Market definition

Introduction

1. This appendix considers the available evidence on the relevant product and geographic markets for shell and processed egg respectively. The CC's guidelines state that the key to market definition is substitutability—the extent to which customers can readily switch between products, or suppliers can readily switch their facilities between the supply of alternative products.[1]

2. In assessing the likelihood of this substitutability, we apply the SSNIP (small but significant non-transitory increase in price) framework, at the 5 per cent level, consistent with CC guidelines.[2] Where we refer to price increases in this appendix, we are therefore referring to a 5 per cent increase.

3. CC guidelines note that market definition is not an end in itself, but rather as a framework within which to analyse the effects of a merger on competition. As such, market definition is a useful tool for identifying the competitive constraints affecting the merged entity. However, there is inevitably an element of judgement involved in market definition, and it is important to note that whilst a precise market definition is desirable, where a precise definition of the relevant market yields little or no additional information as to the whether the merger will result in an SLC or not, the CC may not want to devote disproportionate resources to determining the definition of the relevant market.

4. This appendix covers the two main types of eggs, namely shell eggs and processed eggs, separately.

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[1] *Merger references: Competition Commission Guidelines, CC2*, June 2003.
[2] There may be circumstances where it is appropriate to apply the SSNIP framework at another price level.

Shell eggs

The relevant product market

5. There are four different ways in which the supply of shell eggs may be categorized. These include differences by type of shell eggs, size of shell eggs, type of customer or whether covered by the Lion mark or another mark or standard.

6. The standard approach to market definition is to start with narrow product markets and consider whether a hypothetical monopolist of each product would find it profitable to impose a SSNIP. Such a price rise may be rendered unprofitable either because other suppliers would rapidly switch to the production of that product, or because customers would switch into other products in sufficient numbers to render the price rise unprofitable.

7. The parties' view is that the relevant product market consists of all shell eggs, regardless of shell egg type, size, branding or customer characteristics. Their preferred market definition is the supply of shell eggs to retailers, wholesalers and caterers. This is because they believe that on the supply side the requirements of different customer groups are similar. They were also of the view that the OFT had underestimated the degree of demand-side substitutability between different egg types, and that in any event supply-side substitution between egg types was easy.

8. Notwithstanding these views, they also consider separately in their analysis the supply of shell eggs to retailers, since this is the principal area of overlap between the parties.

Substitutability by type of egg

9. There are four principal types of shell eggs sold to consumers. These are organic, free-range, barn and cage eggs.[3]

10. When defining the relevant market it is important to note the differences that may exist between different levels of the supply chain. For the purposes of market definition any differences between the level of supply to final consumers (the retail level) and the level at which the parties operate, the level of supply to retailers (the wholesale level) may be relevant. Whilst retailer purchases may be largely driven by conditions in the downstream retail market, this does not necessarily preclude differences at the wholesale level. In this appendix we consider first the evidence of demand-side substitution at the retail level and second the evidence of substitution at the wholesale level.

Customer views

11. Retailers were generally of the view that their customers would not be likely to switch between different types of eggs in response to a 5 per cent increase in price of any one type of eggs.

12. Of the largest four retailers, Asda noted that it was its perception that customers had a preference for a particular egg type. [✂] Asda was not able to estimate the extent of substitution that would result from a 5 per cent increase in price. [✂] was of the view that substitution between types of eggs was limited.[4] [✂]

[3] In addition, around 10 per cent of the production of all types of eggs is classed as smalls or seconds. These eggs are either too small for sale to consumers or have small defects such as cracked or discoloured shells and are sold to processors for breaking or boiling. It is possible that there may be economies of scope for suppliers of shell eggs who also have interests in processed egg.
[4] [✂]

13. The views of smaller retailers were more mixed. [✂] noted that a [✂] increase in the price of its organic eggs had little impact on the split of sales.[5] Similarly Waitrose did not believe that a price rise of 5 per cent would make a material difference to sales volumes. Both Co-operative Group (CWS) and [✂] said that they did not regard different types of egg as substitutable, and they did not believe that there would be significant substitution in the event of a 5 per cent increase in price.

14. Somerfield said that there was relatively little substitution between egg types. However, there might be some substitutability between barn eggs and free-range eggs and between barn eggs and cage eggs. [✂] said that there was a general trend of customers moving from cage eggs to free-range eggs and organic eggs. Promotions at [✂] tended to show an impact on different sizes of the same type of egg. However, there appears to be little impact of cage-egg promotions on the sale of free-range eggs. If free range eggs were promoted, [✂] believed that customers might trade up to free-range eggs from cage eggs.

15. The views of foodservice and catering customers showed a similar pattern. McDonald's stated that it only bought free-range eggs and so did not see other types of egg as substitutes. [✂] 3663 said that it only sold cage eggs and would not regard other types of egg as substitutes. [✂] said that barn, free-range and organic eggs were likely to be in the same market but that customers would not easily substitute into cage eggs due to strong feelings regarding animal welfare.

