## DETERMINATION OF MERGER NOTIFICATION M/07/027 BRITVIC/C\&C

## Section 21 of the Competition Act 2002

Proposed acquisition of the soft drinks business of C\&C Group plc by Britvic plc

Dated 13/08/07

## Introduction

1. On 24 May 2007, the Competition Authority ("the Authority") in accordance with section 18(1) of the Competition Act, 2002, ("the Act") was notified on a mandatory basis of a proposal whereby, Britvic plc ("Britvic") would acquire sole control of the soft drinks business ("the Target") of C\&C Group plc ("C\&C") ("the proposed transaction").

## The Undertakings Involved

## The Acquirer

2. Britvic, the acquirer, is a public limited company incorporated under the laws of England and Wales. Its shares are traded on the London Stock Exchange. Britvic is a producer and supplier of soft drinks to customers in the State. Britvic has seven manufacturing plants across the UK but none in the State. Until April 2007, Britvic sold its products in the State to off-trade customers via distributors such as Robert Roberts. ${ }^{1}$
3. The following Britvic brands (either owned or held under license from others) are distributed in the State:
(i) Ame, which is a blend of fruit juices, spring water and herbal extract with no artificial sweeteners;
(ii) Purdey's, which is a multivitamin juice fruit drink that contains a combination of carbonated spring water, fruit juice, vitamins and natural plant extracts;
(iii) Robinsons, which is a low juice squash drink that is marketed in different flavours; and,
(iv)Robinsons Fruit Shoot, which is a "kid's" ready to drink fruit juice in sports bottle.
4. For the financial year ending 30 September 2006, Britvic generated sales of Stg£6 million (c. $€ 8.8$ million) ${ }^{2}$ in the State.
[^0]
## The Target

5. C\&C, the target, is a public limited company incorporated under the laws of Ireland. It shares are traded on the Irish and London Stock Exchanges. The soft drinks business, which is the subject of the proposed transaction, is only one part of C\&C. The soft drinks brands that are manufactured and sold by C\&C in the State include: (i) Ballygowan which is the number one water brand in the State; (ii) $7-U P$ which is the number lemon-lime brand; (iii) Club which is the number fruit carbonate brand; (iv) MiWadi which is the number one squashes brand; and, (v) Pepsi which is the number two cola brand.
6. For the financial year ending February 2007, the target generated turnover of c. $€ 149$ million in the State.

## The Proposed Transaction and Rationale

7. Britvic proposed to acquire the shares of the target which comprise the following wholly-owned subsidiaries of $C \& C$ that manufacture and distribute various brands and flavours of soft drinks:

- Aquaporte Limited
- Ballygowan Limited
- Britvic Limited
- C\&C (Belfast) Limited
- C\&C (wholesale) Limited
- C\&C (Ireland) Limited
- C\&C Logistics Limited
- C\&C Management Services Limited
- C\&C (Munster) Limited
- C\&C Pension Trust (1973) Limited and
- William J. Dwan \& Sons Limited

8. Britvic submitted that the proposed transaction will provide the following benefits:
(i) Increase Britvic's product and brand line;
(ii) Broaden the geographic footprint for Britvic's existing business (i.e., expand its limited presence in the State and on the island of Ireland generally);
(iii) An opportunity to accelerate earnings/revenue growth; and,
(iv) Enhance potential for supply chain synergies including scale benefits in direct procurement and innovation/acceleration of new products.
9. C\&C submitted that the sale of its soft drinks business will allow it to focus on its core alcohol manufacturing and supply business.

