A report on the anticipated acquisition by Celesio AG of Sainsbury's Pharmacy Business

Appendices and glossary

Terms of reference and conduct of the inquiry

Terms of reference

1. On 29 December 2015 the CMA referred the anticipated acquisition by Celesio AG of Sainsbury's Supermarkets Limited UK Pharmacy Business for an in-depth (phase 2) merger investigation:

    1. In exercise of its duty under section 33(1) of the Enterprise Act 2002 (the Act) the Competition and Markets Authority (CMA) believes that it is or may be the case that:

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

            (i) the condition specified in section 23(1)(a) of the Act is satisfied in that enterprises carried on by Celesio AG will cease to be distinct from the enterprise consisting of the in-store community pharmacy business and hospital pharmacy business carried on by Sainsbury's Supermarkets Limited UK; and

            (ii) the condition specified in section 23(1)(b) of the Act is satisfied; and

        (b) the creation of that situation may be expected to result in a substantial lessening of competition within a market or markets in the United Kingdom for goods or services, including but not limited to the retail supply of prescription-only medicines, pharmacy-only medicines, and pharmacy services to end-customers.

    2. Therefore, in exercise of its duty under section 33(1) of the Act, the CMA hereby makes a reference to its Chair for the constitution of a group under Schedule 4 to the Enterprise and Regulatory Reform Act 2013 in order that the group may investigate and report, within a period ending on 13 June 2016, on the following questions in accordance with section 36(1) of the Act:

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

(b) if so, whether the creation of that situation may be expected to result in a substantial lessening of competition within any market or markets in the United Kingdom for goods or services.

Sheldon Mills
Senior Director of Mergers
29 December 2015

Conduct of the inquiry

2. We published biographies of the members of the inquiry group conducting the inquiry on 5 January 2016, and the administrative timetable for the inquiry was published on the CMA website on 13 January 2016.

3. We invited a wide range of interested parties to comment on the anticipated acquisition. These included competitors of Sainsbury's and Celesio, as well as NHS trusts, Local Health Commissioners and government bodies. Evidence was obtained from third parties through hearings, written requests, questionnaires and telephone contact. Summaries of hearings can be found on the CMA website.

4. We also commissioned a consumer survey to obtain the views of customers; details of the survey findings are on the CMA website.

5. We received written evidence from Celesio and Sainsbury's, and a non-confidential version of their joint main submission is on the CMA website. We held a hearing with Celesio on 16 March 2016 and a hearing with Sainsbury's on 18 March 2016.

6. On 26 January 2016, we published an issues statement on the CMA website, setting out the areas of concern on which the inquiry would focus.

7. On 26 January 2016, members of the inquiry group, accompanied by staff, visited the sites of Celesio and Sainsbury's.

8. During the course of our inquiry, we sent Celesio and Sainsbury's a number of working papers, and other parties were sent extracts of those working papers, for comment.

9. On 29 April 2016, we published on the CMA website the notice of provisional findings, a summary of our provisional findings, our provisional findings and a notice of possible remedies.

10. On 24 May 2016 we held response hearings with Celesio and Sainsbury's.

11. Calls to discuss remedies options were held with four third parties in May.

12. On 25 May 2016, we extended the period of the reference to 8 August 2016, due to the scope and complexity of the inquiry, the need to allow sufficient time to take full account of any representations received, including responses to the provisional findings and remedy options, and the need to provide a fully reasoned decision within the statutory time frame.

13. A non-confidential version of the final report will be available on the CMA website.

14. We would like to thank all those who have assisted us in our inquiry so far.

Interim measures

15. We took steps to ensure that the business operations of Celesio and Sainsbury's remained separate and independent during the course of the inquiry.

16. We considered whether any changes were necessary to prevent pre-emptive action by the Parties that might prejudice the reference or impede the application of effective remedies at the end of our inquiry should they be required.

17. After considering evidence from the Parties, we decided that the Parties should change the end date stated in the BSA. We also requested fortnightly updates from the Parties to confirm they remained separate and independent.

18. On 27 June 2016, we accepted interim undertakings from Lloyds.

19. On 7 July 2016, we accepted interim undertakings from both Celesio and Sainsbury's.

Industry background

Introduction

1. This appendix provides an overview of the UK pharmacy industry:

   (a) Community pharmacy regulatory framework (paragraphs 2 to 23).

   (b) Pharmacy funding (paragraphs 24 to 39).

   (c) Outpatient dispensary (paragraph 40).

Community pharmacy regulatory framework

2. England, Scotland, Wales and Northern Ireland each have their own regulatory and licensing arrangements. The principal regulation in each country is set out in Table 1.

Table 1: Regulatory framework by UK nation

Nation	Regulation
England	SI 2013/349 National Health Service England: The National Health Service (Pharmaceutical and Local Pharmaceutical Services) Regulations 2013
Scotland	The National Health Service (Pharmaceutical Services) (Scotland) Regulations 2009
Wales	Welsh Statutory Instruments 2013 No. 898 (W. 102) National Health Service, Wales: *The National Health Service, Wales (Pharmaceutical Services) (Wales) Regulations 2013*
Northern Ireland	Statutory Rules of Northern Ireland 1997 No. 381 Health and Personal Social Services: *Pharmaceutical Services Regulations (Northern Ireland) 1997*
Internet pharmacies – England only	Regulation 25 (and the Conditions set out in Regulation 64) of the Pharmaceutical Services 2013 Regulations provide for Distance Selling Pharmacy contracts

3. In the following section we describe some of the key elements under the relevant regulations of first the licensing and second service commissioning in each country. We then set out some details of DSPs in England.

England

Licensing

4. The NHS (Pharmaceutical and Local Pharmaceutical Services) Regulations 2013 make provision for pharmaceutical applications to the Pharmaceutical List to be made where a need is identified in the local Health and Wellbeing Board's PNA. The PNA is reviewed and updated by the local authority every three years. An application can be made outside the scope of the PNA. The applicant must be able to provide evidence to NHS England that the granting of the application would secure improvements or better access.[1]

5. Applicants apply to be included on the Pharmaceutical List; if accepted they may provide NHS pharmaceutical services in line with the Regulations. They remain on this list unless NHS England has reason to remove them from it. NHS England performs 'Fitness to Practise' checks for all new entrants to the market. All contractors must be fit to practise and notify NHS England of any changes to this information.[2]

6. There is also provision in England to relocate a pharmacy within the area of the Health and Wellbeing Board (or to an adjacent area) where it can be demonstrated there would be no significant change to provision of pharmaceutical services and that for patient groups accustomed to accessing current premises, the new site will not be significantly less accessible.[3]

Service commissioning

7. In England the Secretary of State for Health/Department of Health are responsible for the National Health Service (Pharmaceutical and Local Pharmaceutical Services) Regulations 2013 and the way that pharmacies are reimbursed and remunerated for service provision.

8. NHS England monitors pharmacies against their Terms of Service and takes action where appropriate to ensure that safe and effective pharmaceutical services are commissioned for the population of England. NHS England is the sole commissioner of national pharmaceutical services under the terms of the Community Pharmacy Contractual Framework.[4] These national services include:

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[1] The application would be made under Pharmaceutical Services 2013 Regulations, Regulation 18 – 'unforeseen benefits applications'.
[2] See General Pharmaceutical Council: Raising Concerns.
[3] Ibid. Regulation 24 – 'Relocations that do not result in significant change to pharmaceutical services provision'.
[4] Local services are outside of the Community Pharmacy Contractual Framework.

(a) essential services (eg core services that all pharmacy contractors have to provide); and

(b) advanced services: There are four Advanced Services[5] within the NHS Community pharmacy contractual framework[6] (National). These are: MURs; NMSs; Stoma Appliance Customisation (SAC) and Appliance Use Reviews (AURs). In addition a fifth advanced service, Flu vaccination, was added in 2015/16. If a pharmacist meets the necessary criteria for a particular service it can choose whether or not it wishes to provide the service.

9. There has been a policy objective in England to increase the number of clinical and preventative services that pharmacies provide[7] partly driven by the government seeking to cut healthcare costs and reduce pressure on GP practices. For example, flu vaccinations are now able to be offered in pharmacies across England. Table 2 illustrates this increase in service provision in respect of advanced services (MURs and NMSs) in England.

Table 2: Advanced services use in England

Year	*MURs*	*NMS*
2006/07	559,315	
2007/08	951,358	
2008/09	1,397,319	
2009/10	1,707,139	
2010/11	2,108,604	
2011/12	2,434,128	
2012/13	2,820,415	647,859
2013/14	3,081,108	763,761
2014/15	3,183,094	775,998

Source: General Pharmaceutical Services in England statistical reports.

10. In the wider healthcare system, local authorities and CCGs[8] come together in local Health and Wellbeing Boards to commission services to target local health priorities. Local authorities can commission public health services from pharmacies including, for example, needle exchange, sexual health services, support to stop smoking, support for weight loss, and alcohol advice. CCGs commission enhanced services, for example minor ailments/Pharmacy First schemes, pharmacy urgent repeat medicines services, access to palliative care medicines and medication review/pharmaceutical advice to care homes.

11. Further details of the services in England are included at Annex 1.

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[5] A pharmacist can choose to provide any of these services as long as they meet the requirements set out in the Secretary of State directions. These services are not commissioned at a local or national level.
[6] See Community Pharmacy Contractual Framework.
[7] See White Paper 'Pharmacy in England: Building on Strengths – delivering the future'. (2008).
[8] CCGs are NHS organisations set up by the Health and Social Care Act 2012 to organise the delivery of NHS services in England. They comprise all the GP groups in the geographical area.

Scotland

Licensing

12. The Scottish Regulations are broadly similar to those for England with regard to the licensing. There is provision for new contracts where necessary or desirable to secure adequate provision. There is also a mechanism to relocate as a minor relocation if it has no 'significant effect'.

Service commissioning

13. There are five key national service components to these arrangements in the form of Additional Pharmaceutical Services,[9] namely:

    (a) the Minor Ailment Service;

    (b) the Acute Medication Service;

    (c) the Chronic Medication Service; and

    (d) the Public Health Service; and

    (e) Gluten Free Food Service.

14. As additional pharmaceutical services, broadly speaking pharmacy contractors can opt in or out of providing any of the above. In reality they do not, as fees for these services are built into the national remuneration Global Sum (which is centrally funded). There is also an income opportunity from the reimbursement of any drugs they might dispense as part these services. Each of these services are supported by subordinate legislation in the form of Directions, which set out the terms and conditions and service specifications.

15. Although the above framework is consulted on and negotiated at a national level, the provision of these NHS Pharmaceutical Services is entered into between the pharmacy contractor and the Health Board in which the individual pharmacy is located, regardless of whether it is a small independent or part of larger chain. The Scottish government does not commission or enter into contract arrangements with pharmacy contractors.

16. As well as the specified national services, Health Boards can put in place Locally Negotiated Services to meet a local need or priority. These can vary in

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[9] These are additional in the sense that they are over and above the core requirements around the supply of medicines and appliances to patients as prescribed under Section 27 of the National Health Service (Scotland) Act 1978. The powers relating to the arrangements for providing additional pharmaceutical services are set out in Section 27A.

purpose and length depending on the local circumstance. Locally Negotiated Services are entirely funded and negotiated by the Health Board.

Wales

Licensing

17. The Welsh Regulations are broadly similar to those for England with regard to licensing. New contracts are approved where they are demonstrated necessary or desirable to secure adequate provision of pharmacy services. There is also scope for a minor relocation.

Service commissioning

18. In Wales standards for essential and advanced services are laid down in regulations made by the Welsh Ministers. The standards for local services (also referred to as enhanced services) are set by local health boards. Health boards are the determining authorities for fees and allowances payable for enhanced services. However, the nature (ie the broad categorisation of the service) of these local services are set out in Ministerial Directions. Health Boards are only authorised to make arrangements for those enhanced services set out Directions. Local health boards are the commissioners of enhanced (local) services.

19. Advanced services include MUR and Discharge Medication Review. This can be provided by any pharmacist that meets the necessary criteria.[10] Enhanced services commissioned by local health boards include, for example, palliative care support, stop smoking services, and care home services.[11]

Northern Ireland

Licensing

20. Pharmacies in Northern Ireland are governed by the Pharmaceutical Services Regulations (Northern Ireland) 1997.[12]These are broadly similar to the Regulations for Scotland with regard to the licensing and regulatory requirements. Relocations are allowed if they will not have an appreciable

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[10] Details of the criteria of the pharmacy and the pharmacist can be found on the NHS Wales website: Community Pharmacy Contract website – Advanced Services.
[11] Full list of enhanced services can be found on the NHS Wales website: Community Pharmacy Contract – Enhanced Services.
[12] Statutory Rules of Northern Ireland 1997 No. 381 Health and Personal Social Services: Pharmaceutical Services Regulations (Northern Ireland) 1997.

effect on the business, and new contracts are determined on the basis of adequacy and necessity or desirability.

Service commissioning

21. Northern Ireland has five Local Commissioning Groups (LCGs) – the Belfast; Northern; South Eastern; Southern and Western LCG. Each LCG is responsible for the commissioning of health and social care by addressing the needs of their local population.[13] They also have responsibility for assessing health and social care needs; planning health and social care to meet current and emerging needs; and securing the delivery of health and social care to meet assessed needs.

22. Nationally commissioned services include MUR and Minor Ailments Service. These are similar to Advanced Services in England, in that pharmacies can choose whether to provide them. Local services include: smoking cessation, managing your medicines, repeat dispensing, minor ailments scheme and medicines use review.[14]

Distance selling pharmacy contracts

23. The number of DSPs are small in the UK at present, as shown in Table 3. The three main operators and their revenues are: ExpressChemist.co.uk, revenue £117.3 million (including wholesale and nursing home ops);[15] Pharmacy2u.co.uk, revenue £17.6 million;[16] ChemistDirect.co.uk, revenue £15.8 million.[17]

Table 3: Pharmacy contracts – distance selling, England

Year	*Number of contracts*
2008/09	56
2009/10	76
2010/11	122
2011/12	176
2012/13	200
2013/14	211
2014/15	227

Source: General Pharmaceutical Services in England statistical reports.

[13] Community Pharmacy NI: Local Commissioning Groups.
[14] Community Pharmacy NI: NI Regional Pharmacy Services.
[15] Statutory accounts, year ended 31 March 2015.
[16] Statutory accounts, year ended 31 March 2015.
[17] Statutory accounts, year ended 31 December 2014.

Pharmacy funding

24. Each nation has a similar mechanism for funding pharmacies. England and Wales have joint Drug Tariff arrangements, except for some minor variations. The Northern Ireland Drug Tariff uses prices set out in Part VIII of the English Drug Tariff as reference prices. Scotland's Drug Tariff framework is similar to England & Wales's adjusted to reflect relevant Scottish medicine comparators. The following description sets out details of England's Drug Tariff.

Drug Tariff

25. The reimbursement prices pharmacists receive for medicines under NHS prescription are set by the NHS under the Drug Tariff.[18]

26. The Drug Tariff is produced monthly by the Pharmaceutical directorate of the NHS Business Services Authority, NHS Prescription Services for the Secretary of State. The Tariff provides information on what will be paid to contractors for NHS services including both reimbursement (the cost of drugs and appliances supplied against an NHS prescription form) and remuneration (profession fees/allowances which are paid as part of the NHS pharmacy contract).[19]

27. For generic drugs the basic reimbursement price is set out in Part VIIIA of the Drug Tariff. Some of these are set out in Table 4 below.

Table 4: Mechanism for reimbursement of generic drugs price

Category	*Type*	*Price*
M	Generic (most common)	Based on information submitted by manufacturers
A	Generic (widely available)	Based on a weighted average of list prices from wholesalers (AAH and Unichem) and generic manufacturers (Teva and Actavis)
C	Other Generic	Generic drugs which 'are not readily available as a generic drug' under the Drug Tariff. The Drug Tariff indicates which product forms the basis for the reimbursement price.

CMA analysis.
Note: The Department of Health selects which generic drugs are included in this category (in contrast to the most common generics, which are listed in Category M). If a generic drug is included in Category C, the reimbursement price is the same as the linked branded product. The price list for the branded products is the Chemist and Druggist price list.

