

## Pricing

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## Summary

1. The prices paid by customers for domestic bulk LPG vary widely depending on the supplier, on whether the customer is new or established, and on whether the customer has negotiated a discount. Variations in the cost of supplying different customers (depending on factors such as the tank size and volume of LPG purchased) explain only a small part of price differences between customers. Substantial differences exist between the average prices charged by the four major suppliers (Calor, Flogas, Shell and BP)—nearly 10 per cent between the highest- and lowest-priced supplier.
2. [REDACTED]. The prices of smaller suppliers vary around a wide range: [REDACTED]. With the exception of [REDACTED], the major suppliers told us that they do not, on the whole, charge systematically different prices between regions, and this is supported by our analysis.
3. [REDACTED] and [REDACTED] all offer introductory discounts to new customers.<sup>1</sup> [REDACTED] introductory price is fixed for only six months. Those of [REDACTED] are fixed for the first [REDACTED] and those of [REDACTED] are fixed for up to three years; the size of the discount falling each year.
4. Calor and [REDACTED] offer standard prices to domestic bulk LPG customers, [REDACTED], and a proportion of customers are charged at a discount on the standard price. In contrast,

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<sup>1</sup>[REDACTED] commented that, because it had no standard charges, 'initial price' was a more appropriate term than 'discount'.

[redacted] and Shell told us that they calculate prices individually depending on expected customer usage and other features of the account. Our analysis of prices in Annex 1 indicates that, for each major supplier, factors such as the volume of LPG consumed, the length of time the account had been in place, and whether the customer had negotiated a discount, explain only a proportion of the variation in prices between customers.

5. Price changes by the major suppliers appear, in recent years, to have been caused more by changes in the wholesale price of propane (which has fluctuated considerably over the period), than competitive responses to changes in each others' prices. Of the major suppliers, [redacted] systematically collects information on competitor prices.
6. We considered whether conditions existed for coordination between suppliers. There is some evidence to suggest that the conditions for coordination may be met in this market, but we have not seen any clear evidence that such coordination occurs at present.

## Note

7. The focus in this appendix is on prices, and pricing policies, in 2003 and 2004. One reason for this is that data for these years were available at the start of the investigation, and to request an update of all relevant information (including customer databases) would have placed a considerable burden on suppliers. We consulted with the major suppliers who broadly agreed that the market had not changed in any significant respect since this time period. Another reason was our concern that firm behaviour during the period of the investigation could be influenced by the investigation itself. We did, however, receive updates of monthly average prices, which we have used.

## Headline prices

8. We begin with an overview of prices charged by the major suppliers. Further details are provided in later sections. Average prices for the major suppliers are shown in Table 1. The major suppliers provided us both with average monthly prices and with prices charged to each customer. We noted inconsistencies within the customer database information, and have therefore relied, where possible, on aggregated pricing data. Over the period shown, [redacted]. The average price of the highest-priced major supplier over this period was typically between [redacted] per cent higher than that of the lowest-priced major supplier. Revenue per litre from standing charges, based on customer database information, is also shown in the table.<sup>2</sup> [redacted].

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<sup>2</sup>[redacted] noted that the additional revenues were fixed and not volume-related. It argued that for this reason, they should not be expressed in ppl terms. However, our intention is simply to compare revenues from domestic bulk LPG supply relative to the volume of LPG supplied.

TABLE 1 Price comparison: major suppliers

	2003	2004	2005 (to October)	Revenue per litre for standing charges 2003*
Calor				
Flogas				
Shell				
BP				

Source: Suppliers.

\*Standing charges calculated from suppliers' customer databases, excluding metered estate customers, customers with zero or negative recorded consumption and customers in the highest and lowest percentiles of consumption.

9. Average monthly prices to domestic customers, from mid-1999 to mid-2004, are shown in Figure 1.<sup>3</sup> Prices increased substantially in 2000: [redacted] and [redacted]. The major suppliers told us that price fluctuations were principally due to changes in the cost of propane, (see Annex 2). The major suppliers have sustained substantially different average prices over the period: [redacted]. [redacted] Flogas told us that [redacted]<sup>4,5</sup> A number of customers complained that suppliers were quicker to pass on increases in the cost of propane than decreases. Our analysis of wholesale and retail prices over time (see Annex 2) did not support this complaint.

