

Terms of reference and conduct of the inquiry

Terms of reference

1. On 29 July 2013, the OFT sent the following terms of reference to the CC:
 1. In exercise of its duty under section 22(1) of the Enterprise Act ('the Act') to make a reference to the Competition Commission ('the CC') in relation to a completed merger, the Office of Fair Trading ('the OFT') believes that it is or may be the case that -
 - (a) a relevant merger situation has been created in that:
 - (i) enterprises carried on by or under the control of Optimax Clinics Limited have ceased to be distinct from enterprises previously carried on by or under the control of Ultralase Limited; and
 - (ii) the condition specified in section 23(4) of the Act is satisfied, with respect to the supply of refractive eye surgery in the United Kingdom; and
 - (b) the creation of that situation has resulted or may be expected to result in a substantial lessening of competition within any market or markets in the UK for goods or services, including the supply of refractive eye surgery in the United Kingdom.
 2. Therefore, in exercise of its duty under section 22(1) of the Act, the OFT hereby refers to the CC, for investigation and report within a period ending on 12 January 2014, on the following questions in accordance with section 35(1) of the Act:
 - (a) whether a relevant merger situation has been created; and
 - (b) if so, whether the creation of that situation has resulted or may be expected to result in a substantial lessening of competition within any market or markets in the UK for goods and services.

(signed) JACKIE HOLLAND
Senior Director, Office of Fair Trading
29 July 2013

Interim measures

2. On 29 July 2013, we adopted the initial undertakings accepted by the OFT from Optimax on 22 January 2013 and consents accepted by the OFT on 10 May and 20 June 2013. These undertakings and consents are published on the CC [website](#).
3. On 13 August 2013, we directed Optimax to appoint a monitoring trustee and published the [directions](#) on the CC website.

Conduct of the inquiry

4. On 29 July 2013 we posted on our website an [invitation to express views about the merger](#).
5. The [administrative timetable](#) for the inquiry was published on the CC website on 28 August 2013.
6. We received a written submission and other written evidence from Optimax. A non-sensitive version of [Optimax's main submission](#) can be found on the CC website.
7. On 10 September 2013, members of the Inquiry Group, accompanied by staff, visited premises of both Optimax and Ultralase to see the operation of the two businesses.
8. We invited a wide range of interested parties to comment on the acquisition. These included competitors of the main parties, members of the syndicate that sold Ultralase to Optimax and management consultancy businesses that represented both Optimax and Ultralase during the sale process. Evidence was obtained through oral hearings with third parties, through telephone contacts and through responses to questionnaires. Summaries of all [third party hearings](#) can be found on our website.
9. An [issues statement](#) was published on our website on 30 August 2013, setting out the areas of concern on which the inquiry would focus.
10. In the course of our inquiry, we sent to Optimax and other parties some working papers and extracts from those papers for comment, and to check for accuracy and confidentiality.
11. A non-confidential version of the provisional findings report was placed on the CC website on 25 October 2013. We received no substantial responses to the provisional findings.
12. A non-confidential version of the final report was placed on the CC website on 20 November 2013.
13. We would like to thank all those who have assisted in our inquiry.

Financial information on the parties

Introduction

1. In this appendix we provide some historical financial information on Optimax and Ultralase.

Optimax

2. The financial performance of Optimax between 2007 and 2011 (Table 1) was such that the business generated profits in each year. Because of the structure of the ownership of freehold properties and equipment, the extent of trading between businesses controlled by Mr Ambrose and the incorporation of the business in 2010, the financial information below should be used with caution.¹

TABLE 1 Optimax financial performance

	£'000					
	YE Dec 2011*	YE Dec 2010*	YE Apr 2010*	YE Apr 2009	YE Apr 2008	YE Apr 2007
Turnover	[x]	[x]	[x]	[x]	[x]	[x]
Cost of sales	[x]	[x]	[x]	[x]	[x]	[x]
Gross profit	[x]	[x]	[x]	[x]	[x]	[x]
Amortization	[x]	[x]				
Depreciation	[x]	[x]	[x]	[x]	[x]	[x]
Net interest	[x]	[x]	[x]	[x]	[x]	[x]
Net profit before tax	[x]	[x]	[x]	[x]	[x]	[x]
EBITDA	[x]	[x]	[x]	[x]	[x]	[x]
Net assets	[x]	[x]	[x]	[x]	[x]	[x]
Net debt / (cash)	[x]	[x]	[x]	[x]	[x]	[x]
Lease payments	[x]	[x]				

Source: Optimax Clinics Unlimited unaudited financial statements (2011, 2010); (Russell Ambrose trading as) Optimax Laser Clinics 2009, 2008, 2007.

*2011 figures are for the year ending 31 December 2011. Figures for the year ending December 2010 cover a period of only 8.5 months (from the date of incorporation of Optimax Clinics Unlimited. Figures for the year ending April 2010 cover the period 1 May 2009 to 12 April 2010. 2007–2009 figures are for the years ending 30 April 2007–2009. Disclosure of interest payments with respect of the finance aspect of leases changed in 2010 and it is not clear how this affects the figures above.

3. We do not have financial statements for 2012; however, management accounts indicate that [x].

Ultralase

4. CLVC Group Limited has not filed its 2011 or 2012 financial statements.²

¹ Depending on the nature of lease arrangements, profit and earnings might not be directly comparable with Ultralase. Pricing of goods and services might not be included on an arm's length basis.

² We have been provided with what appears to be a draft, unsigned set of financial statements for 2011.

5. Turnover for the 12 months to 31 December 2011 was £[x] million and was in the range of £[x] million for FY 2008 to 2011. Gross profit margins remained steady at [x] to [x] per cent over the period. Adjusting for impairments of goodwill, the business was EBITDA positive in aggregate over the period.

TABLE 2 **Ultralase financial performance**

	£'000			
	CLVC		Ultralase acquisitions	
	2011	2010*	2009	2008
Turnover	[x]	37,344	40,265	41,372
Cost of sales	[x]	(15,933)	(18,090)	(17,872)
Gross profit	[x]	21,411	22,175	23,501
Goodwill impairment	[x]	-	-	(123,581)
Amortization	[x]	(2,971)		
Depreciation	[x]	(3,257)	(4,321)	(3,608)
Interest payable	[x]	(3,970)	(7,219)	(6,855)
Profit/(loss) on ordinary activities before tax	[x]	(5,288)	(12,011)	(126,028)
EBITDA (adjusted for impairment)	[x]	4,910	(470)	8,016
Net assets	[x]	11,878	(133,676)	(122,248)
Net debt	[x]	[x]	[x]	[x]

Source: Financial statements of CLVC Group Ltd (2011 draft, 2010); Ultralase Acquisitions Ltd (2009, 2008).

*CLVC was incorporated in October 2009, but was dormant until it acquired Ultralase Acquisitions Ltd and became the group holding company on 18 February 2010. These are consolidated group accounts so include the Ultralase business from that date, but do not represent the full-year 2010 results for the Ultralase business. Full-year 2010 revenues for the Ultralase business were £42.3 million.