28. The Drug Tariff sets out a deduction scale which applies to the total of reimbursement prices for medicines and appliances dispensed by an individual pharmacy premises. The deduction scale takes into account the total level of reimbursement to be paid to a pharmacy; the higher the total, the larger the percentage discount. There is a group of products, including cold

[18] Pharmaceutical Services 2013 Regulations, Part 12, sections 89–98. The Drug Tariff.
[19] PSNC, Dispensing factsheet: using the Drug Tariff.

chain drugs[20] and controlled drugs, where no discount is given to pharmacies and zero 'claw-back' (deduction scale) is applied by the Department of Health.[21]

29. For branded medicines, the reimbursement prices are set by the manufacturer who will be influenced by the Pharmaceutical Price Regulation Scheme 2014 (PPRS) scheme and the deduction scale applied to reimbursement by the Department of Health.

30. The prices paid by a pharmacy for a medicine will be determined by the price negotiated with the wholesaler or the manufacturer. These prices could, for example, be net prices paid for a generic product, a gross price and a retrospective month rebate for a manufacturer's generic scheme (eg Teva) or a gross trade price and a settlement discount on a branded medicine.[22]

31. The Parties submitted that on average, more than 100% of the price charged by wholesalers for prescription medicines was passed on by the pharmacies to the ultimate customer (ie the NHS or private patients).[23]

32. The NHS, however, under the Community Pharmacy Contractual Framework (CPCF) pays pharmacy contractors in fees/allowances and medicine margin for providing pharmaceutical services. Medicine margin is the difference between the purchase price paid by the pharmacy and what they have been reimbursed by the NHS for the product. The medicine margin is assessed by an annual margin survey to establish whether the agreed amount of margin under the CPCF was delivered, under delivered or over delivered. The difference between the medicine margin found in the margin survey and the agreed medicine margin as part of the CPCF determines whether there needs to be any adjustments to payments made to pharmacy contractors. In the main adjustments are made through the reimbursement prices of drugs predominantly in Category M.

33. The retained buyer margin is a fund set at £800 million for both 2014/15 and 2015/16. The £800 million retained margin element is a target that the Department of Health aims to deliver by adjusting the reimbursement prices of drugs in Category M of the Drug Tariff. The delivery of margin to pharmacy is calculated by the NHS Business Services Authority on behalf of the Department of Health through a margins survey, which in turn is monitored by PSNC. Where the margins survey identifies that the delivery rate of margin to

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[20] These are temperature-controlled drugs that are stored in temperature controlled environments (2°C to 8°C) throughout the delivery chain and in the pharmacy.
[21] Department of Health guidance, Pharmaceutical price regulation scheme 2014.
[22] Rebates are based on monthly volumes.
[23] Parties' initial submission, Part C, paragraph 2.1.

community pharmacy will under or over deliver on the £800 million target, the Department of Health will recalibrate Category M Drug Tariff prices to bring the margin delivery rate back on track.

Fees and allowances

34. Fees and allowances cover Item Fees, Establishment Payments, the Repeat Dispensing Annual Payment, and Additional Fees. They also include Practice Payments including a contribution for provision of auxiliary aids for people eligible under the Disability Discrimination Act 1995 (DDA)/Equality Act 2010, payments for the Advanced Services and IT payments. National fees and allowances payments can be further categorised in two ways: *(a)* payment for Essential Services, and *(b)* payment for Advanced Services. Essential Services are services which all community pharmacy contractors must provide, Advanced Services may be provided if the contractor chooses to provide them.

Essential services

35. The main element of essential service payments relates to fees which include:

(a) a professional fee for every item dispensed including medicines and appliances – currently 90 pence per item;

(b) additional fees (set out in Part IIIA of the Drug Tariff) including: dispensing unlicensed specials or imports, measuring and fitting hosiery and trusses and dispensing controlled drugs; and

(c) expensive prescription fee – equivalent to 2% of the net ingredient cost of items dispensed that cost over £100.

36. In addition, community pharmacies receive establishment payments, practice payments, repeat prescription annual payment and an EPS allowance for deploying and maintaining EPS functionality.

Advanced services

37. Advanced services fees are set by nationally by NHS England and include NMS (between £20 and £28 each),[24] MUR (£28), AUR (£28 for an AUR conducted on pharmacy premises or £54 for an AUR carried out in a patient's

[24] In the year ended March 2015 774,930 NMSs were claimed.

home), SACs (£4.32 per qualifying item dispensed) and Flu Vaccinations (£9.14 per administered vaccine).[25]

38. The split of NHS England funding for 2015/16 is estimated as shown in the table below.

Table 5: NHS funding for community pharmacy 2015/16

Funding element	*£ million*
Practice payments	633
Dispensing fees	869
Directed Medicine reviews and other advanced services	86
Electronic prescription allowance	28
Repeat dispensing allowance	17
Special fees and other allowance	97
Establishment payments	270
Total	2,000

Source: Department of Health Community Pharmacy in 2016/17 and beyond proposals stakeholder briefing.

39. The median average pharmacy receives £220,000 a year in NHS fees and allowances (including margin).[26]

Outpatient dispensary

40. The pharmacy dispensing functions of a hospital pharmacy, namely dispensing ethical medicine products, will be the same as community retail pharmacies. However, there are some differences, most notably:

(a) The provision of hospital pharmacy services is subject to a competitive tendering process, for example by the NHS hospital trust for that OPD pharmacy location, and the ability to operate the pharmacy will be for a limited period. In contrast, a community retail pharmacy contract is provided following an application, and lasts indefinitely.

(b) Billing and pricing arrangements for OPD pharmacies will be different to community retail pharmacies. The NHS Drug Tariff does not apply to hospital dispensing and manufacturers tend to agree prices with hospitals for supply to them distinct from the prices agreed for community pharmacy reimbursement.

(c) P-medicine, GSL products and retail sales are a very small proportion of the sales for these pharmacies.

[25] Funding for the service will be in addition to and outside of total agreed community pharmacy funding for 2015/16, instead coming from NHS vaccination budgets. The total delivered will be dependent on uptake of the service, but no cap has been set for this.
[26] Department of Health Community Pharmacy in 2016/17 and beyond proposals stakeholder briefing.

(d) Ethical medicines may differ from the type usually dispensed in the community pharmacy, as they are more often high value ‘speciality’ medicines prescribed in a hospital.

(e) Hospital pharmacies will often be limited with regard to the range of products that they are able to stock, especially in relation to P-medicines and other GSL items.

Services that can be offered by retail pharmacies (in England)

Category of service	*Nature of service*	*Examples of services*
Essential services	Core services that must be provided by all pharmacy contractors	Dispensing medicines Dispensing appliances Repeat prescriptions Clinical governance Public health Disposal of unwanted medicines Signposting
Advanced services	Can be offered by pharmacies attaining accreditation	Medicine user reviews (MUR) New medicine service (NMS) Appliance Use Reviews (AUR) Stoma Appliance Customisation (SAC) Flu vaccination
Local services	May be commissioned to meet specific local needs	*Categories of services called either:* *1. Enhanced services* • Anticoagulant Monitoring Service • Care Home Service • Disease Specific Medicines Management Service • Gluten Free Food Supply Service • Independent Prescribing Service • Home Delivery Service • Language Access Service • Medication Review Service • Medicines Assessment and Compliance Support Service • Minor Ailments Service • Needle and Syringe Exchange Service • On Demand Availability of Specialist Drugs Service • Out of Hours Service • Patient Group Direction Service • Prescriber Support Service • Schools Service • Screening Service • Stop Smoking Service • Supervised Administration Service • Supplementary Prescribing Service *2. Locally commissioned services may include:* *i. Public health services:* • Supervised consumption • Needle and syringe programme • NHS Health Check • EHC and contraceptive services • Sexual health screening services • Stop smoking • Chlamydia testing and treatment • Weight management • Alcohol screening and brief interventions *ii. Other services could include:* • Minor ailments services • Palliative care schemes • MUR+ • Other medicines optimisation services.

Source: CMA.

Summary of the constraints under the Cooperation Agreement between Lloyds and Sainsbury's

1. The Cooperation Agreement concerns the arrangements for the continuing relationship that will exist between the Parties and is for an [✂] term, [✂]. The Cooperation Agreement details the products that may be sold by each party, aspects of the operation of the pharmacies in the Sainsbury's stores such as opening hours, exclusivity arrangements and the future development of the business.

2. The following is a summary of the constraints on how Lloyds can operate the Sainsbury's pharmacy business post-merger under the Cooperation Agreement.

Summary of agreement

[✂]

DJS consumer survey report and diversion ratios

1. The consumer survey report can be accessed on the CMA website: DJS research report into Celesio/Sainsbury's merger

Diversion ratios

Calculating diversion ratios from the consumer survey

2. Our consumer survey asked a number of questions about customers' reasons for visiting the pharmacy, before going on to ask them what they would do if the store was closed. The responses to this second set of questions was used to calculate the diversion ratio between the Parties in that local area. The diversion ratios can give an indication of the ranking of customer preferences within a local area. The higher the diversion ratio, the more closely two firms are considered to compete.

3. It is standard practice in consumer surveys that seek to provide an empirical estimate of diversion to ask customers what they would do in response to the closure of a store rather than what they would do in response to, say, a 5 to 10% change in PQRS. Although in this case we are principally interested in the behaviour of customers who would be willing to switch between the Parties in response to a change in their relative QRS offers (as price is generally fixed), we can infer diversion ratios based on the behaviour of all customers by making the assumption that the diversion behaviour of marginal[1] and infra-marginal[2] customers is similar. The Parties agreed that it was generally accepted that it was not feasible to interview only customers who were marginal or to ask customers what they would do in response to a 5 to 10% change in QRS and expect to receive meaningful results.[3]

4. In this case, the Parties argued that it was inappropriate to assume that the diversion behaviour of marginal and average (and by implication infra-marginal since the population of customers is comprised of marginal and infra-marginal customers) customers would be similar, as a store closure question did not in and of itself establish that there were any marginal customers between the Parties, or whether they would be likely to switch in

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[1] Marginal consumers are those who are sufficiently sensitive to changes in QRS that they would switch to a different pharmacy in response to a 5 to 10% deterioration in the QRS offering.
[2] Infra-marginal consumers are those who would not switch to a different pharmacy in response to a 5 to 10% deterioration in the QRS offering.
[3] The Parties noted that one might well expect to receive meaningful results if customers were asked what they would do in response to a specific worsening of a QRS parameter, such as a 1-hour reduction in opening hours.

response to a small but significant worsening of one or more QRS parameters. The Parties argued that further evidence was needed to establish that there were customers who were marginal and without such evidence the response to a store closure diversion question was not informative.

5. We consider that there are marginal customers between the Parties in this case, as summarised below, and there is no evidence to suggest that we cannot infer that diversion behaviour of marginal and infra-marginal customers is similar:

   (a) As set out in paragraphs 7.28 to 7.56 of the final report, customers of both of the Parties value a similar set of QRS parameters when choosing their pharmacy. If customers place a value on a service parameter it is reasonable to assume that a deterioration in that service parameter will cause some customers to reassess their choice of pharmacy.

   (b) As set out in paragraphs 7.57 to 7.160 of the final report, there is evidence that Lloyds flexes elements of its competitive offering in response to competition from pharmacies at a local level. There is also evidence that in local areas Lloyds responds similarly to competition from supermarkets and non-supermarkets, depending on the particular threat that competitors pose in each particular local market. If customers would not switch in response to a change in the QRS offer, Lloyds would not have an incentive to change its QRS offer in response to competition.

6. The diversion ratio is constructed to give an estimate of the percentage of customers who would divert from A to B, as a proportion of those customers who would switch in response to a reduction in the competitive offering. The diversion ratio from a Lloyds pharmacy to a Sainsbury's pharmacy provides us with an estimate of the percentage of customers switching from Lloyds to Sainsbury's in response to a deterioration in the competitive offering at Lloyds.[4] By construction, the diversion ratio across all alternative options must sum to 100%.[5]

7. In order to calculate the diversion ratio we asked:

   (a) 'Imagine that you had known before setting out today that this pharmacy was permanently closed. What would you have done instead of visiting this pharmacy today?' (Question 18)

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[4] As set out in paragraph 7.160 of the final report variables on which pharmacies compete at a local level include at least the following parameters: opening hours, store ambience, staffing and quality of advice, provision of additional services, waiting times, prescription collection and delivery, and relationships with GPs.
[5] Since the diversion ratio is calculated by dividing the number of customers switching to a specified option by the total number of customers switching, the sum across all options must be 100%.

(b) For customers who responded that they would have either gone to another pharmacy or had their prescription sent to another pharmacy we then asked: 'which other pharmacy would you have used?' (Question 19)

8. Where Lloyds has multiple pharmacies in an area, an existing Lloyds' customer may respond to the second question that they would have gone to another Lloyds pharmacy. Where surveyed customers indicated that they would have done this, they were asked a further diversion question:

(a) 'Now imagine that all Lloyds/Sainsbury's (ask as appropriate) pharmacies were permanently closed. What would you have done instead of using this pharmacy today?' (Question 21)

(b) For customers who responded that they would have either gone to another pharmacy or had their prescription sent to another pharmacy we then asked Question 22: 'Which other pharmacy would you have used?'

9. We used the results of these questions to calculate diversion ratios between the Parties. We calculated two different formulations of the diversion ratio, one that allowed for own party diversion (based on the responses to survey questions 18 and 19) and one that did not (based on responses to questions 21 and 22).

(a) The diversion ratio measure that allows own party diversion (also referred to as including own party diversion) can be interpreted as giving an estimate of the proportion of sales that would be lost by a single Lloyds store to the relevant Sainsbury's store. It provides an indication of the post-merger competitive constraint on a single Lloyds store.

(b) The diversion ratio measure that does not allow own party diversion (also referred to as excluding own party diversion) can be interpreted as giving an estimate of the proportion of sales that would be lost by all Lloyds pharmacies in an area to the relevant Sainsbury's store. It provides an indication of the post-merger competitive constraint on the Lloyds fascia.

10. The Parties said that when considering the CMA-surveyed areas the more appropriate survey diversion ratio to use was generally the diversion in response to a single store closure. The Parties said that this was because the CMA had not in general identified any likelihood of multiple Lloyds store closures or reduction in QRS across multiple Lloyds stores in an area (they said that nor were single store closures identified as a likely outcome). They said that our analysis had focused on possible variations in opening hours at the individual pharmacy level, rather than across all Lloyds pharmacies. They said that our analysis had not focused on other potential reductions in QRS,

and that we had not substantiated our analysis in relation to any other such QRS parameter.

11. We have used the diversion ratio excluding own party diversion to inform our filtering approach. We have chosen this measure to ensure that we are capturing all areas where the merger might change the competitive constraint across a group of pharmacies in a local area. This is particularly relevant where there are several Lloyds pharmacies close to a Sainsbury's pharmacy such that the merger might affect the competitive constraint across the group of pharmacies, rather than just a single store. In our more detailed local area assessments of the filtered pharmacies, we have gone on to consider the extent to which the competitive constraint on individual Lloyds pharmacies in an area is similar. We have used this assessment to inform the weight we place on each of the diversion ratio estimates in each case.

Econometric demand estimation at the local level

Introduction

1. This appendix outlines the approach we are using in estimating consumer demand in the merger between Celesio (Lloyds Pharmacy) and Sainsbury's Pharmacy for prescription medication.[1] The aim of the demand estimation is to understand the factors that drive consumers' pharmacy choice. In addition, based on the estimates of consumers' choice, we calculate diversion ratios which are used in our filtering methodology to identify areas that may lead to an SLC.

2. Since pharmacies are not able to set the price of their offering for NHS POMs, we base our estimation of diversion ratios on a measure of the quality of service offered by a pharmacy. The resultant metric allows us to assess whether the merger may give the Parties a unilateral incentive to reduce the level of service for prescription consumers (on quality, range and/or staffing parameters) at a local level in response to a reduction in competition.[2] To the extent that these same quality parameters influence choice for consumers of P-medicines and pharmacy services, then this model may also be informative of local competition in these markets.