## The Authority's Investigation

10. During the course of its Phase 1 investigation, the Authority met with the parties and their legal representatives, issued the parties with formal requests for information under section $20(2)$ of the Act, distributed questionnaires to customers and competitors and retained an economics expert. The Authority considered all the submissions made by the parties and evidence obtained from the following sources:

- Internal business documents of the parties submitted in response to the Authority's request for further information;
- Responses to the questionnaires issued to third parties. The Authority distributed questionnaires to six customers ${ }^{3}$ and four competitors ${ }^{4}$ of the undertakings involved. The Authority received replies from all six customers. Collectively these customers account for over $75 \%$ of the wholesale purchase and retail sale of soft drinks in the State. Similarly, the Authority received replies to the questionnaire from all four competitors of the undertakings involved;
- The parties' economics report and presentation. The parties submitted an economics report prepared by Indecon International Economic Consultants ("Indecon Report") ${ }^{5}$ as part of the merger notification. This report suggested that the proposed transaction should be assessed in the context of a single market comprising all soft drinks. Subsequently Indecon made a presentation to the Authority on the merger focussing on quantitative analysis ("Indecon Presentation") ${ }^{6}$. Each of these contributions concluded that the proposed transaction will not lead to a substantial lessening of competition;
- Econometric analysis conducted by staff of the Competition Authority; and,
- Econometric analysis and advice provided to the Authority by Dr. Vincent Hogan, University College Dublin.


## Analysis

## Relevant Product Market

11. Although both Britvic and C\&C are active in the manufacture and distribution of various brands and flavours of soft drinks, their activities in the State overlap in two market segments in the soft drinks industry: (i) ready to drink non-carbonated fruit juices; and, (ii) squashes. ${ }^{7}$ The Indecon Report suggested that the relevant market affected by the proposed transaction is a single market for all soft drinks that includes water, carbonated soft drinks, fruit juices and squashes. [...] In relation to squashes, Indecon noted that MiWadi is not a close substitute of Robinsons; [...].

[^1]12. On the basis of the proposed market definition by the Indecon Report, the parties submitted that the proposed transaction will give rise to a Zone A merger. ${ }^{8}$ According to the Authority's Merger Guidelines, Zone A mergers are unlikely to raise competition concerns.
13. Information provided by the parties suggested that there is limited overlap in the activities of the parties in the ready-to-drink fruit juices market in the State as Britvic has a limited presence in this market segment. ${ }^{10}$ Given the limited overlap in the parties' activities in this market segment, the Authority considers that the proposed transaction will not lead to a substantial lessening of competition in the ready-to-drink fruit juices market.
14. However, with respect to the squashes market segment, Table 1 below shows that the parties occupy the number 1 and number 2 positions in this market. The squashes market segment is already highly concentrated with a Herfindahl-Hirschman Index ("HHI") of at least 2434. ${ }^{11}$ The proposed transaction will result in a Zone C merger ${ }^{12}$ with a post merger HHI of at least $4673^{13}$ and a delta of 2238. Post merger, the merged entity will account for [ $60 \%$ to $70 \%$ ] of the squashes market segment with its nearest competitor accounting for $[5 \%$ to $10 \%]$. Private label squashes, which include brands offered by Tesco, Superquinn and Supervalu, collectively account for [ $15 \%$ to 20\%]. According to the Authority's Merger Guidelines, Zone C mergers are likely to raise competition concerns.

[^2]Table 1
Market Shares by Volume of Squashes, by Brand, the State, 2006
$\left.\begin{array}{|l|c|c|}\hline \begin{array}{l}\text { Brand (brand } \\ \text { owner) }\end{array} & \begin{array}{c}\text { Estimated Market } \\ \text { Shares Pre-merger } \\ \text { (\%) }\end{array} & \begin{array}{c}\text { Estimated Market } \\ \text { Shares Post-merger } \\ \text { (\%) }\end{array} \\ \hline \text { MiWadi (C\&C) } & {[25-35]} & \text { Britvic= [60-70] }\end{array}\right][5-10]$

Source: Competition Authority based on the parties' submission
15. Given the combined high share of the MiWadi and Robinsons brands in the squashes market segment post-acquisition, the Authority considered that it was necessary to: (i) ascertain whether there is a distinct product market comprising of squashes only; and, (ii) examine the likely impact of the proposed transaction in this market segment. The Authority used a number of different types of evidence and sources in order to address these two issues.