6. We do not have financial statements for 2012; however, management accounts indicate that revenues for the period January to October amounted to £[x] million.

Market competition

1. This appendix contains supporting material on competition in the market for laser eye surgery.

Volume and revenue evolution over time

2. We investigated the recent trends in the market by analysing the data submitted by the parties and Optical Express. Table 1 shows the number of customers treated by each of these providers. We calculated the volume related to the first six months of each year to give a comparison with 2013 (for which we had data to June).

TABLE 1 Laser eye surgery volume (number of patients), January to June

	2009	2010	2011	2012	2013
Optical Express	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Optimax	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Ultralase	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: CC analysis of data supplied by each of these suppliers.

Note: Data covers January to June of each year. For the transaction data from Optimax and Ultralase, transactions with unknown treatment types have been distributed pro rata among LASER, IOL and other sales. Post-merger some customers of the parties were marked as 'transferred' to the other merging party. We allocated them to either Optimax or Ultralase accordingly.

3. The revenue pattern, shown in the table below, followed very closely the volume trend.

TABLE 2 Laser eye surgery revenues, January to June only

	£ million				
	2009	2010	2011	2012	2013
Optical Express	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Optimax	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Ultralase	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: CC analysis of data supplied by each of these suppliers.

Note: For the transaction data from Optimax and Ultralase, transactions with unknown treatment types have been distributed pro rata among LASER, IOL and other sales. Transactions with negative price or prices equal to zero were excluded. Post-merger some customers of the parties were marked as 'transferred' to the other merging party. We allocated them to either Optimax or Ultralase accordingly.

Prices

4. We investigated how the prices of the parties and Optical Express had evolved over the recent years. Figure 1 shows average revenue per customer in the period 2008 to 2013 (for Optical Express we only had data related to the period 2011 to 2013). In order to allow comparison with the 2013 figure we considered the average revenue per customer earned in the first six months of each year.

FIGURE 1

Laser average revenue per customer over time



Source: CC analysis of data provided by Optical Express, Optimax and Ultralase.

Note: Optimax and Ultralase provided transaction-level data. For the data from Optimax and Ultralase, transactions with unknown or non-laser (that is, not LASIK and LASEK) treatment types, negative prices, prices equal to zero and transactions which included discounts to friends or family were excluded. Revenue from additional product sales, such as eye drops, and interest payments were also excluded. To allow comparison of 2013 with previous years, only treatments which occurred between January and June of each year were included.

5. Laser eye surgery includes a range of treatments where price can differ significantly. Changes in the average revenue across all treatments may therefore be the result of variations in the product mix rather than in the prices of the individual treatments. To address this problem we separately estimated the average revenue per customer related to four categories of laser eye surgery: wavefront and non-wavefront variants of both LASIK and LASEK. The wavefront treatments make up the vast proportion of laser eye procedures,¹ and LASIK treatments are substantially more common than LASEK treatments.² Figures 2, 3, 4 and 5 show the evolution over time (2009–2013) of the average revenue per customer for January to June of each year for each category.

FIGURE 2

Average revenue per customer over time—wavefront LASIK



Source: CC analysis of data provided by Optical Express, Optimax and Ultralase.

Note: The notes under Figure 1 apply also here. The categorization into groups of treatments was based on the information provided by the parties and CC analysis.

FIGURE 3

Average revenue per customer over time—wavefront LASEK



Source: CC analysis of data provided by Optical Express, Optimax and Ultralase.

Note: The notes under Figure 1 apply also here. The categorization into groups of treatments was based on the information provided by the parties and CC analysis.

FIGURE 4

Average revenue per customer over time—non-wavefront LASIK



Source: CC analysis of data provided by Optical Express, Optimax and Ultralase.

Note: The notes under Figure 1 apply also here. The categorization into groups of treatments was based on the information provided by the parties and CC analysis.

¹ On average, 75 per cent of the laser eye surgeries carried out by Optimax, Ultralase and Optical Express in the period January 2011 to October 2012 were wavefront treatments.

² On average, 87 per cent of the laser eye surgeries carried out by Optimax, Ultralase and Optical Express in the period January 2011 to October 2012 were LASIK treatments (and 13 per cent LASEK treatments).

FIGURE 5

Average revenue per customer over time—non-wavefront LASEK

[REDACTED]

Source: CC analysis of data provided by Optical Express, Optimax and Ultralase.

Note: The notes under Figure 1 apply also here. The categorization into groups of treatments was based on the information provided by the parties and CC analysis.

6. The graphs show a relatively common pattern across different types of laser treatment.³ Before 2013, Ultralase had higher prices than either Optimax or Optical Express. The differential narrowed over time, mainly as a result of Ultralase reducing its prices. In 2013 Ultralase’s prices were realigned to match those of Optimax.
7. Table 3 shows the variation in the annual average prices between 2012 and 2013 for each of the four treatment groups. Optimax’s price has risen by [REDACTED] per cent in all categories. Ultralase’s price reductions have resulted from a substantial decrease in the prices of wavefront treatments, which make up the large majority of its sales. Optical Express’s price has fallen for wavefront LASIK, which is its most common procedure, but has risen for the other types of treatments.

TABLE 3 Changes in average prices by treatment group between 2012 and 2013 (January to June period only)

	<i>per cent</i>		
	<i>Optical Express</i>	<i>Optimax</i>	<i>Ultralase</i>
Wavefront Lasik	[REDACTED]	[REDACTED]	[REDACTED]
Wavefront Lasek	[REDACTED]	[REDACTED]	[REDACTED]
Standard Lasik	[REDACTED]	[REDACTED]	[REDACTED]
Standard Lasek	[REDACTED]	[REDACTED]	[REDACTED]

Source: CC analysis of data provided by Optimax, Ultralase and Optical Express.

Note: The notes under Figure 1 apply also here. The categorization into groups of treatments was based on the information provided by the parties and CC analysis.

Marketing

8. Marketing appears to be an important generator of sales and third parties consistently indicated that considerable investments in marketing activities were required in order to attract a significant volume of customers. Table 4 shows the marketing spend and the marketing spend/turnover ratio for Optimax, Ultralase and Optical Express since 2010.

³ Except for non-wavefront LASEK which is, however, a relatively low-volume treatment.

TABLE 4 Marketing expenditure, 2010 to 2013

	Marketing expenditure (£ million)				Marketing expenditure/turnover (per cent)			
	2010	2011	2012	2013 (Jan to Jul)	2010	2011	2012	2013 (Jan to Jul)
Optimax	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Ultralase	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Optical Express	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]

Source: Optimax and Ultralase Management Accounts, Optical Express data, Monitoring Trustee report of 16 September 2013.

*November and December marketing spend and turnover data not available and therefore not included.
 †2010 turnover data not available.