3. For POMs we have access to data on the total volume of prescriptions for each GP practice in England broken down by the pharmacy that fulfilled the prescription. However, it should be noted that the only quality indicator that is available for all pharmacies in England is opening hours. We are able to utilise this data to estimate an econometric consumer choice model. In this model a consumer, after being seen by a GP and receiving a prescription for a medicine, is faced with a choice of pharmacy from which to pick up the prescribed medicine. We assume that each consumer takes into account several different aspects of the pharmacy offering in making their choice of pharmacy, among which are the observable characteristics of the pharmacy, such as the distance between their GP practice and each pharmacy, and the quality of service at each pharmacy, as measured by opening hours.[3]

4. Following a standard approach in the literature on demand estimation we estimate an econometric model of consumer choice. The econometric model

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[1] Note that we do not cover non-prescription pharmacy-only medicines.
[2] Note that we can also use our methodology to predict the share of prescriptions if a pharmacy in the catchment area closes.
[3] Evidence that quality parameters do drive choice can be found in Appendix F.

builds on a consumer choice model in which the trade-off between different factors for the pharmacy choice is explicitly modelled. In particular, we assess the effect of distance and opening hours on the pharmacy choice of the consumer. Our econometric specification reflects this trade-off by including the consumer's distance to a pharmacy, the pharmacy's opening hours and a set of control variables in the estimation. We therefore use the model to provide evidence on the determinants of consumers' pharmacy choice.

5. In addition, from the estimated choice model, we infer the response of consumers to a change in the opening hours at a pharmacy.[4] We use the estimates of the choice model to estimate diversion ratios for each pharmacy active in a particular market. From those diversion ratios we are able to assess the fraction of consumers that are retained by the newly merging parties in response to a decrease in the opening hours at a pharmacy of the merging parties. We use opening hours because the Parties have suggested to us that consumers are likely to base their decision of pharmacy on a range of factors including their opening times.[5] In addition, we have access to a comprehensive data set on opening hours at pharmacies in England, but not for any other quality indicators.

6. In summary, the results of the model suggest that:

   (a) When choosing a pharmacy, consumers trade off the distance to a pharmacy and the opening hours of the pharmacy. In the estimated choice model, we find that our distance variable and quality variable, as measured by opening hours, both have statistically significant coefficients, which suggests that they are important factors in a consumer's choice of pharmacy.

   (b) Supermarket and non-supermarket pharmacies are substitutes from the perspective of the consumer, and in particular supermarket pharmacies are closer substitutes for non-supermarket pharmacies than vice versa.

7. In the remainder of this appendix we discuss the data sources, present descriptive statistics and discuss the methodology. In addition we present and discuss the results of estimations, including the limitations of the analysis.

Data

8. The analysis uses several sources of data made available by the NHS. The main data source is the 'Public Prescription Data'.[6] This contains information

[4] As discussed below, we can use the change in the quality of service of a pharmacy to obtain an elasticity.
[5] Parties' initial submission, Part C, paragraph 3.5.
[6] For England: NHS Business Services Authority website – Practice Prescribing Dispensing Data.

on the total NHS prescriptions dispensed in England, which have been submitted to NHS Prescription Services in a given month.

9. In the data we observe the location of the GP practice as well as the location of the pharmacy at which a medicine prescribed by the GP has been dispensed. In addition the data contains information on the number of items dispensed at the pharmacy for a given GP practice in a given month.

10. In addition we have data available on the opening times for pharmacies.[7,8] This data set covers most pharmacies in England. It provides information on the daily opening and closing times during weekdays, as well as the extent of opening hours on weekends. This data on opening hours is the most comprehensive quality indicator that we have access to.[9] The data set covers opening hours during September 2015. While we have access to prescription data ranging from April 2014 to September 2015, opening hours are recorded on a rolling basis and therefore no historical information is available. We therefore limit our analysis to September 2015, using the cross-sectional variation to identify the effect of quality, ie opening hours, on demand.

11. In preparing the data for the analysis, we dropped all observations for which the distance between the GP and the pharmacy was greater than 40 miles. In the raw data set we observe that some consumers collect their prescription up to 408 miles from the GP at which it was issued, which we consider are outliers. In line with the Parties, we have chosen a threshold of 40 miles.[10] Applying this threshold, we retain about 92% of the data.

Descriptive statistics

12. In this section we present the summary statistics for the main variables in the data set which we use for the demand estimation. The following table presents summary statistics on the share of prescriptions[11] for all pharmacies, and the share of prescription volume for the Parties' stores in the data set. The average share of prescriptions for a given pharmacy in a given GP

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[7] Including for bank holidays.
[8] After cleaning the data we cover approximately 95% of currently open pharmacies in England.
[9] While we have additional quality indicators for Lloyds and Sainsbury, we do not have access to comparable information for other pharmacies.
[10] In response to the market questionnaire parties, Lloyds and Sainsbury's, submitted computer code in which the 40-mile threshold is used.
[11] Share of prescriptions is the fraction of prescriptions from all GP practices up to 40 miles away that have had at least one prescription fulfilled at the pharmacy, at any time across the data set. We do not aggregate GP practices for this analysis. We do, however, exclude those practices for which we do not consider that patients will exercise choice, where information on the type of practice is available. It is important to note that share of prescriptions is not a measure of market share as defined by a hypothetical monopolist test. We use the share of prescriptions throughout this appendix.

practice is 1.7%. Lloyds' pharmacies, on average, have a higher share of prescriptions with 2.3% compared with Sainsbury's pharmacies, 0.8%.

Table 1: Summary statistics

Variable	*Considering*	*Mean*	*Std Dev.*
Share of prescriptions*	Overall	1.7	7.2
	excl. independents†	1.5	6.3
	Lloyds	2.3	8.7
	Sainsbury's	0.8	3.0
Distance between GPs and pharmacies (miles)	Overall	6.1	6.8
	excl. independents	6.9	7.2
	Lloyds	5.7	6.5
	Sainsbury's	7.2	7.1
Total number of opening hours	Overall	63.1	19.2
	excl. independents	66.9	18.7
	Lloyds	57.2	13.6
	Sainsbury's	92.1	9.9
Age of pharmacy (months since April 2014)	Overall	22.1	21.3
	excl. independents	24.5	22.2
	Lloyds	20.3	16.4
	Sainsbury's	9.7	4.4

Source: CMA analysis.
* We multiplied the share of prescriptions by 100.
† We classify independent pharmacies using information provided by the Parties.

13. The distance from the consumer to the pharmacy plays a crucial role in the demand estimation. In particular, as explained in detail below, consumers trade off the distance travelled to a pharmacy against the quality of the pharmacy. We do not have information on consumer location, and hence do not observe directly the distance between the consumer and the pharmacy ('consumer-distance'). We therefore approximate consumer-distance by using the distance between a consumer's GP practice and the pharmacy ('GP-distance') as a proxy. However, we acknowledge that this relationship might not be fully accurate. If the relationship is not fully accurate, econometrically this would raise the issue of an imperfect proxy variable, which could result in inconsistent estimates.[12]

14. However, we believe the GP-distance to a pharmacy to be a valid approximation to the consumer-distance to a pharmacy. The location of consumers follows an empirical distribution with a mean distance to a pharmacy. For the GP-distance to be a valid approximation, its mean has to be correlated with the mean of the consumer-distance distribution.[13] It is plausible to assume that consumers' locations are distributed in proximity to their GP practice, and therefore that the consumer-distance and GP-distance are sufficiently

[12] Note that a valid proxy variable *(a)* is correlated with the omitted variable and *(b)* that there is no correlation between the omitted variable and the other variables ones the proxy variable is accounted for.
[13] By analogy, the econometric literature frequently uses GDP per capita to approximate income in a country. Of course, GDP per capita does not provide a good approximation to all incomes in the country because incomes follow an empirical distribution. Nevertheless, GDP per capita is used as a proxy variable because it provides a good approximation to mean income in a country. We apply the same logic in the context of distances.

correlated. On this basis, the GP-distance is a valid approximation to the consumer-distance in the econometric model.[14,15] Notwithstanding the above argument we discuss the implications of a weak correlation between the GP-distance and the consumer-distance for the econometric model, and its interpretation in the limitation section below.

15. In our local competitive effects assessment we find that GP catchment areas based on GP distance to a pharmacy are not a good proxy for consumer catchment areas. However, in the context of the demand analysis we think that it is appropriate to use the GP-distance because we are interested in the correlation between the average consumer-distance in the GP catchment area and the GP-distance, rather than the implied catchment areas from these two approaches. As noted above, we acknowledge that this is an imperfect proxy and therefore we are cautious in interpreting the distance effect.

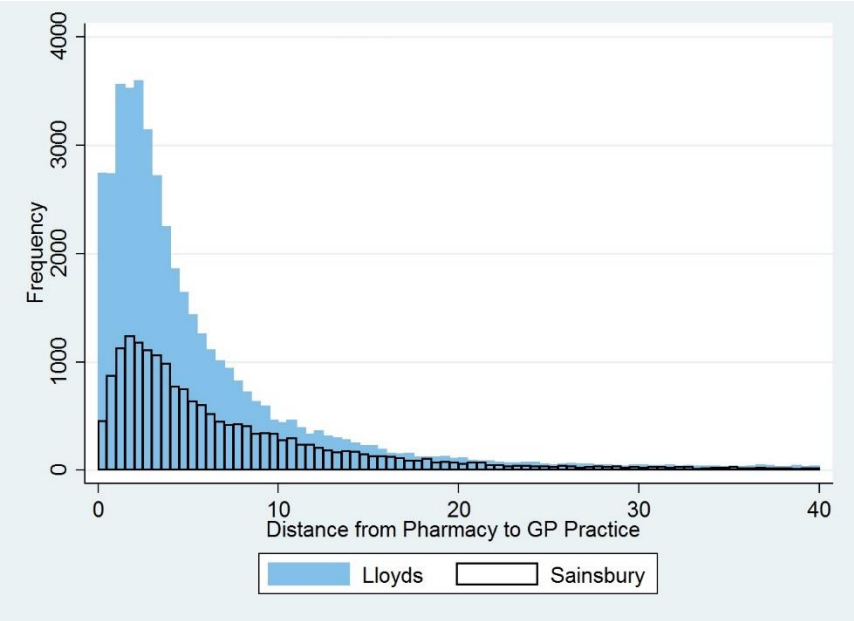
16. The average distance between a pharmacy and a GP practice is 6.1 miles.[16] In Figure 1 we provide an overview of the distances recorded in the data, where we show the distribution for Lloyds and Sainsbury's separately. The figure suggests that Lloyds' pharmacies are, on average, more closely located to a GP practice than Sainsbury's pharmacies are. Specifically, for Lloyds the average distance to a GP practice is 5.7 miles, while for Sainsbury's it is 7.2 miles.

[14] Using the GP-distance as an approximation to the consumer-distance does not contradict our market definition in the corresponding section. In the market definition we use a catchment area approach because, based on the survey results, it is more accurate compared with the GP-distance. However, in the econometric model it is preferable to use the distance of the consumer to the pharmacy rather than the catchment area. Because we do not have information on the consumer-distance for all pharmacies we use the GP-distance as a proxy as discussed above.

[15] There exist potential approaches that address the issue. For example, one could estimate a random coefficient model as in Berry, Levinsohn and Pakes (1995) to account for the distribution of consumers around a GP. However, those models introduce considerable complexity into the estimation and we therefore chose not to pursue those options.

[16] The averages presented here are simply the arithmetic mean distances between each GP practice and pharmacy of the described types in the data. These means are not weighted by the number of people who travel from each GP to the relevant pharmacies. We expect the average distance actually travelled to be smaller than these means, as fewer people will travel long distances.

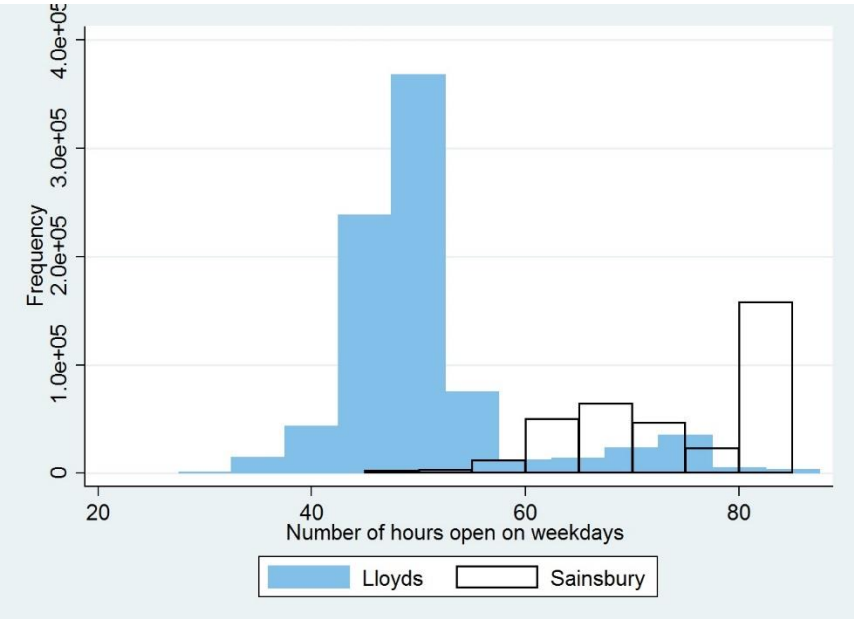
Figure 1: Distribution of GP-distances



Source: CMA analysis.

17. The distribution of opening hours is shown in Figure 2 below. As can be seen, the distribution of the opening hours between Lloyds and Sainsbury's is different. The average opening hours at Sainsbury's (92 hours per week) is higher than Lloyds (57 hours per week), as well as the average opening hours in the whole data set (63 hours per week). This reflects that Sainsbury's pharmacy's opening hours are usually linked to its store opening hours, and that a larger proportion of Sainsbury's pharmacies have 100-hour licences.

Figure 2: Distribution of opening hours per week



Source: CMA analysis.

Econometric model

Consumer choice model

18. The starting point of our analysis is a choice model of a consumer. Suppose that a consumer i receives a prescription from a GP for a certain medicine. The consumer then chooses from which pharmacy to collect the prescribed medicine. We assume that the consumer trades off different pharmacy characteristics, such as the quality of service at the pharmacy, with the distance to the pharmacy. We assume that it is the distance between the location of the GP practice and the location of the pharmacy that matters to the consumer's pharmacy choice. This simplifying assumption is driven by the structure of our data (as discussed in paragraph 13 above). We discuss the implication of this assumption further below.

19. We summarise the trade-off the consumer faces by assuming that consumer i in market m derives utility u_{il}^{m} from picking up their prescribed medicine from pharmacy l. In particular we assume that the consumer i's utility function takes the following form:

$$u_{il}^{m} = \delta_{ml} + \zeta_{ml|G}(\sigma) + (1-\sigma)\varepsilon_{ml},$$

where δ_{ml} is the mean utility of a consumer derived from choosing pharmacy l in market m.[17] The mean utility term can be separated into a part that is observable in the data and one part that is not directly observable in the data, but can be inferred from it as explained below. Specifically, we model the mean utility as:

$$\delta_{ml} = \beta' X_{ml} + \gamma g(d_{ml}) + \xi_{ml}.$$

We assume that a consumer trades off distance to the pharmacy with quality at the pharmacy. We therefore model the consumer's mean utility of a pharmacy as being composed of d_{ml}, the distance[18] from the GP-practice (local market), m, to pharmacy l, and observed quality and characteristics of the pharmacy in the market, denoted by X_{ml}.[19] We model the observed quality by including pharmacy-specific quality indicators, such as opening hours or the pharmacy brand. We allow the effect of distance on utility to be non-linear. Both distance and quality indicators are observed, i.e. we have information on

[17] The remaining two terms in the utility function are error terms, which we explain in more detail below.
[18] The empirical literature on pharmacy and hospital choice emphasises the importance of distance in the consumer's choice.
[19] We assume that consumers are homogenous with respect to the trade-off between distance and quality.

them in the data set.[20] The ξ_{ml} term captures the unobserved quality of the pharmacy, which is observed by the consumer but not observed in the data set. For example, this could be the ease with which a consumer can find parking near the pharmacy.

20. Consumers might make different choices with respect to the type of pharmacy they consider in response to a change in quality. For example, some consumers may have a preference for picking up a prescription medicine in a pharmacy attached to a supermarket, and therefore tend to substitute supermarket-pharmacies in response to a change in quality within this type of pharmacy.[21] This implies that the elasticity of substitution between pharmacies may differ according to the type of pharmacy.[22] To take this into account, we introduce a nest structure by allowing the unobservable utility to be correlated among pharmacies of the same type.[23] We do this by introducing the term $\zeta_{ml|G}(\sigma)$ into the utility function. This term accounts for consumers' choice between pharmacies depending on which segment,G, the pharmacy, l, belongs to.[24]

21. With the information available to the consumer for the possible pharmacies they could choose, we then assume that the consumer chooses the 'best' pharmacy from the alternatives presented to the consumer. In other words, the consumer chooses pharmacy l over pharmacy k if the utility derived from the former is higher than from pharmacy k, i.e. if $u_{il}^{m} \geq u_{ik}^{m}$. Since consumers' preferences differ, this results in different consumers at the same GP practice choosing different pharmacies.

