50. First, the parties stated that 'A basic problem with using time invariant weights is that this may give rise to a measure of price that is not a good reflection of the actual price at which consumers are purchasing the brand in any given week'. To support this statement, the parties constructed a hypothetical example in which time-invariant weights led to an average price of £0.75 (in all weeks), whereas the actual price was £0.5 (in all weeks). According to the parties, using time invariant weights could therefore be 'misleading'. We agree with this point in the general case, but note that

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[30] See, for example, Hausman et al (1994): Competitive Analysis with Differentiated Products, *Annals of Economics and Statistics*, No 34.
[31] See Hausman (1996): 'Valuation of New Goods under Perfect and Imperfect Competition', pp 241/242 in Timothy F Bresnahan and Robert J Gordon (1996): *The Economics of New Goods*, University of Chicago Press.

the important question is how the assumption affects the econometric results in any particular case. We note that, in this example, time-invariant and time-variant weights would give identical estimation results (because our model takes first differences). We perform actual sensitivities with the construction of price series described in paragraph 53 below which suggest that the sensitivity of diversion ratios to methodology is limited.[32]

51. Second, with respect to our method of imputation the parties stated that 'Imputing values in this way means the CC implicitly assumes that prices of missing SKUs do not change across time'. We acknowledge that this is an assumption that we make if the reason for gaps in a specific time series is that the product was on the shelf but had not been sold. However, this assumption is not required in instances where gaps in time series are due to products being delisted.

52. Third, the parties constructed a hypothetical example in which 'there is a SKU that represents 10% of IRN-BRU expenditure over two years. However, there are a number of weeks when this SKU is half price and represents 90% of IRN-BRU sales'. The parties continued that in this example:

53. Time invariant weights suggest the reduction of the price of brand IRN-BRU is 'small' (the 50% price reduction is assumed to apply to 10% of the brand, implying a 5% price decrease). Any measured reduction of Pepsi volumes will be compared against a 'small' price reduction for IRN-BRU suggesting a high degree of sensitivity of Pepsi volumes to IRN-BRU's price.

54. We acknowledge that this feature of a time-invariant weight price index may overstate the cross-price elasticities. However, it should be noted that for the same reason, the estimated own-price elasticities may appear more elastic than they actually are (ie they may be too negative). This makes the total effect on the diversion ratios ambiguous. Moreover, some sort of time-variant weighting is necessary in order to avoid spurious variation in the price indices, ie variation that does not reflect actual price changes but changes in volumes/product mix.[33]

55. Fourth, regardless of weighting issues, the parties criticized the aggregation over different product characteristics (particularly bottle/can size), stating that this would provide 'a poor approximation of a consumer's actual choice set'. To address this type of concern, we implemented a model for the Tesco (Scotland) data set that is based on 2-litre bottles only.[34] This model showed broadly sensible results, and gave a higher (statistically significant) diversion ratio from IRN-BRU to Pepsi compared with the situation where one aggregates over all different SKUs. We acknowledge that the omission of the below 2-litre segment in the 2-litre-only model may be responsible for the higher diversion ratio.[35]

56. To examine the difference between time-invariant and time-varying weights, we have implemented our model with time-varying weights on our two main data sets (Nielsen Scantrack (Great-Britain-wide) data set and Litmus impulse (Scotland) data set) and on the Tesco (Scotland) data set (as described in Annex 4). We find the following:

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[32] The CC model is estimated in first differences.
[33] When two SKUs are priced differently, but the prices remain stable over time, one would still observe variation in a price index based on time varying weights if relative volumes vary over time.
[34] We chose the 2-litre segment because it appears to be relatively distinct from the 330ml and 500ml segments (2-litre bottles are mostly used for home consumption and not chilled).
[35] Using the approach of Wooldridge (2005): *Introductory Econometrics*, p92ff, and assuming that price changes are positively correlated across bottle sizes, the 2-litre cross-price elasticities between the considered brands and IRN-BRU may be overstated. Under the same assumptions, the 2-litre own-price elasticities may be biased towards zero. Ideally, one would introduce aggregate expenditure shares and prices of the below-2-litre segment into this model to account for a possible omitted variable bias.

(a) *Nielsen Scantrack (Great-Britain-wide).* With time-varying weights, the IRN-BRU own-price elasticity changes from [✂] to [✂] (both statistically significant) and the cross-price elasticity of Pepsi with respect to IRN-BRU reduces from [✂] to [✂] (both not statistically significant).[36] The resulting diversion ratio from IRN-BRU to Pepsi is not statistically significant (as with time-invariant weights).

(b) *Litmus impulse (Scotland).* The diversion ratio from IRN-BRU to Pepsi increases from [✂] per cent to a still moderate [✂] per cent when time-varying weights are used instead of constant weights (both diversion ratios are statistically significant).[37] The reason is that the relevant cross-price elasticity almost doubles in size from [✂] to [✂] with time-varying weights (the own-price elasticity changes slightly from [✂] to [✂]).[38]

(c) *Tesco (Scotland).* With time-varying weights, the IRN-BRU own-price elasticity changes from [✂] to [✂] (statistically significant) and the cross-price elasticity of Pepsi with respect to IRN-BRU reduces from [✂] to [✂] (statistically significant). As a result, the estimated diversion ratio from IRN-BRU to Pepsi remains almost unchanged at [✂] per cent.[39]

57. Based on these results, we conclude that our findings with respect to the diversion from IRN-BRU to Britvic brands are qualitatively robust to the choice of time-varying versus time-invariant weights.

'Simultaneity bias'

58. The parties stated that the CC model suffered from a 'simultaneity bias' due to the joint determination of expenditure shares and total expenditure (the latter being a control variable in the AIDS model).

59. Simultaneity bias occurs if there is reverse causality between the dependent variable and one of the regressors, ie if not only the regressor X affects the dependent variable Y, but Y also affects X.[40] If there is reverse causality, the error term is correlated with the regressor X, making the OLS estimator biased and inconsistent.

60. The parties' argument for a potential simultaneity bias is not entirely clear to us. They suggested that there was a simultaneity bias because promotions might increase expenditure share and also expand the market for CSDs, thereby increasing total expenditure on all brands. We have already discussed the implications regarding the model's assumption that CSD expenditure is not affected by prices. What is not clear is how this statement fits into a discussion on simultaneity bias.

61. It should be noted that the literature sometimes treats the real expenditure term, ie total expenditure deflated by Stone's price index, as endogenous (however, the parties do not seem to refer to this issue in their argument). The reason is that the Stone price index is a function of the time-varying expenditure weights of the brands. As a robustness test, we therefore implemented our model on the Nielsen Scantrack (Great-Britain-wide) date with a Stone index that uses time-invariant expenditure weights. This did not have a significant effect on the estimated parameters.

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[36] The cross-price elasticity of Tango with respect to IRN-BRU increases from [✂] to [✂] but remains statistically insignificant. The resulting diversion ratio from IRN-BRU to Tango also remains statistically insignificant.
[37] Similarly, the diversion ratio from IRN-BRU to Tango increases from [✂] to [✂] per cent (statistically significant).
[38] The unexpected increases in the elasticities (in absolute value) resulting from switching to time-varying weights reflect the ex-ante difficulty to determine the direction of parameter change upon changing the specification in multivariable contexts.
[39] The cross-price elasticity of Tango with respect to IRN-BRU decreases from [✂] to [✂], but remains statistically significant. As a result, the diversion ratio from IRN-BRU to Tango decreases from [✂] to [✂] per cent.
[40] Wooldridge (2005): *Introductory Econometrics*, p506.

62. In conclusion, while we note the implications regarding the assumption in the model that CSD expenditure is not affected by prices, in our view the model does not suffer from simultaneity bias.

Brands not included in the model

1. We do not include the following brands in the model:

(a) Fanta and Sprite, because the prices of Fanta, Sprite and Dr Pepper are highly correlated.[1] As a robustness test, we included Fanta and Sprite into our estimation on the Nielsen Scantrack (Great-Britain-wide) data set. This did not affect our conclusions with respect to the estimated diversion ratios from IRN-BRU to the Britvic brands.[2]

(b) Orangina and Mountain Dew, as their sales were below the threshold described above. However, because of our specific interest in them, we included both brands into our demand system (on the Nielsen Scantrack (Great-Britain-wide) data set). This did not significantly affect our conclusions with respect to the estimated diversion ratios from IRN-BRU to the Britvic brands. Moreover, the model did not suggest that any Britvic brands were a significant constraint on Orangina prices.

(c) Private-label brands, because most data sets do not contain information at the SKU level on them (which is needed to construct our price index). In addition, we do not believe that own-label products would constrain the price of IRN-BRU from a modest increase. The prices of the goods are very far apart, and our assumption is that the end-consumer makes choices from within the branded or unbranded product categories.[3]

[1] We keep only Dr Pepper in our system. We chose to keep Dr Pepper as the survey conducted by the parties suggested that it is a closer substitute to IRN-BRU than Fanta or Sprite.
[2] With respect to the point estimates, introducing Fanta and Sprite reduced IRN-BRU's own-price elasticity from [✂] to [✂]; it did not have an impact on the cross-price elasticity of Pepsi with respect to IRN-BRU; and it increased the cross-price elasticity of Tango with respect to IRN-BRU from [✂] to [✂]. Moreover, the standard errors of these point estimates were not significantly affected by the introduction of Fanta and Sprite.
[3] In this, we follow the reasoning and analysis presented in the CC's Cott/Macaw decision. See Cott Beverages Ltd and Macaw (Holdings) Ltd merger report, 2006, paragraphs 4.33–4.39 and Appendix B.

Econometric specification

1. In our baseline specification, we pool the time series of different fascias together. This assumes that consumers do not switch between fascias in response to price changes:

$$\Delta w_{ift} = \alpha_i + \sum_j \gamma_{ij} \Delta lnp_{ift} + \beta_i \, \Delta lne_{ft} + \theta_i \Delta month_t + \Delta \varepsilon_{ift}$$

where:

(a) the brands are indexed by *i*, the fascias by *f* and the weeks by *t*;

(b) w_{ift} = expenditure share of brand *i* at fascia *f* at time *t*;

(c) p_{ift} = price of brand *i* at fascia *f* at time *t*;

(d) $e_{ft} = Y_{ft} / P_{ft}$, where:

(i) Y_{ft} is the total expenditure on all brands at fascia *f* at time *t*; and

(ii) in $P_{ft} = \sum_i w_{ift} ln\, p_{ift}$ is the Stone price index;

(e) *month* = a set of monthly dummies; and

(f) $\Delta X = X_t - X_{t-1}$ (first difference operator).

Elasticities and diversion ratios

2. The uncompensated price elasticities are derived following Green and Alston (1990):[1]

$elasticity_{ij} = \theta_{ij} + (Y_{ij} / w_i) - \delta_i(w_j / w_i)$, where:

(a) $\theta_{ij} = 0$ if $i \neq j$, and $\theta_{ij} = -1$ if $i = j$; and

(b) w_i = mean expenditure share of brand *i* across all *f* and *t*.

3. The diversion ratios are calculated as:

(Cross-price elasticity of brand *j* with respect to brand *i*)/(Own-price elasticity of brand *i*) × (Volume of *j*/volume of *i*), where:

(a) volume of *j* = total litres sold of *j* at all *f* and *t*; and

(b) volume of *i* = total litres sold of *i* at all *f* and *t*.

[1] An uncompensated elasticity contains both the substitution and income effect.

Elasticity matrices

TABLE 1 **Estimation results on Nielsen Scantrack (Great-Britain-wide) data**

Change in	*IRN-BRU quantity*	*Pepsi quantity*	*Tango quantity*	*7UP quantity*	*Lucozade quantity*	*Coca-Cola quantity*	*Dr Pepper quantity*	*Schweppes quantity*	*Monster quantity*	*Relentless quantity*	*Red Bull quantity*
IRN-BRU price	[✂]***	[✂]	[✂]	[✂]	[✂]**	[✂]	[✂]	[✂]*	[✂]	[✂]	[✂]
Pepsi price	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]**	[✂]**	[✂]	[✂]	[✂]**	[✂]
Tango price	[✂]	[✂]	[✂]**	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
7UP price	[✂]	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Lucozade price	[✂]***	[✂]***	[✂]	[✂]**	[✂]***	[✂]*	[✂]**	[✂]***	[✂]**	[✂]**	[✂]
Coca-Cola price	[✂]***	[✂]***	[✂]*	[✂]*	[✂]***	[✂]***	[✂]***	[✂]*	[✂]	[✂]**	[✂]
Dr Pepper price	[✂]	[✂]	[✂]**	[✂]***	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]
Schweppes price	[✂]	[✂]	[✂]	[✂]	[✂]**	[✂]**	[✂]	[✂]***	[✂]*	[✂]**	[✂]
Monster price	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]***	[✂]
Relentless price	[✂]	[✂]*	[✂]	[✂]	[✂]	[✂]	[✂]**	[✂]	[✂]***	[✂]***	[✂]**
Red Bull price	[✂]	[✂]*	[✂]	[✂]	[✂]	[✂]	[✂]*	[✂]	[✂]**	[✂]**	[✂]***

Source: CC analysis.

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.01. Standard errors clustered by fascia.

TABLE 2 **Estimation results on Tesco (Scotland) and Co-op (Scotland & Northern Ireland) data**

Change in	*IRN-BRU quantity*	*Pepsi quantity*	*Tango quantity*	*7UP quantity*	*Lucozade quantity*	*Coca-Cola quantity*	*Dr Pepper quantity*	*Schweppes quantity*	*Monster quantity*	*Relentless quantity*	*Red Bull quantity*
IRN-BRU price	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]***	[✂]*	[✂]**	[✂]	[✂]
Pepsi price	[✂]***	[✂]***	[✂]***	[✂]***	[✂]*	[✂]***	[✂]***	[✂]	[✂]	[✂]	[✂]
Tango price	[✂]	[✂]**	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]*
7UP price	[✂]	[✂]	[✂]**	[✂]***	[✂]**	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Lucozade price	[✂]***	[✂]	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]**	[✂]**
Coca-Cola price	[✂]***	[✂]***	[✂]	[✂]*	[✂]***	[✂]***	[✂]***	[✂]	[✂]	[✂]***	[✂]***
Dr Pepper price	[✂]**	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]**
Schweppes price	[✂]**	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]	[✂]**	[✂]
Monster price	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]***	[✂]
Relentless price	[✂]***	[✂]	[✂]*	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]***	[✂]
Red Bull price	[✂]	[✂]	[✂]	[✂]	[✂]**	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]***

Source: CC analysis.

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.01, no star = no statistical significance at conventional levels. Newey-West standard errors.

TABLE 3 **Estimation results on Litmus impulse (Scotland) data**

Change in	*IRN-BRU quantity*	*Pepsi quantity*	*Tango quantity*	*7UP quantity*	*Lucozade quantity*	*Coca-Cola quantity*	*Dr Pepper quantity*	*Schweppes quantity*	*Monster quantity*	*Relentless quantity*	*Red Bull quantity*
IRN-BRU price	[✂]***	[✂]**	[✂]**	[✂]***	[✂]*	[✂]***	[✂]*	[✂]	[✂]	[✂]	[✂]**
Pepsi price	[✂]	[✂]***	[✂]***	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]***
Tango price	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]**	[✂]	[✂]	[✂]*
7UP price	[✂]	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Lucozade price	[✂]***	[✂]***	[✂]	[✂]***	[✂]***	[✂]**	[✂]**	[✂]	[✂]	[✂]**	[✂]**
Coca-Cola price	[✂]	[✂]***	[✂]	[✂]	[✂]***	[✂]***	[✂]	[✂]	[✂]	[✂]***	[✂]
Dr Pepper price	[✂]	[✂]	[✂]**	[✂]*	[✂]	[✂]**	[✂]***	[✂]	[✂]	[✂]	[✂]***
Schweppes price	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]
Monster price	[✂]	[✂]	[✂]	[✂]**	[✂]	[✂]**	[✂]**	[✂]	[✂]***	[✂]	[✂]*
Relentless price	[✂]	[✂]	[✂]*	[✂]*	[✂]**	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]
Red Bull price	[✂]	[✂]*	[✂]***	[✂]	[✂]***	[✂]	[✂]*	[✂]	[✂]***	[✂]**	[✂]***

Source: CC analysis.

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.01, no star = no statistical significance at conventional levels. Standard errors clustered by fascia.

TABLE 4 **Estimation results on Tesco (Scotland) data**

Change in	*IRN-BRU quantity*	*Pepsi quantity*	*Tango quantity*	*7UP quantity*	*Lucozade quantity*	*Coca-Cola quantity*	*Dr Pepper quantity*	*Schweppes quantity*	*Monster quantity*	*Relentless quantity*	*Red Bull quantity*
IRN-BRU price	[✂]***	[✂]**	[✂]*	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]
Pepsi price	[✂]	[✂]***	[✂]***	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Tango price	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
7UP price	[✂]	[✂]	[✂]	[✂]***	[✂]*	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Lucozade price	[✂]	[✂]	[✂]*	[✂]	[✂]***	[✂]	[✂]	[✂]**	[✂]	[✂]*	[✂]
Coca-Cola price	[✂]***	[✂]***	[✂]**	[✂]	[✂]	[✂]***	[✂]*	[✂]	[✂]	[✂]***	[✂]
Dr Pepper price	[✂]***	[✂]	[✂]**	[✂]	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]
Schweppes price	[✂]	[✂]**	[✂]	[✂]	[✂]	[✂]*	[✂]*	[✂]***	[✂]	[✂]	[✂]
Monster price	[✂]	[✂]	[✂]*	[✂]*	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]***	[✂]
Relentless price	[✂]*	[✂]*	[✂]**	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]
Red Bull price	[✂]***	[✂]*	[✂]	[✂]	[✂]	[✂]	[✂]*	[✂]	[✂]	[✂]*	[✂]***

Source: CC analysis.

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.01, no star = no statistical significance at conventional levels. Newey-West standard errors are used.

TABLE 5 **Estimation results on Tesco (England and Wales) data**

Change in	*IRN-BRU quantity*	*Pepsi quantity*	*Tango quantity*	*7UP quantity*	*Lucozade quantity*	*Coca-Cola quantity*	*Dr Pepper quantity*	*Schweppes quantity*	*Monster quantity*	*Relentless quantity*	*Red Bull quantity*
IRN-BRU price	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]**	[✂]	[✂]	[✂]
Pepsi price	[✂]	[✂]***	[✂]***	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]*
Tango price	[✂]	[✂]	[✂]*	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]**
7UP price	[✂]	[✂]	[✂]	[✂]***	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]**
Lucozade price	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]**	[✂]*	[✂]
Coca-Cola price	[✂]***	[✂]***	[✂]**	[✂]	[✂]	[✂]***	[✂]*	[✂]	[✂]**	[✂]***	[✂]
Dr Pepper price	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]
Schweppes price	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]**	[✂]*	[✂]***	[✂]	[✂]	[✂]
Monster price	[✂]	[✂]	[✂]	[✂]*	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]***	[✂]
Relentless price	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]**	[✂]	[✂]	[✂]	[✂]***	[✂]
Red Bull price	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]**	[✂]	[✂]*	[✂]***

Source: CC analysis.