FIGURE 1

**Average monthly prices to domestic customers (1)**

[redacted]

Source: Suppliers.

**Pricing policies**

**Calor**

- 10. [redacted]<sup>6</sup>
- 11. [redacted]<sup>7</sup>
- 12. As of 1 January 2004, [redacted] per cent of Calor's domestic bulk customers were charged a price equivalent [redacted]; a further [redacted] per cent paid the [redacted] price of [redacted] ppl. Around [redacted] per cent of Calor customers did not pay one of these standard prices.
- 13. [redacted]

<sup>3</sup>Month-to-month fluctuations may be due in part to variations in the customer mix—eg more (or fewer) deliveries to customers who are on lower prices in one month than another.

<sup>4</sup>[redacted]

<sup>5</sup>[redacted] commented that the price fluctuation in Figure 1 did not show different prices each month but was due to the mix of customers and therefore distorted the price smoothing effect. [redacted] standard prices are shown in Figure 3.

<sup>6</sup>[redacted]

<sup>7</sup>[redacted]

FIGURE 2<sup>8</sup>

**Calor customer prices as at 1 January 2004**

[REDACTED]

Source: [REDACTED]

14. [REDACTED]
15. [REDACTED]<sup>9</sup>
16. [REDACTED]<sup>10</sup>
17. [REDACTED]

FIGURE 3

**Calor prices, weekly trend, 1999 to 2004**

[REDACTED]

Source: [REDACTED].

***Flogas and Flogas NI***

18. [REDACTED]
19. At the start of 2004, Flogas charged [REDACTED] of its customers a price of [REDACTED], while the remaining [REDACTED], with no other single price being charged to more than [REDACTED] per cent of its customers.
20. Flogas [REDACTED]. If the shift in propane prices is expected to be temporary, Flogas will [REDACTED]. Flogas told us that, in general, all customers would receive a standard letter announcing a price change. [REDACTED]
21. Flogas told us that the factors it considered in determining a price reduction to prevent customer switching were [REDACTED].
22. [REDACTED]
23. [REDACTED]

***Shell***

24. In 2003, Shell charged an average introductory price of [REDACTED] ppl (compared with an average price overall of [REDACTED] ppl). Shell provided us with an analysis of prices which concluded that new customers had not been paying consistently lower prices than existing customers. However, this analysis defined new customers to include customers who had moved into a house that was already supplied by Shell, as well as customers who were 'truly' new to Shell.

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<sup>8</sup>[REDACTED]  
<sup>9</sup>[REDACTED]  
<sup>10</sup>[REDACTED]

25. [redacted]
26. Shell told us that it did not differentiate between regions other than for depots in the [redacted] which faced higher transport costs.

### **BP**

27. [redacted]
28. [redacted]
29. [redacted]
30. [redacted]
31. [redacted]

### **Standing charges**

32. The average standing charge per annum is around £[redacted] for [redacted] customers and £[redacted] for the customers [redacted]. Revenue from standing charges is around one-fifteenth (for [redacted]) and [redacted] (for the [redacted]) the size of revenue from LPG sales. (See also Table 1.)

### **Comparative price levels**

33. The distribution of prices (excluding standing charges) to domestic bulk LPG customers at the end of 2003 is shown in Figure 4.<sup>11,12</sup> [redacted]

FIGURE 4

[redacted]

Source: Suppliers.

### **Pricing by smaller suppliers**

34. The prices, and pricing policies, of smaller suppliers vary widely (see Table 2). [redacted] out of [redacted] suppliers who provided information did not offer lower prices to new customers than to established customers; of the remaining [redacted] offered a substantial discount, [redacted] a small discount, and [redacted] did not state the discount offered. [redacted] of the [redacted] charged a standard price, but [redacted] of these offered discounts to a majority of their customers. Prices charged by different suppliers varied widely—for example, average prices charged in 2003 ranged from under [redacted] (about [redacted] below that of the cheapest of the major suppliers) to above [redacted] ([redacted] above that of the most costly of the major suppliers). [redacted] appear to have increased their prices since 2003, but others have not.