Estimation

22. Based on the above consumer choice model, the academic literature on demand estimation shows that the choice model can be estimated using a

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[20] We assume that the consumer makes the pharmacy choice at the time of being prescribed the medicine by the GP. This implies that the consumer decides on which pharmacy to go to based on the location of the GP practice. We think that this is a reasonable assumption because the consumer becomes fully aware at the GP practice about their needs and therefore evaluates choices at this point in time. Some consumers might behave differently, for example choosing to combine picking up the prescription medicine with their weekly shopping. As explained below, we account for this by using a nested logit model.

[21] In our survey we asked consumers for their reason why consumers originally picked their pharmacy. Of Sainsbury's respondents, 40% stated that the location of the pharmacy within a supermarket in their top 3 reasons.

[22] In technical terms we are addressing the problem of the independence of irrelevant alternatives.

[23] Note that ε_{il} is a nest specific error term. Please also note that we account for consumer heterogeneity with respect to the nest error in our econometric model.

[24] We estimate a nested logit model, which we discuss in more detail below. The advantage of a nested logit model is that we are able to account for correlation of consumers' taste across segments of pharmacies. This is also reflected by differences in the elasticity of substitution.

linear regression specification.[25] Based on the above choice model, the empirical industrial organisation literature shows that the specific estimation equation is:

$$\ln s_{ml} = \beta' X_{ml} + \gamma g(d_{ml}) + M_m + \sigma_G \ln s_{ml|G} + \zeta_{ml},$$

where $\ln s_{lm}$ is the (logarithm of the) share of prescriptions of pharmacy l in market m.[26] The share of prescriptions of pharmacy l in segment G is denoted by $s_{ml|G}$.[27] This term accounts for the differences in substitution patterns across different segments of the market. The error term, ξ_{ml} , is interpreted as the unobserved pharmacy quality.

23. To be able to estimate the above equation we have to normalise one choice option of the consumer (ie hold one option constant and measure the others relative to this).[28] This normalised option should be present in each market so that a consumer is always able to choose this particular outside option. For example, we would not be able to choose Boots in one market and in another choose Superdrug as the outside option.[29] We therefore decided to normalise on independent pharmacies as a group, because they are present in almost all GP catchment areas.[30,31]

24. We also assume that the number of prescriptions issued reflects the total size of a market. We therefore exclude the possibility that consumers do not have their prescription dispensed, even if, in an extreme case, their first choice pharmacy closes down.[32] The rationale for this assumption is that a patient

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[25] We base our approach on the demand estimation introduced by Berry (1994). As shown in Berry (1994), a key assumption we make is that the errors are logit distributed. The approach has since been used extensively by competition authorities (for example in the EU for the Volvo-Scania merger) and in the academic literature.

[26] An alternative specification we could estimate is

$$\ln s_{lm} - \ln s_{0m} = \beta' X_{lm} - \beta'_0 X_{0m} + \gamma g(d_{ml}) - \gamma_0 g(d_{m0}) + \sigma \ln s_{ml|G} + \varepsilon_{ml}.$$

In this specification we would need additional information on the outside option, such as measures for distance and quality. It therefore seems preferable to use the fixed effects approach describe above.

[27] Note that we make the nesting parameter nest specific, σ_G. We implement this by interacting the nest-share of prescriptions with a supermarket dummy.

[28] This is a result of the derivation of the regression line. For details see Berry (1994).

[29] For example, consider the car market. Here potential buyers of cars can choose alternative modes of travel (eg bike or public transport), which is not reflected in the observed sale of cars. In addition, all consumers have the same possible outside options, eg cycling.

[30] We define an independent pharmacy as owning fewer than ten pharmacies. In the data set about 2.4% of GP/month combinations in England do not have prescription volumes with an independent pharmacy in at least one time period. This amounts to 5% of English GP practices which do not send patients to an independent pharmacy. If no independent pharmacy is available in the catchment area we do not consider the catchment area in our estimation.

[31] We assume in doing so that independent pharmacies generally share similar characteristics and quality. While this is a limitation, we consider it not unreasonable: they are generally less likely than the large chains to have access to sophisticated technology, to purchase their medicines from non-vertically integrated subsidiaries and to have a widely recognisable brand. Further, the Parties often treat independents as a single class in their internal documents, which suggests a degree of homogeneity across these store types.

[32] In a less extreme example, the pharmacy of first choice to the consumer might lower service quality sufficiently for the consumer not choosing to go to the pharmacy anymore.

who was sufficiently ill to have a prescription written for them will likely go on to pick up their prescription from a pharmacy.[33]

25. We account for the outside option in the estimation by including market-specific indicator variables, M_m. To estimate the model, we need to normalise one of the choice options for consumers.[34] We choose to normalise on the outside option. We normalise by dropping one of the indicator variables. The idea behind this approach is to normalise the mean utility of the outside option and, as a result, interpret the variables in the estimation relative to the outside option.[35]

Instrumental variables

26. The literature on nested logit models for demand estimation suggests that it may be necessary to instrument the within-group share, $s_{ml|G}$, because of endogeneity. The reason for this endogeneity is that the quality of a pharmacy has an effect on the share of prescriptions within a nest.[36] Therefore, we use an instrumental variable approach to account for this endogeneity.

27. The literature on nested logit demand estimation proposes, and successfully applies, the characteristics of other products in the market. We chose to use as an instrument the number of competing stores, other than the focal store, within a nest in a market. This is a valid instrument because the focal store is not able to directly influence the number of 'other' stores in the nest.[37]

Estimation results

28. In this section we present the results of our estimation. We first present and discuss the main specification. We then provide the results of several alternative estimation specifications to assess the robustness of our results. All estimation results are presented in Table 1. Each column represents a different specification. In each case, the dependent variable is the logarithm of the pharmacy share of prescriptions. The independent variables are presented in rows, and may be included or excluded in each specification.

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[33] Having had their prescription dispensed, the question of whether they finish the course of drugs, which is known to be a somewhat common issue, does not affect the analysis.
[34] Note that this is also a fairly standard assumption to make. Usually, the outside option is to not buy the good. But even with this assumption, there is considerable heterogeneity among the reasons a potential consumer might not buy a good.
[35] Please note that because we use a fixed-effects approach to the outside option, the mean utility is a fixed, negative number. This implies that we scale the utility of the choice options, but does not affect the utility ranking of the choices. The estimated coefficients are not affected by this scaling.
[36] In addition there is potentially an issue of simultaneity, which we address by an instrumental variable approach as well.
[37] The literature suggests using characteristics that are not endogenous in the short run, which is not the case for the number of competing stores.

Where no coefficient is presented, the term was excluded from the specification.

29. The main specification is presented in column (1) of Table 2. The quality indicator used is the total opening hours during working days. The estimated coefficient is positive, as expected, and statistically significant at the 1% level. This suggests that opening hours are an important determinant in consumers' choice of pharmacy.[38]

30. The coefficient on distance is negative and statistically significant at the 1% level. This suggests that the distance from the pharmacy to the consumer's GP practice matters for the choice of pharmacy by the consumer.

Table 2: Regression results

	(1) *Share of prescriptions (log) – Specification A*	*(2)* *Share of prescriptions (log) – Specification B*	*(3)* *Share of prescriptions (log) – Specification C*	*(4)* *Share of prescriptions (log) – Specification D*
Distance to GP (log)	–1.02***	–1.05***	–1.03***	–1.15***
	(0.02)	(0.02)	(0.02)	(0.01)
Total opening hours (log)	0.43***			0.48***
	(0.01)			(0.01)
Opening hours at weekend (log)		0.16***		
		(0.00)		
Total hours closed over lunch (log)			–0.01**	
			(0.00)	
Market share in nest (log)				0.08***
				(0.01)
Supermarket nest (log)	0.06***	0.05***	0.05***	
	(0.01)	(0.01)	(0.01)	
Non-supermarket nest (log)	0.21***	0.18***	0.19***	
	(0.01)	(0.02)	(0.01)	
Combined nest (log)				0.09***
				(0.01)
Age of pharmacy (log)	0.10***	0.07***	0.07***	0.11***
	(0.00)	(0.00)	(0.00)	(0.00)
R-square	0.74	0.73	0.73	0.67
Number of observations	315,017	315,017	315,017	315,017

Source: CMA analysis
Notes:
1. Standard errors in parentheses; * p<0.1, ** p<0.05 and *** p<0.01.
2. All specification include market specific and brand specific fixed effects.

31. To aid interpretation, we calculated the distance elasticity of a pharmacy in a given market with respect to the distance to a GP practice.[39] The results for each GP-area are depicted in Figure 3, where we separate the distributions by Lloyds and Sainsbury's pharmacies.

32. The estimated elasticities suggest that demand falls in response to an increase in the distance between a pharmacy and a GP practice. This

[38] Please note that technically the interpretation of a coefficient is always relative to the outside option.
[39] We used a specification that is linear in the distance. The formula for the elasticity is:

$$\varepsilon_{im} = \beta_d d_{ml}\left(1 - \sigma s_{l|g} - (1-\sigma)s_{ml}\right)/(1-\sigma).$$

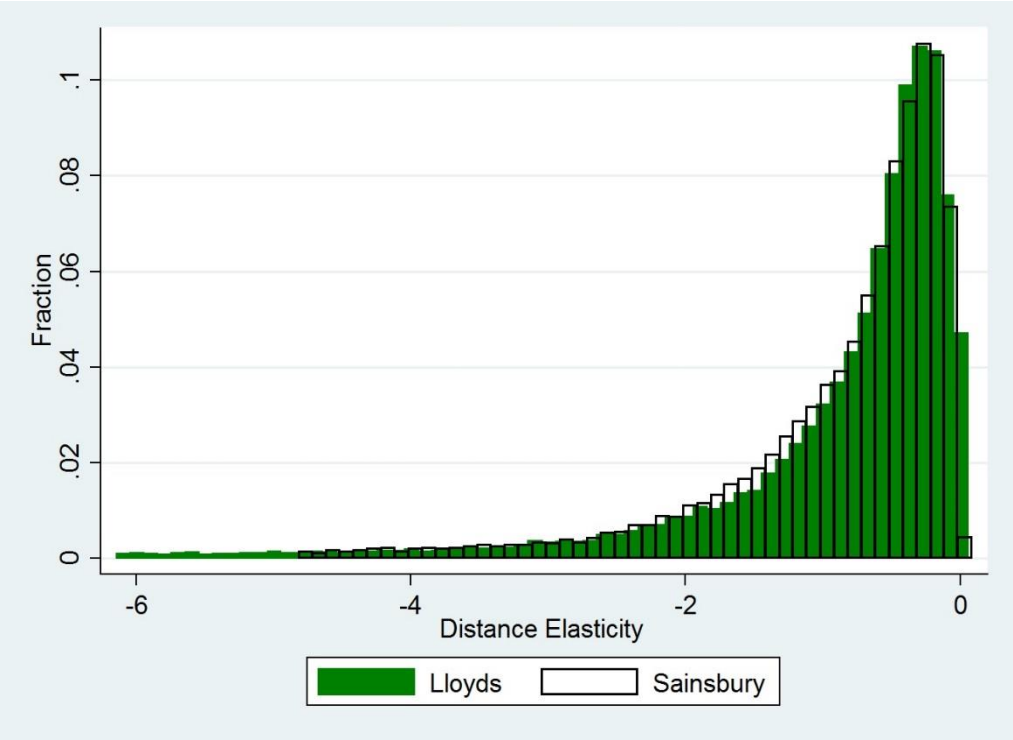
increase in distance could be the result, for example, of moving the premises of the pharmacy or the GP practice.[40]

33. In Figure 3 all elasticities range from zero to –6. The interpretation of this number is that, for example, for a value of -5 of the demand elasticity, demand falls by 5% in response to a 1% increase in distance between the pharmacy and the GP.[41] The figure suggests that Lloyds and Sainsbury's have similar distributions of the distance elasticity. However, we note that Lloyds has a higher share of pharmacies with a high distance elasticity. This overall pattern suggests that consumers do not respond drastically differently to distance between Lloyds and Sainsbury's.

34. We also differentiated the nesting variables by supermarket and non-supermarket pharmacies.[42] The nesting parameter, by definition, ranges between zero and one. Estimates close to zero suggest that consumers do not have a preference to substitute within a nest relative to the outside option.[43] Our estimated nesting parameters are all within the defined range and are robust towards alternative proxies of opening hours. Also, our estimates suggest that consumers choosing a pharmacy associated within a supermarket are only marginally more likely to choose a supermarket pharmacy as an alternative. However, consumers who choose a non-supermarket pharmacy are more likely to choose an alternative pharmacy within the non-supermarket nest.

[40] Note that by the formula of the distance elasticity, being closer to the pharmacy reduces the distance elasticity.
[41] While some elasticities seem small, this is driven by the distance between the GP and the pharmacy. For example, if a pharmacy is 0.1 miles away from the GP the 1% increase in distance is small compared with a pharmacy that has a 1-mile distance to the GP.
[42] Note that there is a third, omitted category, which is the outside-option nest.
[43] Note, that a coefficient close to zero implies that we do not find correlation of pharmacies within a nest, again, relative to the outside option.

Figure 3: Distribution of the distance elasticities



Source: CMA analysis.

35. In addition we also control for the age of a pharmacy in our regression. The reason we include this variable is that an 'older' pharmacy may have an established reputation and, as a result, an established relationship with consumers, which makes it more likely to be chosen.

36. In Table 2 we also present alternative specifications to assess the robustness of our results. In columns (2) and (3) we use alternative variables for opening hours, specifically the opening hours on a weekend or the number of hours closed over lunch. The results suggest that those changes do not materially affect the distance coefficient or the nest-coefficients.

37. In addition we tested whether restricting the nest-variables to be equivalent across the different types of nest affects our results. Both the opening hours and distance effect parameters have the expected sign, while we observe an increase in response to this change. The coefficient on the nest is in the expected range and is low. The R-squared values of the main specification in column (1) and the alternative specification in column (5) suggest that the main specification fits the data better.

The diversion ratio formula

38. The econometric estimation allows us to estimate diversion ratios at the local pharmacy store level. In this section we present the formulas used in the calculations. From the estimated diversion ratios we can infer which fraction of

consumers will be recaptured by the merged entity in response to a change in opening hours. We can use this to understand the closeness of competition between Lloyds and Sainsbury's pharmacies. Specifically we use the following formula:

$$\frac{\mathrm{d}s_l}{ds_k} = {\varepsilon_{kl}s_k}/{-\varepsilon_l s_l},$$

where ε_{kl} is the cross elasticity between pharmacies l and k, and ε_l is the elasticity of pharmacy l.

39. The elasticities are computed from the nested logit model described in the previous section. The starting point is the logit formula, in which the opening hours, $\mathcal{H}$, enter in the numerator and the denominator. In addition we have to take into account whether pharmacies are within the same nest or not. The calculations for the own elasticity yield.

$$\varepsilon_{lm} = \frac{ds_{lm}}{d\mathcal{H}_{lm}}\frac{\mathcal{H}_{lm}}{s_{lm}} = \frac{\beta_{\mathcal{H}}\mathcal{H}_{lm}(1-\sigma s_{l|g} - (1-\sigma)s_l)}{(1-\sigma)}.$$

We also derive the cross elasticity for pharmacies across nests which results in the following expression.[44]

$$\varepsilon_{klm} = \frac{ds_{lkm}}{d\mathcal{H}_{lm}}\frac{\mathcal{H}_{lm}}{s_{lm}} = \beta_{\mathcal{H}}\mathcal{H}_{lm}s_{lm}.$$

Limitations

40. In this section we discussion some of the limitations of our methodology:

(a) The data contains GP practices which operate in multiple locations. For example, a GP might have a subsidiary practice or offer consultations in local areas. In the data we observe only the number of prescriptions at the aggregate GP practice level, ie all prescriptions are attributed to the main practice.[45] This affects approximately 16% of the GP practices in the raw data.[46] This issue introduces measurement error into the distance measure, because distances are based on the main practice of the GP, which may not be the premise that the patient visited. This measurement error results in a downward bias in the estimated distance effect.