## Internal Documents

16. The parties' internal documents categorise soft drinks into a number of categories including the following segments: (i) colas; (ii) other carbonates; (iii) still water; (iv) sparking water; (v) fruit juices; and, (vi) squashes.
17. A review of the internal documentation submitted by the parties indicates that while consumers are becoming more health conscious and are choosing healthy drinks over carbonated drinks, competition in the soft drinks market occurs mainly within a particular soft drinks segment. The consumer decision tree suggests that consumers first decide on a drink segment, and then a particular flavour followed finally by a specific brand. The parties continuously monitor competition within a soft drinks segment. A survey commissioned by one of the parties indicates that, in relation squashes, consumers consider regular and non-added sugar squashes to be substitutable. However, consumers consider that other soft drinks categories are not substitutable for squashes. ${ }^{14}$ Furthermore, internal brand planning documents indicate that brands of soft drinks compete mainly within a particular product segment. ${ }^{15}$ For example, within the

[^3]${ }^{15}$ For example, C\&C, Wholesale Limited 3 Year Strategic Review 2007/2010.
squashes segment, each party consistently competes for the market leader position in that segment. The parties consistently compare the performance of their brand against those of other manufactures and retailers within the squashes segment. This practice is commonly used to monitor competitors within a given soft drinks segments. For example, in the water segment, one of the parties noted how its water brand has been losing market share due to competition from other suppliers of water. ${ }^{16}$

## Conclusion

18. The Authority therefore considers that the parties' internal documentation indicates that the relevant product market can be segmented into different categories of soft drinks, one of which is squashes.

## Survey Evidence: Customers and Competitors

19. An analysis of third party responses indicates that squashes are considered a separate segment from other soft drinks. Respondents to the Authority's questionnaire, especially retailers, confirmed that a 5-10\% permanent increase in the price of squashes will not cause customers to switch to other types of soft drinks. Consumers are likely to absorb the price increase or switch to another brand within the squashes segment rather than switch to a soft drink outside the squashes segment.
20. In relation to the adjacent placement of different soft drinks in retail outlets, retailers confirmed that this method is applied for ease of consumer shopping rather than a reflection of substitutability between different soft drinks. This is reflected in the retailers' shelf-space plannogram in which particular categories of soft drinks are placed in a specific area in their retail outlets. For example, toiletries occupy a different part in their outlet to soft drinks.

## Conclusion

21. The Authority therefore considers that evidence from third parties who responded to the Authority's questionnaire indicates that there is a separate market for squashes.

## Econometric Evidence

## Indecon Report's Analysis of Price Series

22. Indecon carried out correlation and co-integration analyses between price series of different combinations of soft drinks in order to define the relevant market affected by the proposed transaction. ${ }^{17}$
(i) Indecon presented pairwise correlation coefficients ${ }^{18}$ for three Central Statistical Office ("CSO") monthly price series covering the period January 1997 to March 2007. The three price series were: "Mineral Water, Soft Drinks \& Juices"; "Mineral Water \& Soft Drinks";

[^4]and, "Fruit Juices." Indecon found correlation coefficients of over 0.95 between these price series. ${ }^{19}$
(ii) Indecon presented pair-wise correlation coefficients between the above three CSO price series and "Private Label Squashes", where the data was provided from ACNielsen. The price series were all monthly covering March 2006 to March 2007. Indecon drew attention to the "appreciably high degree correlation" between the three CSO prices series and the private label squash price series. The correlations varied between 0.5404 and 0.6470 .
(iii) Indecon also conducted a cointegration analysis ${ }^{20}$ between "Private Label Squashes" and each of the three price series mentioned in (i) above. Indecon found that the "Private Label Squashes" is cointegrated with each of the price series in (i) above. The Indecon Report concluded from the analysis of price series that "private label squashes belong to the same product market as branded squashes and fruit juices." ${ }^{21}$