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<sup>11</sup>[redacted]  
<sup>12</sup>[redacted]

TABLE 2 Prices and pricing policy

	<i>Number of domestic customers (2003)</i>	<i>Introductory price (Oct 04)</i>	<i>Average or standard price (Oct 04)</i>	<i>Average price 2003</i>	<i>Standard price</i>	<i>Proportion of customers negotiating discount from standard price</i>
<i>Smaller suppliers</i>			✂			
<i>Major suppliers</i>			✂			

Source: Suppliers.

[✂]

### Comparison by sector

35. Average prices to domestic bulk LPG customers are compared with those charged to other customers in Figure 5. [✂] [✂] told us that domestic bulk LPG customers generally did not have access to deals aimed at non-domestic customers. One reason for this was that business customers had higher demand, generating a higher ROCE. Another was that non-domestic customers were more likely to use LPG throughout the year, improving tanker fleet utilization. In addition, the average price may be influenced by a few high-volume customers paying lower prices. Other suppliers made similar points.
36. Trend data indicate a substantial price increase in 2000/2001 across companies and customer groups, a dip in 2001/2002 (for [✂] and [✂]) and relatively stable prices thereafter (see also Figure 1). The relationship between prices and the principal input cost—propane—are analysed in Annexes 2 and 3.

FIGURE 5

[✂]

Source: Suppliers.

### Metered estates

37. Metered estate customers generally pay lower prices than other domestic bulk LPG customers, particularly those of [✂] and [✂] ([✂]). The major suppliers told us that tank utilization is generally higher for metered estate installations than tanks supplying individual premises, thereby giving logistical efficiency advantages. Table 3 presents data on prices paid to the suppliers by metered estate customers.

TABLE 3 Prices to metered estate customers and other domestic customers

Ppl	Calor		Flogas		Shell		per cent
	Non-metered estate	Metered estate	Non-metered estate	Metered estate	Non-metered estate	Metered estate	
✂							
Average pence per litre	(						)

Source: Suppliers.

**Notes:**

- 1. BP did not provide pricing data for metered estate customers.
- 2 Some estate-management firms purchase domestic bulk LPG on their estates; they are classified by suppliers as commercial customers.

**Determinants of price**

38. The major suppliers also told us that prices charged to individual customers were influenced by, among other things, cost factors, including volume purchased, distance from depot, and the length of time that customers had been with the supplier. Annex 1 consists of a regression analysis relating cost factors such as volume of LPG, tank size, and distance from depot to the price of LPG. We found that, while some cost variables have a statistically significant effect on price, the effects tend to be relatively small, and, even when they are combined with other factors, such as whether the customer is new, or has negotiated prices, much of the variation in prices between customers is unexplained.

**Monitoring of competitor pricing**

39. [X] surveys a panel of its competitors' customers each month in order to monitor prices. [X] competitor prices by [X] are shown in Figure 6, along with the actual maximum and minimum average prices of [X] and [X]. [X] estimate is between the actual maximum and minimum average price [X]. The results of [X] panel for September 2004 appear as Table 4. [X]. [X] did not have a monitoring program in place, but received indicative prices of other suppliers from its account managers. [X].

FIGURE 6

**[redacted] price monitor estimates v actual competitor prices ([redacted])**

[redacted]

Source: CC based on data from major suppliers.

TABLE 4 [redacted] price panel results, September 2004

	Average	Max	Min	Observations
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Source: [redacted]

40. [redacted]

41. [redacted] provided us with reasons for its price increases and decreases over the period. In all cases the reasons related to current and forward prices of oil and LPG: competitor pricing was not mentioned as a reason. [redacted] told us that none of the price changes were in response to the retail price of another supplier. It said that the period was one of unprecedented volatility and increases in raw material prices, which inevitably had a major short term effect on pricing decisions by [redacted], and that no general conclusions about long term pricing strategy should be drawn from the behaviour of market players during such a period.

**Coordination**

42. We now consider the scope for coordinated behaviour between suppliers. Our guidelines<sup>13</sup> set out three conditions as necessary for coordinated effects to occur and be sustainable through time. These conditions can be summarized as:

- (a) the market must be sufficiently concentrated for any significant deviation from the prevailing behaviour to be observed by other firms;
- (b) deviation from the behaviour must be costly to the firm doing so—for example, if it cuts prices, other firms respond with a matching price cut such that the price cut of the original firm is not profitable; and
- (c) competitive constraints must be relatively weak. If barriers to entry are low, then the threat of entry will tend to undermine such conduct.