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.01, no star = no statistical significance at conventional levels. Newey-West standard errors are used.

TABLE 6 **Estimation results on Co-op (Scotland and Northern Ireland)**

Change in	*IRN-BRU quantity*	*Pepsi quantity*	*Tango quantity*	*7UP quantity*	*Lucozade quantity*	*Coca-Cola quantity*	*Dr Pepper quantity*	*Schweppes quantity*	*Monster quantity*	*Relentless quantity*	*Red Bull quantity*
IRN-BRU price	[✂]***	[✂]	[✂]**	[✂]**	[✂]***	[✂]**	[✂]***	[✂]	[✂]**	[✂]**	[✂]
Pepsi price	[✂]***	[✂]***	[✂]*	[✂]	[✂]***	[✂]**	[✂]***	[✂]**	[✂]	[✂]	[✂]
Tango price	[✂]	[✂]**	[✂]***	[✂]	[✂]	[✂]**	[✂]	[✂]	[✂]	[✂]	[✂]
7UP price	[✂]	[✂]**	[✂]**	[✂]***	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]	[✂]
Lucozade price	[✂]***	[✂]	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]*	[✂]**	[✂]
Coca-Cola price	[✂]***	[✂]***	[✂]	[✂]**	[✂]***	[✂]***	[✂]	[✂]	[✂]	[✂]***	[✂]***
Dr Pepper price	[✂]	[✂]	[✂]	[✂]	[✂]**	[✂]***	[✂]***	[✂]	[✂]	[✂]	[✂]***
Schweppes price	[✂]**	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]
Monster price	[✂]	[✂]**	[✂]	[✂]	[✂]	[✂]**	[✂]	[✂]	[✂]***	[✂]	[✂]
Relentless price	[✂]***	[✂]*	[✂]***	[✂]	[✂]***	[✂]**	[✂]	[✂]***	[✂]***	[✂]***	[✂]
Red Bull price	[✂]	[✂]	[✂]	[✂]*	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]***

Source: CC analysis.

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.01, no star = no statistical significance at conventional levels. Newey-West standard errors are used.

TABLE 7 **Estimation results on Tesco (Scotland), 2-litre bottles only**

Change in	*IRN-BRU quantity*	*Pepsi quantity*	*Tango quantity*	*7UP quantity*	*Coca-Cola quantity*	*Dr Pepper quantity*	*Schweppes quantity*
IRN-BRU price	[✂]***	[✂]***	[✂]***	[✂]	[✂]***	[✂]***	[✂]***
Pepsi price	[✂]***	[✂]***	[✂]	[✂]*	[✂]***	[✂]***	[✂]**
Tango price	[✂]**	[✂]	[✂]***	[✂]	[✂]	[✂]	[✂]
7UP price	[✂]***	[✂]	[✂]	[✂]***	[✂]	[✂]	[✂]
Coca-Cola price	[✂]***	[✂]***	[✂]	[✂]	[✂]***	[✂]***	[✂]***
Dr Pepper price	[✂]	[✂]	[✂]**	[✂]	[✂]	[✂]***	[✂]
Schweppes price	[✂]	[✂]	[✂]**	[✂]	[✂]	[✂]	[✂]***

Source: CC analysis.

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.01, no star = no statistical significance at conventional levels. Newey-West standard errors are used.

Data management

Gaps in SKU level price series

1. For a given brand, we calculate a weighted average price over all SKUs at each point in time, using constant expenditure share weights. For example, the price of IRN-BRU at time t is calculated as:

   $P_{IRN\text{-}BRU,\ t} = \sum_j w_j * p_{jt}$, where:

   (a) wj is SKU j's share of expenditure on IRN-BRU over the whole time period used for the estimation; and

   (b) Pjt is the price of SKU j at time t.

2. In this context, 'gaps' in the SKU level time series have the following effects:

   (a) Whenever a specific SKU j is not sold during a given week, this price index will decrease (all other things being equal).

   (b) Whenever a specific SKU j is introduced (again), this price index will increase (all other things being equal).

3. Assuming that additional (fewer) SKUs increase (decrease) the expenditure on a given brand, the above price index may introduce a positive correlation between a brand's average price and expenditure share. To (partially) solve this problem, we filled gaps in the SKU level price series with the last observed price. In the case of products that are first observed after the sample has started, we have filled the gaps at the beginning of the time series with the first observed price.

4. The causes of the observed gaps (listed product that was not sold versus delisted product) are not known to us.[1] If this information were available, a more refined approach would be to:

   (a) impute prices where a product was listed but not sold; and

   (b) adjust the expenditure weights of the products still listed when a given product was delisted.

Cleaning of SKU names

5. We have identified several instances where two SKUs are identical in terms of product characteristics but have differently spelled names (for example, SKU X may be the promotional version of SKU Y). To avoid measurement error in our price indices, we have aggregated SKUs that are identical in terms of product characteristics.[2]

[1] One exception is Tesco.
[2] This procedure was not applied to the Litmus impulse (Scotland) data set.

Assessment of the survey evidence

1. [✂]

2. Our reservations about the survey were the following:

   (a) Panel recruitment may have led to coverage bias.

   (b) Quota sampling may have exacerbated biases.

   (c) The memory-based question was subject to imperfect recall.

   (d) The hypothetical 'non-availability' of the product question is not directly related to the question of interest—which is reactions to a price rise.

   (e) The diversion ratios are based on reported preferences rather than revealed preferences.

3. These are common caveats to survey-based methods of estimating diversion ratios, and we acknowledge that the survey provides useful evidence. Our goal in the econometrics was to add a new source of evidence based on revealed preferences.

4. The survey demonstrates IRN-BRU's strong presence in Scotland. [✂]

5. The survey provided some evidence that IRN-BRU is a relatively distinct product with a loyal following. Table 1 below shows what consumers would have done if their drink of choice had not been available. [✂]

TABLE 1 **Proportion of survey respondents choosing different alternatives to their favoured drink, including the 'outside good' option**

per cent

	IRN-BRU *491*	*Pepsi* *1,163*	*Tango* *685*
Bought a different drink	[✂]	[✂]	[✂]
Gone elsewhere to buy a drink	[✂]	[✂]	[✂]
Not bought a drink	[✂]	[✂]	[✂]
Don't know	[✂]	[✂]	[✂]

Source: TNS.

6. The parties translated the survey results into diversion ratios. Diversion from IRN-BRU to the Britvic portfolio was estimated at [✂] per cent taking Great-Britain-wide responses and [✂] per cent based on Scottish-only responses. Diversion from Orangina to Tango was estimated at [✂] per cent, with a total diversion to Britvic brands of [✂] per cent.

7. In translating survey results into diversion ratios, a number of decisions had to be made. These were:

   (a) Should a correction be made to rebase the denominator in the diversion calculation for diversion to within-firm products? The question here arises when a party to the merger has multiple products, and when some amount of diversion occurs to the firms' own products. For example, AG Barr sells both IRN-BRU and Tizer.

When customers divert from IRN-BRU, let us say that 90 per cent go to products owned by other firms, and 10 per cent divert to Tizer. Should the diversion ratio to other goods for the purposes of merger analysis be 90/100, that is, 90 per cent, or should it be 90/(100–10), that is, 100 per cent. The measure chosen ultimately depends on the use to which it is put. Since we were looking to use diversion ratios in the context of the theory of differentiated goods under posted price competition, we chose the measure of diversion that accords most closely with the measure used in that theory.[1] The theory expects diversion ratios to be measured over products, not over firms, and we therefore agreed with the parties in their main submission and chose the first measure, with no rebasing of the denominator.

(b) Should, [✂], the second responses be ignored? [✂] advised rejecting them because of the risk of bias from previous exposure to brand names. We agreed with [✂].

(c) Should all responses be aggregated over all sales channels, or should we consider only specific channels? We took the view that as long as the number of responses was adequate, the choice here should be made according to the uses the diversion ratios were to be put. We had no a priori reason to believe that diversion ratios or incentives to raise prices should be the same across all channels.

(d) Should Great-Britain-wide or Scottish results be used? We need to consider two possibilities: IRN-BRU consumers behave in the same way wherever they are, but happen to be more concentrated in Scotland; or alternatively, IRN-BRU consumers behave differently in Scotland. [✂] The psychology of brands might suggest that the consumer has a different relationship and loyalty to brands with which they grew up. All of these factors might be reasons for treating IRN-BRU respondents in Scotland differently from those Great-Britain-wide. On the other hand, it is also possible to imagine consumer psychology as being determined largely by taste and brand image, and that once a consumer has discovered a product, they on average behave alike. [✂]

(e) Whether we should correct for 'outside goods'—that is, whether the option to not purchase a soft drink at all should be counted as one of the options to which respondents could 'divert'. We agreed with the parties that a correction for outside goods should be made. The 'outside good' option represents the extent to which the market for the products expands and contracts in response to price changes, and this is a real effect and an important one in this market. We took the view that we should use the data from the survey itself, where respondents were offered the opportunity to say that they would not have drunk anything at all if their favoured drink had not been available, to determine the magnitude of that option. [✂] per cent of respondents diverted to the outside good from IRN-BRU—these are the people who would not have bought a drink at all if IRN-BRU had not been available, and would in effect have shrunk the market. The parties recom-

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[1] In the theory, the diversion ratio is defined over goods, not over firms. It is given as:

$$D_{IB,Pepsi} = \frac{\eta^{IB}_{Pepsi}\, Q_{Pepsi}}{\eta^{IB}_{IB}\, Q_{IB}}$$

Where
η^{IB}_{Pepsi} Is the cross price elasticity of Pepsi with respect to the IRN-BRU price
$Q_{Pepsi}$is the quantity of Pepsi sold
η^{IB}_{IB} is the own price elasticity of IRN-BRU
Q_{IB} is the quantity sold of IRN-BRU

mended using a larger value for diversion to the outside good—of the order of [✂] per cent—than provided by respondents. They cited previous analyses of the industry in support of this. However, we see no reason not to use the measure delivered by the survey.

(f) All of these decisions led us to conclude that the diversion ratio from IRN-BRU to Britvic brands based on the survey is of the order of [✂] to [✂] per cent. This is very close to the value that the parties themselves recommended using, although higher than their recommendation after their proposed adjustment of [✂] per cent for the outside good.

The indicative price rise calculation

Introduction

1. This annex describes the indicative price rise (IPR) calculations that we performed for IRN-BRU.

2. The IPR calculation brings together the following:

   (a) econometric estimates of diversion ratios and the statistical confidence intervals around these;

   (b) estimates of the variable profit margins on the products to which there is diversion;

   (c) assumptions about the shape of the demand curve; and

   (d) assumptions about the nature of competition in the market.

3. We calculated IPRs for the two data sets that implied positive and significant diversion from IRN-BRU to Britvic brands. These were the data set for Tesco stores in Scotland and the Litmus data on impulse stores in Scotland. We put less weight on the results of the Tesco Scotland data because of the performance of the model.

4. When we compute IPRs[1] we generate non-linear combinations of stochastic variables (the diversion ratios) and point estimates (for margins and demand model coefficients). The confidence intervals of those combinations need to be re-estimated to take account of the variance–covariance of the parameters. When we perform the computation for the Tesco result, the Tango-related IPRs are not statistically significant, whereas the Pepsi-related IPRs continue to be so. We therefore focus on the Pepsi effect for the Tesco results. For the impulse segment results, we aggregate Pepsi and Tango diversions and effectively treat Tango as if it were Pepsi. We consider this to be a conservative simplification, since Tango has a higher margin than Pepsi.

Assumptions about competition in the market

5. We assume that companies compete on price (ie Bertrand competition) in a differentiated goods market. Bertrand competition assumes that the market is characterized by:

   (a) Excess capacity, or, if not that, then low barriers to capacity expansion. We believe that this assumption holds in the market. For example, Britvic has recently announced plans to close factories.

   (b) Posted prices in anonymous markets. This assumption applies to the end-consumer market, where goods are purchased off the shelf or on-premise at prices that are fixed and not subject to negotiation. We are aware of the limitations in applying this assumption to the level of wholesale prices, which are

[1] We follow the methodology provided in *Unilateral Effects with General Linear Demand*, Jerry Hausman, Serge Moresi and Mark Rainey, 2010 Mimeo, MIT, http://economics.mit.edu/files/6601.

determined in a process of repeated negotiations and long-term relationships between a small number of sophisticated parties. The analysis of IPRs based on Bertrand competition is intended to show how the merger changes parties' incentives—how they would behave if posting new retail prices to customers who behave just like end-consumers were all that were involved in finding a new equilibrium after the merger. We do not interpret the result as implying that the market is actually like this.

(c) Competition on prices and no coordinated strategies.

Estimates of variable profit margins for Pepsi

6. Our variable profit margins for Pepsi in the impulse segment and at Tesco stores are derived from data provided by Britvic. Margins at [✂], and this can be attributed largely to the [✂].

TABLE 1 **Pepsi variable margins**

	Tesco	*Impulse*
Variable cost, £/l	[✂]	[✂]
Wholesale price, £/l	[✂]	[✂]
Variable margin	[✂]	[✂]

Source: Britvic and CC calculation.

Shape of the demand curve

7. We assume a linear demand curve in all the IPR results shown. This is a common assumption in IPR simulation—it is simple, plausible and conservative. The alternative assumption that is commonly made is a constant elasticity demand curve. This is usually made for mathematical convenience rather than any other reason. A linear demand curve will find IPRs that are lower than the constant elasticity case. A constant elasticity demand curve has the counterintuitive property that there is no price so high that demand falls to zero. A standard GUPPI calculation or the use of constant elasticities in a single-round version of the IPR model would double a similarly calculated IPR based on a linear demand curve, however, we consider this to be an extreme assumption.

Exposition of the IPR calculation

8. For the purpose of exposition, we present both analytical and numerical/graphical accounts of the IPR calculation. In both cases, we make use of the concept of price best response functions. For goods 1 and 2, the price best response function of good 1 with respect to good 2 describes the price of good 1 that maximizes profits for every price of good 2. When the goods are substitutes, a higher price for good 2 implies a higher demand for good 1, and therefore a higher profit-maximizing price. This is a 'best response' in that, for any price that is set for good 2, the function gives the best response reaction for good 1. The point at which the reaction functions of good 1 and good 2 cross is an equilibrium in the sense that the price of good 2 is a best response to the price of good 1 and vice versa. There is therefore no incentive to deviate from those prices.

9. In both the analytical and the numerical/graphical account of the IPR calculation, we ask how a merger changes the best response equilibrium prices.

10. We assume linear demand, and, in the analytical presentation, we assume that units have been rescaled to make the slope of the demand curve –1.[2] We define demand for good 1 to be $x_1 = A_1 – p_1 + D_{21}p_2$, where x_1 is the quantity demanded, A_1 is a constant, p_1 is the price of good 1, p_2 is the price of good 2 and D_{21} is the diversion ratio from good 2 to good 1. What this demand function states is that increases in the own price reduce demand, while increases in the price of good 2 increase demand for good 1 in proportion to the diversion from good 2 to good 1.

11. Given constant marginal costs of c_1 for good 1, variable profits can be computed as $\pi_1 = (p_1 – c_1)(A_1 – p_1 + D_{21}p_2)$, where $(p_1 – c_1)$ is the variable margin on good 1.

12. We can derive a price reaction function from this expression by maximizing it with respect to p_1, which shows how to extract maximum profits from good 1 by varying the price of good 1 and taking as given the price level of good 2. We get: $d\pi_1 / dp_1 = 0 = A_1 – 2p_1 + D_{21}p_2 + c_1$, or $2p_1 = A_1 + D_{21}p_2 + c_1$. This equation allows us to determine the profit-maximizing p_1 for every p_2.

13. After a merger that brings together good 1 and good 2, the firm now sets p_1 to maximize: $\pi_1 + \pi_2 = (p_1 – c_1)x_1 + (p_2 – c_2)x_2$.

14. A reaction function is derived in exactly the same way as above, giving $2p_1 = A_1 + (D_{21} + D_{12})p_2 - D_{12}c_2 + c_1$.

15. The difference between the reaction function pre- and post-merger can be thought of as $D_{12} (p_2 – c_2)/2$, and can be thought of as simply reflecting the additional variable margin earned on incremental sales of good 2 arising from an increase in p_1. This involves both a steepening of the best response function and a shift downwards.

16. The overall effect of the two changes in the reaction function at prices for good 2 that are above the cost of good 2 is to increase the equilibrium price of good 1 because of the diversion effect. The magnitude of the increase will depend on the magnitude of the diversion effect (the steepening of the reaction function) and slope of good 2's reaction function.[3]

A graphical presentation of the IPR calculation

17. In this subsection, we derive the IPR methodology from the demand modelling parameters, margin parameters and price reaction functions. We present graphically a deterministic version of the calculation. This does not make use of the error bounds on point estimates that are derived in the demand modelling. We then describe the computation performed to take account of these stochastic terms. Throughout, we focus our attention on Pepsi and IRN-BRU, because we found no evidence of a statistically significant cross-price elasticity of demand between either product.

18. A price reaction function for a good shows, for any price of a related good (whether a competitor's or one's own) what the profit-maximizing price of the good is. Figure 1 shows the price reaction function that we have derived for Pepsi against the IRN-BRU price given demand conditions as estimated in Scottish Tesco stores.