Evidence of demand-side substitutability by egg type

16. [✂] submitted an analysis of what it considered to be substitutability between egg types based on data from a sample of its [✂] loyalty card scheme customers. This

[5] [✂]

analysis assesses the degree of purchasing overlap by analysing the purchasing behaviour of customers in the sample over a 52-week period.[6]

17. [✂] used the proportion of customers that purchased both products as a measure of the degree of substitutability between those products. However, the interpretation of this measure needs to be treated with some care. One explanation for recording that customers in the period bought more than one type of egg (for example, free-range eggs and organic eggs) is that they are genuinely marginal, and are substituting back and forth between the two types of eggs as a result of small changes in relative prices. However, there are at least three further explanations for why we may observe the purchase of both products.

18. First, customers may use different types of eggs for different purposes. [✂] told us that customers might do this, for example using 'basic' eggs for baking whereas for breakfasts they might use a free-range or organic egg.[7] If this is the case, then some of the customers recorded in the [✂] analysis as marginal may in fact view products as complements. Second, some of the switching as measured using the [✂] analysis may be as a result of deep cut-price promotions (such as 'buy one get one free' (BOGOF) offers), and as such would not give an accurate indication of the proportion of customers that would switch in the event of a 5 per cent increase in price. Finally, some of the observed joint purchases in the [✂] data may reflect more permanent changes in consumer tastes and purchasing patterns. A number of market participants and the parties themselves told us that there was a general shift in consumer purchasing towards free-range and organic products.

[6]The period chosen for analysis by [✂] was the 52-week period to 26 August 2006.
[7]Source: hearing with [✂].

19. The figures provided by [✂] will therefore represent an upper bound regarding the degree of substitution that would occur in response to a 5 per cent increase in price.

FIGURE 1

[✂]

Source: [✂].

20. Figure 1 shows that on [✂] analysis the degree of substitution by customers between egg types is generally very low.[8] In [✂] view there is relatively more substitution between barn eggs and free-range ([✂] per cent of customers, representing [✂] per cent of egg sales) and between free-range and organic eggs ([✂] per cent of customers, representing [✂] per cent of egg sales).

21. [✂] also noted that price movements tend to have a very limited impact on sales volumes. [✂] noted that the only major change in the pricing of its egg product lines over the past year was a change in the pricing of its organic range of eggs. [✂] reduced the price of its organic eggs by approximately [✂] per cent [✂]. [✂] noted that this had no significant impact on the volume mix of organic or other egg types.

22. In addition to the analysis provided by [✂], the CC carried out its own analysis of price and volume data provided by [✂]. This analysis can be found at Annex A.

23. [✂][9]

24. In summary, at the retail level, the available evidence appears to indicate that there would be limited substitution by final consumers between different types of shell eggs in the event of a SSNIP. This would appear to indicate that a hypothetical monopolist

[8]The number of potentially marginal customers will include those who bought two types of egg and those who bought two or more. For example, the number of potentially marginal customers between barn and free-range will include those customers who bought barn and free-range, as well as those that bought barn free-range and organic, and those that bought all four types.
[9][✂]

at the retail level for any one type of shell eggs would find it profitable to impose a price rise of this magnitude.

25. It is important to note, however, that the fact that there may be limited substitutability between types of shell egg at the level of supply to final consumers does not necessarily preclude that substitutability may be greater in the upstream markets for the supply of shell eggs to retailers, wholesalers and caterers.[10]

26. Typically, the wholesale elasticity of demand will be heavily dependent on the retail level elasticity of demand. For example, where retailers seek to maintain a constant percentage margin on their products, the elasticity of demand at the wholesale level is likely to be equal to the elasticity of demand at the retail level downstream. The wholesale elasticity may be greater than the retail elasticity if retailers can drop a product in response to a price rise. This may occur where there is limited shelf space such that an increase in prices at the wholesale level will diminish the retailer's margin, with the result that they have the incentive to use that shelf space to sell alternative products with a higher margin.

27. Responses from retailers indicate that eggs are a known value item (KVI) for all retailers. In addition, a number of retailers said that eggs were a key component of the customer's basket and as such were a must-stock product. Responses from retailers indicate that all egg types are KVIs and must-stock products, with the possible exception of barn eggs. Fewer retailers regarded barn eggs as a must-stock item and furthermore a number of retailers do not stock barn eggs or have done so only intermittently in the past.

[10]For the purposes of discussion, the elasticity of demand for the sale of shell eggs to retailers, wholesalers and caterers will be referred to as the wholesale elasticity.

28. Retailers themselves regard their margins as being relatively stable over time. Given that eggs are a must-stock product for supermarkets, it may be that the wholesale elasticity of demand is in fact lower than at the retail level as retailers are unwilling to drop egg product lines in response to fluctuations in price.

29. The CC carried out its own analysis of substitutability between egg types at the level of supply to retailers. This analysis is included at Annex B. The results of this analysis show that there is evidence that, in the short run, retailers do not substitute between cage eggs and free-range eggs in response to large price movements. We were told that retailers in general change suppliers in response to longer term movements in price. However, we found no evidence of retailers substituting between free-range eggs and cage eggs in response to longer term changes in prices either.

30. It would therefore seem reasonable to conclude that the wholesale elasticity of demand is likely to be no greater than the elasticity of demand at the retail level.