9. Marketing spend has fallen substantially from 2010 to 2012 for each of Ultralase, Optical Express and Optimax. In 2012 all three considerably cut their investment in advertising.
10. Marketing spend of the parties in 2013 up to July has continued to decline. On a constant rate of expenditure Optimax's spend will have reduced by around [X] per cent in 2013 compared with 2012 and Ultralase's spend will be reduced by around [X] per cent.

Overlaps

11. The parties used an 80 per cent catchment area around each of their treatment and consultation centres to identify overlaps. The size of the catchment area was based on a straight-line distance, rather than drive-times, and was specific to each overlap. These catchment areas were based only on the location of Optimax patients. The Ultralase catchment areas were equal to the catchment area of the nearest Optimax location.
12. Given the number of stores operated by the parties, we sought to identify those local areas where the merger was either unlikely to lead to an SLC on a local level or potentially problematic from a competition perspective.
13. We carried out an assessment of catchment areas based on patient level data from both parties. Nationally, 80 per cent of patients lived within about 45 minutes of the store in which they received a consultation.
14. We used catchment areas based on 45-minute drive-times as a starting point for identifying whether there were overlaps between Ultralase and Optimax treatment centres and consultation centres before the merger. However, we also recognized that patients were more widely distributed in some areas. Therefore, in addition to drive-times between stores, we also considered the extent to which the distribution of Optimax and Ultralase customers overlapped in these areas.⁴
15. Based on this two-stage analysis we identified the overlaps in Table 1. We identified a number of overlaps where an Ultralase store overlapped with more than one

⁴ The stores in the following potential overlaps were more than 45 minutes apart, but there was a notable overlap in the distribution of their customers: Ultralase Chelmsford–Optimax Ipswich, Optimax Leicester–Ultralase Northampton, Optimax Peterborough–Ultralase Cambridge, Optimax Peterborough–Ultralase Northampton and Optimax Glasgow–Ultralase Edinburgh. The drive-time between the stores in each of these overlaps was below 60 minutes except for Glasgow–Edinburgh which was about 64 minutes.

Optimax store⁵ and vice versa.⁶ Therefore, a number of locations appear in more than one overlap in the table.

⁵ For example, Ultralase Chelmsford and Optimax Southend and Optimax Ipswich.

⁶ For example, Optimax Leicester and Ultralase Nottingham and Ultralase Northampton.

TABLE 5 **Overlaps**

<i>Local area(s)</i>	<i>Clinic</i>	<i>Optical Express within 45 minutes of both stores</i>	<i>Other suppliers within 45 minutes</i>
Belfast	Optimax Belfast	Yes	5
	Ultralase Belfast		5
Birmingham	Optimax Birmingham	Yes	7
	Ultralase Birmingham		7
Bristol	Optimax Bristol	Yes	4
	Ultralase Bristol		4
Cardiff	Optimax Cardiff (Consultation)	Yes	3
	Ultralase Cardiff		3
Glasgow	Optimax Glasgow	Yes	2
	Ultralase Glasgow		2
Guildford	Optimax Guildford (Consultation)	Yes	7
	Ultralase Guildford		7
Leeds	Optimax Leeds	Yes	5
	Ultralase Leeds		5
Liverpool	Optimax Liverpool	Yes	8
	Ultralase Liverpool		6
Maidstone	Optimax Maidstone	Yes	2
	Ultralase Maidstone		2
Manchester	Optimax Manchester	Yes	8
	Ultralase Manchester		8
Newcastle	Optimax Newcastle	Yes	4
	Ultralase Newcastle		4
Nottingham	Optimax Nottingham	Yes	4
	Ultralase Nottingham		4
Reading	Optimax Reading	Yes	4
	Ultralase Reading		6
Southampton	Optimax Southampton	Yes	4
	Ultralase Southampton		4
London	Optimax Canary Wharf (Consultation)	Yes	8
	Optimax Chiswick (Consultation)		10
	Optimax Finchley Road		10
	Optimax Liverpool St (Consultation)		10
	Optimax Victoria (Consultation)		10
	Optimax Croydon		9
	Ultralase Hammersmith		10
	Ultralase Tottenham Court Rd		10
Ultralase Harley Street	10		
Chester–Liverpool	Optimax Liverpool	Yes	8
	Ultralase Chester		4
York–Leeds	Optimax York (Consultation)	Yes	5
	Ultralase Leeds		5
Southend– Chelmsford	Optimax Southend	Yes	4
	Ultralase Chelmsford		4
Chelmsford– Ipswich	Optimax Ipswich	Yes	1
	Ultralase Chelmsford		4
Canterbury– Maidstone	Optimax Canterbury (Consultation)	Yes	2
	Ultralase Maidstone		2
Leicester– Nottingham	Optimax Leicester	Yes	4
	Ultralase Nottingham		4
Leicester– Northampton	Optimax Leicester	Yes	4
	Ultralase Northampton		4
Peterborough– Cambridge	Optimax Peterborough	Yes	2
	Ultralase Cambridge		1
Peterborough– Northampton	Optimax Peterborough	Yes	2
	Ultralase Northampton		4
Northampton– Milton Keynes	Optimax Milton Keynes	Yes	4
	Ultralase Northampton		4
Milton Keynes–St Albans	Optimax Milton Keynes	Yes	4
	Ultralase St Albans		8
St Albans–London	Optimax London Finchley Road	Yes	10
	Ultralase St Albans		8
Edinburgh– Glasgow	Optimax Glasgow	Yes	2
	Ultralase Edinburgh		1
Newton Abbot– Exeter	Optimax Newton Abbot	Yes	4
	Ultralase Exeter (Consultation)		4

Source: CC analysis of data provided by the parties.

Shares of supply at local level

16. Figures 1 to 5 show the shares of supply in five local areas. These graphs are discussed in Section 6 of the main report.
17. We calculated the shares of supply combining the data provided by AMO and, when available, the data on the volume of Intralase femtosecond flap procedures provided by Optical Express, Optimax and Ultralase.

FIGURE 6

Shares of supply based on AMO data—Belfast



Source: CC analysis of data provided by Optical Express, Optimax, Ultralase and AMO.

Note: For Optimax and Ultralase we used data submitted by the parties. Optical Express submitted data only for the period 2011 to 2013, we then used the AMO data for 2009 and 2010. For the remaining companies we used the data provided by AMO.

FIGURE 7

Shares of supply based on AMO data—Bristol



Source: CC analysis of data provided by Optical Express, Optimax, Ultralase and AMO.

Note: For Optimax we used data submitted by the company. For Ultralase we used (i) the data submitted by the company for the period 2011 to 2013 and (ii) the data provided by AMO for 2009 and 2010 (as Ultralase transaction database did not specify the type of treatment in relation to a large number of procedures carried out in Bristol in 2009 and 2010). Optical Express submitted data only for the period 2011 to 2013, we then used the AMO data for 2009 and 2010. For the remaining companies we used the data provided by AMO.