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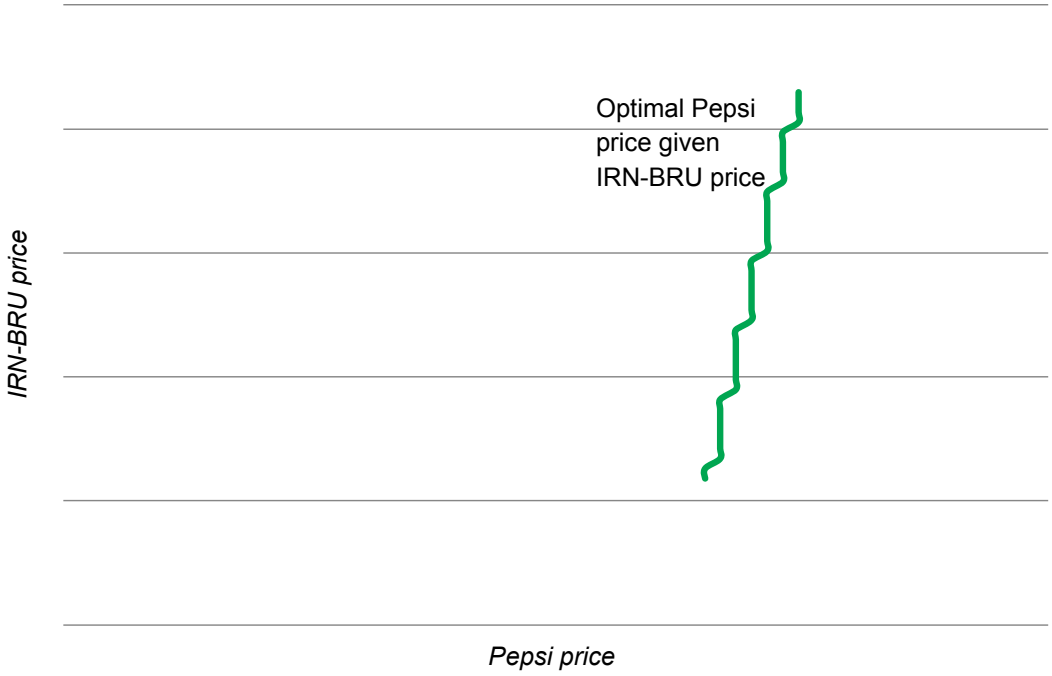
[2] This follows the simplified presentation in *Unilateral effects calculations*, Carl Shapiro, Berkeley mimeo, October 2010. When we estimate the IPRs numerically, we use the more general approach described in *Unilateral Effects with General Linear Demand*, Jerry Hausman, Serge Moresi and Mark Rainey, 2010 Mimeo, MIT, http://economics.mit.edu/files/6601.

[3] If we were in a case with positive diversion going both ways between the two goods, then the price best response function for good 2 would analogously show that every price of good 1 now entailed a higher price for good 2 (for all prices of good 1 above costs). The resulting two-way adjustment of best responses would imply a higher optimal price for both goods than in the case that we consider here.

FIGURE 1

Price reaction functions, Pepsi versus IRN-BRU



Source: CC analysis.
Note: Units have been excised from the chart.

19. Figure 1 should be read as follows:

(a) keeping all other prices of all other goods constant;

(b) if the wholesale price of IRN-BRU is [✂] £/l, the profit-maximizing price for Pepsi in Scottish stores is around [✂] £/l;

(c) if the wholesale price of IRN-BRU is [✂] £/l, the profit-maximizing price for Pepsi rises to about [✂] £/l;

(d) in general, as the price of IRN-BRU rises, the profit-maximizing price for Pepsi rises; and

(e) the steps in the reaction function arise from the discrete numerical simulation from which these are derived.

20. A number of assumptions have to be made in constructing such reaction functions:

(a) the nature of competition (Bertrand competition on price with differentiated products and no capacity constraints); and

(b) the curvature of demand (we assume linear demand throughout).

21. The reason for the upward slope of the price reaction function for Pepsi with respect to IRN-BRU comes ultimately from our estimation of the demand model for the goods. We have used the own-price and cross-price elasticities between IRN-BRU and Pepsi for the Scottish impulse market and for Tesco in Scotland shown in Tables 2 and 3.

TABLE 2 **Own and cross price elasticities, Tesco Scotland**

Change in	*IRN-BRU quantity*	*Pepsi quantity*
IRN-BRU price	[✂]***	[✂]**
Pepsi price	[✂]	[✂]***

Source: CC calculation. Own- and cross-price elasticities based on Scottish impulse data.

TABLE 3 **Own and cross price elasticities, Litmus impulse Scotland**

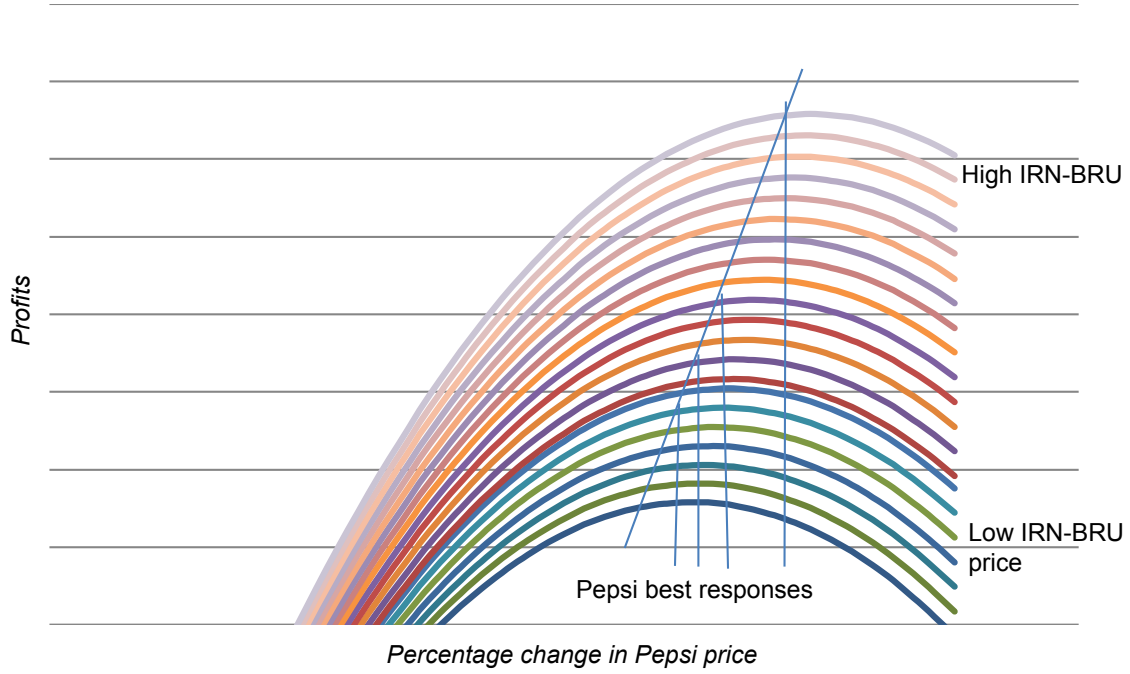
	IRN-BRU quantity	*Pepsi quantity*
IRN-BRU price	[✂]	[✂]
Pepsi price	[✂]	[✂]

Source: CC calculation. Own- and cross-price elasticities based on Scottish Tesco data.

22. The first line of the elasticity matrix in Table 3 tells us that when the price of IRN-BRU increases by 10 per cent, the quantity sold of Pepsi rises by [✂] per cent. In terms of the price reaction functions, higher demand for Pepsi translates into a higher profit-maximizing price. This can be seen in Figure 2, where each curve shows Pepsi's profits at a particular Pepsi price for a given IRN-BRU price. The higher curves are associated with higher IRN-BRU prices. It is clear that the profit-maximizing point—the maxima of the curves—moves to the right as the price of IRN-BRU rises and is what is captured by the upward sloping price reaction function.

FIGURE 2

Pepsi profits at different levels of IRN-BRU prices

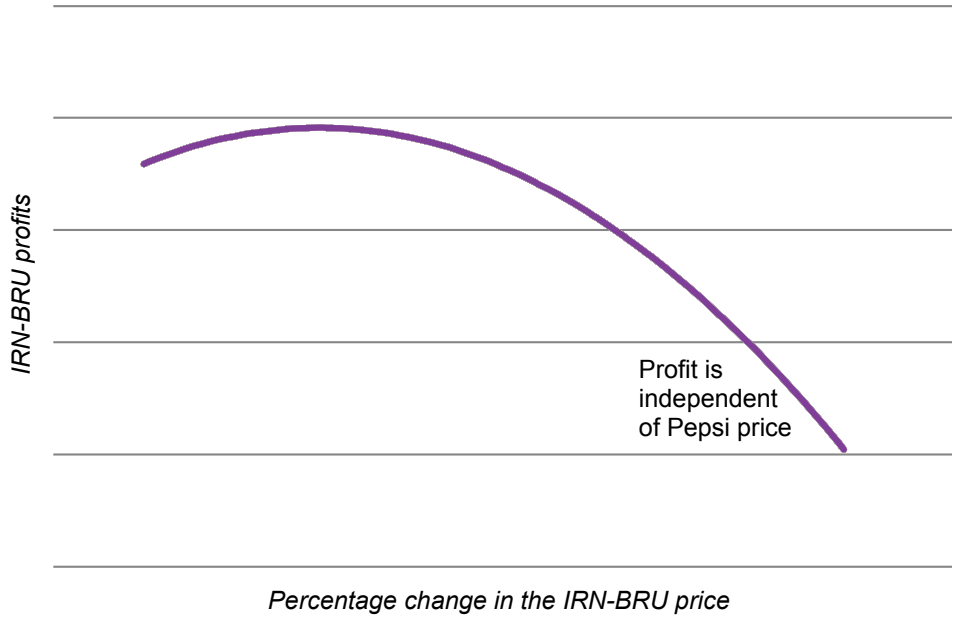


Source: CC analysis.
Notes:
1. At different levels of the IRN-BRU price, different Pepsi prices are shown to maximize Pepsi profits. This arises because the IRN-BRU price influences the Pepsi demand level. (In this chart if the relationship to IRN-BRU prices were the only one that mattered for Pepsi, then its price would currently be too low. However, much more important than the IRN-BRU cross-elasticity is the Coca-Cola cross-elasticity for Pepsi pricing. It is important that we are performing a partial simulation of the market and not considering all the constraints on the goods when looking at optimal pricing. This is because we wish to focus on the changes brought about by the merger, and we assume that the knock-on effects to other products are small.) The diagonal line intersects the maxima of the profit curves and shows, for each IRN-BRU price, the optimal Pepsi price (shown by the dotted vertical lines).
2. Units have been excised from the chart.

23. Estimated on this data, we find no significant impact on IRN-BRU quantities when the Pepsi price changes. We therefore assume, for convenience, that there is no relationship between the Pepsi price and the quantity sold of IRN-BRU. In other words, the optimal price for IRN-BRU is independent—at least pre-merger—of the price of Pepsi. We can see this in the IRN-BRU price/profit plot below, where the curve is identical for every level of Pepsi prices.

FIGURE 3

IRN-BRU price/profit curve

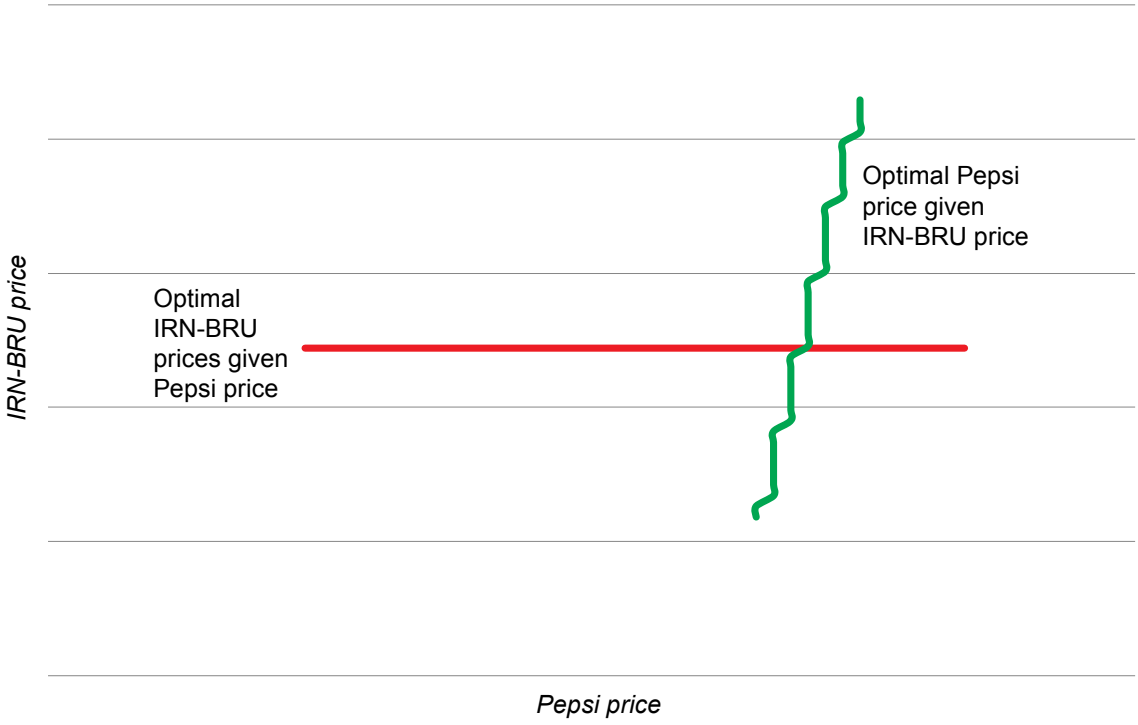


Source: CC analysis.
Note: Units have been excised from the chart.

24. The independence of IRN-BRU profits from Pepsi prices is represented in Figure 4 with the horizontal price reaction function for IRN-BRU. The graph shows that the optimal price for IRN-BRU is around [✂] £/l whatever the price of Pepsi.

FIGURE 4

Price reaction functions, Pepsi and IRN-BRU



Source: CC analysis.
Note: Units have been excised from the chart.

25. The point where reaction functions cross is the point where each product's price is set at a consistent level with the profit-maximizing price of the other product. If the product prices are not at the intersection of reaction functions, then there is an incentive for one or both parties to change prices: by definition, the prevailing price would not in this case be the profit-maximizing price for at least one of the parties and they therefore have an incentive to deviate.[4]

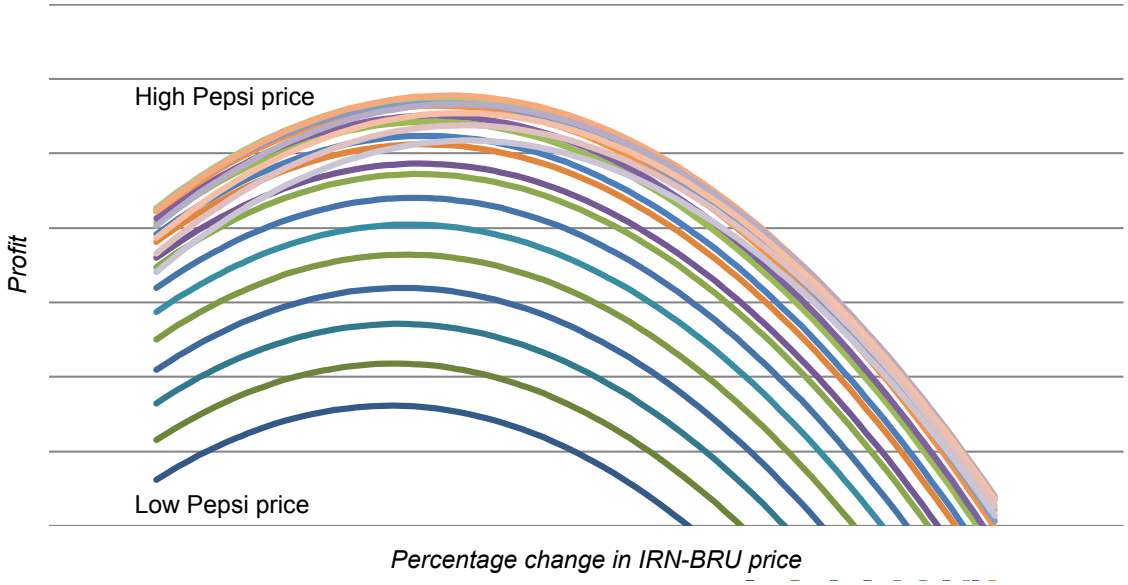
26. The impact of the merger on the reaction functions is to rotate the IRN-BRU reaction function anti-clockwise. This rotation can be understood as follows:

(a) The optimal IRN-BRU price is now dependent on the Pepsi price because the IRN-BRU optimum has to be measured against total profits, and not just IRN-BRU profits. As the price of IRN-BRU rises, the quantity of Pepsi sold rises and thus Pepsi sales make a contribution to overall profits. This is the diversion effect. At different levels of the Pepsi price, the contribution of diverted sales changes because the Pepsi margin changes. This effect is shown in Figure 5, which shows the relationship between IRN-BRU price and total profits at each level of Pepsi price. At low Pepsi prices, profits are low because Pepsi is not making a large contribution to profits; this rises as Pepsi prices rise; however, they fall again at some point as Pepsi prices get beyond their profit-maximizing point (this is shown in the top of the graph, where the profit lines start to cross and overlap).

[4] Again, it is worth emphasizing that we are abstracting here from the complexity of pricing architecture in the context of many products owned by many parties and focusing only on the most important relationship from the point of view of the merger.

FIGURE 5

Total IRN-BRU and Pepsi profits

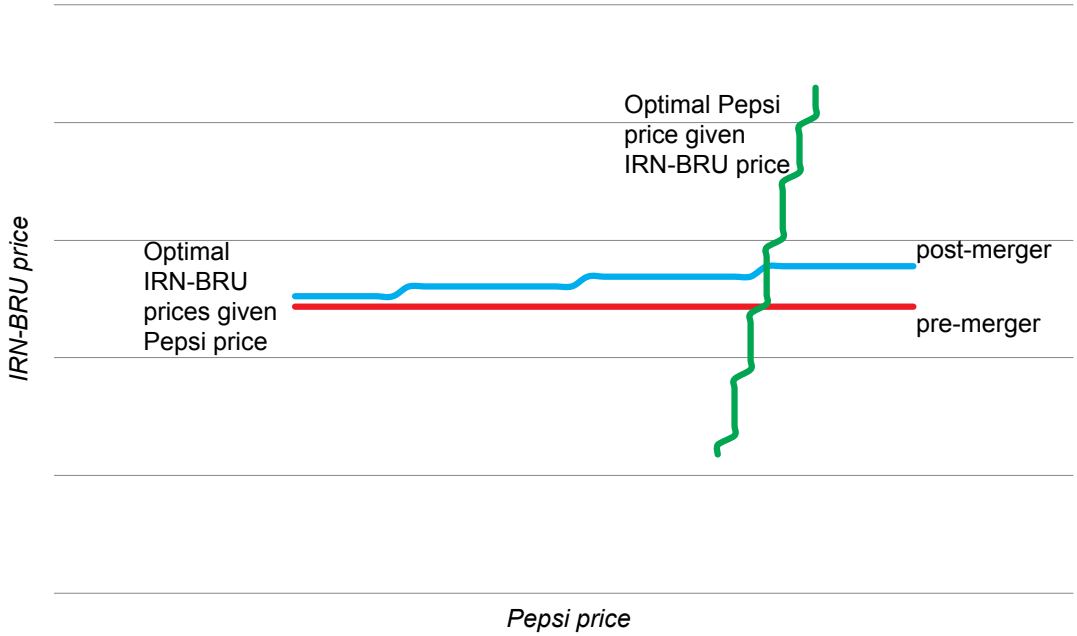


Source: CC analysis.
Notes:
1. The optimal IRN-BRU price at each level of Pepsi price is higher than before merger, as long as the contribution of Pepsi sales increases profits—that is for all points above the Pepsi costs.
2. Units have been excised from the chart.