Evidence of supply-side substitution by egg type

31. On the supply side, substitution between egg types would appear to be relatively easy for the supply of egg packing services. However in the supply of packed eggs to retailers, which is the level of the supply chain at which the parties operate, it is considered unlikely that there would be significant supply-side substitution between different types of egg in the event of a 5 per cent increase in price. This is primarily because of the difficulties that suppliers to retailers face in obtaining sufficient volumes of the appropriate type of egg to pack. Supply side substitution at the level of the supply of packed eggs to retailers therefore depends to some extent on supply-side substitution at the producer level.

32. Supply-side substitution at the producer level is generally difficult, at least in the one-year timeframe referred to in CC guidance. The main barriers to supply-side switching at the producer level include the constraints of the planning system. For example to switch from the production of intensively produced eggs (cage eggs or barn eggs) would necessitate obtaining surrounding land and would also require planning permission. It is possible that suppliers of cage eggs could switch to barn eggs and vice versa, however whether switching would be likely in the event of a 5 per cent increase in price is unclear.

33. In summary, there is clear evidence that even relatively large price movements, for example as a result of a deep cut price promotion, do not induce either final consumers or retailers to substitute between organic eggs, free-range eggs and cage eggs. We have less evidence with respect to barn eggs, which are stocked intermittently by retailers, or not at all and do not appear to be a KVI to the same extent as the other types of eggs. This may indicate that either retailers or final consumers are more likely to substitute between barn eggs and other types of eggs, or that barn eggs are part of a wider market for intensively produced eggs, which would include cage eggs. In any event, whether barn eggs are treated as a separate market or are included with cage eggs does not materially affect our analysis. We therefore think it appropriate to consider separate markets for organic eggs, free-range eggs and cage and barn eggs respectively.

Evidence of substitutability by size of egg

34. Customer responses appear to indicate that there is greater substitutability between different egg sizes than between egg types. For example, the analysis of loyalty card data from [✂] indicates that [✂] customers are more likely to buy more than one

size of egg than more than one type of egg.[11] The CC's own analysis of retail level data appears to show some evidence of greater substitutability at the retail level between sizes of egg. [✂][12]

35. At the wholesale level, retailers may be more likely to drop one particular size of egg than they would be to drop a type of egg. For example, [✂]. It may be the case that at the wholesale level elasticity of demand is higher than the retail level elasticity of demand for different sizes of shell egg.

36. At the production level, different sizes of egg are produced from flocks of different ages. A typical flock will produce eggs over a period of 50 to 70 weeks. At the beginning of the laying cycle flocks will tend to lay more small eggs, and over the laying cycle the eggs produced will tend to become larger, and laying less frequent. Suppliers to retailers tend either to own their own production, or to contract with producers for the majority of their shell egg supplies, and contracts tend to be for the total output of a laying flock, or on a 12-month rolling basis. As a result, on the supply side any supplier can produce any size of egg, for the particular types of eggs for which they have laying flocks.

37. It is possible to source different sizes of eggs from the wholesale market. However, wholesale or spot market supply is likely to be a relatively short-term option and would not be a sustainable sourcing method for a firm operating at the packer level.[13]

38. As all producers will necessarily produce the full range of egg sizes for each type of egg they produce (at least from owned and contracted production), to apply a SSNIP test on any one size of egg would appear to be unrealistic. In any event, as market

[11][✂] In particular, there appears to be a greater degree of purchasing overlap between medium and large eggs than between other categories, [✂]. However, as discussed in paragraph 19, this evidence needs to be interpreted with some care.
[12][✂]
[13]Source: Staff hearing with Central Egg Agency.

shares are likely to be unaltered whatever the precise definition of the market with respect to size of egg, it is therefore not necessary to define the market with respect to size and differences by size of egg are not discussed further in this appendix.

Substitutability between Lion and non-Lion eggs

39. The parties supply eggs bearing the Lion mark.[14] These eggs account for 85 per cent of the shell eggs sold in the UK. The parties argued that Lion and non-Lion eggs were functionally fully substitutable and that some retailers would buy or consider sourcing both. The parties cited the examples of [✂] as retailers which bought non-Lion eggs. In addition, the parties told us that [✂] had threatened to source non-Lion eggs from continental Europe on two separate occasions in 2005 and 2006. Furthermore, the parties noted that the harmonization of salmonella treatment following the zoonoses regulatory changes in the EU would diminish the distinction between Lion and non-Lion branded eggs.[15]

40. Questionnaire responses from customers do not appear to support the parties' contention that Lion and non-Lion eggs are substitutable on the demand side. The majority of the customers who responded stated that they would not switch to a non-Lion alternative in the event of a 5 per cent increase in the price of Lion eggs. The reasons cited by customers include customer awareness of the brand and food safety and traceability issues.[16] [✂] told us that it was not confident that standards in other countries were of an equivalent level. This is particularly important for products

[14]The Clarence court brand of eggs, supplied by Stonegate, does not bear the Lion mark. However this brand accounts for a small proportion of Stonegate's sales.
[15]The Zoonoses regulations were adopted in August 2006. The first target for salmonella reduction is set for 2008. The regulations envisage banning the retail sale of eggs from salmonella-infected flocks from 2010.
[16][✂]

that bore the [✂] brand. [✂] said that it would need to be 100 per cent certain that it was not putting customers at risk.[17]

41. [✂] said that 80 per cent of customers suggested that British eggs and the Lion quality mark were an important determinant when buying eggs.