## The Authority's [...] Analysis of Price Series

23. After studying the Indecon report, the Authority formed the following views concerning Indecon's price correlation and co-integration analyses:
(i) The high correlation coefficients obtained by Indecon may suggest that markets should be broadly defined. However, the coefficients may be spurious [...] for a variety of reasons. ${ }^{22}$ In the instant case, there are two grounds for suspecting that the results might be spurious:
(a) two of the three CSO price series - "Mineral Water \& Soft Drinks" and "Fruit Juices" - are subsets of the third, "Mineral Water, Soft Drinks \& Juices." The high correlation coefficients obtained is therefore not surprising; and,
(b) for correlation analysis to be valid, the price series must be stationary (i.e., have a constant mean and variance). If the price series is non-stationary then the correlation may become invalid. Indecon applied the price correlation technique to price series that are non stationary. ${ }^{23}$

[^5](ii) The Indecon Report's cointegration analysis gives rise to similar difficulties to (i)(a) above. For example, cointegrating "Private Label Squash" with "Mineral Water \& Soft Drinks" is likely to give a similar result to cointegrating "Private Label Squash" with "Mineral Water, Soft Drinks \& Fruit Juices". In addition, the cointegration analysis was based on a very small sample of 12 observations.
(iii) The Indecon Report did not control for common factors (for example, the weather) that may affect the price series used in both its price correlation and co-integration analyses. Spurious price correlation may arise when two price series are subject to a common influence. If this common factor is not accounted for, the correlation coefficients of prices between two different soft drinks would be biased upwards leading potentially to the finding of an overly broad product market.
24. [...], the Authority considered that it would be prudent to carry out its own price correlation and cointegration analyses using an extended and disaggregated data set for each of the different soft drinks categories.
25. The Authority used CSO monthly price series data ("the price series") for each of the following soft drinks categories for the period December 1989 to May 2007 (210 observations) with March $1996=100$ :
(i) Mineral Water;
(ii) Carbonated soft drinks;
(iii) Fruit juices; and,
(iv)Squashes/Cordials.

The following common factor variables were used: (i) dummy for the introduction of the Euro; (ii) the CSO average temperature at Dublin airport weather station for the period December 1989 to May 2007; (ii) dummy for seasonal changes; and, (iii) the CSO Consumer Price Index for the period December 1989 to May 2007. ${ }^{24}$
26. The Authority took the following steps in carrying out its own price correlation and co-integration analyses:
(i) Plotting the price series;
(ii) Obtaining the correlation coefficients of the price series; ${ }^{25}$
(iii)Testing for stationarity of each price series;
(iv)Regressing the price series on common factors and obtaining residuals; and,
(v) Conducting co-integration tests of the residuals using both the Engel Granger and the Johansen tests.
27. The Authority found:
(i) Correlation coefficients of over 0.84 between the price series;
(ii) The price series are non-stationary which implies that the Authority cannot rely on the correlation coefficients to determine the extent of the relevant market; and,

[^6](iii) The price series of the different types of soft drinks are not cointegrated which indicates that the relevant market is not as broad as that claimed in the Indecon Report.
30. [...]
31. On 2 August 2007, the parties and their representative presented new quantitative analysis to the Authority, referred to above as the Indecon Presentation.