27. This can be represented in the IRN-BRU price reaction function, as shown in Figure 6. The best-response set of prices entails a higher IRN-BRU price because of the diversion effect. The optimal Pepsi price is slightly increased because Pepsi demand is higher at the increased IRN-BRU price. The indicative price rise for IRN-BRU is given by the percentage change in the best response price after compared with before the merger—from about [✂] £/l to about [✂] £/l.

FIGURE 6

Price reaction functions, Pepsi and IRN-BRU



Source: CC analysis.
Note: Units have been excised from the chart.

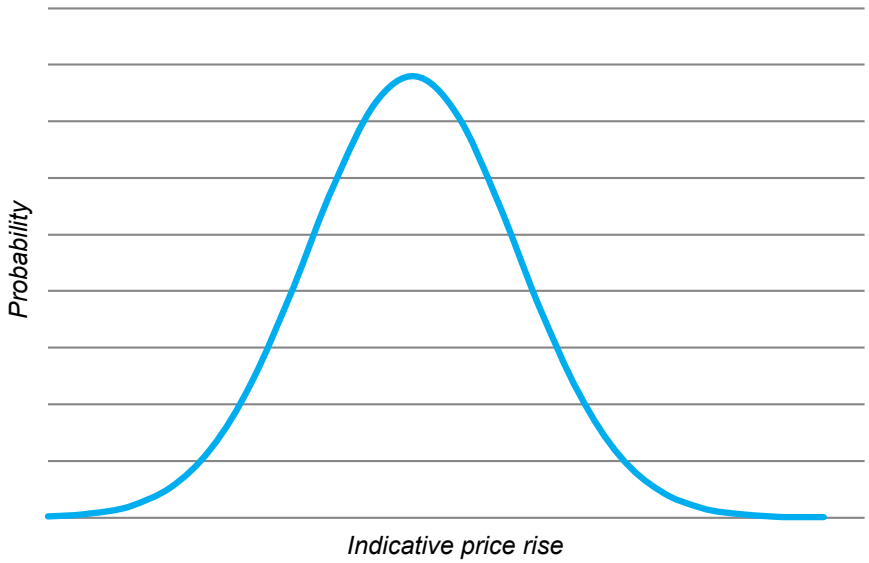
28. We use an algebraic derivation of the procedure[5] explained graphically and numerically above in order to use the information that the demand modelling has generated about the uncertainty of the elasticity parameters to calculate error bounds on indicative price rises. We perform the estimation using the Stata package *nlcom* command.[6] This package is used to capture the fact that the stochastic inputs to the IPR covary with each other, so that a non-linear combination of the inputs will have expected values and error bounds that differ from the point estimates used in the graphical and numerical representation.

29. The implied IPR for the Scottish impulse case with diversion to Britvic of [✂] per cent has a mean value of [✂] per cent. The distribution of values is shown in Figure 7.

[5] We follow the methodology provided in *Unilateral Effects with General Linear Demand*, Jerry Hausman, Serge Moresi, and Mark Rainey, 2010 Mimeo, MIT, http://economics.mit.edu/files/6601. The IPR distributions are the result of adding stochastic inputs for the demand-related parameters to their equation 12.
[6] www.stata.com/bookstore/stata12/pdf/r_nlcom.pdf.

FIGURE 7

IPR probability distribution, impulse, Scotland



Source: CC calculation.
Note: Units have been excised from the chart.

30. The IPR based on Scottish Tesco pooled data gives a mean value of [✂] per cent.

Bargaining

Introduction

1. In this appendix we present our analysis of bargaining power between manufacturers and retailers in the off-trade, multiples channel. We start with a description and assessment of the instances of buyer power identified by the parties. We find that there is a wide range of bargaining variables that are threatened or used.

2. In order to examine this question more fully, we analyse the amount of value added retained by soft drinks producers and retailers. Total value added was calculated as the difference between the retail price and producers' costs. This allowed us to identify whether:

   (a) the margin sharing depends on whether a brand is a 'must stock'; and

   (b) there are systematic patterns in margin sharing for must-stock brands depending on the identity of the producer (and, by extension, its size[1]).

3. Secondary questions include:

   (a) are larger retailers able to get a larger share of total margin for the same brands (ie are larger retailers stronger in bargaining); and

   (b) are there systematic patterns in margin sharing for non-must-stock brands depending on the identity of the producer (and in particular, on its size).

4. Our main findings are:

   (a) There is no systematic advantage for CCE regarding split of total value added for must-stock brands: [✂].

   (b) On average, must-stock brands allow their producers to earn a larger share of the total value added, one exception being [✂] which earns a larger share for [✂] (non-must-stock) compared with [✂] (must-stock).

   (c) For non-must-stock brands there is no systematic advantage for CCE regarding split of total value added: [✂].

Examples of 'buyer power'

5. The parties outlined a number of examples of buyer power to us. We have categorized these according to the reason for the buyer action. Our results are summarized in Table 1.

[1] Throughout the empirical analysis, we look at the identity of the firms rather than directly looking at their size. This means that a limitation of this analysis is that we cannot strictly differentiate between an effect that might be due to specific characteristics of a firm rather than its size.

TABLE 1 **Examples of buyer power outlined by the parties**

Type of cases	*Threat*	*Actual*
Delisting (not performing)		AG Barr–[✂] 2011
Delisting (related to price or fixed payments)	AG Barr–[✂] 2008 Britvic–[✂] 2013	Britvic–[✂] 2010/11 (switch to import Pepsi); [✂] 2006; [✂] 2005; [✂] (2012)
Rejected price increase		AG Barr–[✂] 2013; [✂] 2012; [✂] 2012 (2); [✂] 2012; [✂] 2006/08
Broken promotional deal		Britvic–[✂] 2010; [✂] 2010
Range reduction (not performing)		
Range reduction (price retaliation)	AG Barr–[✂] 2012	

Source: CC analysis on parties' submission.

6. In the threats described by the parties, two are delistings related to pricing issues and one is a threatened range reduction in retaliation for a price rise. In terms of actual notable instances of buyers exercising power, there are four pricing-related delistings, five rejected price increases and two instances where the buyer reneged on promotional deals. There is one case of a delisting caused by a product not performing.

7. We note that this collection of examples does not establish that buyer power is a binding constraint on manufacturers' pricing in this market. The largest category of cases, rejected price increases, would be observed in any situation of repeated negotiations—if buyers never rejected a requested price rise, the sellers would clearly not be doing their job adequately. We note also that of the actual delistings for price-related reasons most occurred some time ago or were related to the one case—grey imports of Pepsi—where buyers have a clearly equivalent alternative.

8. A recent case of pricing-related delisting is the [✂] delisting of 2012. This appears to be a case of tough negotiation that failed, with threats of delisting on a large scale actually being carried out.

9. We note that the parties have said that [✂]. We note that there is a single instance of this sort of bargaining behaviour—[✂]—and that was a threat rather than an actual case.

10. The examples of buyer power outlined by the parties seem to be best described as examples of active negotiations between parties who both share power. We believe that a more quantitative approach is needed to establish whether the balance of power lies all on one side or the other.

Data

11. We combined sales and cost data received from four major producers of soft drinks (CCE, Britvic, AG Barr and GSK) with Nielsen data on final sales of soft drinks via six major grocery multiples (Tesco, Asda, Co-op, Morrisons, Sainsbury's, and Waitrose). The main variables of interest from the producers' data are wholesale price per litre and cost per litre, and the main variables from retail data is the final retail price. Then we calculated retailers' margin per litre for each brand as the difference between the retail price and the wholesale price. Producers' margin per litre was calculated as the difference between the wholesale price and costs per litre.

12. Each retailer's share in total margin is then calculated as a ratio of retailer's margin to total value added (ie difference between retail price and producer's cost). Each

producer's share in total value added is the ratio of the producer's margin per litre to total margin per litre.

13. Below we describe how we dealt with different sources of data and what cleaning procedures we implemented, and how we matched the data sets provided by producers with those from Nielsen.

Nielsen data

14. The source for retail prices by multiple was Nielsen key account data provided by Britvic. It contained data on volume and value of sales for around 120 brands with total sales above £2 million. The data was on a weekly basis and covered 156 weeks—from the week ended 6 March 2010 to the week ending 23 December 2013. Britvic also provided names of producers of each of the brands in the data set. The following multiples were included in the data set: Tesco, Sainsbury's, Morrisons, Asda, Co-op and Waitrose.

15. In order to transform weekly prices into yearly prices, for every observation we identified year as the year in which the last day of a particular week falls on, and then calculated volume-weighted average prices for each brand in each year in each multiple. Since the sample started in March 2010, for the calendar year 2010 the average price is the average for the period of March to December 2010. We checked if for 2011 and 2012 March to December prices were representative of the January to December prices and found no systematic pattern in deviation.

16. Another way to deal with 2010 would be to use the period of March 2010 to February 2011 as the approximation for 2010 prices. We checked if for 2011 and 2012 prices calculated using March to February periods were representative of the yearly prices, and found no systematic pattern in deviations. Therefore for simplicity we used the approach described in previous paragraph to calculate 2010 prices (ie March to December 2010).

AG Barr

17. Initially submitted sales data by AG Barr showed only invoice value and contribution (invoice value less cost of goods). This did not take into account the following items:[2]

    (a) Promotional investment (PI) is [✂]. This investment has grown at an aggregate level year-on-year and it is a tool that AG Barr uses to engage shoppers and customers.

    (b) Retailer investment (RI) consists of [✂].

    (c) [✂]

18. AG Barr emphasized the importance of these types of extra expenditure: [✂].

19. Later we received an Excel spreadsheet containing the data presented in the [✂], where these additional items were accounted for. However, even this data did not include other costs such as customer delivery costs and sales costs and so it overstated the true variable margin associated with a brand or customer. Later AG Barr submitted its estimates of delivery costs for the main grocery multiples.

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[2] According to AG Barr's classification. RI and PI are recorded together in the category 'CDT investment'.

20. In order to make AG Barr's data comparable to that of other producers, we deducted [✂] and CDT investments from the net sales revenue figures for each brand and each multiple customer. Therefore, we calculated net wholesale price as:

    (Gross sales value – [✂] – CDT allocation) / Quantity gross litres

21. We calculated cost per litre as:

    (COGS[3] + Brand marketing + Brand ops recoveries + Brand adjustment) / Quantity gross litres

22. We note that this is different from AG Barr's methodology[4] in only one aspect: where to place CDT investment. AG Barr includes it in costs, and we deducted it from the revenue. Therefore the absolute margin is the same across the two approaches, but in our view promotional investment needs to be reflected as a reduction in the price a customer pays, and not as producer's cost. Ideally, we would want to separate retailer investment from CDT investment, as this is a cost to the producer. However, neither AG Barr nor CCE or GSK record these separately (whereas Britvic does). Therefore, in order to be able to achieve comparability of data across producers, we deducted both retailer investment and promotional investment from the net sales revenue.

23. AG Barr's calculations show that CDT investment can vary significantly depending on the brand and on the multiple. For IRN-BRU, CDT as a percentage of list sales value ranged between [✂] and [✂] per cent for the main multiples in 2011. Depending on the share of CDT represented by RI or PI, overstatement of the true margin share of producer may vary between brands and multiples.

Britvic

24. Table 2 shows the main items contained in Britvic's data. Sales data provided at SKU level stops at the trading contribution level, and therefore we cannot account for further costs.

[3] Cost of goods sold.
[4] AG Barr pointed out that it amended its accounting policy in relation to CDT in the Transaction prospectus as well as in its 2013 annual report and accounts.

TABLE 2 **Description of the data provided by Britvic**

Variable		*Description*	*In trans-action data?*
Cases Invoiced		Sales volumes, expressed in cases invoiced to customer.	Yes
Litres Invoiced		Sales volumes, expressed in litres (cases multiplied by ltrs per case).	Yes
Gross Revenue	**A**	The basic price that is agreed between BSD and a customer, which is stated on their invoice.	Yes
Long Term Discounts	**B**	Contracted, conditional discounts given to customers for fulfilling defined behaviour based on Sales Drivers, Growth Incentives and Cost to Serve efficiencies. Most LTD's do not appear on the Invoice and are paid retrospectively.	Yes
Promotional Discount	**C**	The amount invested with a customer to fund promotional activity (eg from £1.20 to £1.00). PD benefits the end consumer as it is used to reduce the price they have to pay to buy it. PD can be on invoice or retrospectively paid.	Yes
PBI Contribution	**D**	[✂]	Yes
Rental Inc.Comm.Asst	**E**	Money received from customers as rental payments for commercial assets (largely vending machines not chillers or dispense equipment)	Yes
Net Revenue	**[✂]**		Yes
Prime Costs PCR	**G**	Cost of ingredients and packaging. Includes sugar, PET, other raw materials.	Yes
Marginal Production Costs PCR	**H**	Allocation of cost of production sites based on time to manufacture a product. Includes direct labour, heat, and power.	Yes
Marginal Distribution Costs	**I**	Cost to transport goods from the factory to the customer, includes primary warehousing	Yes
Marginal CFGL Costs	**J**	Container and full goods losses, wastage of finished goods	Yes
Marginal Contribution PCR	**[✂]**		Yes
ADF	**L**	Cost of doing business with a customer that falls outside the definition of promotional funding or long term discounts provided to the customer. Generally money invested with customers to pay for their 'costs' in running a promotion: brochures, point of sale, etc. ADF is mainly paid retrospectively in lump sums.	Yes
Trading Contribution PCR	**[✂]**		Yes
Brand A&P and Trade Ex	**N**	Brand A&P is brand specific advertising and promotion. It includes expenditure on TV and other media. Trade Ex is brand specific, but unlike Brand A&P it is also customer specific. It includes costs of brand level point of sale advertising that is specific to a particular customer or outlet.	**No**
Direct Selling Costs	**O**	Direct selling costs are costs associated with customer account teams. These costs are mainly salary/headcount related.	**No**
Commercial Assets Costs	**P**	Commercial Assets incorporates dispense, vending or chiller related costs. In particular, it includes costs related to the service/maintenance, movement and depreciation/write-offs of dispense, vending and chiller assets.	**No**
Variable Contribution	**[✂]**		**No**

Source: Britvic.

25. Britvic is the only producer that provided data for different customer-related costs separately. Discounts and promotional funding are deducted from revenue, and other customer-related costs are recorded as costs (ADF). However, in order to make Britvic data comparable to that of other producers, we recalculated net revenue by additionally deducting ADF costs from it. Therefore, compared with Britvic's own calculations, trading contribution will be the same, but net revenue we calculated will be lower (by ADF amount), and costs will be lower (by ADF amount). On average, ADF represents [✂] per cent of net sales revenue.

26. It should be noted that such costs as 'Brand A&P and Trade Ex', 'Direct Selling Costs', and 'Commercial Assets Costs' were provided separately for each product, but not by customer. For comparability reasons, because none of the other suppliers provided such cost information, we did not include these costs in our analysis.

27. Additionally, Britvic later clarified that submitted costs showed only the variable part of production costs. Since the main goal of our analysis was to see how the total value added generated by a sale of a particular brand is split between a producer and a retailer, we aimed to include all brand-related production and distribution costs

of a producer. Britvic provided us with an estimate of the relative size of variable and fixed costs for 2012, which we used to 'upgrade' its variable costs for all years.

CCE

28. CCE provided the following data.

29. Revenue is based on dead net sales income (DNNSI), [✂] CCE [✂]. This includes all invoiced revenue to customers less [✂]. It should be noted that certain items are not [✂] in CCE's reporting systems and therefore are not included in these figures, eg [✂].

30. DNNSI calculated as the difference between net sales income, and the following items:

    (a) 'Promo funding'. This is the value of support from CCE to the customer in respect of [✂].

    (b) 'Other customer funding' is the value of the other discounts and allowances paid to the customer off-invoice.

        (i) A subset of this is 'Promo TTA' (Promotional Trade Advertising Allowance): [✂].

31. CCE informed us that a more granular breakdown of promotional costs by brand, sub-channel and customer is [✂] CCE's systems and therefore significant additional work and time would be required to provide such data in this format.

32. Also, CCE provided data on promotional funding split only in aggregate form (by brand over all customers, and for top 10 customers for all brands).

33. Data on following types of costs is provided:

    (a) Standard COGs: this includes [✂] costs, [✂].

    (b) FTB (freight to branches): [✂].

    (c) Delivery: this is the cost of transporting goods [✂].

    (d) Warehousing: this is the cost of storing goods.

34. FDM (full delivered margin) which is DNNSI less COGs, FTB, delivery and warehousing costs. This is the [✂].

35. CCE [✂] and was therefore unable to provide [✂] in the time available. While CCE would expect that most of the costs listed above will be [✂]. Since we use the same approach for all producers, this approach is consistent with our analysis.

36. It should be noted that costs were provided by brand, not by brand and customer, and therefore we have used the average across all customers, and we cannot assess if there are differences in brand costs across customers. CCE [✂].

GSK

37. GSK provided the data in Table 3 related to its calculations of net revenue (by brand and by customer).

TABLE 3 **Description of data provided by GSK**

	P&L item	*Definition*	*Calculation*	*Description*
A	**Invoiced Cases**	**Volume delivered in cases**		
B	**List Price Sales**	**Quantities delivered at List price case rate**	Volume x List price	Generic Price File
C	List Price Discounts	Negotiated customer price discount	C = B - D	
D	**Contract Price Sales**	**Quantities delivered at contract prices**	Volume x specific customer contract price	Specific customer negotiated price
E	Contract Price Discounts	On invoice funded promo's, damages, trunker discounts, returned goods, credit notes/ deductions, price claims/ disputes	E = F - D	Cost of breakages, returned goods, yield funded promos (ie NOT related to EPOS sales)
F	**Invoiced Sales**	**Quantities delivered at actual invoiced prices**	F = D + E	Amount invoiced to customer for goods delivered less any credits for pricing errors, returned goods breakages etc
G	ATA	**A**nnual **T**urnover **A**llowances - rebates paid to customers retrospecitvely upon achievement of a sales target		Comprise an un-conditional (% and/or lump sum) and conditional (% and/ or lump sum) element. Costs are apportioned by brand as a % of sales
H	TAA	**T**rade **A**dvertising **A**llowances - amounts paid to customers to cover a wide range of activities e.g. promo space/ promo support/ POS		Reported on an Accruals basis with actual invoices being deducted from the accrual
I	Multibuys / Retros	Promotions held in store that benefit the end consumer Eg. BOGOF, 2 for a price. Amounts are paid retrospectively on a case rate basis		Cost of funding the promotion is invoiced retrospectively by the customer. EPOS data is used by the retailer to measure the take-up of the promotion
J	Customer POP	Customer **P**oint **o**f **P**urchase expenditure - expenditure on consumer activities E.g Sampling, POS, etc		Payment made directly to a customer, or to a third party for goods / services that are 'customer specific' (ie. Materials cannot be transferred to another account)
K	***Total Trade Funds***		*K = G + H + I + J*	
L	**Triple Net Sales**		L = F + K	

Source: GSK.