42. Only [✂] and [✂] considered non-Lion eggs to be a viable substitute for Lion eggs. [✂] said that the Laid in Britain standard could be a possible substitute, but that Lion-branded eggs were always preferable. Morrisons said that Lion eggs could be substitutable with other eggs, but that this could be affected by PR support for the Lion mark. Somerfield said that switching by a retailer to non-Lion products would draw adverse publicity; however, consumer understanding of the Lion mark was still low. It would only be possible to substitute into non-Lion products that carried no health risk. [✂] however, told us it would take non-Lion eggs that met its own technical standards which were roughly in line with Lion requirements.

43. The treatment of Lion and non-Lion eggs as separate markets or otherwise is unlikely to have a significant impact on our analysis of competitive effects as all of the parties' major competitors also supply Lion branded eggs. As a result, for the purposes of the analysis of competitive effects in this case, we have included Lion branded eggs and non-Lion eggs within the same market. We discuss the Lion mark, however, in our consideration of the geographic market below.

Evidence of substitutability by customer type

44. The parties argued that on the supply side there were few barriers that would prevent any egg supplier from supplying all types of customer. It would appear that there is some evidence to support this contention. For example, the parties in annexes 1 to

[17] [✂]

11 of their submission provided evidence that smaller suppliers such as Glenrath, Skea, Fridays, Sunrise and Oaklands could and did supply the major retailers.

45. However, as discussed in Appendix E, the parties' share of supply to wholesale and catering customers is significantly lower than their share of supply to retail customers. This suggests that there are significant differences in the requirements to supply the two markets. In addition the parties noted that their own systems and processes were more geared up to packing eggs as required by the retailers, rather than merely putting them on trays as required, for example, by the catering sector. Security of supply, traceability and quality of service are also more important to retail customers. These customers also require a higher proportion of higher grade eggs than is typically the case for wholesale and catering customers, who buy predominantly cage eggs. This may limit the ability of those suppliers that supply the wholesale and catering market to switch to supplying the retail segment in response to a 5 per cent change in price. Finally, the parties' internal documents suggest that [✂] to catering and wholesale customers [✂].[18]

46. At current prices it would seem that some suppliers, [✂], may be reluctant to supply smaller, low-yield customers. However, in response to a 5 per cent increase in price of any one customer group it may be that a supplier of retailers would find it profitable to supply wholesale and catering customers. However the reverse may not be true, in other words if the price of shell eggs to retailer customers increased by 5 per cent it would not appear likely that suppliers currently supplying wholesale and catering customers would switch to supplying retail customers. This may suggest that there is an asymmetric market definition, but this would not affect the conclusion we reach on the effects of the merger on the catering and wholesale market. We therefore

[18][✂]

consider it appropriate to distinguish separate markets for the supply of shell eggs to retailers and to wholesale and catering customers respectively.

Summary of relevant product markets

47. In summary, the available evidence appears to point towards relevant markets for the supply of the following:

(a) organic shell eggs to retail customers;

(b) free-range shell eggs to retail customers;

(c) barn and cage shell eggs to retail customers; and

(d) shell eggs to wholesale and catering customers.

The relevant geographic market

48. The parties said that, given the realities of the market, the relevant geographic market with respect to shell eggs is no wider than the UK.[19] They also said, however, that they believed that imports represented a competitive threat to the merged entity.

49. Transport costs and other geographic supply conditions generally do not appear to vary significantly by type of egg; as a result, the geographic market may be the same for all of the product markets defined in paragraph 47.[20]

50. The parties' customers gave near unanimous responses to the customer questionnaire. None of the respondents had sourced from outside the UK in the past five years. None had threatened to do so in negotiations with suppliers, and furthermore the vast majority said that they would not source from outside the UK in the event of a 5 per cent increase in price. This applied to both retailers and wholesale and catering customers. Only two respondents to the questionnaire said that they would

[19]Stonegate Farmers/Deans Food Group Submission 3.13.
[20]The cost of transport would appear to be more significant for cage eggs than for free-range as a proportion of sales due to the higher value of free-range eggs. Transport costs may be higher for organic and barn eggs as these may be delivered in smaller quantities.

possibly source from outside the UK in response to a 5 per cent increase in price. Somerfield said that it would possibly source from outside the UK; however, this would be on a gradual basis. [✂] said that it would consider all the options available to it, but stopped short of stating that it would source from outside the UK in response to a 5 per cent increase in price. In addition we are aware of one further small multiple retailer, [✂], which the parties claim has imported shell eggs intermittently in the past. However this retailer accounts for a very small proportion of the market.

51. The level of imports is relatively low; the parties estimate that shell egg imports represented around 7 per cent of shell egg supply within the UK. However we were told by the BEIC that the around half of these imports were of shell eggs for processing.