## Indecon Presentation of Quantitative Analysis

32.The Indecon Presentation used the more extensive and detailed ACNielsen scanner data provided by the parties to the Authority in response to the request for further information ${ }^{26}$ and obtained correlation coefficients of unit price series of the different categories of soft drinks. Indecon obtained correlation coefficients of over 0.82 between squashes, fruit juices and sparkling juices. Conversely, Indecon obtained a very low correlation coefficient of 0.25 between squashes and carbonates. ${ }^{27}$
33.Indecon also tested for stationarity in the price series and found the price series of each of squashes, fruit juices and sparkling water to be stationary. This led Indecon to conclude that squashes compete with fruit juices and some waters. ${ }^{28}$
34.Indecon also considered the effect of the proposed transaction on the structure of a hypothetical market comprising squashes and fruit juices. Indecon found that the proposed transaction will fall in Zone A with post merger HHI of 1,336 and a delta of 66. Indecon therefore concluded that the proposed transaction will not lead to a substantial lessening of competition in the market for squashes and fruit juices due to the low accretion resulting from the proposed transaction and the existence of sufficient competitive constraints.
35. While this quantitative analysis addressed some of the anomalies referred to in paragraph 23 above, its conclusion on the relevant market was not consistent with the evidence from other sources outlined above. The Authority therefore considered it necessary to conduct a [...] econometrics analysis to enable it to delineate the relevant market for assessing the impact of the proposed transaction. To this end, the Authority retained the services of Dr. Hogan.

## Authority Commissioned Study

36. Dr. Hogan used ACNielsen Scanner data ${ }^{29}$ on actual sales to determine the extent of the relevant market and examine the likely impact of the proposed transaction on consumer welfare. The ACNielsen data allocated products to six market segments: Cola; Other Carbonates; Still Water; Sparking Water; Fruit Juice; and, Squashes. The data was provided by

[^7]the parties and was the same as that used in the Indecon's quantitative analysis. The data contains information on the sales of soft drinks in Ireland during bi-monthly periods from June 2004 to April 2007. The data is provided at the level of the product offering (e.g. 7UP CAN (3FR), 330 ML 12PK) and for each product and time period in each of 4 regions (Dublin, Leinster, Munster, and Connaught/Ulster). The data allows for a richer specification of choice insofar as the product variable includes details of packaging.
37. Dr. Hogan estimated a nested logit model of demand which has become the standard model in the literature. ${ }^{30}$ The basic notion of the nested logit model is that demand for a particular product does not only depend on its price, but also on its relationship to other similar products in the market. Specifically, the degree of substitutability can differ depending on whether the products are in the same segment of the market. Thus, a consumer who wishes to purchase a soft-drink will first decide on which segment to select (e.g. cola versus orange) and then decide on the particular product (e.g. Coke versus Pepsi).

Figure1
An Illustration of the Nested Logit Model


Source: Competition Authority
37. The main advantage of the nested logit model is that it offers a way of modelling the demand for a large number of differentiated products while keeping the numbers of parameters at a reasonable level. ${ }^{31}$ This enabled Dr. Hogan to calculate the own price elasticity of any product and the elasticities of substitution between any two products in a market. Using these elasticities, Dr. Hogan put forward an appropriate definition of the relevant market. Finally, Dr. Hogan used the elasticities to assess whether

[^8]other firms' products will restrain the ability of the merged entity to increase prices, an issue relevant for the discussion of competitive assessment below.
38. Dr. Hogan found the following: ${ }^{32}$

- The cross price elasticities between segments are extremely low. In fact they are economically negligible. This implies that products outside of a segment exert no restraining influence on price with a segment; and,
- The cross price elasticities within segments are much higher than without. However, they are still lower than expected. Products that are very close substitutes for each other have cross price elasticities greater than one.


## Conclusion on the relevant product market

39.Taking into account all the evidence in its possession, the Authority [...] concludes that the relevant market for the purposes of assessing the competitive impact of the proposed transaction is the squashes market. The competitive situation in this market is discussed below.