38. Then, GSK calculates variable margin as:

Variable margin = Net sales – Variable part of COGS – Factory variance allocation

GSK told us that this was not a measure it used internally, and that GSK measured Gross Margin as Net sales less all parts of COGS (not just the variable element).

39. Later GSK clarified that it did not include distribution costs in this calculation, and submitted the necessary data. In order to be consistent with other suppliers, we also included the fixed part of standard costs in total production costs.

Matching producers' data and Nielsen data

40. We matched producers' data and Nielsen data by producer, multiple, year and brand. Where there were doubts how aggregation across different SKUs within one brand

was done, we compared total volumes sold in both data sets. For example, Nielsen data had only one line for 'Lucozade' but GSK provided data separately for Lucozade Energy and Lucozade Sport, whose combined volumes matched approximately the sales of Lucozade in Nielsen data (by year by multiple). Therefore we combined revenue, volumes and costs for the two types of Lucozade in the GSK data to match it with Nielsen data.

41. In some cases matching was not straightforward (eg the Barr range, Barr's Originals), and we excluded such observations from the final data set.

42. It should be noted that within each brand the SKU mix will undoubtedly differ from customer to customer and from year to year, and this is a limitation of the data set we use.

43. [✂] clarified that delivery was not billed separately for any customer, and thus the invoice value was the final delivered price charged to a customer. Comparability of discount allocation across producers remains a concern. While GSK and [✂]. For Britvic, most discounts are brand specific and are allocated automatically at the time of billing. [✂] clarified that for brands that they sold under licence, licence fees were normally included in the cost data provided to us.

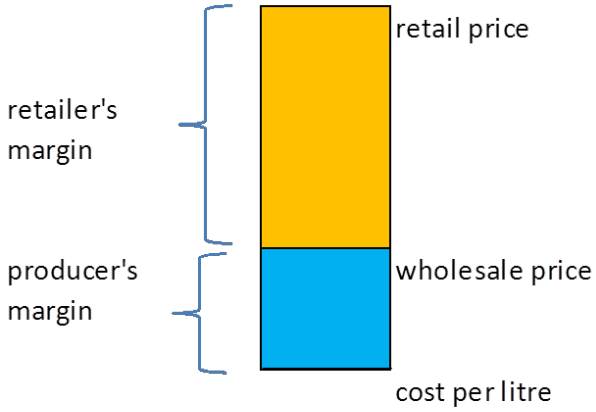
Analysis of the split of total value added

44. As described above, we combined sales and cost data received from four major producers of soft drinks (CCE, Britvic, AG Barr and GSK) with Nielsen data on final sales of soft drinks via six major grocery multiples (Tesco, Asda, Co-op, Morrisons, Sainsbury's and Waitrose).

45. Each retailer's share in total margin is calculated as a ratio of the retailer's margin to the total value added (ie the difference between retail price and producer's cost). Producer's share in total value added is the ratio of producer's margin per litre to total margin per litre. Our hypothesis is that the stronger the brand, the larger the producer's share of value added. Also, the bigger the producer, the larger its share of value added for a must-stock brand.

FIGURE 1

Retailer's and producer's shares in total value added



Source: CC.

46. Analysis of third parties' responses identified the following brands[5] as 'must stock' (these were mentioned most frequently): Coke, Pepsi, IRN-BRU, Britvic J_2O, Ribena, Fanta. We also included Sprite and 7UP, as these have the highest volume of sales of the less frequently-mentioned brands.

47. Figure 2 shows absolute levels of producers' and retailers' margins for must-stock brands in 2011. At first glance, it seems that within each multiple ([✂]), total margins for CSD must-stock brands are all relatively similar. [✂]

FIGURE 2

Producer costs, producer margin and retailer margin for must-stock brands, 2011

[✂]

Source: Nielsen, suppliers' transaction data, CC analysis.

48. Figure 3 is based on the same data as Figure 2, but shows how total value added is shared between producers and suppliers for must-stock brands in 2011.

FIGURE 3

Producer margin and retailer margin for must-stock brands, 2011

[✂]

Source: Nielsen, suppliers' transaction data, CC analysis.

49. We note that for [✂] in 2011, producers' margin shares appear to be lower than those at other multiples. At the same time, there is substantial variation of producers' margin shares for different brands and for different multiples.

50. Table 4 shows the retailer's share of total value added for each must-stock brand in 2011. The table shows that for IRN-BRU, retailer share in total value added is generally [✂].

[5] We restrict our attention to brands within our sample, which is limited to four producers only: CCE, GSK, AG Barr and Britvic.

TABLE 4 **Retailer's share in total value added for must-stock brands, 2011**

per cent

Brand/supplier	*Asda*	*Co-op*	*Morrisons*	*Sainsbury's*	*Tesco*	*Waitrose*	*Average for all multiples*
IRN-BRU	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
AG Barr total	**[✂]**	**[✂]**	**[✂]**	**[✂]**	**[✂]**	**[✂]**	**[✂]**
7up	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
britvic j2o	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
pepsi	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Britvic total	**[✂]**	**[✂]**	**[✂]**	**[✂]**	**[✂]**	**[✂]**	**[✂]**
Fanta	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
My Coke	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Sprite	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
CCE total	**[✂]**	**[✂]**	**[✂]**	**[✂]**	**[✂]**	**[✂]**	**[✂]**
RIBENA	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
GSK total	**[✂]**	**[✂]**	**[✂]**	**[✂]**	**[✂]**	**[✂]**	**[✂]**
Comparison of average retailer's margin share of other producers vs CCE							
AG Barr	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Britvic	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
GSK	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: Nielsen, suppliers' transaction data, CC analysis.

51. In order to establish whether the differences in the way total value added is split between retailer and suppliers are statistically significant, we implemented econometric analysis described below.

Econometric analysis of margins

52. The dependent variable in our model is the retailer's share in total value added, that can range from 0 to 100 per cent. As explanatory variables we include producer-specific dummy variables that take values 1 or 0 depending on the identity of the supplier, retailer-specific dummy variables, year-specific dummy variables, and dummy variables for must-stock brands. Some specifications include interaction terms between these dummy variables. In one specification we include a measure of brand 'uniqueness'—maximum cross-price elasticity of the closest substitute of a brand that we derived from demand estimation. A high value of this variable means that the quantity of a particular brand is very responsive to a change in price of its closest substitute, and therefore, the brand is 'less unique'.

53. We also have used two definitions of a must stock—one, as described above, and another, as provided to us by grocery multiples. Table 5 provides a list of brands we included in our models with an indication whether they were considered must stocks.

TABLE 5 **List of brands included in the model**

Producer	*Brand*	*Must stock*	*Must stock for multiples*
AG Barr	IRN-BRU	[✂]	[✂]
	Rubicon	[✂]	[✂]
	Orangina	[✂]	[✂]
	KA	[✂]	[✂]
Britvic	Pepsi	[✂]	[✂]
	R Whites	[✂]	[✂]
	Britvic j2o	[✂]	[✂]
	7up	[✂]	[✂]
	Tango Carbs	[✂]	[✂]
	Mountain Dew	[✂]	[✂]
	Lipton ice Tea	[✂]	[✂]
CCE	My Coke	[✂]	[✂]
	Ocean Spray	[✂]	[✂]
	Schweppes CSD	[✂]	[✂]
	Capri Sun	[✂]	[✂]
	Dr Pepper	[✂]	[✂]
	Fanta	[✂]	[✂]
	Oasis	[✂]	[✂]
	Powerade	[✂]	[✂]
	Sprite	[✂]	[✂]
	Relentless	[✂]	[✂]
	Monster	[✂]	[✂]
	Lilt	[✂]	[✂]
	Appletiser	[✂]	[✂]
	Glaceau	[✂]	[✂]
GSK	Lucozade	[✂]	[✂]
	RIBENA	[✂]	[✂]

Source: Nielsen, suppliers' transaction data, CC analysis.

54. This evidence needs to be taken as more qualitative than quantitative, because we have been unable to implement a more rigorous analysis, for example by including more control variables (eg brand specific and producer specific).

55. Another caveat is the limitations of a small sample size. For groups with few observations (ie GSK has only one must-stock brand, and only one non-must-stock), coefficients will be 'correct' but their significance may be overstated.

Must-stock brands

56. Initially we restricted our sample only to must-stock brands. Specification 1 in Table 6 shows the results of the estimation for a model with a 'usual' must-stock dummy, and Specification 2, with a must stock as defined by multiples. Specification 3 is the same as Specification 1, but also includes a 'uniqueness measure'.[6]

57. In all regressions the 'default' producer is [✂] (therefore dummy coefficients for other suppliers show how they compare to [✂]), and the default retailer is [✂].

[6] We have a uniqueness measure only for CSDs; therefore we excluded Ribena and J_2O from Specification 3.

TABLE 6 **Regression results with must-stock brands**

Dummies and other variables	*Specification 1 Must-stock brands*	*Specification 2 Must-stock brands, multiples definition*	*Specification 3 Must-stock CSDs, with 'uniqueness' measure*
[✂]	–0.0291**	–0.0904***	–0.0283**
[✂]	–0.0181	–0.0779***	–0.0465
[✂]	0.0394**	–0.0219	-
Brand 'uniqueness'	-	-	0.0617*
[✂]	–0.1366***	–0.1439***	–0.1294***
[✂]	–0.0851***	–0.0796**	–0.0868***
[✂]	–0.1069***	–0.1012***	–0.1159***
[✂]	–0.0528***	–0.0753***	–0.0584***
[✂]	–0.0987***	–0.1106***	–0.1162***
Constant	0.7745***	0.8263***	0.7553***
Observations	144	180	108
R-squared	0.451	0.275	0.516

Source: Nielsen, suppliers' transaction data, CC analysis.

***Significance at 1% level. **Significance at 5%. *Significance at 10%.
Note: Robust standard errors in parentheses. Yearly dummies are not shown.

58. Specification 1 shows that retailer share for [✂] must-stock brands is about [✂] than for [✂] must-stock brands (on average). There is no statistically significant difference for [✂] must-stock brands compared with [✂].

59. Looking at the coefficients for individual retailers, we see that [✂], which means they get a smaller share of the total value added across all must-stock brands (on average).

60. Specification 2 uses an alternative definition of a must-stock brand. It shows that retailer shares for [✂].

61. Results of Specification 3 are similar to those of Specification 1. Additionally, the coefficient for the uniqueness measure is positive and significant at the 10 per cent level, which shows that the less unique a must-stock brand is, the larger the retailer share of total value added (and therefore the smaller the producer's share), which makes intuitive sense as even within must-stock brands there can be stronger (more unique) and weaker (less unique) brands for which the bargaining power of the retailers can be, respectively, weaker and stronger.

62. Results reported in Table 6 are estimated with robust standard errors. We have rerun the regressions using bootstrapping of standard errors, which did not change the significance level of the results.

All brands

63. While the results shown in Table 6 answer the question of whether split of total value added varies with the identity of the producer, we are also interested in how the split depends on whether a brand is must stock or not. In Specifications 4 and 5 (see Table 7) we included all brands, and added a must-stock dummy variable to capture the effect of the strength of a brand. In these specifications we restricted the sample to observations with wholesale volumes above 1 million a year.

TABLE 7 **Regression results with all brands**

Dummies and other variables	*Specification 4 No interaction terms*	*Specification 5 With interaction terms*
[✂]	0.0319*	0.0918***
[✂]	–0.0785***	–0.1242***
[✂]	–0.0668***	–0.1515***
Must-stock dummy	–0.0938***	–0.1268***
[✂]	-	–0.1413***
[✂]	-	0.1028***
[✂]	-	0.1873***
[✂]	–0.1320***	–0.1304***
[✂]	–0.0419**	–0.0340**
[✂]	–0.1156***	–0.1114***
[✂]	–0.0609***	–0.0547***
[✂]	–0.1117***	–0.1154***
Constant	0.8781***	0.8815***
Observations	344	344
R-squared	0.419	0.519

Source: Nielsen, suppliers' transaction data, CC analysis.

***Significance at 1% level. **Significance at 5%. *Significance at 10%.
Note: Robust standard errors in parentheses. Yearly dummies are not shown.

64. Specification 4 imposes a restriction that the 'must-stock effect' is the same for all suppliers, which may not be the case. Results show that on average for must-stock brands the retailers' share of total value added is [✂] per cent smaller (must-stock dummy has a negative and significant coefficient) than non-must-stock brands. Using the duality of retailers' and suppliers' shares in total value added, which need to sum to 100 per cent, we can see that for non-must-stock brands [✂].

65. Specification 5 is more flexible than Specification 4 in that it allows each supplier to have its own specific must-stock effect. We can 'translate' retailer's share in total value added in producer's share (since they sum to 100 per cent), and get the following interpretation of the results.

66. For non-must-stock brands:

(a) AG Barr gets [✂] share of total value added (compared with non-must-stock brands of [✂]);

(b) Britvic gets [✂] share; and

(c) GSK gets [✂].

67. For must-stock brands:

(a) AG Barr gets [✂] share than the must-stock brands of [✂];

(b) Britvic gets [✂] share; and

(c) GSK gets [✂].

68. For must stock vs non-must-stock within the same producer:

(a) AG Barr: [✂] share (than non-must-stock of the same producer);

(b) Britvic: [✂] share;

(c) CCE: [✂] share; and

(d) GSK: [✂] share [✂].

69. We also see the same result as earlier regarding comparison of other multiples vs [✂].

70. In order to assess whether the significance of the results may be affected by auto-correlation (ie 'similarities' in data from one year to another), we also ran separate regressions for each year and compared the results. The produced coefficients are very close to the ones we report for the full sample, and the significance of estimates does not generally change.

71. Results reported in Table 4 are estimated with robust standard errors. We repeat the estimation *(a)* using clustering of standard errors by grocery multiple, and *(b)* using clustering by producer. None of these modifications changes the significance level of the results. As an additional measure, we have rerun the regressions using boot-strapping of standard errors. This did not change the significance level of the results.

72. For completeness, we also reran the regressions using the alternative definition of a must stock as provided by grocery multiples (Specifications 6 and 7). The results are shown in Table 8.

TABLE 8 **Regression results with all brands, alternative definition of a must stock**

Dummies and other variables	*Specification 6 No interaction terms*	*Specification 7 With interaction terms*
[✂]	0.0201	0.1078***
[✂]	–0.0895***	–0.1314***
[✂]	–0.0840***	–0.1348***
Must-stock dummy	–0.0468***	–0.0441**
[✂]	-	–0.2231***
[✂]	-	0.0585**
[✂]	-	0.1046***
[✂]	–0.1341***	–0.1329***
[✂]	–0.0503**	–0.0383**
[✂]	–0.1188***	–0.1143***
[✂]	–0.0629***	–0.0558***
[✂]	–0.1042***	–0.1165***
Constant	0.8729***	0.8660***
Observations	344	344
R-squared	0.343	0.439

Source: Nielsen, suppliers' transaction data, CC analysis.

***Significance at 1% level. **Significance at 5%. *Significance at 10%.
Note: Robust standard errors in parentheses. Yearly dummies are not shown.

Conclusion

73. Our analysis suggests that:

(a) There is [✂] for [✂] regarding the split of total value added for must-stock brands: [✂].

(b) On average, must-stock brands earn a [✂] share of the total value added, one exception being [✂].

(c) For non-must-stock brands there is also [✂] for [✂] regarding split of total value added: [✂] earns a lower share.

Portfolio effects and distribution depth

Empirical evidence of brand pull-through

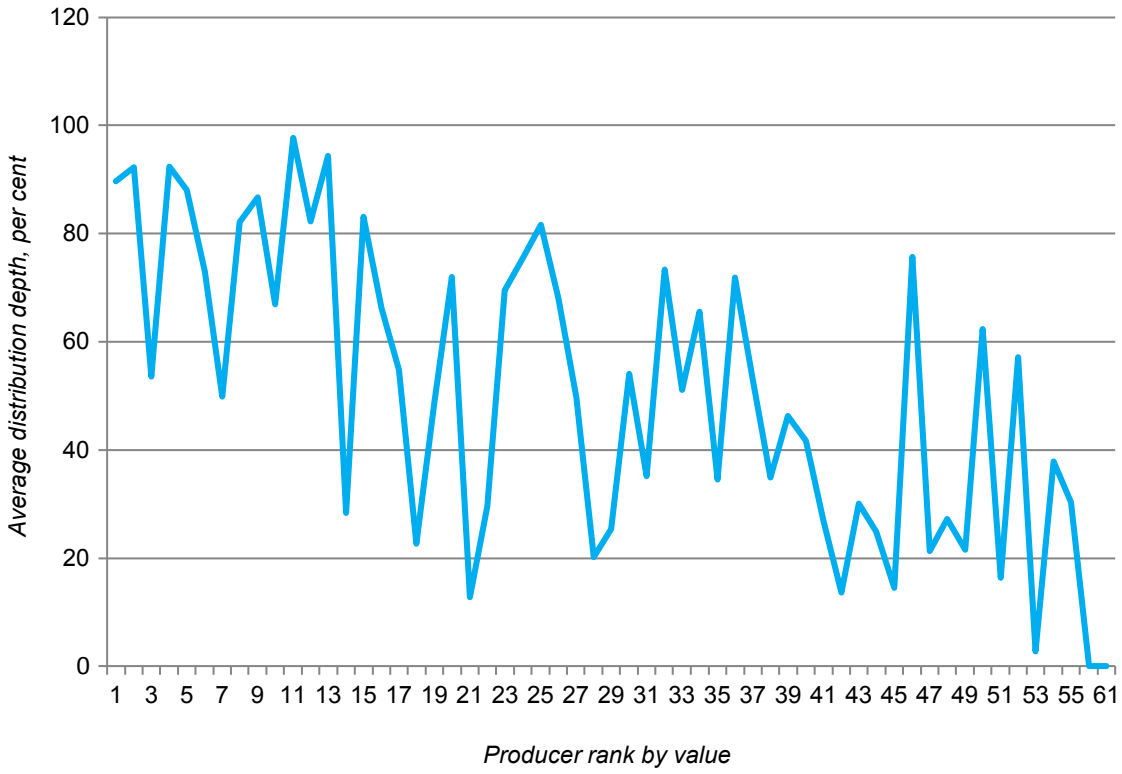
1. In this appendix, we address the question of whether larger companies tend to get better distribution for their brands than smaller companies with equivalent brands. If large companies were effective at promoting their more minor brands, then we would expect that this would be at the expense of the small brands of smaller companies. This appendix outlines the empirical work we have done to investigate the relationship between company size and brand-level distribution.