FIGURE 8

Shares of supply based on AMO data—Manchester



Source: CC analysis of data provided by Optical Express, Optimax, Ultralase and AMO.

Note: For Optimax and Ultralase we used data submitted by the parties. Optical Express submitted data only for the period 2011 to 2013, we then used the AMO data for 2009 and 2010. For the remaining companies we used the data provided by AMO.

FIGURE 9

Shares of supply based on AMO data—Newcastle



Source: CC analysis of data provided by Optical Express, Optimax, Ultralase and AMO.

Note: For Optimax we used data submitted by the company. For Ultralase we used (i) the data submitted by the company for the period 2011 to 2013 and (ii) the data provided by AMO for 2009 and 2010 (as Ultralase transaction database did not specify the type of treatment in relation to a large number of procedures carried out in Newcastle in 2009 and 2010). Optical Express submitted data only for the period 2011 to 2013, we then used the AMO data for 2009 and 2010. For the remaining companies we used the data provided by AMO.

FIGURE 10

Shares of supply based on AMO data—Liverpool



Source: CC analysis of data provided by Optical Express, Optimax, Ultralase and AMO.
Note: For Optimax and Ultralase we used data submitted by the parties. Optical Express submitted data only for the period 2011 to 2013, we then used the AMO data for 2009 and 2010. For the remaining companies we used the data provided by AMO.

Quantitative assessment of the effect of local competition

Introduction and summary of findings

1. Generally, price-concentration analysis (PCA) is used to inform whether the reduction of local competitive fascias following a merger can be expected to lead to an increase in prices.
2. However, given that the counterfactual for the Optimax/Ultralase merger is the exit of Ultralase from the market (see Section 5 of the report), there would have been a fascia reduction even in the absence of the merger. Nonetheless, the PCA analysis can still provide useful indications as to whether competition is local and, if it is the case, which competitors pose a constraint on the parties.
3. We find:
 - (a) some evidence that Optimax reduces the local prices when Ultralase or Optical Express are present within a 45-minute drive-time. We performed a number of robustness and sensitivity checks and discussed the outcomes in paragraphs 29 to 43;
 - (b) no evidence that the presence of any other competitors except for Ultralase and Optical Express has an effect on Optimax prices; and
 - (c) no evidence that Ultralase reduces its prices as a reaction to increased local competition.
4. We note that there are factors that may have limited our ability to capture the effects of competition at local level through the PCA analysis:
 - (a) We observe little variation in market structure across different areas with regards to the three national suppliers (Optimax, Ultralase and Optical Express), which might have impacted the robustness of the results. As we discuss in Section 6 of the report, the parties compete predominantly with each other and Optical Express.
 - (b) The evidence we collected (see Section 6 of the report) suggests that the majority of customers only consider a single provider and few appear to shop around. Given that discounts are negotiated individually, the negative effect of competition on prices may be experienced only by a limited group of customers. As the PCA analysis essentially assesses the average effect of local competition, it may fail to capture the impact on a restricted group of customers. We attempted to identify this group of customers in the data but this analysis did not yield any insights (see paragraphs 32 and 33), possibly because we do not have sufficient information on the characteristics of the customers who shop around.
 - (c) The negative effect of competition on prices may be understated due to unobserved factors affecting both prices and market concentration, albeit we are unable to estimate the significance of such an effect (see paragraphs 38 to 43).
5. The parties submitted results of a similar quantitative analysis that explored the relationship between prices and discounts, and the market structure. This analysis yielded no evidence that Optimax reacts to increased competition by reducing prices

or increasing discounts. Some evidence was found that Ultralase does react to competition by reducing prices. Our analysis improves on those results by exploring a longer time period, a richer dataset and a more precise measurement of market structure. We refer to the differences between the parties' study and the current one in the text.

6. This appendix has the following structure:
 - (a) A description of the data that we used for the analysis.
 - (b) An overview of the methodology.
 - (c) Presentation and discussion of the main results and sensitivity checks.
 - (d) [Technical annex](#) that sets out additional details on the methodology and results.

Data description

Customer-level data

7. Optimax submitted detailed data on all customers treated between January 2008 and August 2013 by either Optimax or Ultralase. The records include, among other things, personal characteristics of the customers (age, gender), the type of treatment received, the number of eyes treated, the list price for the treatment and the actual price paid for it, the clinic where the first pre-treatment consultation took place and the clinic where the treatment took place.

Clinic-level data

8. Optimax also submitted a list of all Optimax and Ultralase clinics that were in operation at the time of the merger. In addition, we received a list of all instances when a clinic was closed or opened since 2008. For each clinic, we received information on:
 - (a) where it was located;
 - (b) whether it was a consultation-only clinic; and
 - (c) whether it provided IOL or laser treatments, or both.
9. Optimax also submitted a list of all competitors known to it and the locations of their clinics. Optical Express provided a list of its existing treatment and consultation clinics and a list of all instances where clinics were closed or opened since 2008.¹

Methodology

10. The aim of the PCA is to examine how local prices vary when the local competitive structure varies. If laser eye surgery providers use prices to compete for customers and if this competition is happening locally around the clinics, we would expect to observe lower prices being offered to customers in areas where there are more competitive fascias, all else equal.

¹ We improved the quality of this information by cross checking it with information available on the providers' website and with submissions from third parties.

11. We follow a reduced form approach, ie we regress the actual prices on market structure and other controls. More precisely, we estimate the following equation:

$$(1) \log P_{it} = \beta_0 + \beta_1 * MS_{it} + \beta_m * X_{it} + \varepsilon_{it}$$

Where $\log P_{it}$ is the logarithm of the actual price paid by customer i at time t , MS_{it} is the fascia count (market structure) around the clinic where the customer had their consultation at time t , X_{it} is a set of m various control variables, and ε_{it} is an error term.²

12. The framework we adopted presumes that treatment prices are determined by how many other choices a customer had in the area where they had their pre-treatment consultation and by various other factors that affect demand and supply in that particular area. This approach reflects our understanding that customers choose refractive eye surgery providers mainly on the basis of the locations where they receive the pre-operation consultations and aftercare, regardless of whether they would need to travel further for the treatment itself.³
13. The main coefficient of interest in equation (1) is β_1 . In particular, $100 * \beta_1$ captures the percentage change in price when one more fascia is present in the area, all else equal. A negative and statistically significant β_1 would be evidence that prices are lower when more competitors are present.
14. Below we provide further details on the data that was used to populate the model.

Dependent variable: price

15. Our dependent variable is the log of the final price in pounds paid by the customer for the treatment. We deducted any additional sales (such as eye drops) or interest where this was known. We doubled the price where only one eye was treated, and dropped outliers (see the [technical annex](#) for details on data cleaning).