## Relevant Geographic Market

40.Indecon suggested that the relevant geographic market is the island of Ireland due to a number of factors including:
(iv) common advertising on both parts of the island;
(v) same brands of soft drinks sold on both parts of the island;
(vi) retailers obtained their supplies on a cross-border basis; and,
(vii) cross-boarder shopping is commonplace in the border counties.
41. Both C\&C and Britvic are active on the island of Ireland. Despite this consideration, for the purposes of examining the competitive effects of the proposed acquisition, the Authority has taken the view that the relevant geographic market is at least the State. The Authority does not need to come to a view on whether the market is wider than the State because the Authority's conclusions concerning the competitive effects of the proposed acquisition, outlined below, will be unaffected if the relevant geographic market encompasses not only the State but also Northern Ireland or the rest of the EU.

## Competitive Assessment

42. The parties made a presentation to the Authority on 2 August which summarised their views as to why the merger would not lead to a substantial lessening of competition ("SLC"). Leaving aside the issue of market definition, the parties identified several factors that they thought would constrain the merged entity if it tried to raise the price of squashes post merger. These are:

- MiWadi and Robinsons are not close substitutes;
- Retailer own brands are the fastest growing brands in the State;

[^9]- In the European context, retailer squash brands are the leading brands in over half of all European countries;
- There have been significant new entrants in recent years; and,
- Retailers will exercise buyer power as only four retailers account for c. $70 \%$ of the squashes segment.

These issues are considered below.
43. As mentioned in the paragraph 14 above, the proposed transaction will result in a Zone $C$ merger in the squashes market with the merged entity accounting for $67.5 \%$ of that market. Given this high market share, the Authority has to assess whether the merged entity will have the ability to exercise market power post merger in the squashes market.
44. The Authority's investigation has revealed that the merged entity is unlikely to exercise market power in the squashes market due to:
(i) The econometric evidence suggests that MiWadi is not the closest substitute for Robinsons. The econometrics study commissioned by the Authority found that the cross price elasticity between MiWadi and third party products (private labels) is higher than the cross price elasticity between MiWadi and Robinsons. This suggests that private label squashes exert a more restraining influence on MiWadi's pricing power than Robinsons.
(ii) The parties' internal documentation showed that as a result of a recent promotion on Robinsons, MiWadi's is approximately $10 \%$ more expensive than Robinsons. However, this price promotion on Robinsons had little or no effect on the sales of MiWadi. MiWadi maintained its market share while Robinsons appeared to have gained market share from other squashes brands, for example, Kia Ora. This could be explained by the fact that MiWadi and Robinsons target different demographics. [...]. ${ }^{33}$
(iii)The results of a survey conducted by one of the parties in 2006 indicate that consumers consider that there exists a lot of choice within the squash segment. ${ }^{34}$ Despite this finding, respondents still bought the same brand on a regular basis. Thus, consumers are aware of the choice but do not necessarily 'shop' the choice in the store due to preplanned purchases to satisfy household preferences." Brand selection is generally driven by what would be consumed in the house by the "kids" - "Mums saw little point in trying new brands that "kids" may not like, and therefore tended to buy the same products repeatedly, using brands as their signpost." This does not imply that there is brand loyalty. Many respondents bought across several brands to fulfil specific flavour preferences, and so absolute brand loyalty (while it existed in places) tends not to be the general rule. "..I get the Robinson's Barley one, the MiWadi Organe \& Mango I think it is, and Ribena Toothkind..."
(v) The own price elasticity of the parties are quite high suggesting that consumers are sensitive to price increases. ${ }^{35}$ This implies that firms have little opportunity to profitably raise price.