2. In the graph below, we rank producers by the total value of product they ship and plot, for multiples, the volume weighted average distribution depth attained by all brands (Figure 1) as well as showing each brand individually (Figure 2, where each data point represents a single brand).

3. 'Distribution depth', a variable we use throughout our examination of portfolio power, is made available in the Nielsen Scantrack data sets. It is defined as the total turnover of stores where the product is listed divided by the turnover of all stores. In that sense, it is a store-size weighted measure of the availability of the product. It is available for multiples and for the impulse channel separately.

FIGURE 1

Average distribution depth attained by producers ranked by sales, 2012, multiples



Source: Nielsen, CC calculations.

FIGURE 2

Brand-by-brand distribution depth attained by producers ranked by sales, 2012, multiples

Source: Nielsen, CC calculations.

4. In both graphs, we see a generally downward trend. This is not surprising and does not lead us to the conclusion that larger producers attain better distribution for their brands *because* they are larger. Many of the brands have larger distribution because they are popular, and thus contribute to making the producers larger producers. [✂] Some of the small producers which attain low distribution towards the right-hand side of the graphs are small because their products are niche, and that is also why their distribution is lower. There is no suggestion in these graphs that the better distribution of producers on the left is disproportionate.

5. Despite the downward trend in both graphs, many small producers also achieve a high degree of distribution. For example, Producer 46 attains 75 per cent distribution. This producer is [✂], which offers [✂] in cartons and cans. Producer 50, with 65 per cent distribution, is [✂], which supplies [✂]. Producer 53, on the other hand, with just 2.5 per cent distribution, is [✂], a budget bottled mineral water.

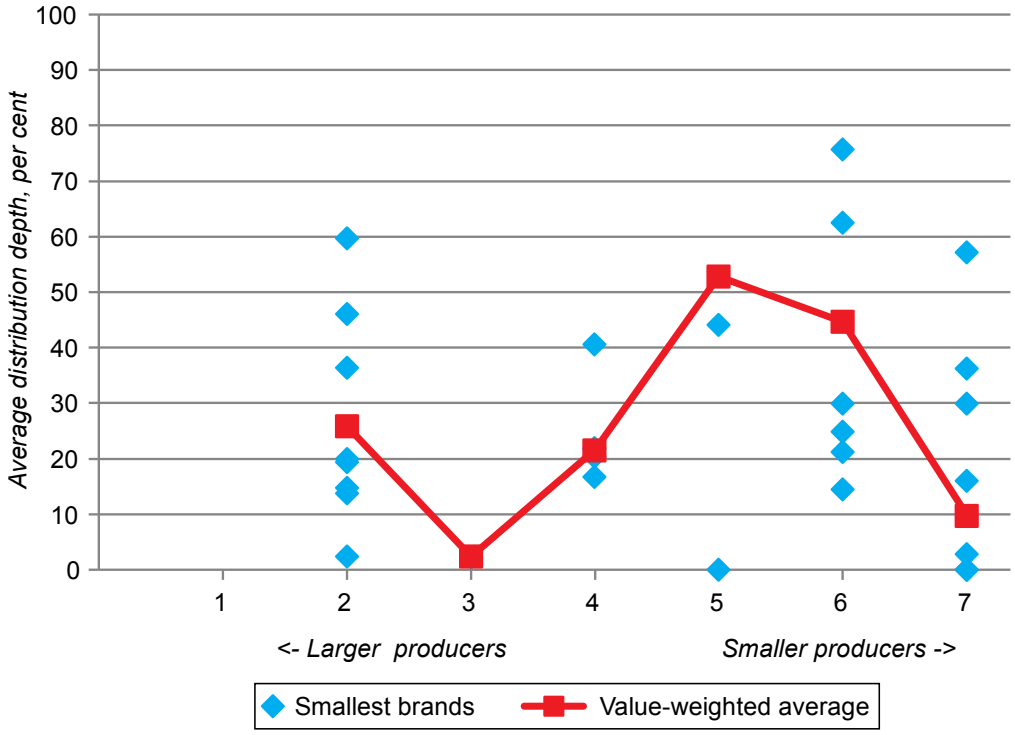
6. The question we want to answer is whether a small brand owned by a large producer tends to get better distribution than a similar small brand owned by a small producer. This analysis relies on soft drink brands, which may be substantially different in their product characteristics, being comparable. We note that [✂], a fruit juice, is [✂] brand with the worst distribution, at 23 per cent. It sold £4 million worth of product in 2012. A product with similar levels of sales is [✂], a small seller of [✂] with sales of £3.4 million that attained a distribution depth of 27 per cent. We consider that it is instructive to make comparisons across these types of products—a minority brand owned by a large company and a minor brand owned by a small company—to identify whether there is any systematic average relationship between size and distribution depth for brands with similar sales levels.

7. We have summarized the relationship between the size of producer, the size of brands, and the distribution depth attained by grouping both producers and brands by size. We define seven groups of producers, with the first group being [✂], producers ranked [✂] by value are in the second group, and so on, with all producers ranked above 50 in the last group. We define four quartiles of brands, from the smallest to the largest by value. Brands within each grouping are assumed to be comparable in the way described by the example above. We are examining this categorization of the data for any systematic downward trend in distribution as the producer size falls (ie the size-band number rises).

8. The four graphs below summarize the results for the take-home segment for each of the brand groupings, starting with the smallest brands.

FIGURE 3

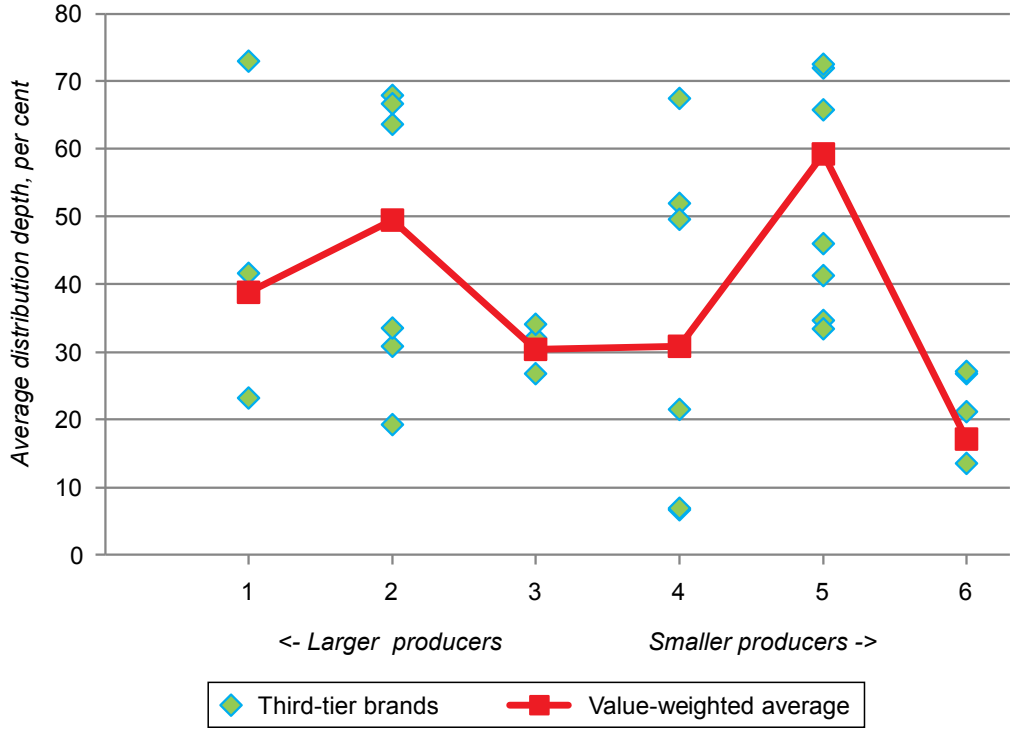
Distribution depth by producer size: smallest brands



Source: Nielsen, CC calculations.

FIGURE 4

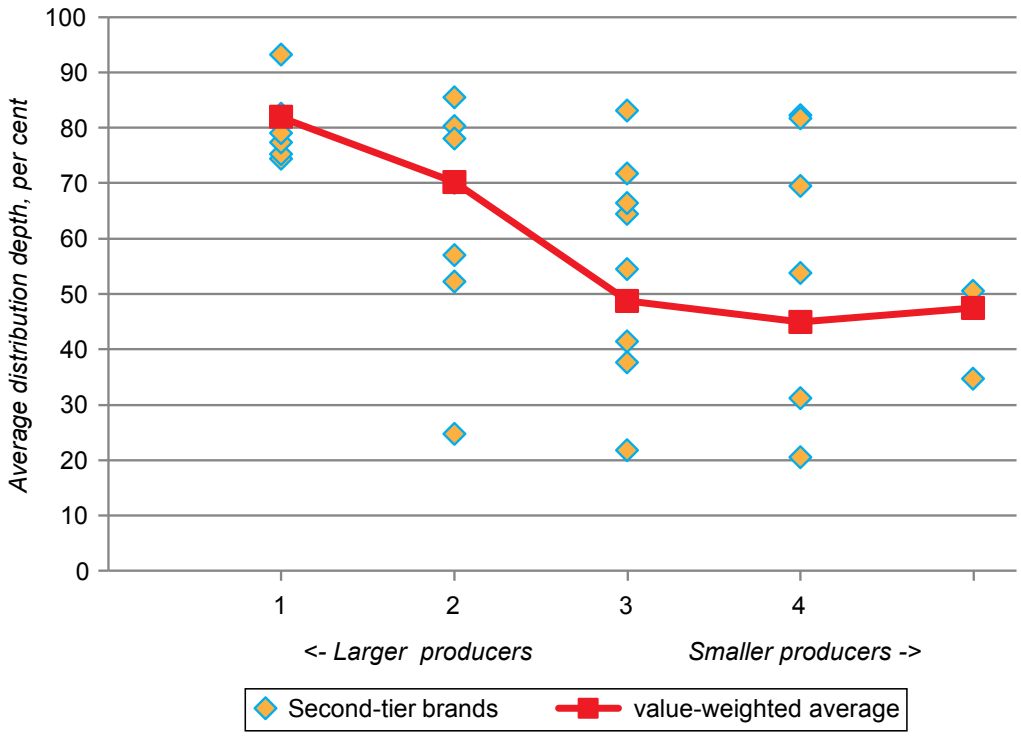
Distribution depth by producer size: third-tier brands



Source: Nielsen, CC calculations.

FIGURE 5

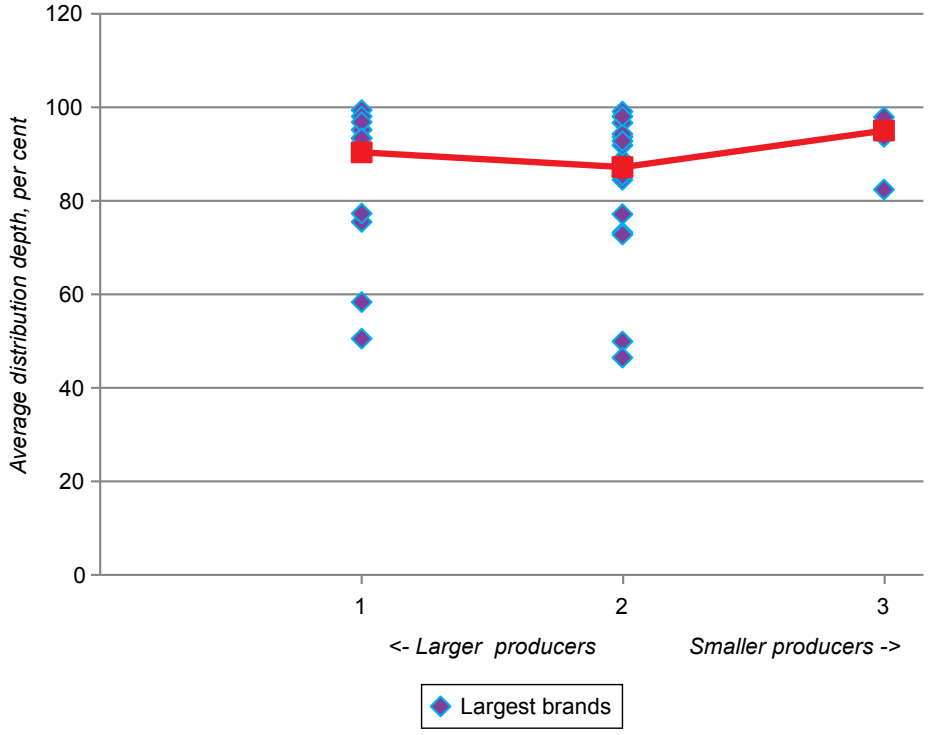
Distribution depth by producer size: second-tier brands



Source: Nielsen, CC calculations.

FIGURE 6

Distribution depth by producer size: largest brands



Source: Nielsen, CC calculations.

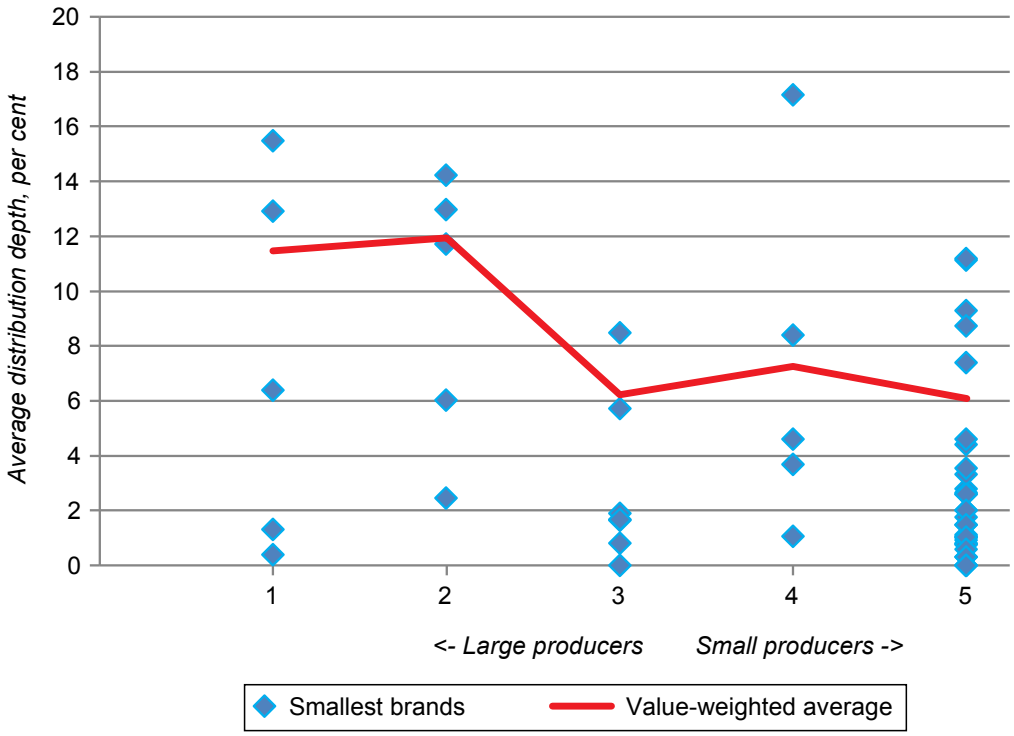
9. For the smallest and the third-tier brand groupings we see no systematic relationship between size and distribution depth. The second-tier brands seem to show some average tendency for distribution to fall as producer size falls. Closer examination of the scatter plots suggests that this effect is quite strongly associated with [✂] with low distribution in the 20 to 70 per cent range. The scatter plots for the other producer brands have far fewer marked differences. This graph might weakly suggest that [✂] manages to attain distributional advantages. The last graph, for the largest brands, shows no advantage to size.

Impulse segment

10. We have conducted a similar analysis on the impulse segment. For the smallest and the third-tier brands, the result is essentially the same—there is no advantage to size. We see some evidence of an advantage to size in the second tier and largest brands, as shown in the graphs below.

FIGURE 7

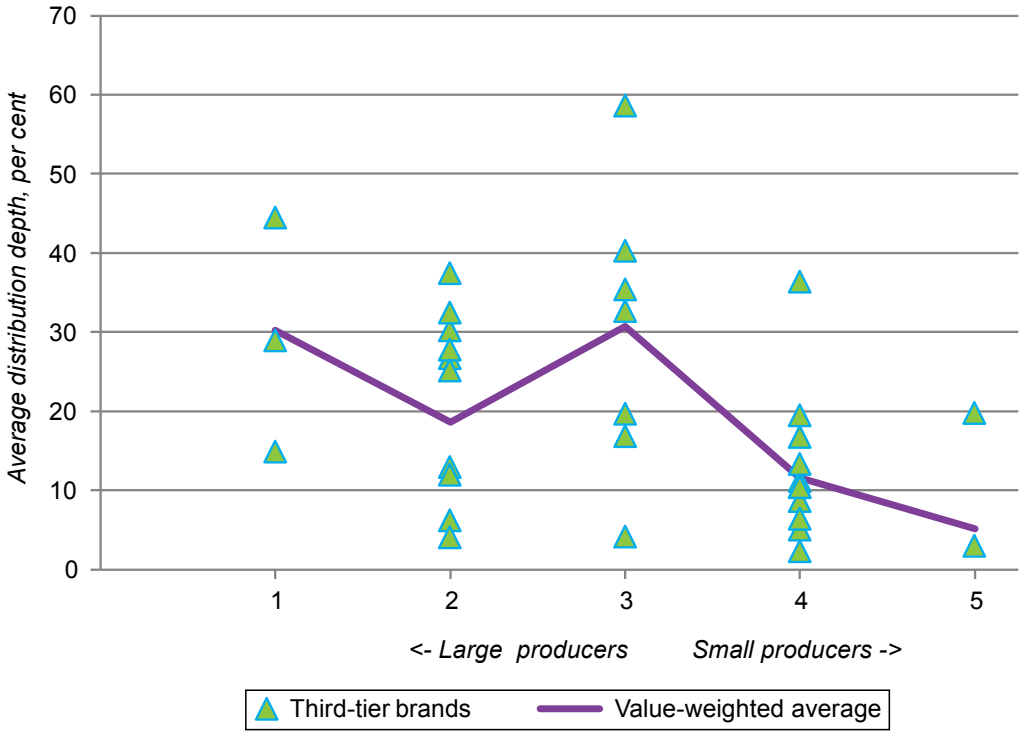
Distribution depth by producer size, impulse: smallest brands



Source: Nielsen, CC calculations.