Market structure

16. Our catchment area analysis informed us that on average 80 per cent of the closest customers drive 45 minutes or less for their consultation. We therefore used this catchment area for our main fascia counts. In addition, we constructed market structure measures for 30-minute and 60-minute driving times. Driving times between clinics were calculated using MapInfo.
17. We used three different types of fascia counts:
- (a) narrow included Optimax, Ultralase and Optical Express;
 - (b) medium included Optimax, Ultralase, Optical Express, Optegra and Accuvision; and
 - (c) wide included Optimax, Ultralase, Optical Express, Optegra, Accuvision and all other providers that perform laser eye surgery.

² The main difference here from the analysis submitted by the parties is that we used individual customer data whereas the parties' analysis used clinics as units of observation. For example, the parties calculated the average price of a clinic by dividing its total treatment revenues by volumes. Our approach with individual customer data has allowed us to better control for important factors that may influence prices, for instance the type of treatment and customer characteristics.

³ The parties' analysis, conversely, was centred around treatment clinics and did not consider consultation-only clinics.

Control variables

18. In order to identify accurately the effect that market concentration has on prices, we need to control for any other supply-side and demand-side factors that may also influence prices. We consider three types of factors that can potentially affect prices:
 - (a) customer characteristics;
 - (b) regional economic conditions; and
 - (c) time trends.
19. The customer characteristics that we control for are:
 - (a) age and gender; and
 - (b) treatment type.
20. Economic conditions may determine the level of demand for refractive eye surgery. To control for these we include the following variables in our equation:
 - (a) Unemployment and gross disposable household income (GDHI) at the NUTS2⁴ level as control variables in the equation.
 - (b) Dummy variables for each NUTS1 region.
 - (c) We account for possible UK wide changes in demand over years and seasons by including dummies for each year and dummies for each quarter.

Details on the sources of this data are set out in the [technical annex](#).

Descriptive statistics

21. Table 1 summarizes some of the key customer-level, clinic-level and regional control variables used in this analysis. We note that Optimax has been charging significantly lower prices than Ultralase. Most customers have two eyes treated and there is significant variation in customers' age. It is worth noting that the narrow fascia count takes an average value of 1.8 out of a maximum of 2, which indicates that the majority of areas have all three major competitors present, and only a small number of areas have a duopoly or monopoly. There is more variation in the medium and wide market concentration measures.

⁴ We use the NUTS classification of regions within the UK following the adoption of this approach by the ONS. See Eurostat for a detailed definition on this classification (http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction).

TABLE 1 Summary statistics of the sample used for the analysis

Variable	Mean	Standard deviation	Minimum	Maximum
Optimax price	[✂]	[✂]	[✂]	[✂]
Ultralase price	[✂]	[✂]	[✂]	[✂]
Number of eyes treated	[✂]	[✂]	[✂]	[✂]
Age	38	11.0	18	73
Number of competitive fascia (narrow)	1.8	0.46	0	2
Number of competitive fascia (medium)	2.6	0.9	0	4
Number of competitive fascia (wide)	5.3	2.7	0	10
Unemployment (%)	8.3	1.9	2.8	12.1
GDHI	16,477	3,690	12,075	24,582

Source: CC analysis of data supplied by Optimax and ONS data. See the technical annex on data cleaning steps.

22. Figure 1 plots the distribution of average quarterly clinic prices (vertical axis) for each different value of the narrow fascia count (horizontal axis). Each box indicates the middle 50 per cent of the price distribution of average clinic prices for clinics that face a certain number of competitive fascias. The line in the box marks the median price, and the whiskers and dots mark the range where the rest of the prices lie. The slightly lower position of the boxes for higher numbers of fascias suggests that prices might be reacting negatively to increased competition. However, unlike the econometric analysis, this simple graphical analysis does not control for other factors that may influence prices.

FIGURE 1

Average clinic prices for laser treatments and number of competitors



Source: CC analysis of parties' data.

Main results

23. We estimate the coefficients in equation (1) using Ordinary Least Squares (OLS) on pooled customer-level data. The estimation is done separately for Ultralase and for Optimax, thus allowing the relationship between market structure and prices to differ between the two companies.
24. Row (A) in Table 2 shows the results of the main regressions. We found that the narrow market concentration measure within a 45-minute catchment area has a negative and statistically significant coefficient for Optimax. The coefficients for the medium or wide definitions of competition were not statistically significantly different from zero. None of the Ultralase coefficients on market structure were negative.
25. Row (B) in Table 2 presents the results of regressions using a 60-minute catchment area for the market structure. The presence of positive and significant coefficients for Ultralase is counter-intuitive. We return to this point in the next section where we discuss endogeneity. Optimax coefficients are statistically significant only at a 10 per cent significance level and if London is excluded. We therefore focus on the 45-minute catchment area in our further analysis.

TABLE 2 Effect of local competition on Optimax and Ultralase price of laser treatments

	Effect on price % including London		Effect on price % excluding London	
	Optimax	Ultralase	Optimax	Ultralase
(A) Entry of a competitor within 45 minutes driving time, narrow definition	-1.78**	0.35	-1.47***	0.11
(B) Entry of a competitor within 60 minutes driving time, narrow definition	-2.76	3.76***	-4.15*	4.56***

Source: CC analysis of parties' data. Standard errors in parenthesis.

Note: Statistical significance: ***significant at 1%, **significant at 5%, *significant at 10%.

26. Although the results when including and excluding London are not dissimilar, we believe that driving times may not accurately describe catchment areas properly in London due to other means of transport and the different traffic patterns. This implies that our market structure measures for clinics located in London might not accurately capture the relevant fascia. For this reason we further focus only on results of regressions that exclude customers who had a consultation in London.

Competitor types

27. Following our main results discussed in paragraph 24, we were interested to test directly whether suppliers other than the ones included in the narrow definition may still pose a competitive constraint on Optimax. We estimated the following equation:

$$(2) \log P_{it} = \beta_0 + \beta_1 * Narrow_{it} + \beta_2 * Others_{it} + \beta_m * X_{it} + \varepsilon_{it}$$

Here, *others* included a count of all fascias other than Ultralase and Optical Express.

28. The results are presented in Table 3. The coefficient on the narrow market structure decreased and lost statistical significance, as compared with the coefficient when only the narrow fascia count variable was included. This appears to be the result of the two variables (narrow and others) being multi-collinear. However, as the two together have a statistically significant effect on prices,⁵ this result does not contradict the earlier result of absence of significant coefficients for the medium and wide definitions (see paragraph 24), and it suggests that competitors other than Ultralase or Optical Express do not pose a significant competitive constraint on Optimax.

TABLE 3 Effect of Ultralase or Optical Express versus effect of other competitors on Optimax prices

	per cent	
	Effect on Optimax price	Effect on Optimax price
Entry of a competitor within 45 minutes' driving time, narrow definition (Ultralase and Optical Express)	-1.47***	-1.02
Entry of any other competitor within 45 minutes' driving time		-0.57

Source: CC analysis of parties' data. Standard errors in parenthesis.

Note: Statistical significance: ***significant at 1%, **significant at 5%, *significant at 10%.

⁵ A test on the joint significance of the variables *narrow* and *others* indicated that together they have a statistically significant effect in the equation.