<sup>13</sup>CC3, Market Investigation References: Competition Commission Guidelines, paragraphs 3.62 to 3.67.

### ***Transparency of coordinated behaviour***

43. The market is highly concentrated (with an HHI above 3,000<sup>14</sup>). Suppliers monitor one another's prices to a limited extent (see paragraphs 39 to 41), but prices are not generally transparent, particularly in view of the wide range of prices offered to each supplier's customer base. However, when a customer switches supplier, the outgoing supplier will invariably know the identity of the new supplier, as arrangements relating to the change in supply are made between the two suppliers. If a customer obtains a lower quote from a competitor and uses this to negotiate a discount from the incumbent supplier, the incumbent may in many cases be able to identify the competitor concerned. In summary, the nature of firms' information about each others' behaviour suggests that there may be some scope to coordinate on the extent to which they approach each other's customers or how they respond to approaches to each other's customers—ie whether they try to win these customers, and particularly the prices they quote to them—rather than to coordinate on their average or standard prices.<sup>15</sup>

### ***Cost of deviation***

44. In markets where switching costs are high, attempts by competitors to win a customer from an incumbent supplier may result in the customer using the competitor's quote to obtain a discount from his incumbent supplier. In such a case, there is a cost to the incumbent (which has to offer a lower price to retain those customers) but no benefit to the competitor (which does not win the new customer) and the incentive to deviate from any coordination (by offering aggressively low prices to the other supplier's customers) would, consequently, be limited. In addition, if one of the suppliers did cheat, the other could potentially respond to this deviation by offering lower prices to customers of the first supplier. The first supplier would then have to lower its prices to those of its own customers who had been approached by, or had approached, the other supplier, in order to retain them. Such an analysis suggests that the second condition could, in principle, be satisfied in the market for domestic bulk LPG.

### ***Competitive constraints***

45. Coordination is less likely if barriers to entry are low, or a fringe of firms outside the core oligopolists have the incentive and scope to attract significant volume away from the core group. In the present case, market entry has occurred, and a fringe of smaller competitors exists in Great Britain, though not in Northern Ireland. However, several smaller suppliers told us that winning a new customer entailed a substantial investment due, in part, to the need to install a new tank. In addition, we note that if a customer threatens to switch and the current supplier responds by offering a lower price, the customer can avoid switching costs by staying with the current supplier, and this will tend to reduce the incentive to attempt to win customer from existing suppliers (see Appendix G, paragraphs 109 to 113). Hence, the scope for expansion by these fringe players, and consequently the degree of competitive constraint they impose, may be limited.

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<sup>14</sup>The HHI or Herfindahl-Hirschman Index is defined as the sum of the squares of all the market shares in the market. As set out in paragraph 3.11 of CC3, the OFT guidelines state that the OFT is likely to regard any market with a HHI in excess of 1,800 as highly concentrated, and that where it uses the HHI, the CC will have regard to that threshold level, but only as one factor in its wider assessment of competition.

<sup>15</sup>See also the discussion of parallel pricing in paragraphs 46 and 47.

### ***Other indicators of coordination***

46. We considered whether suppliers were coordinating their prices by analysing prices charged by three of the major suppliers, and propane costs, in recent years. The model estimated the relationship between current-period price changes for each supplier and price changes by all suppliers, and wholesale prices, in previous periods. Initial results indicated a possible relationship between current-period price changes by some suppliers and previous-period price changes by others. However, data were not available from one of the major suppliers ([X]), with the result that competitive interaction between the four could not be modelled in full. Furthermore, structural shifts, particularly Flogas' acquisition of British Gas, suggested that the period should not be studied as a single time series, but analysis of shorter periods would have been based on an unsatisfactorily small number of observations. In view of these concerns, we considered that the model we developed was not sufficiently robust to constitute evidence of coordination in prices.
47. Furthermore, limited customer awareness of the prices available from alternative suppliers (see Appendix G, paragraph 76), and the evidence that customers seldom switch directly in response to disparities, or changes, in the relative prices offered by different suppliers (Appendix G, paragraphs 54 to 63), indicate that there is little, if any, incentive for suppliers to attempt to harmonize their prices.

### ***Scope for coordination***

48. In the light of the above discussion, we consider that there is some evidence to suggest that the conditions for coordination may be met in this market. However, we have not seen any clear evidence that such coordination occurs at present.