FIGURE 8

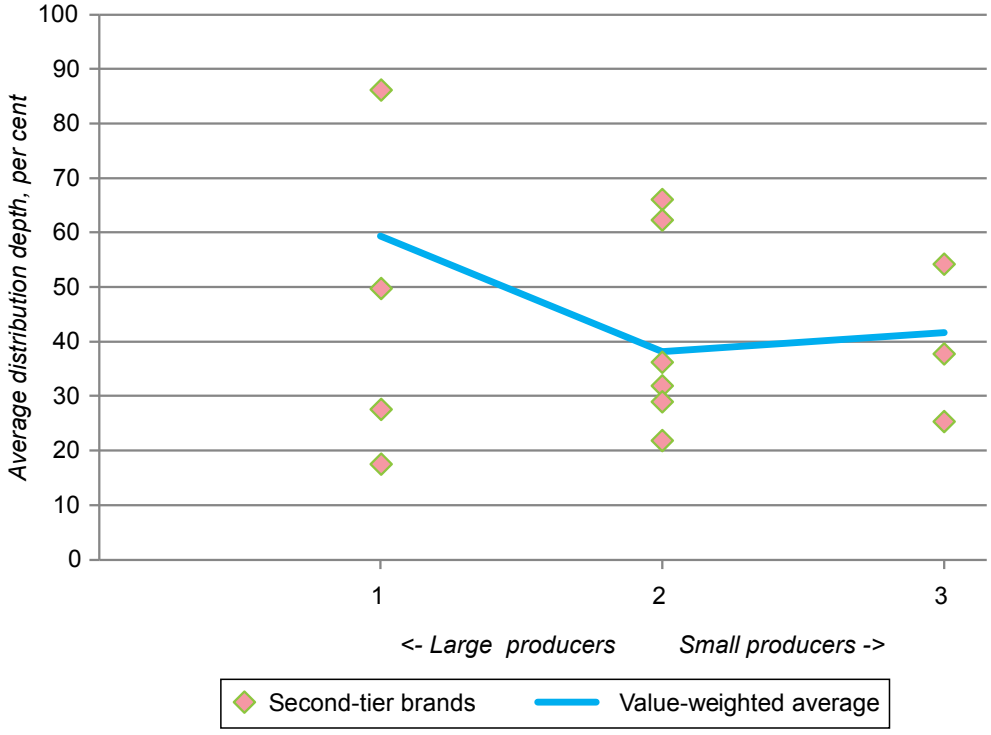
Distribution depth by producer size, impulse: third-tier brands



Source: Nielsen, CC calculations.

FIGURE 9

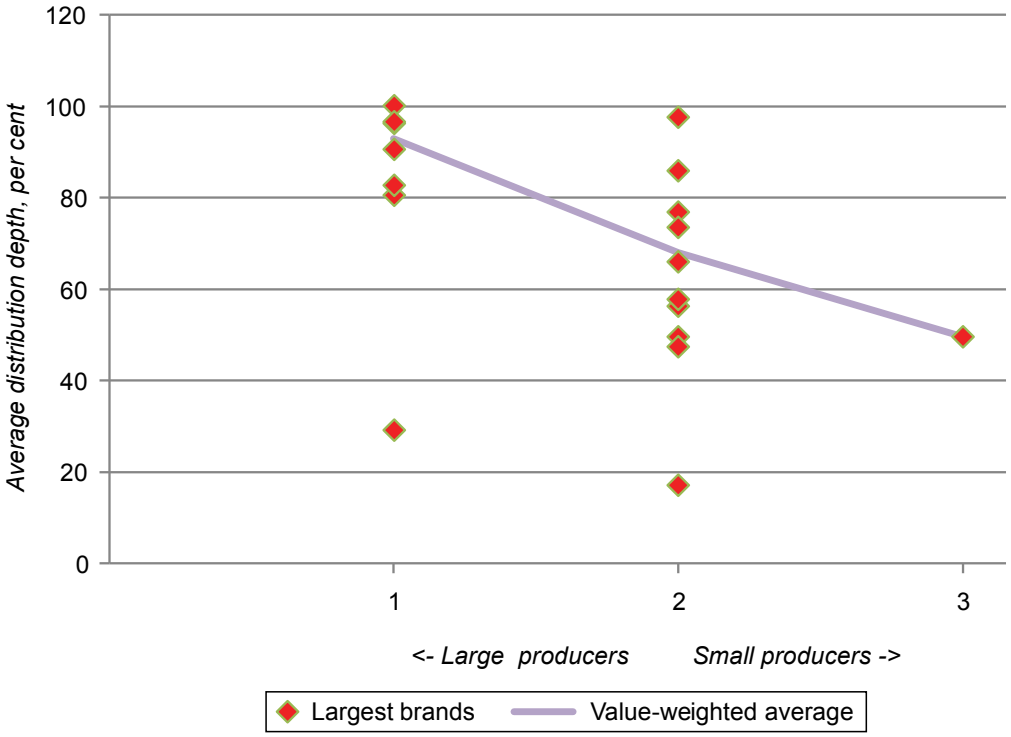
Distribution depth by producer size, impulse: second-tier brands



Source: Nielsen, CC calculations.

FIGURE 10

Distribution depth by producer size, impulse: largest brands



Source: Nielsen, CC calculations.

Entry and expansion

Introduction

1. This appendix provides additional information on barriers to entry to supplement that contained in paragraphs 6.130 to 6.138 of the report. First, we list some examples of entry and exit from the last ten years. Then we look at the relevant assets, capabilities and timescale required to enter the market. Finally, in Annex 1, we present brief case studies of four new entrants into the soft drinks market from the past 25 years: Red Bull, Innocent, Sunny Delight and Virgin Cola.

Examples of entry and expansion in the past ten years

2. Over the last ten years a number of soft drinks companies have expanded via the introduction of new brands and product extensions, and there has also been market entry by FMCG companies.[1] AG Barr provided details of new brands that had been introduced to the UK market in recent years by established soft drinks companies:

   (a) Brands introduced by CCE include: Glaceau, Monster, Relentless, Coke Zero, Powerade and Oasis.

   (b) Brands introduced by PepsiCo include Tropicana.

   (c) Brands introduced by Britvic include: Mountain Dew Energy, Fruit Shoot, J20 and Lipton Ice Tea.

   (d) Brand introduced by Nichols: Levi Roots.

3. AG Barr also provided details of brands introduced by:

   (a) large FMCG companies (San Pellegrino (Nestlé—2007), Sunny Delight (Procter & Gamble—1988), Volvic touch of fruit (Danone—2000);

   (b) independent new entrants (Innocent (1999), Boost (2001) and Red Bull (1994)); and

   (c) private labels including Euroshopper (available in Booker wholesale outlets) and Best-in (available in Bestway wholesale outlets).

4. Britvic said that the success of start-up entrants was gaining momentum, including niche brands (eg Firefly Tonics which is a health brand, and Boost, an energy drink).

Examples of exit from the soft drinks industry in the past ten years

5. There have also been a number of exits or withdrawals of product lines from the soft drinks industry in the last ten years. These included:

   (a) CCE: Fanta still, Minute Maid, Dasani water;

[1] Britvic estimated that [✂] per cent of its successful product launches were new products and not simply new flavours or new packs.

(b) PepsiCo: Pepsi Raw, Tropicana Spirit;

(c) Britvic: Freekee soda; and

(d) independent/other: Umbro, Rivella.

6. Of these exits we note that some were new product failures that were withdrawn quickly (such as Freekee soda) but others were initially successful (such as Dasani water) but later failed when product-related issues became apparent.

Overview

7. There are several specific factors that may affect the likelihood, timing and extent of entry or expansion, and we examined the extent to which these represented barriers to entry:

(a) Consumer brand: the development and promotion of a soft drink product and consumer brand, including the ability to influence consumer behaviour via advertising, sponsorships and/or marketing campaigns.

(b) Raw materials: including a supply of water, sugar, fruit juice and fruit pulp (if the new drink is to be fruit-based), flavourings, colourants and other ingredients and additives required to produce the underlying flavour on a consistent basis.

(c) Regulation: A number of regulations underpin the supply of soft drinks (eg Food Safety Act 1990, Flavourings in Food Regulation (EC) 1334/2008 and many others). Environmental, health and safety legislation must also be complied with. We do not believe that the regulatory framework constitutes a significant barrier to entry.

(d) Distribution and logistics: access to sales and distribution capabilities on a regional or national basis, to serve the principal sales channels (off-trade and on-trade), develop relationship with buyers, eg to negotiate joint business plans with customers and monitor and manage in-store promotions and ensure that the brand is listed in their stores. Distribution could be outsourced to a third party.

(e) Production: the availability of suitable production facilities (either in-house or on an outsourced basis) to provide a range of package sizes in sufficient volume and on a timely basis to meet customer demands and seasonality, and the associated work force.

(f) Access to finance: the capability to fund the cost of entry or expansion and to be able to deal with the high probability of failure of individual product launches and generate an appropriate rate of return to justify the initial investment.

(g) Timing considerations: the ability to enter and expand on a timely basis.

Detailed assessment

8. This section examines each of the principal requirements to enter or expand in the soft drinks industry. It incorporates the views of the main parties, third parties and our assessment of relevant evidence.

Consumer brand

9. The parties told us that the main challenge for a new entrant would be to develop a strong brand. We believe that this is especially true in the case of a new CSD brand, given the entrenched position (and high brand recognition) of existing leading brands such as Coke, Pepsi, Lucozade and, in Scotland, IRN-BRU. Nichols confirmed that it was harder to be innovative with a new CSD brand. A new entrant will need to spend more (as a proportion of sales) to establish its brand than an incumbent needs to spend in order to maintain its brand position; brands are long-lasting assets in which continued investment is important.

10. Virgin Cola was an attempt to provide a new cola product applying consumer recognition of the Virgin umbrella brand to the soft drinks industry (see Virgin Cola case study).

11. An alternative to developing a new brand is to obtain a UK franchise for products of an existing soft drinks brand (eg an overseas brand). The parties provided details of a number of soft drinks brands that have achieved consumer recognition and have developed into significant brands over the last 20 years. We noted that the majority of these brands were introduced to the UK by an existing soft drinks company (eg CCE, Britvic, Barr and GSK), although there are some independent brands. Red Bull had already been introduced successfully in Austria, Hungary and elsewhere prior to its introduction into the UK market in 1994 (see Red Bull case study).

12. The time taken to achieve scale varies between different brand launches, and will depend in part on the distribution strategy chosen, marketing spend etc. Generally, we understand that it should be clear within 6 to 12 months of launch whether or not a new product is likely to prove successful, although it may take longer than this (two to three years or even longer) for sales to ramp up to the brand's expected long-term sales level. Sometimes, success can be achieved more quickly. For example, within one year of the launch of Sunny Delight, the brand had become the third best-selling soft drink in the UK, with sales not far behind Pepsi. However, sales have subsequently fallen substantially (see Sunny Delight case study).

Sales and distribution

13. Retailers (and, if appropriate for the brand, outlets in the 'on'-trade) need to be persuaded to stock the new brand. The parties told us that a new brand would need to achieve listings with (in particular) the major multiples and wholesalers. An established FMCG company would benefit from established relationships with supermarkets and other major customers, whereas a start-up would need to develop relationships incrementally with retailers willing to take products

14. AG Barr said that in the energy drinks segment a number of new brands had achieved significant scale and success within 12 months of launch.

15. Retailers told us that they were generally willing to stock new brands if they thought there would be consumer demand for them. In addition to the cost price (and hence the margin they can earn) they will consider the nature of the product (eg similarity to existing products), and the planned promotional and advertising strategy in coming to a view as to whether the new product is likely to sell well. Existing drinks companies which launch a new brand may also pay the retailer a listing fee in order to encourage listing of the new product. Achieving listings with wholesalers (which sell to smaller retail outlets with limited shelf space) may be more difficult, as they are reluctant to stock a new product which does not already have an established reputation. A new entrant may therefore have to distribute its product directly to

smaller retailers initially in order to build up demand. A wholesaler is more likely to stock a product once its customers start demanding it from them.

16. A national sales force, of the type that an existing drinks company or an FMCG company will have, will assist the rapid spread of a new product. A start-up company proposing to enter the soft drinks market for the first time is unlikely to have an established national sales force. This is not an insurmountable barrier to entry, as (for example) Red Bull and Innocent have shown.[2] However, in the absence of strategies such as those employed by Red Bull the initial build-up in sales is likely to be slower than would be the case for a new brand launched by an existing soft drinks company.

Production

17. We identified two principal strategies that a soft drinks company could adopt with respect to production, with the possibility that these could be mixed:

(a) The outsourced production strategy approach to production by outsourcing manufacturing and packaging to third party suppliers. This strategy would avoid the need to develop and operate production capabilities but would increase costs by the margin required by the supplier to provide relevant services. This strategy is easier to adopt if the new brand is positioned at the premium end of the market (with premium pricing) as the additional cost is then more easily absorbed. Outsourcing increases dependency on third parties throughout the value chain.

(b) The in-house production strategy approach to production, by controlling the entire production. The soft drinks company would need to incur capital expenditure to acquire and develop a production site, and distribution capability. A new entrant could begin with outsourcing, and later develop in-house production facilities if sales volumes were sufficient to justify the investment.

Outsourced production strategy

18. We noted that Nichols is largely dependent on third party suppliers for all its UK products.[3] In the year ended 31 December 2012, Nichols' gross margins were [✂] per cent (2011: [✂] per cent) and its return on capital employed was around [✂] per cent. This provided evidence that a soft drinks company can operate with an out-sourcing strategy.

19. The parties told us that prospective entrants can avoid the need to invest in new production capacity, cutting the costs of entry, by using (at least initially) 'contract bottling' (albeit that this typically costs around £[✂] per case more than in-house bottling). Examples of companies that are able to provide contract packing include Cott, Gerber and Refresco, although there are several others.

In-house production strategy

20. The parties estimate that a second-hand bottling line could be purchased for a relatively low amount, starting from around £[✂]–£[✂] million, although—given that finding a location for that line may be more challenging—the contract-bottling option is likely to be preferable for new entrants.

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[2] Red Bull used a third party sales and distribution company for the first few years after its launch in the UK.
[3] Source: Nichols plc Annual Report, 2011, p12.

21. AG Barr said that the cost of purchasing a production line would depend entirely on the packaging format of the product under consideration. The cheapest entry level was afforded by carton production, followed by PET (initially without in-house bottle blow-moulding), followed by canning. AG Barr said that it would be feasible for a complete slow-speed used production line running at around [✂] bottles per hour to be sourced for less than £[✂] and this could be operated by as few as [✂] employees. A number of businesses specialized in the sale of used production equipment that could be assembled to enter production. The cost of new machinery would be three to four times higher than for second-hand equipment and high-speed lines would be much more expensive.[4]

22. A production site would require a substantial investment in production and warehousing equipment, including specialized automated equipment and the ability to maintain appropriate quality and hygiene levels. Its location would need to ensure an appropriate water supply for production and access to the motorway network for distribution.

23. Britvic told us that the addition of a new line within an existing factory might be expected to cost in the region of £[✂] million and take 12 to 18 months, while construction of a new factory would be significantly more expensive and take much longer. AG Barr has told us that the total cost of its new Milton Keynes factory [✂] would be about £[✂] million (£[✂] million for land and buildings and £[✂] million for equipment) and it will take [✂] to complete phase 1 ([✂]).

Summary assessment of production

24. It would appear that both outsourced and in-house production represent valid strategies for soft drinks companies and these strategies can be mixed. Specifically, a new entrant could outsource production at the outset to avoid the major investment required to produce in-house, and could then migrate some or all of its production capability to its own assets if commercially worthwhile. We did not find any evidence that access to production capabilities represented an insurmountable barrier to entry for a new entrant.

Cost of development and commercial returns required

25. Red Bull told us that building a new brand, raising consumer awareness and securing access to sales and distribution was an expensive task and could cost in the region of £[✂].

26. Britvic told us that the advertising/marketing spend in order to establish the market for a new drink would vary significantly by product. As an example, it said that it spent around £[✂] million in advertising and marketing costs on the launch of *Drench*, as compared with around £[✂] for *Hydro*.

27. AG Barr told us that in order to assess an innovative product launch it would need to be confident (from the results of quantitative research) that there would be sufficient consumer appeal. AG Barr would also consider whether there was a long-term profitable opportunity. Dependent on the scale of the complexities involved, AG Barr would typically expect a new line to sell [✂] cases in its first year in market.

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[4] [✂] told us that it was presently installing a new high speed carbonates filling line at a cost of £[✂], and that it had taken 14 months from formal approval of the proposal to commencing commercial production.

Access to finance

28. A start-up would need to secure appropriate finance. If production and distribution are outsourced, then the initial sum required need not be particularly high, depending on the amount planned to be spent on advertising and marketing, and the requirement for working capital. Innocent was launched with an initial investment of £250,000 (see Annex 1), though we would expect a start-up today to require rather more. Given the relatively low amount of seed capital required if this route is adopted, we do not regard access to finance as a major barrier to entry, however, we note that the probability of success of an individual new product would be low.

29. An existing FMCG company would need to demonstrate that the project could generate appropriate commercial returns, but could be expected to have access to the capital required if their internal hurdle rate is met.

Timing considerations

30. While it takes time to plan the launch of a new drink (about 10 to 12 months) and more time, following launch, for sales to build up, new product launches are being planned by drinks companies all the time. However the majority are unsuccessful: Red Bull told us that there were many failures each year across all categories. It said that not only with new brands but within the sub-brands, flavours and pack sizes there was a constant stream of ineffective new product development. New product launches by new entrants to the industry are far fewer and further between. The speed with which sales of a new brand will build up will depend on the attractiveness of the brand, the degree of marketing support behind it, and the ability of the sales force to cover distribution channels. We would expect that, for a new brand launched by a new entrant (rather than an existing soft drinks company) the sales build-up will, in general, be slower and that it might take two, three or more years before sales reach a level where the new brand is in a position to represent serious competition for an existing brand.

Overall assessment of entry and expansion

31. Summary observations:

(a) The majority of 'new' drinks are brand extensions by established producers such as CCE, Britvic, AG Barr and GSK.

(b) New products which copy characteristics of genuinely new products (for example, the proliferation of functional drinks) have a greater chance of success if they are within the portfolio of established producers.