Robustness and sensitivity checks

Treatment types

29. We consider the possibility that the competitive dynamics depend on the type of treatment. Since the most frequent treatments carried out by both Optimax and Ultralase are LASIK Wavefront (58 per cent of all treatments) and LASEK Wavefront (12 per cent of all treatments), we next separately estimate equation (1) using only those customers who received these types of treatments.
30. Table 4 presents the results of this exercise. We find that for Optimax the earlier result of a statistically significant negative effect of narrow competition on prices still holds for LASIK WF, but not for LASEK WF. We do not find any significant effect of medium or wide competition on LASIK WF or LASEK WF prices.

TABLE 4 Effect of local competition on LASIK WF and LASEK WF prices

	<i>per cent</i>			
	<i>Effect on LASIK WF price</i>		<i>Effect LASEK WF price</i>	
	<i>Optimax</i>	<i>Ultralase</i>	<i>Optimax</i>	<i>Ultralase</i>
Entry of a competitor within 45 minutes' driving time, narrow definition	-1.88***	0.37	-0.1	0.25

Source: CC analysis of parties' data. Standard errors in parenthesis.

Note: Statistical significance: ***significant at 1%, **significant at 5%, *significant at 10%.

31. We find no evidence that Ultralase would lower its LASIK WF or LASEK WF prices as a reaction to increased competition, either defined as narrow, medium or wide.

Customer age groups

32. Other evidence collected on the behaviour of laser eye surgery customers suggests that only some customers shop around to find a better offer. We are interested to test whether our estimate of the reaction of Optimax prices to local competition in Table 2 could be more intense for the type of customers that engage in such negotiations. We have little evidence on which group of customers is more likely to shop around and negotiate prices. We consider that in theory younger customers might be more price-sensitive and more used to sourcing information from the Internet (which according to our customer survey is the most common source of information when deciding which provider to use). Based on this assumption we use age as a proxy to identify customers that shop around.
33. We distinguish between customers who are younger and older than 40. We estimate equation (1) with two additional regressors: a dummy indicating whether the person is over 40, and an interaction term of the market structure variable with the same dummy, allowing the effect of local competition on prices to vary between the two age groups. The resulting coefficient of the interaction term was not statistically significantly different from zero (see Table 2 in the [technical annex](#)). This means that we do not find evidence that local price competition would be more intense for treatments supplied to people under 40. However, we consider that age may not be a sufficiently good identifier of the particular group of customers who shop around.

Consultation or treatment clinics and distance to treatment clinic

34. We next consider whether consultation-only clinics compete on price differently from clinics that can offer treatment. In particular, we include a dummy variable that identifies whether the clinic provides treatment or not. We also run a specification where we include a variable that captures the distance to the nearest treatment facility from the consultation clinic. This is to capture the possibility that discounts are offered to customers that have to travel significantly to the treatment centres. None of the specifications yielded evidence that there is a statistically significant price difference between the different types of facilities. Therefore, we do not include this regressor in any other specifications.

Influential observations

35. We explore whether our result in Table 2 is driven by any influential observations or clinics. We found that Optimax Southend may be such a clinic. We estimate the coefficients in the main equation of interest while allowing the effect of competition on the Southend clinic to differ from the effect in the rest of the UK:

$$(2) \quad P_{it} = \beta_0 + \beta_1 * MS_{it} + \beta_2 * MS_{it} * Southend_{it} + \beta_m * X_{it} + \varepsilon_{it}$$

36. We find that after including the interaction term the main coefficient on the narrow market concentration measure is still negative and of similar magnitude (−1.51 per cent) but it is no longer statistically significantly different from zero at any conventional significance levels (see Table 2 in the [technical annex](#) for full results). We are not aware of anything that would explain why Southend is a genuine outlier and hence we decided to keep it in the regression. However, we take the sensitivity of the result into account when weighing the evidence.
37. We repeated the same exercise to check the sensitivity of our result on the most popular treatment, LASIK WF (see paragraph 29). We found that the coefficient on market structure remained negative and statistically significant when Optimax Southend was separated.

Endogeneity

38. In studies like the present one, which rely on variation in competition across areas to identify its effect on prices, the estimates may be biased due to unobservable factors that are affecting prices and are also correlated with the market structure. In principle, such a bias could be upward or downward depending on the unobservable factor.
39. Theory suggests that higher competition intensity, ie fascia counts, should be, if anything, negatively correlated to price, all else equal. Our framework tries to capture the main demand and supply factors that affect price and may also be related to the competition intensity by the inclusion of several controls and dummy variables. However, the fascia counts coefficients are positive and significant for some Ultralase specifications (see Table 2), which is counter-intuitive. This could be explained by a positive bias: certain areas could have particularly high demand for laser eye surgery, which would drive prices up while at the same time encouraging more entry into that local market. Such a bias may also affect the Optimax specifications.
40. We explored the Instrumental Variables (IV) approach to remove any such bias. A good IV is a variable that is strongly correlated with the regressor of interest, ie fascia counts, but does not directly affect prices. The IVs available to us were local

population density and population. The instrument with the strongest correlation with the fascia counts is population density. Under some assumptions and all else equal (including local competition), we believe that population density in an area should not directly affect treatment prices. However, as a proxy of the market depth or cost-side factors it can be correlated with some factors that affect the attractiveness for entry of new fascias—that is, it may affect competition.⁶

41. The resulting coefficients were not significantly different from zero for both Optimax and Ultralase (see Table 4 in the [technical annex](#)). In particular, the positive and significant coefficients for Ultralase under the main specification reduce and become insignificant. The opposite is true for Optimax. We interpret this inconsistency as a result of a potentially weak instrument.⁷
42. Another way to eliminate any bias coming from clinic time-fixed effects would be to include variables that control for clinic fixed effects. In such a case the identification of the effect of market concentration on prices would depend entirely on changes of market concentration over time. There was very little entry or exit in the market in the time period that we used for our analysis, therefore we considered this approach to be inappropriate.
43. Overall, given the counter-intuitive main results for Ultralase, we believe that any endogeneity bias should be positive. We are unable to prove the extent of this hypothesis due to lack of strong instruments for the IV approach. We therefore conclude that the main results regarding Optimax, which are in line with the standard industrial organization theory, are still valid. That is, Optimax appears to reduce prices where it is faced with stronger competition. In addition, the effects of competition may be understated, but we are not able to estimate by how much.

⁶ See W Beckert and N Mazzarotto, *Price-Concentration Analysis in Merger Cases with Differentiated Products* (2010) for a discussion of possible instruments.

⁷ This inconsistency may also be interpreted as the result of an endogenous instrument.