## Regression analysis of inter-firm price differences

- 1.1. The major suppliers provided us with details from their customer databases about the price charged to each domestic customer (as of 1 January 2004), and characteristics of the customer account which could potentially affect the price charged—such as the volume of LPG consumed, the length of time the account had been in place, and whether the customer had negotiated a discount.
- 1.2. We analysed this data to assess how much, if at all, variation in prices to different customers by the same supplier reflected cost differences in supplying those customers.
- 1.3. We found that, while some characteristics (not necessarily cost-related) of the customer account had a statistically significant effect on the price, those characteristics on which the parties provided us with data, taken together, explained only a small part of the observed price variations between customers.

### Background

- 1.4. Variables considered for inclusion in the equations were based on the following:
  - volume of LPG consumed;
  - the year when the contract was signed;
  - distance from the supplier's depot to the customer's premises;
  - whether or not the customer had negotiated a discount;
  - payment by direct debit;
  - automated top-up arrangement; and
  - whether property was on a metered estate.
- 1.5. The regression equations are estimated by ordinary least squares (OLS). The validity of the method assumes implicitly that price and volume are not simultaneously determined, ie that LPG consumed does not depend on the price charged.<sup>1</sup> It is possible that some consumers use more LPG because they pay a lower price, but we have assumed that such an effect is limited. To the extent that this does occur, the effect will be to overstate the effect of volume consumed on price in the equations discussed below.
- 1.6. The data we received from the major suppliers included records with no, zero or negative distance, volume or price information. We excluded these observations from the following regression analysis. In addition, variables are based on supplier reports and some—such as whether the customer negotiated or was free to switch supplier—may have been open to interpretation. Variables included in the equations

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<sup>1</sup>Annual volume consumption for 2003 was used, and price as of 1 January 2004; however, prices on 1 January 2004 can be expected to be closely correlated to prices over 2003 and before.



1.11. [✂]

1.12. [✂]

## Flogas

TABLE 2 Regression (2)—Dependent variable: in prices 2004

Number of  
customers (approx)  
Number of obs  
F( 12, 28648)  
Prob > F  
R-squared  
Adj R-squared

[✂]

[✂]

Source: CC based on data from Flogas.

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1.13. [✂] of the variation in logarithmic prices between Flogas customers is explained by the available explanatory variables. [✂]

1.14. [✂]

1.15. [✂]

1.16. [✂]

## BP

TABLE 3 Regression (3)—Dependent variable: in prices 2004

Number of  
customers  
(approx)  
Number of obs  
F( 7, 7520)  
Prob > F  
R-squared  
Adj R-squared

[✂]

[✂]

Source: CC based on data from BP.

1.17. The above results confirm that [X] explain around [X] per cent of variation in logarithmic prices among BP customers [X].

1.18. [X]

## Shell

1.19. [X]

TABLE 4 Regression (4)—dependent variable: in prices 2004

Number of customers (approx)  
 Number of obs  
 F( 10, 12164)  
 Prob > F  
 R-squared  
 Adj R-squared

[X]

[X]

Source: CC based on data from Shell.

1.20. The covariates in this regression explain [X] per cent of the variation in logarithmic prices. [X]

## Pooled regression

1.21. We carried out a pooled regression of prices from the major suppliers. The results are shown as Regression (5) below. Each column shows a different model (i.e. a regression equation in which different variables have been included). All results were highly statistically significant except those shown in italics. The equations explained only a small amount—between 10 and 20 per cent—of the variation in prices between customers. [X]

TABLE 5 Regression (5)—pooled data

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>

Source: CC based on data from major suppliers.