[44] Note that we do not present the cross elasticity for pharmacies within a nest because Lloyds and Sainsbury's are not within the same nest.
[45] For example, a GP practice has a main premises and two subsidiaries. Doctors prescribe medicines at all of those premises, but our data suggests that the prescriptions are recorded at the main premise only.
[46] Because the catchment area of any pharmacy typically contains more than one GP practice, the percentage of catchment areas affected by this issue is underestimated.

Furthermore, the remaining variables in the estimation are potentially biased as well. However, signing the bias is not possible in our case, because we do not know the correlation between the distance and the quality variables.

(b) As we have discussed above, we estimate the demand equation using an instrumental variable approach because of a concern over the endogeneity of the nest variable. One general concern about instruments is that the instruments are weak, ie that the instruments are only weakly correlated with the endogenous variable. Weak instruments would introduce a larger bias into the estimated coefficient compared with not using an instrumental variable approach. The econometric literature suggests a statistical test to assess instrument weakness. We tested this issue in our estimation. Using the critical values provided in Stock and Yogo (2005), the statistical test does not suggest that our instruments are weak.

(c) In our methodology we use the characteristics of the individual pharmacies in the choice model of the consumer, as well as in the estimation of the choice model. To compute the diversion ratios we relied on the estimates from this model. Restricting the econometric model to the use of the characteristics of the pharmacies constrains the substitution patterns of consumers between pharmacies. Including consumer characteristics would allow for more flexible substitution patterns of consumers between pharmacies. However, those models are considerably more complex and time-consuming to estimate.[47] We therefore decided to use a nested logit demand. To assess the validity of the results from the demand estimation we rely on additional evidence available to us, for example, the survey results or internal documents submitted by the Parties.

(d) As we discussed above, the GP-distance might be an imperfect proxy variable for the consumer-distance. While we think that the GP-distance is a valid proxy, it is plausible that the correlation between the GP-distance and consumer-distance is weak. While this does not invalidate the proxy variable, this would result in a likely underestimation of the distance effect. Therefore the magnitude of the distance effect should be interpreted with care.

Limitations of the diversion estimates from the model

41. The results of the diversion ratios estimated by the demand estimation model are systematically lower than those of the survey. We consider that there are

[47] For instance, one could estimate a random coefficient model as in Berry, Levinsohn and Pakes (1995) to allow for richer substitution patterns between alternatives.

two explanations for this. First, although we observe differences in opening hours, the variation of opening hours with share of prescriptions across markets might be small, resulting in an underestimate of the opening hour effect. Second, although opening hours are clearly important to consumers, there are other factors driving their decision which are not captured by the model.

42. The Parties suggested that a lack of variation in opening hours was not a plausible explanation for why the demand estimation diversion ratios may be underestimated as, in their view, there is a great deal of variation in opening hours. The Parties said that if diversion in relation to store opening hours was generally very low, then it was more likely that this was because consumer demand between the Parties was not very sensitive to variations in store opening hours.

43. We do not accept the Parties' argument, for the following reason. In the demand estimation model we are only able to control for opening hours and do not explicitly control for additional quality factors. This is somewhat mitigated because we include fixed effects in the model to account for wider differences in quality between pharmacy brands. However, those pharmacy fixed effects do not control for local level differences in quality. Furthermore, in the choice model we make explicit that there is unobserved quality of a pharmacy, which is accounted for in the choice model as observed by the pharmacy consumer but not observed in the data. However, we potentially put too much emphasis on the unobservable quality term.

44. Furthermore, we do not have any information to suggest whether a consumer chooses a pharmacy near the consumer's home or workplace, which may affect the correlation between distance and pharmacy choice. As discussed above, we are using the GP-pharmacy distance as a proxy variable for the consumer-pharmacy distance. However, after dropping the observations with in the highest 8% of the distance travelled, we observe in the data that some consumers travel up to 40 miles between their GP and the pharmacy of their choice. This suggests that consumers are heterogeneous in their choice of pharmacy with respect to their preferred starting point to go to a pharmacy. For example, some consumers might see a GP near to their home, but decide to get the prescribed medicine at a pharmacy close to their place of work. As a result we may overstate the distance travelled by consumers between the starting point of their journey and pharmacy in our data set. As we discussed following paragraph 13 of this appendix, this may lead to inconsistent estimates.

45. To assess the robustness of our estimates with respect to the consumer-distance heterogeneity, we reduced the GP-pharmacy distance to a maximum

of 5 miles.[48] We find that the average diversion ratio increases marginally. However, we do not think that a GP-pharmacy distance of up to 5 miles, especially in urban area, addresses the problem adequately (for example, we note that 82% of Lloyds consumers surveyed by DJS travelled for less than 10 minutes to reach the pharmacy, with 38% walking all the way and 53% using a car. This suggests that consumers' willingness to travel is substantially less than 5 miles, particularly in urban areas). Therefore, we are still concerned that we are not able to account sufficiently for underlying differences in consumers' travel behaviour and hence there is a potential bias in our estimates. As a result we decided to put less weight on the point estimates of the choice model, and specifically the diversion ratios, in the local analysis.

46. Given these limitations, we have used the demand model to identify areas where diversion between the Parties is predicted to be high relative to the average across all areas as part of our initial filtering of areas for further analysis. We have not used the diversion ratios from the model as part of our detailed assessment of local areas.

[48] We decided not to reduce further the maximum GP-pharmacy distance because we are concerned about introducing selection bias. If we were to reduce the maximum GP-pharmacy distance below 5 miles the underlying population would not be a random sample, but a sample with biased proportion of differences in consumers.

Pre-merger competition in pharmacies

Introduction

1. This appendix examines in further detail the extent to which pharmacies are able to compete. In particular, it expands on the evidence available in this case as to whether pharmacies have the ability to attract customers by changing their competitive offering, even though certain aspects (such as prescription charges) are regulated.

2. This appendix also further considers the evidence to assess whether pharmacies in general, and Lloyds and Sainsbury's in particular, were in practice competing on these variables before the merger. The appendix does not consider whether the merger changes the Parties' incentives with respect to any of these variables.

3. We first outline how the market works; second we outline evidence on overall perceptions of the Lloyds and Sainsbury's brands; third we identify a set of choice parameters which are important to consumers; and fourth we briefly consider the extent to which regulation or the Cooperation Agreement between the Parties limits the ability of providers to flex each parameter (were they to have the incentive to do this).

4. Following this, we consider the Parties' internal documents and our own data analysis to understand whether pharmacies in general, and the Parties in particular, actually flex any of these parameters in response to local competition. This complements our assessment in Section 7 of the final report.

5. Specifically, we provide a more detailed consideration of documentary and survey evidence alongside some simple quantitative analysis to complement the empirical assessment in Appendix G of the final report:

   (a) Convenience, including location and parking

   (b) Stocking and product range

   (c) Opening hours

   (d) Store layout and facilities

   (e) Waiting times

(f) Staffing and quality of advice

(g) Electronic prescriptions

(h) Online ordering, delivery and collection services

(i) Pricing and special offers

6. Finally, we provide a summary table which contains extracts from the Parties' investment proposals, as referenced in the final report and in this appendix.

Choice and competition among pharmacies

How the market works

7. In the UK, medicines are generally prescribed by GPs, and dispensed by pharmacies. Consumers who are prescribed medicines, or who wish to use a service or buy a non-prescription product from a pharmacy, exercise free choice as to which pharmacy provides them with their product or service.

8. Patients choose a pharmacy based on their own assessment of which is most suitable for them. Patients may either travel to the pharmacy which suits them most each time they receive a prescription, or they may nominate a particular pharmacy to receive their prescriptions electronically until further notice. We explain this process in more detail in paragraph 2.5 of the final report.

9. In both cases however, patients exercise choice of pharmacy, and pharmacies are incentivised to attract patients to their store because their income depends largely on the volume of prescriptions they dispense.

10. For standard retail products where competition occurs at a local level, customers make their choice of provider based on several factors, which may include PQRS. Firms then compete on the parameters which are important to customers in order to win business, focusing most on improving their service offering where competition is most intense.

11. In this market, regulation fixes prices charged to customers for prescription medicines and many pharmacy services. Established practice by pharmacy chains has seen pharmacies usually set prices of other products, such as p-medicines, centrally across stores. Prices are therefore not likely to be an important competitive parameter at the local level.

12. With respect to measures of QRS, regulation sets a floor on some parameters, and fixes the level of others. In this particular case, the Cooperation Agreement signed between the Parties also [✂].

13. Despite these restrictions, pharmacies do appear to vary some QRS parameters. We found evidence of opening hours, refurbishment timings, service offerings, waiting times and mystery shopper ratings as examples where there are wide discrepancies in the level of service offered by pharmacies.

14. There are a number of possible reasons for variation in these key parameters across pharmacies: different chains may have different policies given their particular business models, the strength of demand may vary across areas, and certain regions may face higher staffing costs. There is, however, also evidence that at least some of this variation is related to the strength of the competitive constraint faced in local areas.[1]

15. This makes intuitive sense: if patients are more likely to seek to have their prescriptions dispensed in stores which offer a higher quality customer experience, then in areas where there are more pharmacy chains competing for a given number of patients, each pharmacy will be incentivised to improve its customer experience to win more business.

16. By contrast, if a pharmacy chain is the only credible alternative, or one of few differentiated pharmacies in an area, then it would make little business sense to focus investment and other resources on maintaining and improving quality in that particular area, as this will result in an increase in costs with little or no increase in income. It should be noted however that pharmacists may also seek to deliver high-quality service for professional and reputational reasons.

Observing competitive influence on choice parameters

17. There are broadly speaking three sources of evidence linking choice parameters with the competitive landscape. These are the Parties' internal documents and submissions, the views of third parties and evidence from statistical analyses of pharmacy data.

18. As an example, we understand that at least some of the larger chains, including Lloyds (in its Competitive Edge document) and Boots, provide central guidance to local or regional managers which advises them of possible actions that could be taken at a local level in the event of:

    (a) entry of a different brand of pharmacy in the local area;

[1] See the analysis presented in Appendix G.

(b) a change in the competitive position (location) of another pharmacy brand in the local area; and/or

(c) a drop in the number of patients flowing from a particular GP practice, where this data is available at store level.[2]

19. Further, pharmacies appear to monitor their own positioning relative to other similar brands, in order to win or defend market share.[3] For example, Sainsbury's has historically compared itself to a range of traditional and supermarket pharmacies. One example is an internal document from 2013 which assessed the chain's current strategy and proposed improvements.[4]

Figure 1: Internal document from Sainsbury's showing its perceived positioning on PQRS variables relative to other chains

[✂]

Source: Sainsbury's.

20. This document highlights that Sainsbury's monitored, at a high level, [✂]. It also suggests that Sainsbury's [✂], and that it [✂]. Sainsbury's submitted that following this review [✂].

21. Moreover, we understand that many chains conduct regular research on their perceptions among shoppers to ensure that their customers are happy with the service they receive. Pharmacy chains will consider this important in itself, and a further motivation is that keeping customers happy mitigates the risk that they will go elsewhere. This research is outlined in greater detail below.

Consumer perceptions of Lloyds and Sainsbury's

22. This section provides an overview of a number of surveys conducted as part of the ordinary course of the Parties' businesses. We consider that these surveys provide information on how the Parties monitor consumer perceptions of their offerings at the national level. This national picture of customer

[2] Both Parties told us that such guidance was generic and not provided in response to a specific change or event.
[3] Sainsbury's submitted that it 'has previously commissioned market research to help better understand its own position within the pharmacy industry, and to help improve the rate at which it is able to convert existing in-store grocery shoppers into users of its pharmacy counters'. Sainsbury's submitted that is, however, 'not focused on winning or defending its market share against other pharmacy players'. We consider that attempts to convert its grocery customers (who currently use other pharmacies) into users of its pharmacy counters constitutes by definition an attempt to win market share from the pharmacies which are currently used by such customers.
[4] Sainsbury's submitted that this document was put together by an external consultant and did not reflect how Sainsbury's looked at the industry on a day-to-day basis. We agree insofar as we did not find other such comparisons among the documents that were provided to us, however we also note that there were few or no other documents suggesting that its approach was different to that proposed in this one.

perceptions may be informative in how Lloyds and Sainsbury's make decisions at the local level.

Perceptions of Sainsbury's positioning

23. [✂], Sainsbury's commissioned research [✂] which looked at customers' perceptions of different types of pharmacies. The research identified three key customer needs from a pharmacy: [✂] Figure 2, [✂].

Figure 2: Customer perception of pharmacies in relation to [✂]

[✂]

Source: Sainsbury's.

24. The same research also found that, [✂]. All this pointed towards a [✂] position of Sainsbury's (and other supermarket) pharmacies compared with independents and high street chains.

25. [✂], Sainsbury's commissioned research on brand perceptions and purchase patterns among Sainsbury's grocery shoppers.[5] Some of the research findings can be informative of the closeness of competition between the Parties:

(a) What customers looked for in a pharmacy was the same for Sainsbury's pharmacy users as for [✂].

(b) Of Sainsbury's shoppers with access to a Lloyds pharmacy, [✂]% identified Lloyds as their preferred pharmacy, and another [✂]% indicated the chain was one of the pharmacies they preferred to use. [✂]

(c) Of Sainsbury's shoppers who used a Lloyds pharmacy, [✂]% indicated Lloyds as their preferred pharmacy, and another [✂]% as one of the pharmacies they preferred to use; [✂].

(d) The brand perception of Lloyds among Sainsbury's shoppers was [✂] than the brand perception of Sainsbury's pharmacy, [✂].

(e) Sainsbury's had an advantage relative to Lloyds in terms of convenience (ie ability of customers to pick up a prescription as part of a wider grocery shopping mission and longer opening hours), but a disadvantage in terms of repeat prescription and prescription collection services. However, the

[5] [✂]

perceived difference between Sainsbury's pharmacy and Lloyds was [✂] than that between Sainsbury's pharmacy and independents.

26. Figure 3 summarises the various pieces of research commissioned. It confirms the contrasting perceptions of the relative strengths and weaknesses of the Parties.

Figure 3: Customer perception of high street and supermarket pharmacies

[✂]

Source: Sainsbury's.

Perceptions of Celesio's positioning

27. Celesio also commissioned research on brand awareness and consumers' habits. The research, [✂], did not include supermarkets among potential retailers when analysing customers' purchasing behaviour in relation to prescription medicines and OTC products. This would suggest that supermarkets were not seen as major competitors, at least in terms of brand awareness.[6] [✂]

28. On the other hand, other work done on research on customers' purchasing behaviour, [✂], included supermarket pharmacies in its analysis and gave some insight on their similarities with – and differences to – Lloyds.[7]

(a) Lloyds' customers used supermarket pharmacies less often than the total population sample, but the difference was not very large: [✂]% of Lloyds' customers also used supermarket pharmacies ([✂]% of them most often used supermarket pharmacies) versus [✂] in the total sample. The presentation explicitly noted that 'Lloyds' customers also visit supermarkets frequently'.

(b) Lloyds' pharmacies were mainly chosen by customers for their convenient location, while supermarkets were also chosen for their product range and low prices.

(c) Lloyds was stronger than supermarkets on POMs, while the opposite was the case for p-medicines and, in particular, for GSL products.

(d) Only [✂]% of Lloyds' customers used supermarkets to get prescription medicines, while the proportion was [✂] for pharmacy-only medicines ([✂]%) and GSL products ([✂]%).

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[6] [✂]
[7] [✂]

29. A more direct comparison between Lloyds and Sainsbury's is included in a Celesio presentation prepared in relation to the merger. Lloyds is considered stronger than Sainsbury's in terms of [✂]; Sainsbury's is perceived as stronger on [✂].

30. Overall, the Celesio documents suggest that Celesio sees supermarkets as retail competitors, but not as its closest ones. Lloyds and supermarkets are considered as having different strengths, although their customer bases overlap to a large extent.

31. A 2012 Celesio document that discusses the risk ratings of its portfolio also supports the view that Celesio views supermarkets as competitors, but not as its closest ones. This assigns scores for ten risk factors.[8] One score is related to the risk posed by 100-hour pharmacies. The highest 100-hour pharmacy risk (scoring [✂]) is assigned for a [✂]; an [✂] scores [✂] and a [✂] scores [✂]). This document was updated to remove this rating following the end of the 100-hour exemption.

Consumer views on quality

32. This section reviews the Parties' internal documents to identify which factors are important in customers' choice of pharmacies. It also considers the survey we commissioned for this case and previous investigations in this sector.