Data cleaning

1. We received data on [X] customers treated by Optimax and [X] customers treated by Ultralase between January 2008 and August 2013. For the purpose of this analysis we only used data before the fourth quarter of 2012. Also, we did not use data from 2009 as it had a significant number of missing values in various variables.
2. Our analysis only used customers who had laser eye surgery. We considered that the number of IOL customers was not large enough to allow robust estimation.
3. Further, we dropped the following observations from the dataset:
 - (a) Where the price is zero, missing or negative.
 - (b) The bottom and top 1 per cent of the price distribution within each treatment type and each quarter.
 - (c) Where treatment date, treatment type, age, gender or location of consultation are not known or not valid (for instance, the location is a clinic in the Republic of Ireland).
 - (d) Where age is more than 100, as we found that these customers did not have a correct entry for their date of birth.
 - (e) Where the customer received the 'friends and family' discount, as these prices are only granted to friends and family of the staff members and do not reflect the offers available to the general public.
 - (f) Where the list price is more than £100 lower than actual price, as Optimax told us that these prices were wrong.
4. In addition, in order to have a sufficient sample of observations to adequately represent every clinic and treatment type, we kept:
 - (a) only those observations where at least 15 customers were consulted in a particular clinic in a particular quarter for a particular treatment type; and
 - (b) only those clinics which have at least four quarters of data.
5. Our resulting dataset contained [X] Optimax and [X] Ultralase customers who had their pre-treatment consultation in 27 Optimax and 24 Ultralase clinics.
6. We also updated our market structure measures by using the list of clinic openings and closures since 2008. As a result, our fascia counts reflect historical market structure in each quarter. We assumed that a clinic was open during a quarter if it was open for at least two months in that quarter.

Econometric specification

7. Our initial methodology involved estimating the following equation:

$$\begin{aligned} \log P_{it} = & \beta_0 + \beta_1 MS_{it} + \beta_2 Age_{it} + \beta_3 Male_{it} + \beta_4 Eyes_{it} + \beta_5 Unemployment_{it} \\ & + \beta_6 GDHI_{it} + \beta_m [Type]_{it} + \beta_k [Time\ dummies]_{it} \\ & + \beta_l [Region\ dummies]_{it} + \varepsilon_{it} \end{aligned}$$

Where *[Type]* is a set of dummy variables for each treatment type, *[Time dummies]* is a set of dummy variables marking years and quarters, *[Region dummies]* is a set of dummy variables marking each region based on the NUTS2 classification, and the other variables are as defined in paragraph 12 of the results section above.

8. Standard errors were clustered by clinic. All observations were pooled and the equation was estimated using OLS. Our other specifications used the same equation and estimation method, but added additional regressors, as detailed in the results section.
9. Our IV estimation involved the log of population density as the instrumental variable in a two-stage procedure using generalized method of moments (GMM).⁸

Regional control variables

10. Unemployment data at NUTS2 level was obtained from Nomis, and gross domestic household income data from the ONS website.
11. The above data was converted from annual to quarterly using linear interpolation.

Regression output

12. The following tables report the results of the main regressions discussed in the results section above. Please note that for brevity we do not report the coefficients on the treatment type and time dummies.

TABLE 1 Regression results—main specification

	<i>Optimax, excluding London Log price</i>	<i>Ultralase, excluding London Log price</i>	<i>Optimax, including London Log price</i>	<i>Ultralase, including London Log price</i>
Narrow 45	-0.0147*** (0.00497)	0.00112 (0.00696)	-0.0178** (0.00835)	0.00346 (0.00689)
Age	0.0000388 (0.000134)	0.000332 (0.000231)	0.000137 (0.000114)	0.000336 (0.000203)
Male	-0.00717*** (0.00147)	-0.00845 * (0.00432)	-0.00693*** (0.00125)	-0.00719* (0.00388)
Number of eyes treated	-0.292*** (0.0211)	-0.0260 * (0.0143)	-0.309*** (0.0222)	-0.0264* (0.0132)
GDHI	-0.0000230** (0.00000856)	-0.00000887** (0.00000333)	0.00000166 (0.00000280)	-0.00000862** (0.00000370)
Unemployment	-0.0250*** (0.00626)	-0.0107*** (0.00331)	-0.00787* (0.00438)	-0.00885** (0.00344)
Observations	27,073	18,411	34,535	21,974
R-squared	0.2353	0.2982	0.2156	0.2975

Source: CC analysis of parties' data. Standard errors in parenthesis.

Note: Statistical significance: ***significant at 1%, **significant at 5%, *significant at 10%.

⁸ A method for estimating parameters in statistical models.

TABLE 2 **Regression results—(1) narrow and other competitors, (2) a test for Southend being an outlier and (3) Distinguishing age groups**

	<i>Optimax, excluding London Log price</i>	<i>Optimax, excluding London Log price</i>	<i>Optimax, excluding London Log price</i>
Narrow 45	-0.0102 (0.00946)	-0.0151 (0.0112)	-0.0151** (0.00530)
Others	-0.00578 (0.0123)		
Narrow 45 * Southend		0.000674 (0.0135)	
Over 40 years old			0.0128 (0.00947)
Over 40 years old * narrow 45			0.000717 (0.00435)
Age	0.0000385 (0.000134)	0.0000387 (0.000134)	-0.000470 (0.000280)
Male	-0.00720*** (0.00146)	-0.00717*** (0.00147)	-0.00752*** (0.00142)
Number of eyes treated	-0.293*** (0.0212)	-0.293*** (0.0212)	-0.288*** (0.0214)
GDHI	-0.0000233** (0.00000825)	-0.0000231** (0.00000911)	-0.0000231*** (0.00000855)
Unemployment	-0.0259*** (0.00690)	-0.0251*** (0.00654)	-0.0252*** (0.167)
Observations	27,073	27,073	27,074
R-squared	0.2354	0.2353	0.2356

Source: CC analysis of parties' data. Standard errors in parenthesis.

Note: Statistical significance: ***significant at 1%, **significant at 5%, *significant at 10%.

TABLE 3 **Regression results—specific treatments only**

	<i>Optimax, excluding London LASIK WF only Log price</i>	<i>Optimax, excluding London LASEK WF only Log price</i>	<i>Ultralase, excluding London LASIK WF only Log price</i>	<i>Ultralase, excluding London LASEK WF only Log price</i>
Narrow 45	-0.0188*** (0.00558)	-0.00102 (0.00552)	0.00371 (0.0108)	0.00249 (0.0646)
Age	-0.0000535 (0.000101)	0.000332 (0.000547)	0.0000972 (0.000378)	0.000374 (0.000351)
Male	-0.00104 (0.00245)	-0.0233*** (0.00584)	-0.00718 (0.00720)	0.00971 (0.00781)
Number of eyes treated			-0.0878*** (0.0112)	-0.0785*** (0.0226)
GDHI	-0.0000173* (0.00000873)	-0.0000288* (0.0000136)	-0.0000183** (0.00000668)	0.0000123 (0.0000115)
Unemployment	-0.0246*** (0.00632)	0.000309 (0.00828)	-0.0123 (0.00770)	-0.00860 (0.0177)
Observations	18,866	4,391	6,541	1,890
R-squared	0.0488	0.0961	0.0741	0.1205

Source: CC analysis of parties' data. Standard errors in parenthesis.