(c) Of the genuinely new *brands* launched, the majority of these are also from the established drinks companies. There are exceptions, ie new drinks from new entrants to the market, but these are generally in a niche segment rather than competing with established CSDs. The Virgin Cola case study illustrates the difficulty of taking on established CSD brands such as Coca-Cola and Pepsi Cola head on.

(d) Innovation may be in the form of new packaging or package sizes by established brands.

(e) The probability of successful entry is low. New brands from new entrants probably grow sales more slowly than new brands from existing drinks

companies, because new entrants generally do not have a national sales force necessary to achieve scale in distribution, and may have limited budgets to fund advertising and marketing.

(f) Chances of success are enhanced (but not guaranteed) by major investments in brands—this is an expensive undertaking. However, investment in brands does not guarantee success of the product, particularly if there are underlying issues with the product (see Sunny Delight case study). The Red Bull case study (in Annex 1) appears to demonstrate that developing the right product, identifying the target market, and then developing an effective marketing strategy are very important determinants of success.

32. In our discussion of the competitive effects of the merger we investigated the concern that the price of IRN-BRU would increase as a result of the merger. We note that IRN-BRU is an established CSD and conclude that a new entrant, competing directly with IRN-BRU, would face similar difficulties to those Virgin Cola experienced in competing with Coca-Cola and Pepsi. Therefore we conclude that successful new entry of a product to compete with IRN-BRU would be unlikely.

Case studies of soft drink launches

Introduction

1. This annex contains brief case studies[1] of four soft drink products which have been launched over the past 25 or so years:

   (a) Red Bull;

   (b) Innocent;

   (c) Sunny Delight; and

   (d) Virgin Cola.

2. Red Bull (an energy drink) and Innocent (fruit smoothies) were successful, and their sales are still expanding today. Sunny Delight (an orange-tasting soft drink) was initially very successful, but its sales subsequently fell sharply, and Virgin Cola (a CSD) was unsuccessful. All four were launched by new entrants to the soft drinks industry: start-up companies in the case of Red Bull and Innocent; an established company with interests in other businesses such as airlines and music retailing in the case of Virgin Cola; and an established FMCG company in the case of Sunny Delight.

Red Bull

History

3. Red Bull is an example of market entry through the creation of a new product niche using unconventional marketing and distribution channels to gain initial acceptance of the product. Red Bull was created in 1987. It was developed from a soft drink which had been developed and successful launched in Thailand in 1976. The taste was reformulated to suit western tastes and was marketed in carbonated form and in distinctive packaging, first in Austria and later in many other countries. Today Red Bull is available in more than 165 countries.

4. The product contains no fruit. It is made from water, sugar, caffeine, taurine (another stimulant) and flavourings.

5. Following the original launch sales were very low and market analysis was negative but Red Bull was successfully promoted as a functional drink.

6. Red Bull was introduced in Germany in March 1994. By June, it was claiming a quarter of the sports drink segment there, according to the Associated Press, putting it ahead of Gatorade. A total of 5.226 billion cans of Red Bull were sold worldwide in 2012, representing an increase of 12.8 per cent against 2011. Company turnover was €4.930 billion.

[1] All the information in this annex has been obtained from public sources which we believe to be correct, but have not verified with the drinks companies concerned (with the exception of Red Bull).

Marketing and distribution strategy

7. The target market for Red Bull is young people with active lifestyles. In contrast to the classic marketing strategies of products such as Coke, in the early years Red Bull was not advertised. Instead the brand relied on the concept of viral marketing, paying students, DJs and young opinion formers to host parties where the drink was served.

8. Teams of students were hired in each country to establish a relationship with the consumers, to have them discover the product (through distribution of free samples), to talk with them about the product and to convey the information from the consumers to the company about their appreciation of, or dissatisfaction with, the product.

9. In universities and colleges, the Student Brand Manager became an ambassador of the brand in their own school. Their objective was to be sure that Red Bull was present at every strategic moment in the student social calendar: integration week-end, sporting events, big parties etc. Red Bull was keen to instil a real passion for the brand among these people, as this made them more likely to promote a good image of the brand and to have a greater positive impact on targeted consumers.

10. The product is sold at a premium price compared with other soft drinks. A small, 250ml can currently retails for around £1.20–£1.35 per can (and more in some smaller outlets). It is by far the most expensive non-alcoholic drink on the market, and some three to six times more expensive than Coke.

11. In advertising terms, aside from simple cartoon ads promoting the lift the beverage offered with the slogan 'Red Bull gives you wings', Red Bull associated itself with Grand Prix racing and the extreme sports movement.[2] Traditional advertising spend was limited, however, as the company focused heavily on getting product samples into the right hands.

12. Red Bull led the energy drink segment in the UK. In 2011 it had 7.5 per cent (value share) of the UK CSD market in 'off'-trade, and around 4 per cent (value share) of the total 'on'-trade soft drinks market.

13. Originally, the marketing strategy focused on one product, in one type of container (can), rejecting any diversifications, licensing, brand merchandising or the creation of an umbrella brand. The policy was later relaxed as, in 2008, Red Bull launched Red Bull Cola and, more recently, expanded into other flavoured Red Bull energy drinks ('Red Edition', 'Blue Edition' and 'Silver Edition').

14. Red Bull is manufactured in Austria and Switzerland and then shipped to its markets around the world, as far afield as South Africa, Japan, Saudi Arabia and the USA.

Innocent

15. Innocent is an example of a genuinely new product successfully launched by a new entrant.

[2] The company sponsored snowboarding and freeskiing contests as well as Flugtag, a homemade flying machine challenge. More recently, it sponsored Felix Baumgartner to jump from a balloon on the edge of space, 24 miles above the earth.

History

16. Innocent was founded in 1998 by three friends who had met at Cambridge University. All three had started jobs with blue-chip companies after graduation (one in advertising and two in management consultancy) but continued to talk to each other about their desire to become entrepreneurs.

17. In 1999, after spending six months working on fruit smoothie recipes and £500 on fruit, the three friends sold their drinks from a stall at a music festival in London. Customers were asked to put their empty bottles in a 'YES' or 'NO' bin depending on whether they thought the three should quit their jobs to make smoothies. At the end of the festival the 'YES' bin was full, with only three cups in the 'NO' bin, so they resigned from their jobs in order to start up the business.

18. Initially, they struggled to find investment, but eventually a wealthy American businessman decided to invest £250,000. In total, it took 15 months from the initial idea to taking the product to market.

19. On 30 March 2009 TCCC, through its indirect wholly-owned subsidiary company European Refreshments, entered into an Investment Agreement to acquire an [15–20] per cent shareholding in Fresh Trading for approximately £30 million.[3] In May 2010, TCCC exercised its option to increase its overall shareholding in Fresh Trading to 60 per cent. In February 2013, it was announced that TCCC was increasing its stake to above 90 per cent and would take full control of Innocent smoothies.

Marketing and distribution strategy

20. In 1999, Innocent made its first sale of three cases to a local sandwich bar. The following year, it managed to get a trial listing in Waitrose (which was successful and led to a full listing).

21. Innocent's first advertising campaign, in 2001, consisted of five poster sites outside the headquarters buildings of the five main supermarket chains. The first television advertisement did not appear until 2006.

22. In addition to limited conventional marketing, for a number of years Innocent ran 'Fruitstock', a free music festival with a blend of live music, homespun market stalls and smoothie tasting designed to encapsulate Innocent's brand values (fun and ethical). Fruitstock was later replaced by Innocent village fetes, though these were also later scrapped in favour of more conventional advertisements highlighting the product's health benefits. The company set up a charitable foundation, the Innocent Foundation, into which it pledged to pay 10 per cent of its profits to support underprivileged people in the countries from which it sourced its fruit.

23. Innocent's founders created a memorable brand that appeared to its customers (and potential customers) to stand for something. The company succeeded in delivering its brand personality with humility, individuality, corporate social responsibility and a sense of humour. As was the case with Red Bull, Innocent avoided the classic marketing strategies associated with soft drinks such as Coke and went for something more quirky and individual to establish the brand in consumers' minds and make them feel they 'owned' the brand.

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[3] www.oft.gov.uk/shared_oft/mergers_ea02/2009/Coca-cola.pdf.

24. As far as we are aware, Innocent has always been produced by third party bottlers, and the company does not have any manufacturing/bottling facilities of its own.

Sunny Delight

25. Sunny Delight is an example of new drink launched by a large FMCG company with heavy branding expenditure which was initially successful but later suffered for product-related reasons.

History

26. Sunny Delight was a soft drink consisting of 5 per cent citrus juice, water and 10 per cent sugar, with vegetable oil, thickeners, added vitamins and flavourings, colourings and other additives.

27. It had been available in the USA since 1964, but was sold there on ambient shelves competing for space alongside squashes and long-life drinks. It was acquired at the end of the 1980s by Procter & Gamble (P&G), which began test marketing Sunny Delight for the UK in Carlisle in 1996.

28. It was launched nationwide in April 1998 with a £9.2 million[4] advertising campaign (the slogan was: 'the great stuff kids go for'). By August 1999, Sunny Delight had become the third biggest selling soft drink in the UK, behind Coke and Pepsi, with sales of £160 million per year.

Marketing and distribution strategy

29. P&G invested in a new filling plant costing about £12 million[5] so that the drink could be packaged in frosted plastic bottles similar to those used for fresh orange juice.

30. Although the drink was perfectly stable at ambient temperatures, P&G sought to position the product in chiller cabinets, alongside fresh juices. This meant that it did not have to compete for ordinary shelf space with other fruit drinks. It reportedly achieved in-store presence on a scale not seen before for a soft drink launch.

31. The advertising was backed up by a large direct marketing campaign to encourage people to sample Sunny Delight. One of the key factors in the success of this campaign was P&G's ability to cross-sell to young families who could be leafleted with special offers given P&G's other brands (eg Pampers).

32. Unfortunately for P&G, the initial success of Sunny Delight was followed three years later by a rapid decline in sales following adverse publicity over health-related concerns.

33. By 2001 sales had halved and in March 2001, P&G announced that it would be separating Sunny Delight into a new joint venture company with Coca-Cola where it was redesigned and relaunched in 2003 as 'SunnyD'. It was relaunched again in March 2009 with a new formulation containing 70 per cent fruit juice and no artificial ingredients or added sugar. However, amid declining sales,[6] the product was further

[4] www.guardian.co.uk/media/2001/apr/11/marketingandpr.comment.
[5] According to industry estimates (www.guardian.co.uk/media/2001/apr/11/marketingandpr.comment).
[6] Turnover by this time was down to single-digit millions.

reformulated in April 2010 as a beverage containing 15 per cent juice. Its successor product, Sunny D, only achieves a small turnover in the UK.

Virgin Cola

34. Virgin Cola is an example of a new product launch that tried to take strong existing brands head on but which failed.

History

35. Virgin Cola was launched in 1994 by a 50/50 joint venture between Cott Corporation, a Canadian private label drinks bottler, and Sir Richard Branson's Virgin brand with the intention that it should become a rival to Coca-Cola. Virgin Cola's relationship with Cott Corporation changed, and Virgin bought Cott's stake in the company shortly before the drink's US launch in 1998. In Britain, the drink was manufactured under licence, first by Prince's soft drinks, before production switched to Silver Spring.

36. After the initial publicity surrounding the launch had passed the label only gained 3 per cent of the UK market. By 1999, it had become clear that Virgin had not achieved significant success in its plans to become a major player in the cola market on both sides of the Atlantic. That year, Virgin Cola had sales of £28.6 million in the UK, compared with Coca-Cola's £620.4 million.

37. By 2000, Virgin's ambitions of competing with Coca-Cola and Pepsi were over, but it continued to innovate, and in June 2000 introduced a new product aimed at children called Mini-V, which was caffeine-free, contained no artificial sweeteners and had 30 per cent less sugar. Despite a multi-million pound advertising campaign, Mini-V disappeared from the shelves within a matter of months.

38. In Britain, Virgin Cola was gradually dropped by supermarkets and smaller chains, leaving its presence largely confined to Asda stores, which only stocked it in large, two-litre bottles, costing 20 to 30 per cent less than its rivals. It maintained a limited presence in independent newsagents, and continued to be sold on Virgin trains and planes, but by 2005 advertising was largely withdrawn.

39. In August 2009 Asda, its last major distributor, discontinued the product. The following month, its licensed producer, Silver Spring Mineral Water, went into administration, and no replacement has been found to continue production for the UK market.

Marketing and distribution strategy

40. Despite some initial success, Virgin Cola struggled to compete with its more established rivals. It was priced 15 to 20 per cent lower than the two leading brands. This was achieved by advertising less than its rivals, relying instead on the Virgin umbrella brand. As well as saving on advertising, Virgin also had a small sales force and did not have a portfolio of other soft drinks brands. However, the lower price failed to persuade consumers to buy Virgin Cola in preference to Coca-Cola and Pepsi Cola.

Glossary

Act	The Enterprise Act 2002.
AG Barr	AG BARR p.l.c.
Agreements	Reference to the **JBP**s formed between **soft drinks producer**s and large customers.
Asda	Asda Stores Limited.
Bag-in-box	**Soft drink**s in the on-trade are often supplied by 'bag-in-box' where the **soft drink** syrup is mixed with carbonated water in a dispenser.
Bestway	Bestway Cash & Carry Limited, a national **cash-and-carry wholesaler**.
BOGOF	Promotional offer where the consumer purchases one item and gets one item free.
Booker	Booker Limited, a national **cash-and-carry wholesaler**.
Bottler	A manufacturer that makes and bottles beverages.
BP	BP p.l.c.
Branded soft drinks	**Soft drink**s manufactured under a known brand.
Brand holder	**Soft drink**s producer.
Brand owner	A company which owns a **soft drink** brand, including product name, logo and recipe.
Britvic	Britvic plc.
Buyer power	Buyer power refers to the ability of a large purchaser to negotiate lower prices from its suppliers. Where this involves offsetting the market power of large suppliers, it is often referred to as 'countervailing' buyer power.
Cash-and-carry wholesaler	A **grocery wholesaler** that supplies business customers such as retailers, caterers and owners of small businesses.
Category captain	Category captaincy is where a supplier (usually a large supplier of branded goods) is appointed by the retailer to exchange information with the retailer to help the retailer manage the way that products within a particular category are presented and sold to consumers.
CC	Competition Commission.
CCE	Coca-Cola Enterprises, a Coca-Cola bottler which operates in eight territories in Western Europe including Great Britain.

Consumers	End-consumers of **soft drink**s (for example, the general public).
The Co-op	Co-operative Group Limited
CSD	Carbonated **soft drink**. Mixture of water with carbon dioxide often including a sweetener and flavouring agent. Examples include drinks such as colas, fruit-flavoured carbonates and lemonade. There are also carbonated energy drinks.
Customers	Customers of **soft drinks producer**s are those who buy products at wholesale prices for onward sale to the consumer.
Danone	Danone Ltd is a French company that sells a range of **soft drink**s. Its main focus is bottled water, including the Evian, Volvic and Badoit brands.
Direct sales delivery	Delivery by **soft drinks producer**s directly to customers, such as pub chains, wholesalers and convenience stores.
Discounters	**Grocery retailer**s offering noticeably lower prices than a conventional supermarket but which stock a limited range of products
Dispenser	Equipment in the on-trade in which **soft drink** syrup, supplied via a **bag-in-box**, is mixed with carbonated water. Also called a fountain.
Diversion ratio	The proportion of sales lost by one product that is instead 'diverted to' another product.
EBITA	Earnings before interest, tax and amortization.
Energy drinks	**Soft drink**s which are marketed as being able to help improve concentration, reaction time and endurance.
EPOS	Electronic point of sale, ie the scanning system at the checkout.
Fixture space	Allocated space either in a retail outlet or cash and carry for product.
FMCG	Fast-moving consumer goods.
Fruit juice	**Soft drink** consisting of 100 per cent pure juice and generally with no added ingredients.
Gondola end	The space at the end of an aisle in a retailer's store.
Grocery retailer	A firm selling groceries at a retail level, being either a supermarket, a convenience store or a specialist grocery retailer.
Grocery store	A retail store, a significant proportion of which is devoted to the sale of groceries.
Grocery wholesaler	A seller of groceries at a wholesale level, usually to convenience stores.

GSK	GlaxoSmithKline plc is a global healthcare company. GSK manufactures and distributes two **soft drink**s brands, Lucozade and Ribena.
Impulse	Drinks purchased for immediate consumption.
JBP	Joint business plan. Agreement between **soft drinks producer**s and larger customers for the pricing and supply of **soft drink**s, often an annual basis.
Juice drinks	**Soft drink**s made with varying quantities of different types of fruit juice.
Litmus	Litmus Market Research supplies information to the **soft drink**s industry on sales through the **impulse** channel.
Multiples	Term used to describe retailers such as supermarkets.
NELY	The combined areas of the North-East, Lancashire and Yorkshire.
Nichols	Nichols plc, a UK company specializing in the production of **soft drink**s.
Nielsen	The Nielsen Company is a leading global information and measurement company that enables companies to understand consumers and consumer behaviour. Nielsen measures and monitors what consumers watch (programming, advertising) and what consumers buy (categories, brands, products) on a global and local basis.
Off-promotion	Period of time when a product is priced at its retail price with no promotional discounts or offers against the price.
Off-trade	Drinks sold in retail outlets and consumed elsewhere, for example drinks sold in supermarkets.
OFT	Office of Fair Trading.
On-trade	Drinks sold and consumed on premises, for example drinks bought in pubs, bars and restaurants.
Pepsi	PepsiCo UK & Ireland, food and drinks manufacturer.
Private label	Own-brand **soft drink**s. Also referred to as own label.
Promotional calendars	The agreed time between a **soft drinks producer** and customer (often over the course of a calendar year) that a product would be on promotion.
Promotional slots	Agreed time allocated to promotion of a products.
Promotional space	The space allocated either within a supermarket or wholesaler which is devoted solely to a product on promotion.
Red Bull	Red Bull, an Austrian company, markets Red Bull energy drinks in the UK.

Sainsbury's	J Sainsbury plc.
SKU	Stock-keeping unit, a unit commonly used that identifies an individual product.
SLC	Substantial lessening of competition.
Soft drink	Beverage which does not contain alcohol.
Soft drinks producer	Company which manufactures and supplies **soft drink**s to either on-trade or off-trade customers.
Still soft drinks	Drinks including **fruit juice**, water, **juice drinks**, squashes and sports drinks. **Soft drink**s produced without carbonation.
Take home	Drinks bought for consumption at a later date.
TCCC	The Coca-Cola Company is the world's leading manufacturer, marketer and distributor of non-alcoholic beverage concentrates and syrups.
Tesco	Tesco PLC.
The guidelines	The CC's merger assessment guidelines.
Whitbread	Whitbread PLC.