### Summary of findings

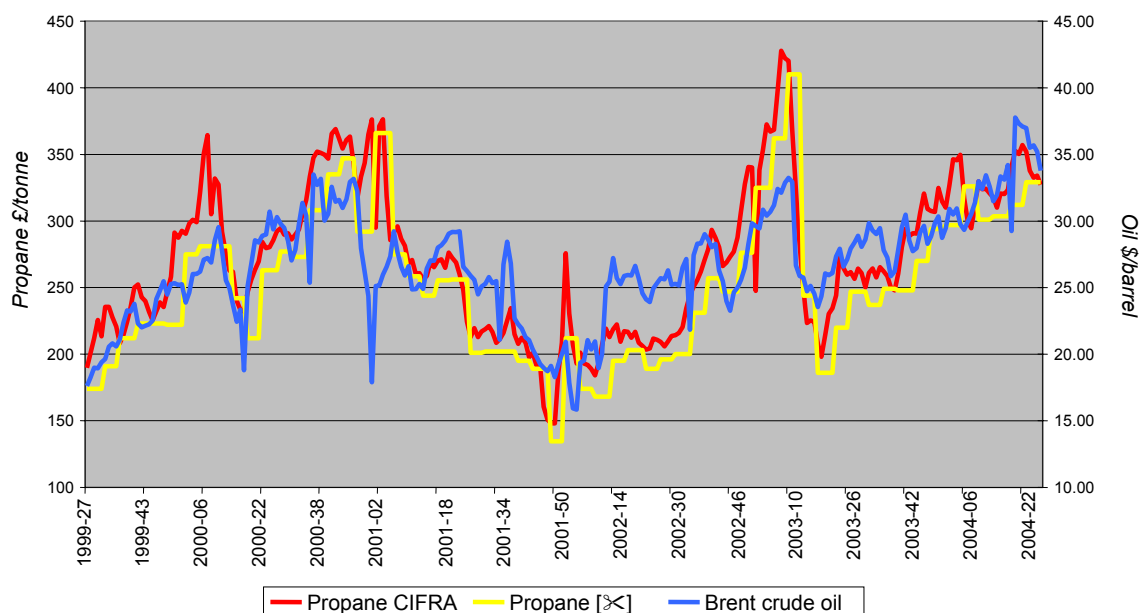
- 1.22. The estimated logarithmic relationships between prices and volume suggests a non-linear price schedule, subject to bargaining, although substantial variation in unit prices remains unaccounted for on the basis of the available covariates. Prices are not, however, very responsive to the volume consumed: substantial differences in consumption between customers are associated with only small differences in price.
- 1.23. LPG prices are, on average, lowest in the year during which a contract has been signed. This finding is indicative of companies offering lower introductory prices to new customers, although some suppliers appear to offer below-average prices to customers who have started using them in the past five years.
- 1.24. Other characteristics of customers' contracts (eg tank size, distance from depot, whether the customer pays by direct debit or has an automated top-up agreement) which could potentially affect the cost of supply do not, in general, have a meaningful and statistically significant impact on per unit prices. On the whole, very little variation between customer prices is explained by such factors, and even start dates and volume consumed have limited explanatory power.

### Price and input cost trends

2.1. Two measures of propane price ([redacted]) are illustrated in Figure 1, ([redacted]) along with the price of Brent Crude Oil. Shell told us that the price of crude oil does not affect the retail price of LPG other than to the extent it moves with/affects the price of internationally-traded propane. Figure 1 has been arranged to show Brent Crude on a similar level to the propane prices, although the unit of measurement is different. Crude oil and propane prices are evidently highly correlated, although they do not move in unison. [redacted] told us that Figure 1 demonstrated that the price of propane was far more volatile than that of crude oil in the long term. [redacted] told us that the cost of propane was only materially affected by the cost of crude when the latter increased significantly in a short period of time.

FIGURE 1

#### Commodity prices, 1999 to 2004



Source: Suppliers.

2.2. [redacted]

FIGURE 2

#### Calor prices, weekly trend, 1999 to 2004

[redacted]

Source: [redacted]

### FIGURE 3

#### Calor average price minus propane (CIFRA) price, 1999 to 2004

[REDACTED]

Source: [REDACTED]

- 2.3. Some customers expressed concern that suppliers passed on increases in input costs more quickly than decreases. Analysis of [REDACTED] and [REDACTED] retail pricing from 1999 to 2004 does not support this view. [REDACTED] and [REDACTED] provided monthly data which contained too little variation for robust analysis.
- 2.4. [REDACTED] [REDACTED] told us that for customers buying relatively small volumes of LPG, such pricing structures would be inappropriate, as such customers typically wanted to know the price expressed in ppl. We do not find these arguments compelling, since customers will ultimately face higher prices if propane costs go up, even if they are temporarily smoothed, and linking prices to propane cost does not necessarily preclude them from being quoted in ppl.