52. The parties noted that, in response to the recent shortages of free-range eggs, some retailers had begun importing shell eggs in to the UK. One retailer, Morrisons, was importing free-range eggs independently from a supplier in the Netherlands and two other retailers, Somerfield and Kwik Save Limited (Kwik Save) were selling free-range eggs imported on their behalf by the parties. However, an acute shortage of eggs represents a substantially larger stimulus than the 5 per cent increase in price typically used for the purposes of market definition. As a result retailers' responses to a shortage of eggs are not necessarily informative in the context of their likely response to a 5 per cent increase in price.

53. It therefore seems clear that the geographic market for shell eggs is no wider than the UK. However, this does not preclude the possibility that there are narrower geographic markets by region within the UK.

54. Customer responses indicate that the majority of customers source shell eggs nationally. [✂] The majority of respondents, however, source the majority of their needs nationally, although many also source limited amounts from local suppliers so as to provide a specialist local range for their customers.

55. We also note that a number of retailers mark some of their own-brand eggs 'Scottish'. In addition Stonegate does not supply into Scotland. This may indicate geographic markets which are narrower than the UK.

56. On the supply side, the parties stated that they supplied shell eggs across Great Britain. Neither party supplies into Northern Ireland. The parties stated that retailers generally let business on a depot by depot basis; as a result, contracts are not necessarily for supply on a national basis.[21]

57. The parties stated that there were no significant differences between regions in terms of pricing, advertising or marketing strategies. Shell eggs appear to be supplied over relatively large distances. The distribution of the parties' shell egg customers in terms of the distance between delivery point and packing facility is outlined below.

TABLE 2 **Distance between packing facility and delivery point**

Proportion of customers %	*Stonegate km*	*Deans km*
50	✂	
70		
90		

Source: The parties.

58. It may be that the relatively large distances over which the parties' customers are distributed would warrant a wider geographic market.

[21]Source: Market questionnaire response 14.1.

59. The parties' competitors were relatively confident that they could supply large parts of Great Britain. For example, Oaklands said that it had to spread its contracted producers over a wide area for reasons of bio security; as such it had to cover relatively large distances to collect eggs in any event.

60. In summary, it seems that the geographic markets with respect to shell eggs are no wider than the UK for all of the product markets defined above. It may be the case that there is an asymmetric market definition so that if the price of shell eggs within Great Britain increased by 5 per cent suppliers in Northern Ireland would be able to expand their sales into Great Britain, but that if the price of shell eggs in Northern Ireland increased by 5 per cent suppliers located in Great Britain would not be likely to commence sales into Northern Ireland. Similarly there may be some evidence to suggest that Scotland should be considered as a separate market. However, the precise definition of the market with respect to Northern Ireland or Scotland does not materially affect our analysis.

Processed eggs

The relevant product market

61. The parties' view is that the relevant market should include both powdered eggs and liquid eggs. In support of this, they cite the following factors:

(a) Rehydrated powdered egg is functionally substitutable with liquid egg. In some cases powdered eggs can be used directly without rehydration.

(b) Once rehydrated, powdered eggs and liquid eggs are to all intents in-distinguishable.

(c) There are numerous examples of customers substituting liquid and powdered eggs.

(d) When adjusted for weight, the prices of powdered and liquid eggs are very similar.

(e) Prices of powdered and liquid eggs tend to move together over time.

Demand-side substitution between liquid and powdered eggs

62. Customer responses clearly indicate that there is little substitutability between liquid and powdered eggs on the demand side. Of the 20 respondents to the liquid egg customer questionnaire and a further two respondents who submitted evidence separately, only one, [✂], said that it would switch to powdered egg in the event of a 5 per cent increase in the price of liquid egg. The CC received responses from 22 customers in total, accounting for about [✂] ([✂] per cent) of Deans' total liquid egg sales by value and almost [✂] ([✂] per cent) of Stonegates' total liquid egg sales by value respectively. The one customer that said that it would switch to powdered egg in the event of a 5 per cent increase in price accounted for less than [✂] per cent ([✂] per cent) by value of Deans' customers that responded to the CC and about [✂] per cent ([✂] per cent) by value of Stonegates' customers that responded to the CC. In contrast the proportion of respondents by value that said they would not switch to powdered egg in response to a 5 per cent increase in price was [✂] ([✂] per cent) for Deans and about [✂] per cent ([✂] per cent) for Stonegate. The remainder of Deans' respondents, about [✂] ([✂] per cent), gave no clear answer.

63. Customers cited the lower quality of the final product and reduced operational efficiency as factors that would prevent them from switching to powdered eggs. Any changeover in egg ingredient would take between three and six months and would necessitate testing, and may also require approval from the retailers.

64. A large customer, [✂], said that with over [✂] individual product lines the cost of switching to powdered egg would be substantial. It estimated that the necessary changes to recipes, packaging, production testing and food safety tests would cost in the region of £400,000 and take a minimum of six months.

65. Another large customer, [✂], said that it carried out periodic trials of the possibility of using powdered egg. However, to date none of these trials had produced satisfactory results in terms of product quality or operational efficiency.