33. We find that there is a substantial degree of consistency across sources and pharmacy brands as to the drivers of choice and the relative importance of these drivers.

Evidence from internal documents

34. A Sainsbury's internal document shows that the factors which Sainsbury's **grocery** customers rank in the top four are the same across users of Sainsbury's pharmacy, [✂]. These factors are:

    (a) [✂][9]

    (b) [✂]

    (c) [✂]

[8] [✂]
[9] Of course, different types of locations may be differently convenient for different customers. Specifically, regular supermarket shoppers may consider supermarket pharmacies to be convenient, while others who work in town centres may consider the community high street pharmacies to be conveniently located.

(d) [✂]

35. [✂]

Figure 4: Some Lloyds pharmacy customers may have been systematically excluded from the sample*

Source: CMA analysis.
*This is consistent with the aim of Sainsbury's surveying its customers within its supermarkets.

36. Because the survey sample was drawn only from shoppers within Sainsbury's supermarkets, the survey may purely illustrate that Sainsbury's shoppers have consistent pharmacy preferences, and not that consumers who are not Sainsbury's shoppers would share those preferences. For instance, it might be the case that people who do not shop in large out-of-town supermarkets have different preferences in general.

37. To assess the preferences of Lloyds' customers, we have reviewed Lloyds' internal documents. One document contained a survey conducted in 2014 of patients living within postcode catchment areas of Lloyds' stores.

Figure 5: [✂]

[✂]

Source: Lloyds

38. This survey contained a prompted question for prescription customers which, like the Sainsbury's survey, asked for the reasons which drove respondents' choice of pharmacy. The document compared Lloyds' respondents with all respondents. Lloyds' customers' rankings were overall very similar to the average, with the largest differences being a [✂].

39. While there were differences in the options given to respondents across the Lloyds survey and the Sainsbury's survey, the overall picture is also similar. Specifically, the top four options for Sainsbury's grocery customers were also

highly ranked by Lloyds' customers, who placed [✂]. There were [✂] options presented.

40. Factors inside the Lloyds top 4 but outside the Sainsbury's top 4 were: [✂]. Similarly worded options to these were, however, in the top 10 of the Sainsbury's survey (out of [✂] options).

Evidence from CMA/OFT surveys

41. A further source of evidence on consumer preferences is available from surveys in the market. In its 2003 Market Study, the OFT found that 57% of patients chose their pharmacy based on locality, whilst 29% chose it because it was more convenient, handy or quicker.

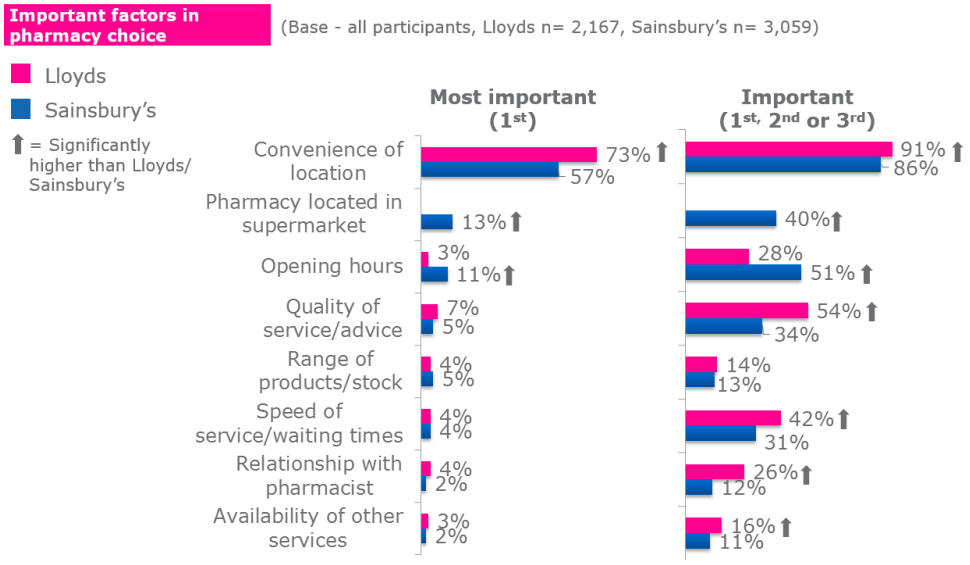
42. In our survey conducted for this case, over 85% of customers responding to a prompted[10] question mentioned 'Convenience of Location' as one of the top 3 most important factors in determining their choice of pharmacy. 73% of Lloyds' customers and 57% of Sainsbury's considered this factor as most important. The Parties submitted that the nature of 'convenience' differed for Sainsbury's and Lloyds' customers. A further 13% of Sainsbury's customers considered 'Pharmacy located in supermarket' to be the most important factor.

43. Customers were also asked for the reason they chose a Sainsbury's or Lloyds pharmacy *on that particular day*. A higher percentage of respondents mentioned convenience, although other factors which received a notable proportion of responses were those related to service and staffing quality, shopping habits and (for Sainsbury's) late/weekend opening hours.

44. Aside from convenience, a range of other factors were also considered important for original pharmacy choice – although these were rarely the most important. Opening hours were in the top 3 for 38% of Lloyds' customers and 51% of Sainsbury's customers; Quality of Advice/Service was in the top 3 for 54% of Lloyds' customers and 34% of Sainsbury's customers; and speed of service/waiting times were in the top 3 for 42% of Lloyds' customers and 31% of Sainsbury's customers.

[10] The unprompted question (Q16: Why did you choose this pharmacy in the first place?) indicated that 66% of Lloyds' customers responded with 'Convenience', while 76% of Sainsbury's customers responded 'Convenience' or 'Visiting Supermarket'. We consider this is evidence that convenience is a particularly important driver of choice.

Figure 6: Results for Question 17 of our survey showing the drivers of original pharmacy choice.



Source: DJS analysis of data collected in our survey.
Note: Question 17 read: 'Which of these factors are most important to you when deciding which pharmacy to visit? Please tell me your top 3 in order of importance, with 1 being the most important.'

45. The results of our survey indicate that there are some differences between the shopping behaviour of customers at Sainsbury's and Lloyds. However, we also consider that there are some important similarities between the factors on which their customers make their choice of pharmacy.

46. We consider that this survey suggests that while convenience is the most important driver, there are a set of other drivers of choice which consumers also value. This is consistent with the surveys conducted by the Parties as part of the ordinary course of their business, and suggests that there are some other parameters which may provide a basis for competition.

Most important factors for Electronic Prescription Service users

47. The preferences of those using the EPS may be different to those using paper prescriptions. To assess this, we have considered a survey conducted by Lloyds which interviewed customers living near an EPS-enabled surgery and a Lloydspharmacy.

48. The top four reasons expressed by those who had nominated Lloyds for EPS usage for their choice were [✂].[11]

[11] [✂]

49. While a specific breakdown for Sainsbury's users was not presented, we can compare Lloyds' users with the average user. Those who nominated Lloyds for EPS appeared to be [✂].[12]

Other factors valued by customers

50. This section uses the internal documents and surveys cited above to summarise all such additional factors alongside those already discussed.

51. The following table lists the factors which customers at Sainsbury's and/or Lloyds considered to be of at least some importance, organised by theme. The list is largely populated with factors taken from a comprehensive Sainsbury's survey, but includes categories from Lloyds' and the CMA's own survey.

Table 1: Parameters which Sainsbury's or Lloyds respondents considered to be of some importance in determining their choice of pharmacy

Group	*Parameter*	*Group*	*Parameter*
[✂]	[✂]	*Group*	*Parameter*
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]

Source: CMA analysis based on a Sainsbury's internal document and its survey.

52. Overall it is clear that while store convenience is the most important factor, customers value other aspects of pharmacy offering, and there is relatively consistent ordering of these other factors among customer preferences.

53. These additional factors can be summarised under the following headings:

(a) Convenience (including location and parking)

(b) Stocking and range

(c) Opening hours

[12] We have identified factors which are twice or half as often cited by Lloyds' customers relative to all EPS customers to highlight the important differences.

(d) Refurbishments and store environment

(e) Waiting times

(f) Staffing and quality of advice

(g) Online ordering, EPS, delivery and collection services

(h) Pricing and special offers

54. In addition, as explained in paragraphs 7.138 to 7.140 of the final report, providing information to local GP practices may also be a relevant parameter of competition, as might be the reaction to new pharmacy licences covered in paragraphs 7.100 to 7.104 of the final report.

Assessment of the local flexibility of identified parameters

55. This section runs through each of the parameters identified with reference to the survey evidence above. It summarises whether the parameter is relevant for local competition considering the specificities of the transaction and the nature of the pharmacy market.

56. Possible reasons why the Parties may not compete strongly on a particular parameter include to a greater or lesser extent the following:

(a) the parameter is not (and will not be) set at the local level;

(b) (for supermarket pharmacies) the parameter is not set with reference to conditions in the pharmacy market;

(c) the Cooperation Agreement [✂];

(d) regulation fixes the level of the parameter; and/or

(e) regulation sets a floor for the parameter which the Parties cannot substantially exceed.

57. This section is intended to establish which parameters are and are not relevant to local competition. It does not seek to assess whether the merger may change the Parties' incentives to compete on these variables. This analysis is conducted in the competitive effects section of the main document.

Parameter A: Convenience/location

58. It is not possible for the Parties to set this parameter differently across POMs, P-medicines, GSL and pharmacy services customers. Further, relocations of

pharmacies are regulated and approval must be granted before a move takes place.

59. The Parties submitted that:

> On the critical non-price variable of convenience (store location), there is no basis to conclude that the Transaction will change the existing market dynamic, due to the high degree of differentiation in the Parties' store location preferences (Lloyds' stores are situated on high streets or within/adjacent to GP surgeries, whilst Sainsbury's pharmacies are located within large supermarkets the location of which is driven by the interests of the wider groceries business).[13]

60. Lloyds told us that competitive reasons sometimes drove relocation, but that location changes would only occur in response to a non-supermarket rival.[14] Lloyds said that it did not vary its offering in response to what supermarket pharmacies were doing and it did not flex any aspects in response to the entry of a Sainsbury's pharmacy. Sainsbury's said it did not flex any aspects of its offer in response to local competition.

61. In relation to location preferences, we note that in some cases the Parties' store location preferences may be aligned. Specifically, both parties appear to have an interest in being located close to GP practices, although Sainsbury's submitted that the location of GP practices influenced neither the location of its grocery stores nor the decision to put a pharmacy in an existing grocery store. Furthermore, we note that Lloyds has expressed a desire to [✂], which we consider to be indicative of aligned location preferences.

62. We do not consider that Sainsbury's will relocate its stores to benefit pharmacy customers, given that this business represents a very small part of its turnover.[15] However, such location-based competition cannot be ruled out for Lloyds. This is particularly true given the established precedent in this sector that pharmacies will seek to locate near GP practices in order to improve their convenience.

63. Further evidence is found in Lloyds' Competitive Edge document which states that an appropriate response to possible entry in a local area may be to [✂], where [✂]. In support of this, we note that a majority of Lloyds' investment proposals considering relocation either mentioned competition or outlined the

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[13] Parties' initial submission, section H, paragraph 1.
[14] The Parties defined non-supermarket rivals as 'high street/community/GP surgery rivals in the same channel: independents, Boots, other national chains'.
[15] Parties' initial submission.

locations (and sometimes strengths and weaknesses of) other pharmacy stores in the area. Some of these cases included mention of supermarkets, including Sainsbury's. More detail is provided in paragraphs 7.100 to 7.104 of the final report.

64. We also consider that a further key element of convenience is parking, which is ranked [✂] in a survey asking Lloyds pharmacy users why they nominated that pharmacy for EPS, and an important aspect of convenience for their customers (as shown in our survey).

65. However, relatively few Lloyds pharmacies provide car parking,[16] and we consider that Sainsbury's is not likely to determine its number and prices (if any) of car parking spaces chiefly on the basis of its pharmacy offering. We consider that any relocation decision will include consideration of parking, and do not therefore consider it a separate parameter.

Parameter B: Range and stocking

Prescription medicines

66. Pharmacies must be able to source 'a full range of prescription products',[17] although there are no minimum stocking requirements (save for the obligation to provide prescription medicines with 'reasonable promptness', which necessitates either reasonable stock levels or scope for quick re-stocking). If a pharmacy does not have a prescription in stock, it will order it for the customer to pick up. Deliveries are usually twice-daily. Pharmacies commonly base their stocking on the requirements of their customers in the past and/or the prescribing mix of general practices in the area.

67. We have not seen evidence that stocking decisions for prescription medicines are currently based on indicators of local competition. Sainsbury's said that 'prescription stocks are determined by local need and all Sainsbury's pharmacies receive twice daily deliveries of prescription products from two wholesalers'. Lloyds also told us that its [✂] – although [✂] ultimately control the ordering of products'.

68. While we do not consider this a particularly significant possibility, we do not rule out that the Parties could in the future differentiate between areas in their stocking policies, for example were it to become more profitable to constrain

[16] Parties' initial submission.
[17] Parties' initial submission, section 2.1.

the size of stock rooms in order to devote more floor space to the sale of other goods or services.

69. In support of this, we note that Lloyds submitted in the context of overall customer satisfaction that 'the fundamentals of providing the prescription service (i.e. *product availability*, waiting and dispensing times) are key differentiators against competitors – particularly those which are not purely health or pharmacy focussed'. This suggests that Lloyds believes that customers value stocking policies where they are always able to obtain their desired prescriptions, and that they might react badly to 'out of stocks'.

70. In at least the particular instance where a medicine is out of stock, customers who need a medicine urgently may have to go elsewhere. As a result of the merger the Parties would recapture a proportion of such customers, and so the incentive to reduce the incidence of stock outages could in theory be weakened.

P-medicines

71. Pharmacies do not face restrictions on the range of p-medicines and GSL items which they can stock. The Parties submitted that they currently operated uniform range policies on p-medicines,[18] and we have not seen any evidence which suggests the contrary. We therefore consider that they do not currently compete by setting range differentially in response to local competition for these products.

72. The Parties submitted that post-merger they intended to 'extend the range of p-meds available in the target pharmacies to improve customer choice, in particular via the introduction of additional own-brand products'. Nevertheless, we consider that the Parties would have the ability to begin operating more localised pricing policies which would take into account the competitive constraints at the store level, were they to become incentivised to do so.

73. In general, we do not consider there to be particularly broad substitutability between many products in this category, and therefore consider that range may not be particularly valuable for consumers or costly for the Parties (as stocking an additional product will not in many cases cannibalise the sales of a product they already offer).

74. However, an incentive to economise on range may still arise where products are substitutable. The Parties might conserve shelf space and reduce their costs by offering only the more profitable brands, pack sizes and formats. We

[18] Parties' initial submission, section H2.2.

therefore consider that while there is at most limited current competition on range at the local level, pharmacies have the ability to alter aspects of this parameter.

Pharmacy services

75. Pharmacies also face some freedom in the range of services they offer. Some services must be available at all pharmacies. These are, for example:

(a) **Promotion of healthy lifestyles**: Each year pharmacies are required to participate in up to six campaigns at the request of NHS England, which involves the display and distribution of leaflets.[19]

(b) **Disposal of unwanted medicines**: Pharmacies are obliged to accept unwanted medicines from patients. The pharmacy will, if required by NHS England or the waste contractor, sort them into solids (including ampoules and vials), liquids and aerosols.[20]

(c) **Support for self-care**: Pharmacies will help manage minor ailments and common conditions, by the provision of advice and where appropriate, the sale of medicines, including dealing with referrals from NHS Direct/ NHS 111.[21]

(d) **Signposting**: NHS England will provide pharmacies with lists of sources of care and support in the area. Pharmacies will be expected to help people who ask for assistance by directing them to the most appropriate source of help.[22]

76. However pharmacies may also choose to provide a range of additional private services or NHS services where these are commissioned. Celesio submitted that:

> A local commissioning authority may choose to limit the availability of certain services in a particular local area. This may be done if the authority believes that enough pharmacies in the local area already provide a service, given the assessed level of demand. As a result, pharmacies may not always be free to 'compete harder' by offering more services at the local level. Equally … 100 hour pharmacies have a further set of services that they will be obliged to provide, as determined at the time their

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[19] PSNC website: Public Health (Promotion of Healthy Lifestyles).
[20] PSNC website: Disposal of Unwanted Medicines.
[21] PSNC website: Support for Self Care.
[22] PSNC website: Signposting.