Note: Statistical significance: ***significant at 1%, **significant at 5%, *significant at 10%.

TABLE 4 Regression results—IV (the market concentration variable instrumented by log population density)

	<i>Optimax, excluding London Log price</i>	<i>Ultralase, excluding London Log price</i>
Narrow 45	0.00564 (0.0133)	-0.0162 (0.012)
Age	0.0000574 (0.000136)	0.000382* (0.000220)
Male	-0.00740*** (0.00137)	-0.00918** (0.00432)
Number of eyes treated	-0.289*** (0.0207)	-0.0283*** (0.0103)
GDHI	-0.0000233*** (0.00000879)	-0.00000668** (0.00000287)
Unemployment	-0.0254*** (0.00623)	-0.00969** (0.00417)
Observations	27,074	19,084
R-squared	0.0496	0.0714
First stage F-test	16.48	15.8

Source: CC analysis of parties' data. Standard errors in parenthesis.

Note: Statistical significance: ***significant at 1%, **significant at 5%, *significant at 10%.

Glossary

Accuvision	A small chain provider of refractive eye surgery procedures in the UK.
AMO	Abbott Medical Optics. A global supplier of refractive eye surgery equipment.
Bank of Ireland	A major global financial services provider and member of CLVC .
Barclays Bank	A major global financial services provider and member of CLVC .
BDO	An independent audit, accounting and business services firm. Commissioned by Russell Ambrose to advise on the possible restructuring of Ultralase .
[Bidder A]	A healthcare-focused private equity house and alternate bidder for the Ultralase business prior to the sale of Ultralase to Optimax .
BMI	BMI Healthcare. A private healthcare group and provider of refractive eye surgery procedures in the UK.
Cataracts	A cataract is a clouding of the lens inside the eye which leads to a decrease in vision.
CCG	Care Commissioning Group. Groups of GPs that are responsible for planning and designing local health services in England. They do this by 'commissioning' or buying health and care services including hospital and emergency care
Centre for Sight	An independent provider of refractive eye surgery procedures in the UK.
CLVC	CLVC Group Limited. The holding company for Ultralase prior to the sale to Optimax . It included a syndicate of four banks (Lloyds Bank, Barclays Bank, RBS and the Bank of Ireland) and a range of smaller stakeholders.
Colin Whipp	Appointed as chairman of Ultralase by CLVC in March 2012.
Cornea	The cornea is the transparent front part of the eye that covers the iris, pupil, and anterior chamber. It accounts for two-thirds of the eye's focusing power. Refractive eye surgery techniques change the shape of the cornea in order to improve the refractive state of the eye.
CQC	Care Quality Commission. An inspectorate of hospitals and other care services in England. The CQC regulates the activities and premises of laser eye surgery clinics.
Creation	Creation Financial Services. A provider of credit for customers of Ultralase undertaking refractive eye surgery .
CVA	Company Voluntary Agreement. A legally binding agreement between a company and its creditors designed to allow the payment of creditors over an agreed period.

Excimer laser	An ultraviolet laser (sometimes known as the exciplex laser) which is commonly used in the production of microelectronic devices and laser eye surgery .
Femtosecond laser	A laser used in laser eye surgery procedures such as LASIK and other ophthalmic treatments such as Clear Corneal Incisions used to treat cataracts .
GMC	General Medical Council.
Grant Thornton	An independent audit, accounting and business services firm. Commissioned by CLVC to review the financial position of Ultralase , to identify costs savings and opportunities for further investment and to facilitate the sale of Ultralase .
Hitachi	Hitachi Personal Finance. A provider of credit for customers of Ultralase undertaking refractive eye surgery .
HIW	Healthcare Inspectorate Wales.
ICL	Implantable contact lens. An IOL -based treatment where there is an insertion of a secondary lens.
IOL	Intraocular lenses. A refractive eye surgery process where the lens of the eye is replaced or enhanced. It is offered to patients with strong prescriptions or cataracts .
LASEK	Laser Assisted Epithelial Keratomileusis. A type of laser eye surgery .
Laser eye surgery	A refractive eye surgery process where the cornea is corrected using a laser. There are two principal laser eye surgery treatments available: LASIK and LASEK .
LASIK	Laser Assisted In Situ Keratomileusis. A type of laser eye surgery .
Lens	The lens is a transparent, biconvex structure in the eye that, along with the cornea , helps to refract light to be focused on the retina. It accounts for one-third of the eye's focusing power.
Lloyds Bank	Lloyds Banking Group. A major global financial services provider and member of CLVC .
Microkeratome	A precision surgical instrument with an oscillating blade designed for creating the corneal flap in LASIK laser eye surgery .
Moorfields Eye Hospital	A specialist NHS eye hospital that accepts private patients. A provider of refractive eye surgery procedures in the UK.
Nuffield	Nuffield Health. A private healthcare group and provider of refractive eye surgery procedures in the UK.
Ophthalmic services/treatments	A range of medical procedures related to ophthalmology .

Ophthalmologists	Qualified medical doctors who perform the refractive eye surgery .
Ophthalmology	The branch of medicine that deals with the anatomy, physiology and diseases of the eye.
Optegra	A small chain provider of refractive eye surgery procedures in the UK.
Optical Express	A large chain provider of refractive eye surgery procedures in the UK.
Optilase	A provider of refractive eye surgery procedures in Northern Ireland.
Optimax	Optimax Clinics Limited. A large chain provider of refractive eye surgery procedures in the UK. Formed in 1991 by Russell Ambrose .
PMI	Private medical insurance.
Project Photon	The documentation produced by Grant Thornton in its work for CLVC .
Ramsay	Ramsay Healthcare. A private healthcare group and provider of refractive eye surgery procedures in the UK.
RBS	Royal Bank of Scotland. A major global financial services provider and member of CLVC .
Refractive eye surgery	A surgical process designed to decrease or eliminate the dependency of a patient on glasses or contact lenses. This can take two forms: laser eye surgery or IOLs .
RLE	Refractive lens exchange. An IOL -based treatment where there is a removal and replacement of an existing lens.
RQIA	Regulation and Quality Improvement Authority.
Russell Ambrose	Owner of Optimax and other businesses that trade with Optimax , eg Optima Jewellers, Optimax Leasing.
Specsavers	A provider of non-surgical ophthalmic services such as glasses and contact lenses.
Tony Veverka	The CEO of Ultralase prior to its sale to Optimax .
Ultralase	Ultralase Limited. A large chain provider of refractive eye surgery procedures in the UK. Sold to Optimax in November 2012. Its previous owner was the holding group CLVC .
UOG	Ultralase Optimax Group Limited. The group containing the share capital of Optimax and Ultralase .
Wavefront laser	An addition to the LASIK and LASEK procedure where a patient will be offered the opportunity to have their eye examined and mapped to understand the structure of the cornea in greater detail.