66. The parties argue that powdered and liquid eggs are, functionally, fully substitutable. However for the purposes of market definition the relevant question is not whether customers could substitute between liquid and powdered eggs, but whether they would, in response to a 5 per cent increase in price.

67. In addition the parties provided pricing data that showed that prices of liquid and powdered eggs were correlated over time, with a correlation coefficient of [✂]. However correlation in prices can be as a result either of substitution between the two products in response to small changes in relative prices, or can reflect common cost or demand movements.

68. In the absence of strong evidence from customers of substitution between liquid and powdered egg it would seem more likely that the observed correlation in prices is as a result of common cost movements, since both liquid and powdered eggs use shell eggs as their main input. A large customer, Northern Foods plc (Northern Foods), told us that movements in the price of liquid eggs would almost certainly be accompanied by parallel movements in the price of powdered eggs. However this was because both powdered and liquid eggs are produced using shell egg and furthermore they stated that powdered eggs were not a realistic user substitute for liquid eggs whatever the price difference between the two.

69. The parties argued that if the observed correlation in prices of liquid eggs and powdered eggs was as a result of common cost movements, then there must be a wider geographic market for second quality eggs which are used as a main

ingredient for liquid and powdered eggs since the vast majority of powdered eggs are imported from outside the UK. However this is not necessarily the case, as common cost movements may also result from common fluctuations in feed prices, power costs or other costs.

Supply-side substitution between liquid and powdered eggs

70. There are no producers of powdered eggs in the UK. Whether powdered egg producers outside the UK could, or could not, switch to the production of liquid eggs does not materially affect our analysis. Supply side substitution with respect to powdered eggs is not discussed further.

Differences by type of liquid eggs

71. We note that Deans internal documents indicate that there are differences between liquid eggs produced from free-range shell eggs and liquid eggs from intensive (barn and cage) shell eggs. In addition the parties submitted evidence which showed that the price of free-range liquid whole eggs is sold at a significantly higher price than intensive liquid whole eggs. [✂][22]

72. The parties argue that it is not appropriate to define separate markets for free-range and cage liquid eggs because there would appear to be perfect supply side substitutability for both products. However suppliers willing to substitute from producing cage liquid eggs to free-range liquid eggs, in response to a 5 per cent increase in price of free-range liquid eggs, would be dependent on gaining access to suitable supplies of free-range shell eggs to break.

73. Information received from the parties suggested that processed eggs had lagged behind retail shell eggs in the swing away from cage eggs to free-range eggs. This

[22][✂]

may indicate that rival suppliers may not have as much difficulty in sourcing free-range shell eggs for breaking.

74. However we have seen no direct evidence of supply side substitution between free-range liquid eggs and cage liquid eggs. We therefore consider it appropriate to define separate markets for free-range liquid eggs and for intensive liquid eggs respectively. Access to suitable shell eggs for breaking is discussed further in Appendix F.

The relevant geographic market

75. In the parties' view, the relevant geographic market is at least as wide as the UK, Germany, the Netherlands, Belgium and France. In support of this, they cited the following factors:

(a) An analysis of the sourcing arrangements of the parties' customers made it clear that both large and small customers procure, have procured or may procure from outside the UK.

(b) Second, the OFT placed too much weight on the supposed customer preference for Lion eggs. A large proportion of customers (about 70 per cent) did not stipulate Lion eggs. Those that did were unable to publicize the fact because in the event of a crisis in UK production such as avian flu, they were obliged to have contingency plans for imports.

(c) Third, transport costs were not high and were plainly not impeding imports. The parties estimated transport costs from the Netherlands or Germany of 1-tonne flow boxes to be no more than 5 per cent.

Geographic demand-side substitution

76. Responses to the customer questionnaire do not support the parties' view that customers can and do substitute between producers from northern continental

Europe and the UK. The majority of customers said that they would not consider switching to a supplier of liquid eggs outside the UK in the event of a 5 per cent increase in the price of liquid eggs in the UK. Of the 22 responses received by the CC in relation to liquid eggs, about [✂] per cent ([✂] per cent) by value of respondents who sourced from Deans and [✂] ([✂] per cent) by value of respondents who sourced from Stonegate responded that they would not switch to a supplier outside the UK in the event of a 5 per cent increase in price and would absorb the price rise.[23] By contrast, five customers, representing about [✂] per cent ([✂] per cent) by value of respondents who sourced from Deans and about [✂] per cent ([✂] per cent) by value of respondents who sourced from Stonegate, said that they would source from outside the UK in the event of a 5 per cent increase in the price of liquid eggs in the UK.[24] A further three respondents said that they would consider sourcing from outside the UK, but had never done so.

77. In addition, a number of the customers cited by the parties as companies that currently sourced from outside the UK or as companies who could source from outside the UK disagreed with the parties' assessment of the relevant geographic market. Northern Foods, a large customer, currently sourced a small amount of liquid eggs from outside the UK; however, it stated that the nine to twelve day shelf life of pasteurised liquid eggs and the increased delivery lead times were limiting factors on imports. [✂] said that it had regular dialogue with suppliers outside the UK; however, its policy of sourcing Lion quality liquid eggs prevented it from using a supplier outside the UK. Similarly, 3663 noted that it would not source from outside the UK in the event of a 5 per cent increase in price and furthermore it had not sourced from outside the UK in the past five years.