100 hour licence was granted. Together, these factors mean that the scope to set the range of services offered at a pharmacy with respect to competitive indicators at the local level is very limited.

77. We consider that this submission suggests that pharmacies with a standard 40-hour licence (the vast majority of Lloyds' estate) are free to compete harder by offering more services at the local level, where local commissioning authorities believe that that insufficient pharmacies in the local area already provide a service.

78. Frequently, pharmacies leave decisions to provide services to local managers. Sainsbury's told us that its range of services may vary from area to area 'to meet the needs of the local populations', and that 'reliance is placed on local pharmacy managers to risk assess and decide if they can provide enhanced services'. In relation to private services, Sainsbury's submitted that its 'approach to providing private pharmacy services is established and driven at the national level (for example, private flu vaccinations)'.

79. Further, Lloyds' Competitive Edge document indicates that pharmacies may [✂].

80. We also note that there is variation in the number and type of local services which are offered at Sainsbury's stores. This is consistent with the Parties' submissions that [✂],[23] [✂].[24] The Parties submitted that local managers would consider factors such as staffing skill levels, store-level infrastructure and the local commissioning context in their decision about whether to offer services. This implies that the range of services is flexible at the local level.

81. A 2013 Sainsbury's document 'Pharmacy + Healthcare Vision' stated that [✂], outlined an intention to [✂], and [✂].

82. Sainsbury's also said that [✂]. Sainsbury's also told us that services were generally profitable so when the pharmacy had the skills and capacity to offer them there was no incentive for Sainsbury's to hold them back.

Parameter C: Opening hours

83. Pharmacy opening hours are regulated. Pharmacies operate on broadly either one of two licences,[25] both of which specify a minimum number of hours over

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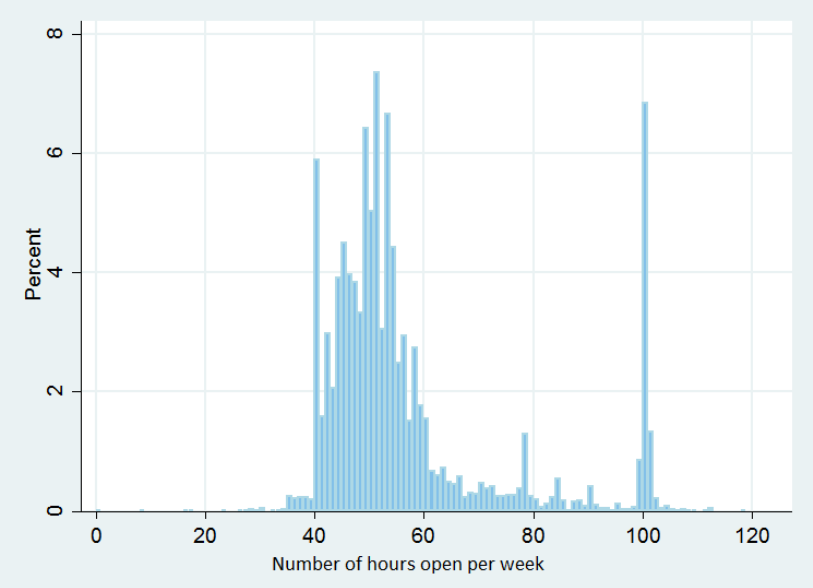
[23] Parties' initial submission, 3.8.
[24] ibid.
[25] More technically, either a pharmacy is on a list which authorises it to provide services or it is not. However different conditions attached when a pharmacy is entered onto the list. These can be divided broadly into two groups: those setting a minimum number of hours above 100 (i.e. licences which were granted under the 100

which each must open (ie the number of 'core' hours a pharmacy must operate for).[26]

84. In practice, many pharmacies on 40-hour a week contracts are open for more than this minimum (ie they open for a number of 'supplementary hours'). Around 90% of pharmacies in England (where we have the best data) are on 40-hour contracts,[27] and around 78%[28] of these open for at least 5 hours more than this minimum. The same is not true for the remaining 10% of pharmacies in England which are on 100-hour contracts: very few are open beyond this number of hours.[29]

Figure 7: Graph showing the percentage of pharmacies in England open for a distribution of total number of opening hours per week



Source: CMA analysis of NHS Choices Data.

85. Figure 7 shows the distribution of opening hours across a large sample of pharmacies in England for September 2015,[30] indicating there is substantial

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hour entry exemption) and those which set a more standard 40 hour minimum number of hours (and were not granted under this exemption). We follow the Parties' convention in referring to two "types" of licence for clarity of expression.

[26] According to the PSNC, 'there is also a provision which allows a pharmacy to apply to open for less than 40 hours, but if NHS England does grant such an application, it can specify which opening hours the pharmacy must open.' See: PSNC website: Opening hours.

[27] CMA analysis.

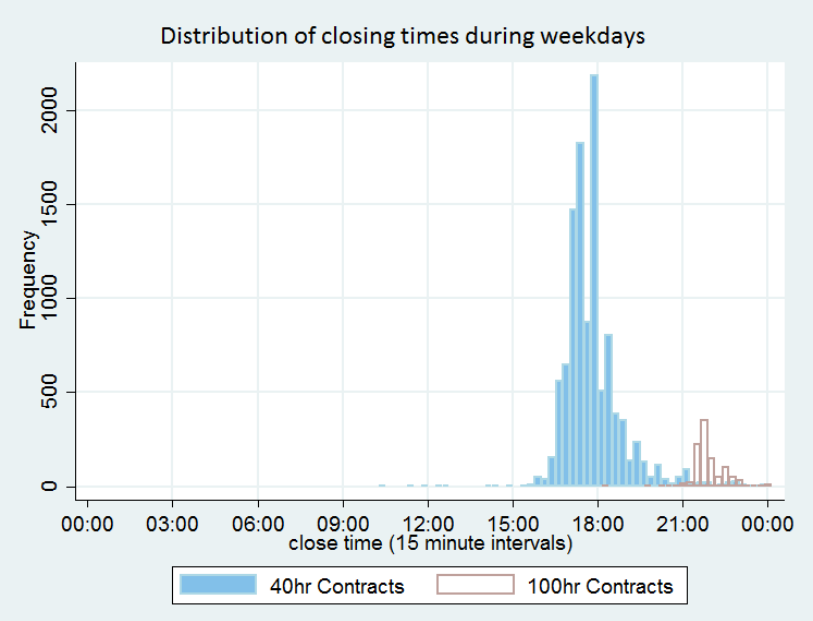
[28] CMA analysis.

[29] Around 10% of pharmacies are open for at least 100 hours per week, and around 2% are open for over 105 hours per week. Source: CMA analysis based on data from NHS Choices.

[30] Data sourced from NHS choices, downloaded January 2016. A very small number of pharmacies for which our data indicated opening hours of 120+ per week were removed to enhance readability of the chart and given that such results are outliers potentially resulting from bounded data quality. We are aware that this data does not include information on approximately 5% of pharmacies which were open, which had NHS ODS subtype 'pharmacy', and which were classed as active in November 2015.

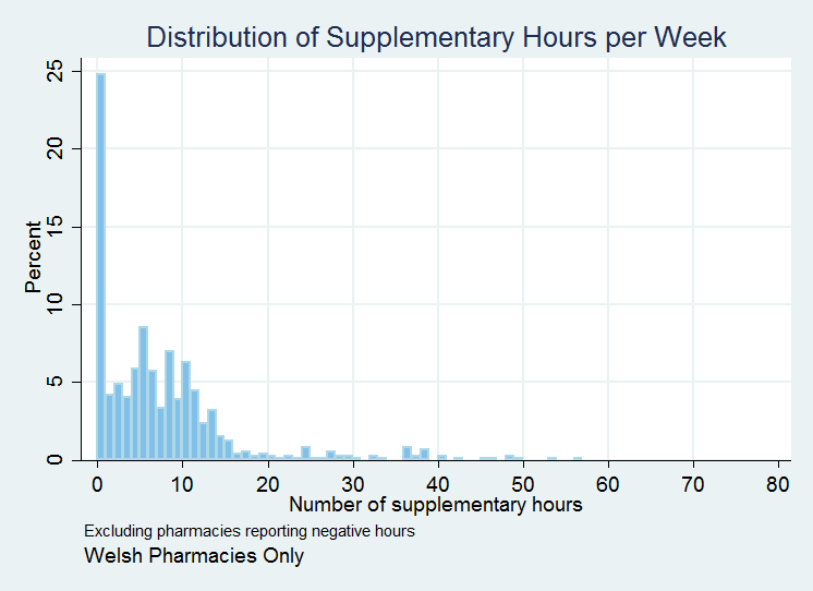
variation across pharmacies. Figures 8 and 9 below provide further detail of other variation among pharmacies in England and Wales.

Figure 8: Closing time during weekdays



Source: CMA analysis.

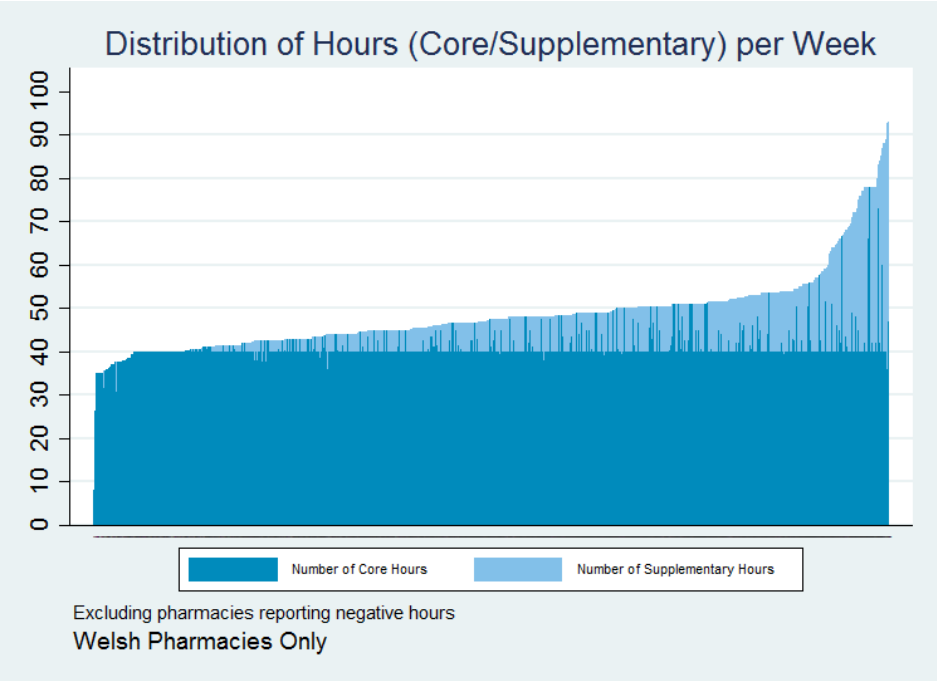
Figure 9: Number of additional hours (Wales)



Source: CMA analysis.

86. Figure 10 below is a stacked bar chart for all pharmacies in Wales ranked by total number of opening hours. This gives a measure of the total number of hours which cannot be flexed easily versus those that can.

Figure 10: Chart showing the breakdown between core and supplementary hours in Wales



Source: CMA analysis.

87. Pharmacies may apply to increase or reduce the number of core hours for which they are open, or to change the timing of the core hours across the week. In practice, we understand that approval for such changes is only forthcoming in a limited set of circumstances, although it may be easier to increase core hours or move to more favourable timings from the perspective of the local commissioning board, than it is to decrease core hours.

88. Pharmacies may also increase, reduce, or rearrange their supplementary opening hours, and do not require approval to do this. They must, however, notify the local NHS commissioning board, a process which takes up to 90 days.[31] Further, the Lloyds Competitive Edge document suggests that the notification process may be faster if an increase is suggested.

Opening hours at Sainsbury's stores

89. For pharmacies which are part of a store selling a wide range of other products, such as supermarket pharmacies, opening hours may be set with reference to non-pharmacy items. For example, opening hours in Sainsbury's pharmacies are currently set to broadly match those operated by the wider store.

90. The Parties submitted that less than [✂]% of Sainsbury's pharmacies' hours differ by more than 3 hours on any day of the week from the main store.

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[31] The National Health Service (Pharmaceutical and Local Pharmaceutical Services) Regulations 2013, paragraph 65.

However, they also submitted that [✂]% of Sainsbury's pharmacies' opening hours are shorter than the main store hours, typically opening within one hour of the main store and/or closing an hour or two before the main store'.

91. There appear to be two main reasons why Sainsbury's may aim for consistency between pharmacy and supermarket opening hours:

(a) First, [✂].[32]

(b) Secondly, [✂].

92. The Transaction may change the incentives around pharmacy opening hours: Lloyds does not benefit from sales in the grocery segment of these stores, and therefore may seek to reduce opening hours. However, there are two reasons why this parameter is likely to remain relatively inflexible at Sainsbury's:

(a) First, the terms of the Cooperation Agreement [✂] Lloyds' ability to [✂].

(b) Around half of Sainsbury's stores (46%)[33] currently operate on 100-hour-a-week licences, and do not exceed this minimum. Therefore, in order to reduce the opening hours of these stores, Lloyds would have to either apply for (seldom granted) exceptions to these licences, or acquire (at significant cost) and replace the store's licence with a 40-hour-a-week licence from elsewhere, with any such relocation subject to regulatory restrictions and an approval process.

Opening hours at Lloyds stores

93. Lloyds submitted to us that opening hours were always set at the local level, and that its opening hours were generally set to be consistent with those of local surgeries. This was to capture customers coming straight from the surgery to get a prescription dispensed.

94. Nevertheless we consider that the motive for doing so may be to capture those customers who would otherwise go to other pharmacies whose opening hours were longer. Therefore competition still drives opening hours, even if GP surgery hours provide a focal point.

95. Indeed, Lloyds' Competitive Edge document states that opening hours are reviewed [✂]. Further, almost all Lloyds stores open for more than the minimum number of hours (around [✂]% open for at least 45 hours and less

[32] We note that, for almost half of Sainsbury's stores, the pharmacy already opens for hours that are different from the main grocery store.
[33] CMA calculations on data provided by NHS England.

than 100 hours), and therefore are subject to a reasonable degree of flexibility in the increases and decreases that can be made.

96. Lloyds later submitted that it 'can and does flex its opening hours in response to competitor openings in certain circumstances', citing a particular instance of an independent entering very close to one of its stores. It also submitted, however, that it has (to the best of its knowledge) [✂], and more generally that competition from Sainsbury's does not drive its opening hours. We did not receive evidence to support this statement.

97. Lloyds also submitted that opening hours were not an important driver of choice for its customers. Lloyds noted that:

(a) only 1.4% of all Lloyds consumers mentioned opening hours in response to an unprompted question asking the reason for their choice of pharmacy on the day of their visit; [34]

(b) when prompted to choose from a list of eight factors, only 3% selected opening hours as the most important reason for their original choice of pharmacy;[35] and

(c) when prompted to choose from a list of eight factors, only 28% of customers considered opening hours to be among the top three reasons.

98. We consider that the last statistic in particular suggests that a sizeable minority of customers regard opening hours to be an important driver of choice. Opening hours was the second most cited in this question for Sainsbury's, and the fourth most cited for Lloyds, in both cases with convenience being cited as most important.

99. We note that Lloyds investment documents, annexed below, suggest that competition can sometimes be a factor (often amongst a number of others) which drives Lloyds to change its opening hours. One example is in [✂], where an investment proposal stated that 'In an attempt to claw back items from local competitors, it has been agreed to increase the opening times of the pharmacy to 7pm in line with the health centre'. Another example is [✂], where Lloyds relocated closer to a new GP surgery and extended its hours to match that surgery. The document stated that under the do-nothing scenario, "it is predicted that items would reduce by 20% with further impacts as more

[34] Further submission of the Parties in relation to possible remedies and in response to the provisional findings, p28.
[35] Further submission of the Parties in relation to possible remedies and in response to the provisional findings, p28.

patients chose to use Asda, which is closer to the new medical centre development".

100. These are also illustrative of our view that although Lloyds does focus on bringing its hours in line with GPs', it does so largely to prevent patients of the GP going elsewhere, and therefore does so for competitive reasons.

Parameter D: Refurbishments and store environment

101. The National Health Service (Pharmaceutical and Local Pharmaceutical Services) Regulations 2013 state that pharmacies must ensure that the areas of the pharmacy in which patients receive NHS services are 'an appropriate environment in which to receive healthcare',[36] and are sufficiently clean.