## Indicators of the extent of overpricing

- 3.1. The present annex attempts to estimate the detriment faced by customers as a result of their paying higher prices than might be expected in the absence of any anti-competitive features in the market. Any such estimate is necessarily broad, and depends on the estimation method used and more detailed assumptions made. Accordingly, we use three rather different approaches to estimating the detriment—one based on detailed customer database comparisons for customers in Great Britain, one based on a comparison between Great Britain and Northern Ireland, and one based on our analysis of profitability. We do not rely exclusively on any one of these three, but rather use them together to estimate a range within which the value of the detriment is likely to fall. The calculations in the present annex are based on the CC's conclusion (see paragraph 6.6 of the Report) that the large majority of customers in Great Britain are paying higher prices than would be the case if these features did not exist. The purpose of this annex is not to provide further support to this conclusion, but to estimate the potential scale of overpricing.

### ***Customer database comparison***

- 3.2. We have found (see Appendix I, Annex 1) that the customers of each major supplier pay a wide range of prices, and that the difference between prices paid by different customers of the same supplier is explained only to a limited extent by factors which (in the views of the major suppliers) affected the cost of supplying these customers. We therefore estimate the detriment of overpricing on the assumption that, in a market without the anti-competitive features we have identified, most or all customers might be expected to pay a price at the lower end of the distribution of currently observed prices. It is possible that, without the contribution to overheads from customers paying higher prices, firms would not find it profitable to supply customers whom they currently supply at lower prices. As such, this approach may tend to overestimate the extent of overpricing. However, we note that three of the nine smaller suppliers who provided us with pricing data (see Appendix I, Table 2) charged average prices which were below the benchmark prices we use for the major suppliers in the calculations below.
- 3.3. Our analysis is based on individual-customer-level data for 2003, provided by the major suppliers. For simplicity, we excluded from the analysis all customers on metered estates and customers for whom a negative price or volume figure was recorded. In addition, we excluded all customers who were supplied with less than [X] litres, or more than [X] litres, of LPG in 2003. These cut-off points were chosen because they represented the 1 per cent of customers of all of the major suppliers with the lowest volume usage, and the 1 per cent with the highest volume usage, in that year. We also excluded all customers who had commenced their supply relationship after December 2001, in order to limit the analysis to established customers. We note that some customers who had commenced their relationship before December 2001 may still have been receiving introductory discounts in 2003, but such customers had a limited effect on the results (see paragraph 3.5).
- 3.4. [X]
- 3.5. [X]

- 3.6. [REDACTED]
- 3.7. [REDACTED]
- 3.8. [REDACTED]
- 3.9. The results of the exercise are summarized in Table 1. The estimated total customer detriment of overcharging by the four major suppliers is £[REDACTED] million, representing around [REDACTED] per cent of the annual turnover of the major suppliers. We subtracted from the total figures the ‘savings’ made by customers who had paid less than the benchmark price in each case.
- 3.10. A variant of this approach would apply the lowest benchmark across all of the major suppliers—ie to assume that, in the absence of anti-competitive features in the market for domestic bulk LPG, customers of all of the major suppliers would be able to achieve the lowest price offered by a supplier to domestic customers. The results are again summarized in Table 1. On this basis, the total detriment rises to £[REDACTED] million.

TABLE 1 Estimate of detriment

	Benchmark price (ppl)	Detriment (£m)	Benchmark price (ppl)	Detriment (£m)
Total		( [REDACTED] )	[REDACTED]	[REDACTED]

Source: CC based on data from major suppliers.

- 3.11. We have not collected detailed customer pricing data from smaller suppliers. As described in paragraph 34, the smaller suppliers appear to charge a wide range of average prices, in some cases above those of the major suppliers and, in other cases, below. Anticompetitive features of this market are not restricted to the actions of the major suppliers, and customers of smaller suppliers face many of the same costs and barriers to switching between suppliers. In the light of these considerations, a reasonable assumption may be that overcharging occurs among smaller suppliers on a similar scale to that of major suppliers. On that basis, we estimate turnover of smaller suppliers at around £[REDACTED] million (see Table I of Appendix F). If we assume that overcharging accounts on average for around 10 per cent of smaller suppliers’ sales revenue (ie a comparable percentage to that of the major suppliers), it is appropriate to increase our estimate of total overcharging by around £[REDACTED] million to take account of this effect.
- 3.12. On this approach, we conclude that the range within which the annual detriment lies is around £[REDACTED] million to £13.1 million per annum, or, on the average of these two figures, around 10 per cent of annual market revenues.