[23]Respondents to the CC in total represented about [✂] ([✂] per cent) of Deans' total sales of liquid egg by value and about [✂] per cent ([✂] per cent) of Stonegates' total liquid egg sales by value.
[24][✂], Alembic Chilled Foods Limited (Alembic), Piquant Caterers Limited (Piquant) and [✂]. All these customers are currently sourcing from suppliers outside the UK.

78. A number of respondents, both large and small, cited the need to use UK-produced liquid eggs in their products due to the demands of the major retailers.[25]

79. Three large customers—[✂], Alembic and [✂]—however, supported the parties' view that the relevant geographic market is wider then the UK. [✂] stated that it sourced liquid eggs on a pan-European basis and that there were approximately [✂] suppliers across Europe that could supply its needs. It viewed liquid eggs as a commodity product and could switch between suppliers easily.

Geographic supply-side substitution

80. There appear to be a number of factors which may limit the ability of firms outside the UK to supply customers within the UK. The parties submitted that transport costs were generally low, and that transport costs from the Netherlands or Germany would be no more than 5 per cent. However, suppliers located further away would have longer lead times in delivering liquid eggs. As a result, they were less suitable for customers who might prefer just-in-time supply arrangements, who had unpredictable demand requirements or had limited storage capacity.

81. A further factor which limits the level of geographic supply-side substitutability is the perishability of liquid eggs. The parties stated that chilled egg products typically lasted from five days to six weeks provided that they were stored and transported at an appropriate temperature (0 to 4ºC). Frozen egg products lasted longer, between six and twelve months, but had to be kept at a temperature of –18ºC. Northern Foods told us at its hearing that on average pasteurised liquid eggs had a nine to twelve day life and that longer life products are typically UHT-treated rather than pasteurised. UHT liquid eggs are typically 5-10 per cent more expensive than pasteurised liquid

[25]Source: transcript of hearing with Northern Foods.

eggs. Northern Foods told us that the perishability of pasteurised liquid eggs is a very real factor limiting the extent of geographic supply side substitutability.

Market outcomes

82. In addition to the views of market participants, and an assessment of supply conditions, it is useful to look at market outcomes when assessing the scope of the relevant geographic market. The delivery radii of the parties can give useful information in this regard as the geographic distribution of the parties' customers is likely to reflect demand and supply conditions. [✂] In their response to the market questionnaire the parties set out the proportion of their customer base within certain radii from their processing depot.

83. Table 3 shows that the bulk of the parties' processed egg customers are located within a relatively short radius of their processing depot. These radii would appear shorter than would be expected in a northern European market. Indeed, for Deans, the radii within which the bulk of its processed egg customers are located would appear to be [✂] than for its shell egg operations.

TABLE 3 **Distance between processing facility and delivery point**

Proportion of customers %	*Stonegate km*	*Deans km*
50	✂	
70		
90		

Source: The parties.

84. The parties estimated that imports of liquid eggs accounted for approximately 9 per cent of UK consumption. They also estimated that the level of liquid egg imports grew by 5 per cent between 2004 and 2005 and that imports of egg products rose by more than 40 per cent in the first five months of 2006. However, as noted in Appendix G, there remains some uncertainty regarding the accuracy of the parties' estimate of

liquid egg imports. Defra trade statistics record only egg products, which can include a number of other products as well as liquid eggs.

Summary

85. In summary, even if there were sufficient marginal customers, with sufficient volume to warrant a wider market definition, the scope for price discrimination would suggest a narrower market definition. The parties told us that they negotiated prices individually with customers. Furthermore we saw evidence from internal documents that the parties have detailed knowledge [✂].[26] The relatively short shelf life of liquid eggs would appear to limit opportunities for arbitrage. The parties are therefore able to price discriminate between marginal and infra-marginal customers. In this context non-marginal customers would not be protected by the potential for marginal customers to substitute to producers outside the UK and would therefore be vulnerable to a price rise. We consider it appropriate to define a separate market for those customers for whom imports represent a poor substitute.

[26]Source further information supplied by Noble on the 11 December 2006 Annex 4.

Analysis of retail level price and volume data submitted by [✂]

Introduction

1. This annex presents an analysis of retail level price and volume data submitted by [✂]. This data is used to assess the responsiveness of consumers to changes in the price of egg SKUs. We use this data to assess the degree of demand-side substitutability at the retail level between *(a)* different types of eggs and *(b)* different sizes of egg.

2. The SKUs chosen for comparison within this annex are all [✂] own-brand products. This is because substitution between different types and sizes of egg is more likely to occur intra-brand than between different brands and because different sizes and types of SKU within the same brand are likely to form the closest possible substitutes.

3. In addition, to remove any possible distortion in relation to pack size, the price and volume comparisons below are conducted on equivalent pack sizes.

4. The focus of this analysis is on cage and free-range eggs. There is no assessment of the substitutability between these egg types and barn eggs as barn eggs were stocked intermittently by [✂] during the period.