[^10](vi) There is ease of entry in the squashes market. This is evident in the proliferation of retailer own brands and discounter brands. Except for BWG which is a buyer group, each retailer has its own brand of squashes and strongly promotes its own brands. This is evident in the growth of sales of retailer brands within their own outlets. ${ }^{36}$ For example, the AC Nielsen data showed that Tesco increased the sale of its own label squash in its outlets to $39.1 \%$ from $28.2 \%$ between June 2005 and June 2007. During the same period, Robinsons' market share in Tesco declined to $29 \%$ from $31.5 \%$, while MiWadi experienced a decline of market share to $23.1 \%$ from $24.9 \%$. Thus, while the proposed transaction would eliminate a source of competition in the squashes market, the merged entity would face competition not only from third parties including GlaxoSmithKline - Ribena, Coca Cola - Kia Ora but also from retailers' private own brands, who have control over shelf space in their outlets. ${ }^{37}$
(vii) The majority of respondents to the Authority's survey submitted that the proposed acquisition will not give rise to competition concerns in the squashes market.
45. In the light of the above, the Authority considers the proposed transaction will not raise competition concerns in the squashes market.

## Determination

The Competition Authority, in accordance with Section 21(2) of the Competition Act, 2002, has determined that, in its opinion, the result of the proposed acquisition of the soft drinks business of C\&C Group plc by Britvic plc, will not be to substantially lessen competition in markets for goods and services in the State and, accordingly, that the acquisition may be put into effect.

## For the Competition Authority

Dr Paul K. Gorecki
Member of the Competition Authority

[^11]
[^0]:    ${ }^{1}$ Britvic does not sell to on-trade customers in the State.
    ${ }^{2}$ The Authority used an exchange rate of 0.689 Euro to a British Pound.

[^1]:    ${ }^{3}$ Tesco, Dunnes Stores, Musgrave, BWG, Superquinn and Stonehouse Marketing.
    ${ }^{4}$ GlaxoSmithkline, Batchelors, Coca Cola Bottlers Ireland and M\&J Gleeson.
    ${ }^{5}$ The Indecon Report is titled, Competition Economics Assessment of the Proposed Acquisition of the Soft Drinks Business of Cantrell and Cochrane Group plc by Britvic plc in the Context of Irish Merger Control. It is dated 21 May 2007.
    ${ }^{6}$ The Indecon Presentation is titled, Quantitative Analysis of Competition Issues in Relation to Britvic's Proposed Acquisition of the Soft Drinks Business of C\&C. The presentation was made to the Authority on 2 August 2007. In this presentation it was claimed that the market comprises at least squashes, fruit juices and some waters.
    7 Canadean Annual Report, "The Soft Drinks Service- 2007 Cycle Republic of Ireland." "Squashes/syrups are very popular in Ireland and have been revitalised by non-added sugar ("NAS") offerings from all major manufacturers in recent years, which now account for more than $40 \%$ of total squashes consumption. The NAS segment is expected to continue to grow at the expense of traditional regular products, underlining the trend towards less sugary beverages."

[^2]:    ${ }^{8}$ Zone A mergers result in a post merger HHI of less than 1000, between 1000 and 1800 or above 1800 with a delta of less than 100 or less than 50.

    9 The Competition Authority, Notice in Respect of Guidelines for Merger Analysis, Decision No.N/02/004, December 2002. ("Merger Guidelines").
    ${ }^{10}$ AC Nielsen data for January 2007 show that Britvic/Roberts and C\&C accounted for [0\% to 10\%] and $[0 \%$ to $10 \%$ ], respectively, of the total volume of fruit juice drinks sold (excluding sales made through Dunnes Stores and Discounters) to the take-home sector in the State.
    ${ }^{11}$ This underestimates the pre-merger HHI as it excludes the square of the market share of Private Label.
    ${ }^{12}$ Zone C mergers result in a post merger HHI of above 1800 with a delta of greater than 100 .
    ${ }^{13}$ This underestimates the post-merger HHI as it excludes the square of the market share of Private Label

[^3]:    14 "Respondents were more likely to try a new flavour or NAS variant within their own brand family as opposed to outside it." Glacier Consulting, "Category Management shopper report- take-home", November 2006.