### Comparison of Great Britain and Northern Ireland

- 3.13. The figures above relate to the market in Great Britain. A similar exercise is not possible in the Northern Ireland market where a uniform price is charged by each of the two suppliers. However, prices in Northern Ireland may be compared with those in Great Britain, and this forms the basis of our second approach. We note that prices in Northern Ireland tend to be lower than those in Great Britain, and have seen no

evidence that this reflects lower costs in Northern Ireland. It is important to note that we have identified similar anti-competitive features in the Northern Ireland market to the Great Britain market and, as such, the Northern Ireland market should not be seen as a 'competitive' benchmark. Nevertheless, the fact that lower prices prevail in Northern Ireland could be seen as indicating that, with increased competition, prices in Great Britain could be at least as low as current Northern Ireland levels.

3.14. Table 2 compares sales and revenue data for Calor and Flogas in Great Britain and Northern Ireland in 2003 and 2004. [redacted]<sup>1</sup> [redacted]

TABLE 2 Comparison of Northern Ireland and Great Britain prices

	Sales (tonnes)	2003 Revenue (£'000)	Average £/tonne	Sales (tonnes)	2004 Revenue (£'000)	Average £/tonne
Calor GB	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Calor NI						
Price difference as a % of Great Britain price:						
Flogas GB						
Flogas NI						
Price difference as a % of Great Britain price:						

Source: Suppliers.

3.15. On this approach, we conclude that the range within which the annual detriment lies is broadly in line with that estimated by the earlier method (see paragraph 3.12 above), amounting to some [redacted] per cent of revenues.

### Profits in excess of cost of capital

3.16. The third approach to estimating the detriment is based on our analysis of profitability. The figures in Table 3 are derived from accounting data in Appendix J. The major suppliers have argued that the ROCE estimates presented below are higher than their true ROCEs, and have also raised arguments in relation to an appropriate cost of capital.<sup>2</sup> Our purpose in presenting these data here is to note that, if we relied on these figures and on the basis of an estimated 10 per cent cost of capital, the excess profits over this cost of capital would be between just over £4 million and £[redacted] million per annum ([redacted]).<sup>3</sup> The lower of those figures is between about one-third<sup>4</sup> and about one-half of the various estimates suggested by our analysis of customer databases and comparisons with Northern Ireland. The profitability analysis, however, allows for the possibility which we noted in paragraph 3.2 that, without the higher contribution to overheads from customers paying higher prices, firms would not find it profitable to supply customers whom they currently supply at lower prices: indeed, [redacted] argued it could not profitably supply all its customers at the benchmark prices indicated above. There is some uncertainty about the validity of the parties' objections to the figures in Table 3: to the extent that these objections are valid, the excess profits figure would be reduced. If we assume a similar level of excess profits among smaller suppliers, the estimate of detriment would rise by around 10 per cent, to between £[redacted] million and £[redacted] million.

<sup>1</sup>[redacted]

<sup>2</sup>[redacted]

<sup>3</sup>[redacted]

<sup>4</sup>The figure of £[redacted] in Table 3 is, for example [redacted] per cent of the £13.1 million quoted in paragraph 3.12.

TABLE 3 **Estimates of excess profits**

	<i>Average revenues/profit 2001-2004</i>	<i>£000</i>
Gas revenue		
EBIT		
Capital employed	✂	
ROCE %		
Excess profits over 10%		
CoC		

Source: CC, based on data from suppliers

[✂]

### **Summary**

3.17. The cost to consumers of the adverse effect on competition we have identified cannot be measured accurately, and the alternative approaches to estimating of consumer detriment arising from anti-competitive features of the domestic bulk LPG market in Great Britain lead to figures in a wide range. The smallest estimate based on the lower end of the range of our profitability analysis is just over £4 million a year (across the major suppliers only). The largest estimates, subject to more uncertainty, are some two to three times that amount (including smaller suppliers). These estimates of modest but nevertheless important consumer detriment reflect the weaker competitive constraints on pricing that result from the adverse effects on competition of the features of the market identified. We note that, if greater competition encourages firms to become more efficient, by incentivizing them to seek cost reductions, the scope for reducing prices may be increased.