Substitutability by egg type

5. [✂]

FIGURE 1

[✂]

[✂]

6. [✂]

FIGURE 2

[✂]

Substitutability between large cage and large free-range eggs

7. Where products are close substitutes, we would expect reductions in the price of a substitute product to result in a fall in sales volumes as consumers substitute into the alternative product. As a result, we may observe that large increases in sales of one product are correlated with a fall in sales volume for the substitute product. Figure 3 plots the sales volumes of large cage and large free-range eggs over time.

8. [✂]

FIGURE 3

[✂]

9. Where products are close substitutes we would expect a reduction in the price of a product, such as a discount or promotion, to result in a fall in the sales volume of close substitutes as consumers switch to the cheaper product.

10. [✂]

FIGURE 4

[✂]

11. [✂]

FIGURE 5

[✂]

12. [✂]

FIGURE 6

[✂]

[✂]

Substitutability between medium cage and medium free-range eggs

13. [✂]

FIGURE 7

[✂]

14. [✂][27]

FIGURE 8

[✂]

15. [✂]

FIGURE 9

[✂]

Substitutability between egg sizes (cage eggs)

16. [✂]

FIGURE 10

[✂]

17. [✂]

[27] [✂]

FIGURE 11

18. [✂]

FIGURE 12

Analysis of price and volume data at the wholesale level

1. This annex provides a brief analysis of market definition at the level of the supply of shell eggs to retailers. This analysis complements the analysis presented in Annex 1. In this annex we compare prices and volumes of [✂] free-range and cage egg SKUs at the wholesale level. The SKUs chosen for comparison are [✂] own brand SKUs of an equivalent egg and pack size so that any remaining differences are solely as a result of differences in egg type.

2. Deans' price and volume data with respect to [✂] was chosen because [✂] data exhibited significant price variation over the period. We performed similar analyses on data for other retailers which produced no clear results.

FIGURE 1

Price and volume of [✂] large free-range 12 pack

[✂]

Source: CC analysis from information supplied by Deans.

3. Figure 1 above shows Deans' wholesale price and sales volume over time, for sales to [✂], on its' top selling free-range SKU.[28] Deep cut price promotions appear to lead to significant increases in sales.

4. However it is not clear that sales volumes are responsive to price in the long run, since over the period the price of free-range increases considerably while volume, discounting the temporary peaks which accompany price promotions, remains relatively static.

[28]This SKU accounts for approximately [✂] per cent of Deans' sales of free-range eggs to [✂] over the period.

FIGURE 2

Price and volume of [✂] large cage 12 pack[29]

[✂]

Source: CC analysis from information supplied by Deans.

5. Again, with cage eggs we see a similar pattern of deep cut price promotions leading to spikes in demand, although volumes in the long run appear to relatively unresponsive to price.

FIGURE 3

The wholesale price of large free-range 12 pack and the volume of large cage 12 pack

[✂]

Source: CC analysis from information supplied by Deans.

6. Figure 3 plots the wholesale price of [✂] large free-range 12 pack against volumes of [✂] large cage 12 pack. The chart shows that deep cut price promotions on the equivalent free-range SKU have no identifiable impact on the volume of cage eggs sold. [✂]

7. In addition, there is a significant increase over the period in the price of the equivalent free-range SKU. Volumes of the equivalent cage egg SKU do not appear to have increased over the period, except during short term price promotions. There is therefore no clear evidence in the data presented here that longer term price trends induce retailers to switch between cage and free-range eggs either.

FIGURE 4

The wholesale price of large cage 12 pack and the volume of large free-range 12 pack

[✂]

Source: CC analysis from information supplied by Deans.

[29]This SKU accounts for approximately [✂] per cent of Deans' sales of cage eggs to [✂] over the period.

8. Figure 4 plots the price of [✂] large cage 12 pack against the volume of the equivalent free-range SKU. There are [✂] price promotions during the period, there appears to be a concurrent drop in free-range sales for one of these events ([✂]) however for the vast majority of promotions there appears to be no identifiable impact of deep cut price promotions on the volume of free-range eggs sold.

9. Again, longer term trends in the price of cage eggs do not appear to have an impact on the volumes of sales of the equivalent free-range SKU.

Summary

10. The above evidence shows us that large, short term promotions on free-range egg prices do not appear to impact upon sales of cage eggs, and short term promotions on cage egg prices do not appear to impact upon sales of free-range eggs.

11. This could be considered as further evidence that cage and free-range eggs are in separate markets at the level of supply to retailers, in addition to at the level of supply to final consumers.

12. However it is difficult to infer, from short term price and volume fluctuations, a great deal about the responsiveness of retail customers to changes in the price charged by Deans. The short term patterns we observe in figures 1 to 4 may simply reflect the responsiveness of end consumers to price promotions. It would seem unlikely that we would observe retailers changing supplier in response to a short term price promotion. Responses from customers to our questionnaire indicate that retailers make ranging decisions based on longer term price trends and allocate volume between suppliers on a per depot basis.

13. However there is no evidence in the data presented here that longer term price trends affect the volume of eggs sold or induce retailers to switch from cage eggs to free-range eggs, or vice versa.