[^4]:    ${ }^{16} \mathrm{C} \& \mathrm{C}$, various "Wholesale Limited Category Plans".
    ${ }^{17}$ The European Commission has in the past used price correlation analysis in merger cases to establish the extent of the relevant market. See for example, Nestle/Perrier (Case IV/M190 [1997] O.J. L356/1), Mannesmann/Vallourec/IIva (Case IV/M315 [1994] O.J. L102).
    ${ }^{18}$ Correlation coefficients show the strength and direction of a linear relationship between two random variables.

[^5]:    ${ }^{19}$ Indecon Report, Table 2.4 , p. 25. Indecon used 123 observations in its correlation analysis.
    20 Cointegration is an econometric technique that test for a statistically significant relationship between two time series. If two or more series are themselves non-stationary, but a linear combination of them is stationary, then the series are said to be cointegrated.
    ${ }^{21}$ Indecon Report, Table 2.5 , p. 26. The quote is taken from p.27. Indecon used 12 observations in its cointegration analysis.
    ${ }^{22}$ For further discussion see S. Bishop \& M. Walker, 2002, The Economics of EC Competition Law: Concepts, Application and Measurement, $2^{\text {nd }}$ Edition. London: Sweet \& Maxwell ("Bishop \& Walker"), pp. 378-394. Spurious correlation occurs when two series seem to be correlated but in fact they are not. The correlation in this case is a 'coincidence' and is not the result of any interrelation between the two products or price series.
    ${ }^{23}$ In other words, applied to a series that is not stable. See, Kiyoung Yang and Cyrus Shahabi ,"On the stationarity of multivariate time series for correlation-based data analysis", Fifth IEEE International Conference on Data Mining (ICDM'05) pp. 805-808. See also Bishop and Walker, pp. 442-454.

[^6]:    ${ }^{24}$ This is not an exhaustive list.
    ${ }^{25}$ Correlation analysis using logs obtained similar results.

[^7]:    ${ }^{26}$ This data set, described in more detail in paragraph 36 below, was also provided to the Authority and is used in Dr. Hogan's econometrics study.
    ${ }^{27}$ Notably, these coefficients are substantially lower than those reported in the first Indecon report.
    ${ }^{28}$ The parties' internal documentation indicates that squashes and water are complementary rather than substitutable drinks. "Squash can be used as a facilitator for increased water consumption". Use and attitude study of 2004 commissioned by C\&C.
    ${ }^{29}$ Dr. Hogan used over 99,000 observations in his study.

[^8]:    ${ }^{30}$ For further reference, see, Berry, Steven and James Levinsohn and Ariel Pakes, 1995, "Automobile Prices in Market Equilibrium", Econometrica, vol. 63, pp. 841-890., Nevo, A., 2000, "Mergers with Differentiated Products: The Case of the Ready to eat Cereal Industry", Rand Journal of Economics, vol. 31, pp. 395-421. It should be noted that some authors have suggested that the nested logit may produce estimated elasticities that are biased upwards. See for example, Jerry, Hausman, and Gregory Leonard, (2002), "The Competitive Effects of New Product Introduction: A Case Study", Journal of Industrial Economics, vol. 50, No. 3, pp. 237-263.

    31 The main alternative model, known as the AIDS model, typically involves estimating more parameters with a consequent loss in efficiency.

[^9]:    ${ }^{32}$ These results are fairly robust to changes in the estimation method. Including or omitting various control variables (e.g., product characteristics, location fixed effects, time effects, company fixed effects) had no real impact of the estimated elasticities.

[^10]:    ${ }^{33}$ Britvic, 2007, Project West Wing- Final Presentation, 24 April.
    ${ }^{34}$ Supra 14.
    ${ }^{35}$ Dr. Hogan obtained own price elasticities of grater than 1 for Robinsons and other brands.

[^11]:    ${ }^{36}$ This is also confirmed by retailers who responded to the Authority's questionnaire. Retailers submitted that they will strongly promote their own brand.

    37 Retailers are competitors as well customers of the merged entity. Retailers indicated they will strongly promote their own brand in the event of a price rise by merged entity.