102. The Parties submitted that the GPhC sets the Standards for Registered Pharmacies (the Standards) which are designed to 'strengthen the regulation of pharmacies and improve the quality of pharmacy practice'.[37] These are monitored by the GPhC Inspectorate, which conducts a risk-based inspection of all pharmacies in the country.

103. As part of these standards, pharmacies must ensure that 'The environment and condition of the premises from which pharmacy services are provided, and any associated premises, safeguard the health, safety and wellbeing of patients and the public'. The same end must be true of the 'equipment and facilities used in the provision of pharmacy services'.[38]

104. However, pharmacies retain substantial discretion around the overall feel of the store and the facilities that they offer.

105. In reviewing the 139 Lloyds investment proposals, we noted that there were a number of examples where the quality of pharmacy stores was not considered by Lloyds itself to be high. Specifically, we note that documents described branches as being [✂].

106. While all of these branches were being refitted or relocated and therefore having these problems rectified, these examples highlight the importance of refurbishments in providing customers with a quality environment.

107. As regards regulation, we note that there were often no references to regulatory issues when mentioning quality issues such as the above, and also

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[36] The National Health Service (Pharmaceutical and Local Pharmaceutical Services) Regulations 2013, Regulation 28(g).
[37] Parties' initial submission, section 6.2.
[38] ibid.

that the pharmacies were not prevented by regulation from having their qualities deteriorate to the state described (although regulation may have prevented further deterioration). We therefore consider that while there is a minimum quality floor, this does not fully incentivise a refurbishment programme which is sufficiently regular to prevent quality issues in the pharmacy environment.

108. The Parties submitted that they were unable to find a relationship between concentration and how recently a refurbishment had occurred at Lloyds. We found some limited evidence that refurbishment occurs more swiftly following competitor entry than otherwise at Lloyds. This evidence is considered further in Appendix G.

109. Lloyds also submitted that 'refurbishment of stores is undertaken for the purpose of increasing a pharmacy's competitive position.' [✂] It later submitted to us that it has never accelerated or implemented a refurbishment in response to competitive pressure from Sainsbury's.[39]

110. In considering this, we found around 25 investment documents relating to refurbishments in the set provided to us by Celesio.[40] Around 18 of these documents either referred specifically to competition, or included information about the location of other nearby pharmacies. An example is in [✂], where Lloyds noted that 'Patients often go elsewhere as the pharmacy feels claustrophobic', suggesting that the refurbishment was done in response to patient responses to poor environment quality. The Lloyds investment board were presented a map including a Tesco pharmacy, and the document stated that 'There are 4 pharmacies in the town, Lloydspharmacy, Boots, Tesco and an independent. Boots is the nearest competitor approximately 400m away in the town centre.' We consider that this suggests Lloyds considers the presence of other pharmacies (including supermarkets) relevant to its refurbishment decisions.

111. Sainsbury's submitted that 'pharmacy refurbishments are carried out as part of an overall store refurbishment', and that 'the only occasion when a change in the planned refurbishment schedule may be necessary is if Sainsbury's is required, following a regulatory visit, to improve the standards of the pharmacy premises'.

112. [✂]

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[39] Further Submission of the Parties in relation to Possible Remedies and in response to the Provisional Findings, page 22

[40] Excluding cases where Lloyds relocated into higher quality premises than its current ones, a situation which is not unlike refurbishment in some cases.

113. Third parties have also told us that they consider the environment and facilities offered in store to be relevant to local competition. As an example, WR Evans told us that it might install a coffee machine were a new store to open in its area, in order to retain its existing customer base.

Parameter E: Waiting times

114. Waiting times and staffing levels are closely related, as an increase in the number of staff who can process a prescription, sell p-medicines and services, and provide advice to customers is likely to imply a decrease in waiting times when the store is busy. The quality of staff training and the balance of locum and permanent staff used are also both likely to be related to waiting times, both of which are discussed below.

115. Waiting times may be particularly important for prescription customers, who typically need to wait for their medicines to be made up by the pharmacist after giving in their form.[41]

116. There is some evidence that pharmacies do compete on this parameter. For example, a Lloyds internal document providing advice to area managers states that the target waiting time is less than [✂]. Lloyds told us that this target was not flexed at the local level. We note that, where there has been a store opening, pharmacies are encouraged to review the target to check they are meeting it.

117. Lloyds told us that [✂]. Lloyds also submitted that the decision to provide additional equipment is not based on local competitive conditions but instead the [✂].

118. Lloyds further said that [✂].

119. Sainsbury's monitored waiting times in a customer satisfaction survey [✂], although it submitted that this related to an OPD pharmacy and that waiting times were a key performance indicator for Sainsbury's under the terms of its contract with the relevant NHS trust. We therefore consider that the document would have little read-across to community pharmacy. Sainsbury's further submitted that the 'supermarket pharmacy model is different from the high

[41] Unless they are picking up a prescription that has been sent via EPS or collected from the GP on their behalf, in which case, their medicine may be ready for them immediately. Supermarket customers who drop their prescription off at the start of their shop, and pick up their medicine at the end, may also not be concerned with waiting times.

street / local model, as its customers are *actively encouraged* to drop off their prescriptions whilst they shop in store'.

120. We note that Sainsbury's still has an incentive to ensure that prescriptions are completed by the time customers have finished their supermarket shop, and that its incentives may be similar to Lloyds' where customers do not drop off their prescription as described.[42] Sainsbury's told us that only a small percentage of its customers do not undertake a supermarket shop whilst their prescription is being prepared.[43]

Parameter F: Staffing and quality of advice

Number of staff

121. By regulation, pharmacies may only operate if there is a pharmacist present,[44] and must fulfil prescriptions with 'reasonable promptness'.[45] Further, the NHS reimbursement model sets a minimum number of qualified dispensing staff hours for funding in proportion to the number of prescriptions that are dispensed in a pharmacy. For example, pharmacies dispensing between 2,000 and 3,000 items a month must be staffed for at least 40 hours, while those dispensing between 11,000 and 12,500 items a month must be staffed for at least 150 hours in total across all staff members.

122. Pharmacies failing to meet the minimum hours for their volume of prescriptions will be paid for the lowest number of prescriptions consistent with the staffing band their actual hours fall into, and therefore there is a strong incentive not to drop below this minimum. Chains may also have their own central policies and targets.

123. [✂]

124. Lloyds submitted that most of its stores would be staffed above the regulatory minimum for a large part of their opening hours. We therefore consider that regulations are not currently fixing its staffing decisions in most local areas.

125. Lloyds' internal guidance on entry responses states that area managers should consider [✂] where another pharmacy has or might set up in the area, and as referenced in paragraphs 7.118 to 7.123 of the final report, there

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[42] [✂]
[43] We note our consumer survey showed that 17% of Sainsbury's pharmacy customers did not make any other purchases in the Sainsbury's store.
[44] PSNC website: Responsible Pharmacist.
[45] The National Health Service (Pharmaceutical and Local Pharmaceutical Services) Regulations 2013, Regulation 5.

appears to be reference to varying staffing levels in response to competition in Lloyds internal investment documents.

126. Lloyds said it determined its staffing levels according to a [✂] model that was consistently applied in [✂] of its stores. This model was based on a model that looked at [✂], [✂] (with a particular emphasis on [✂].[46] However, in an earlier submission Lloyds said the model was a guide and local amendments could be made: 'A [✂] tool is used as a guide for the staffing profile of each store. The productivity tool uses the [✂] of the store and, based on [✂], recommends a staffing profile. The Head of Region and Area Managers own and review the outputs of the [✂] too, and make any [✂] amendments where appropriate. The model is reviewed on a [✂] basis'.

127. Lloyds told us that even were it to flex this parameter in response to competition, it would not consider the presence or absence of Sainsbury's in its decisions. Lloyds did not submit evidence to support these claims.

128. Lloyds said it believed that certain non-price aspects of its offering were crucial to driving overall customer satisfaction. Lloyds said in particular, it believed that the quality of its staff was a highly positive distinguishing factor, in terms of their availability, ability to listen to customer needs, and the quality of their advice. Lloyds said that, given that the majority of Lloyds' retail customer relationships were prescription-based, staff knowledge and experience, together with the fundamentals of providing the prescription service (ie product availability, waiting and dispensing times) were key differentiators against competitors – particularly those competitors which were not purely health or pharmacy focused.

Staff training and quality of advice

129. There are a number of regulations which set a minimum standard on the quality of staff training. Pharmacies must check the qualifications of and make 'arrangements for identifying and supporting the development needs of all staff engaged in the provision of NHS services'.[47]

130. Further, the Standards require that 'staff are empowered and competent to safeguard the health, safety and wellbeing of patients and the public',[48] and the Terms of Service on which pharmacies are granted their licence also

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[46] Further submission of the Parties in relation to possible remedies and in response to the provisional findings, p18.
[47] The National Health Service (Pharmaceutical and Local Pharmaceutical Services) Regulations 2013, Regulation 28(e).
[48] Parties' initial submission.

require that proper inductions and training are provided for staff, and that mechanisms are in place to identify poor performance.[49]

131. However, there may remain scope to increase or reduce levels of training and support of staff to levels, provided the minimum level is always exceeded.

132. As evidence of this, Lloyds' Competitive Edge document[50] states that area managers should [✂] where there is potential for new entry. The document also encourages managers to [✂].

133. The Parties submitted that 'Staff training and career opportunities for Sainsbury's pharmacy staff will also be greatly enhanced as a result of the transaction'.[51]

134. The Parties submitted that there was no variation in the type, quality or availability of training at a local level, and that any reduction of the level of training given would raise issues of patient ethics and result in brand damage.

135. Boots also told us that it would respond to entry in part by 'ensuring all staff are properly trained'. We do not have direct evidence to suggest that Sainsbury's competes at a local level by varying its staff training with local competitive conditions.

Use of permanent vs locum staffing

136. Evidence from consumer surveys indicates that consumers place value on seeing the same pharmacist – which is less likely to be the case if the pharmacy often hires locum staff.[52]

137. It may be possible for the Parties to choose to resource pharmacies facing higher levels of competition with full-time staff, wherever they face a choice in allocating their locums. Both pharmacies do have a significant number of locum staff on their books.[53]

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[49] ibid.
[50] The Lloyds Competitive Edge document. We note that Lloyds' general responses in relation to this document are discussed in the final report.
[51] Parties' response to the issues statement.
[52] We note that locums may be very effective pharmacists, however we also note that a Sainsbury's consumer survey indicated that a significant number of consumers preferred to 'always see the same pharmacist'. We consider that, because this survey was also asked of customers of other pharmacies (the base was Sainsbury's grocery shoppers, not just Sainsbury's pharmacy shoppers), this preference may apply to customers of all pharmacies. Fulfilling this aim is more compatible with permanent staff than with locum staff, and therefore consumers may gain a benefit from pharmacies being staffed permanently.
[53] Parties initial submission.

Parameter G: Online ordering, EPS, delivery and collection services

138. Pharmacies retain full discretion as to whether they offer online doctor services for patients to obtain prescriptions, online ordering of medicines, collection of prescriptions from GP practices and delivery of medicines. They also may have some discretion as to how quickly they implement updates from their third-party-provided systems for the dispensing of electronic prescriptions.

Online ordering/online doctor service

139. We consider that the quality of both online doctor services and provision of online ordering for medicines is set centrally across stores, as is any pricing for delivery of products bought online. Sainsbury's does not offer these services.

Electronic prescription service

140. Celesio submitted that the EPS was 'based on standard NHS technology that is provided by third parties'. It also told us that 'EPS advances are managed by the third party dispensing system providers … and not by pharmacy operators themselves. Therefore, any advances will be available to a large number of pharmacy operators at the same time'.

Delivery services

141. As outlined in Section 7 of our final report, some of Lloyds' investment proposals are suggestive of delivery being a relevant competitive parameter in 2012: two documents from that year ([✂]) suggest that Lloyds had introduced delivery services in response to competition from multiples.[54] We note that in 2016 almost all Lloyds' stores offer delivery however.

142. Specifically, only around [✂]% of Lloyds' stores do not offer home delivery[55] while [✂].[56]

143. Lloyds also noted that the decision to offer delivery services was taken locally by the pharmacy manager where they felt the service was appropriate and would add value. Lloyds said that typically, the service would be offered to customers with mobility problems, which suggests the possibility that Lloyds

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[54] Lloyds told us that they do "not deny using a delivery service competitively; however, Lloyds' delivery service offering is clearly not influenced by competitive pressure from Sainsbury's, as they do not generally offer such a service""
[55] CMA calculation based on Lloyds data.
[56] Parties' initial submission.

can vary the scope of its offering in any given local area. Lloyds also noted that all care homes would have a delivery service as part of the service level agreement, which would typically be daily.

144. A Sainsbury's internal [✂]. We consider that these factors are likely to be relevant to all pharmacies.

145. Sainsbury's submitted that it abandoned a home delivery service roll-out beyond the [✂] in the trial, and that this service accounted for a trivial percentage of its total sales. We consider that restarting this programme would require capital expenditure at Sainsbury's.

Prescription collection services

146. Sainsbury's also said that it is limited in its ability to compete on prescription collection services because it does not have a formal collection service, but rather has staff collect prescriptions where feasible on a case-by-case basis using their own vehicles. We note that this parameter is set at the local level in Sainsbury's.

147. There is some evidence that Lloyds competes on this variable: its internal guidance on entry responses states that area managers should [✂].' As noted in Section 7 of the final report, a Lloyds investment proposal for [✂]. The Parties said [✂]. However, Tesco has confirmed that the pharmacy opened in October 2009. We note this is still nearly three years before the date of the investment proposal. However, we infer from this example that a prescription collection service may be used in some circumstances to improve customer retention. We also note, as outlined in the final report when discussing the Competitive Edge document (subject to the caveats acknowledged about this document), our consideration that Lloyds is able to flex this locally, and our consideration of Lloyds' incentives in areas of high diversion, suggest this parameter is of relevance.

148. Further, we note that the provision of this service is not binary: prescription services could vary in the 'collection radius' as one example recognised by the Parties.[57] Lloyds told us that 'the collection radius is driven solely by profitability (balancing the potential revenues gained against the costs of collection): Lloyds does not take the level of local competition into consideration'.[58]

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[57] Further submission of the Parties in relation to possible remedies and in response to the provisional findings, p24.
[58] ibid.

149. However, we consider that the revenues gained are influenced by the level of competition in the area. Were the level of competition to fall in a given area where Lloyds operated a collection service, Lloyds could expect to receive a higher proportion of revenue coming from a relatively nearby GP practice for which it stopped operating a collection service than would be true under greater competition. If a change in competition is sufficiently large, depending on the incremental cost of collection for additional GP practices, it may therefore become profitable to reduce its collection radius. By considering profitability in determining the scope of its services, Lloyds therefore implicitly takes into account the level of competition in the area.

Parameter H: Pricing and special offers

Prescription medicines

150. Pricing for prescription medicines is fixed nationally: patients pay a flat-rate charge unless they are exempt. Most prescription customers are exempt.[59]

P-medicines

151. All the evidence we have received points to prices for p-medicines being set centrally across pharmacy chains' stores. Boots told us that [✂]. The Parties submitted that they used uniform pricing,[60] although they conceded that local competition could **in principle** take place on the price of p-medicines.[61]

152. While the fact that companies are not setting such parameters at a local level now (and have not done so in the recent past) tells us about **current** conditions of competition, this may change in the future.

153. Given the technological and corporate similarities between Boots and Lloyds (eg both are owned by multinational corporations with extensive experience in pharmacy), this may suggest that Lloyds could develop similar technology and implement local promotions (or pricing), were incentives to change.[62]

154. However, the probability that local pricing would be implemented right across the sector (including independents) is lower. For example, Day Lewis told us

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[59] "Exempt prescription items represent 89.9 per cent of all prescriptions dispensed". Source: Prescriptions Dispensed in the Community – England 2004-2014, Published 7 July 2015. Source: Health and Social Care Information Centre (Prescriptions Dispensed in the Community, England 2004-14 (7 July 2015)). This statistic indicates that most prescription customers will be exempt.
[60] Parties' initial submission, p59, section H3.12.
[61] Parties' initial submission, section H1.
[62] Lloyds submitted that its systems would not currently support localised pricing, as only a small number of price 'bands' were available which were used to support different VAT regimes in the UK, Jersey and Guernsey. We consider that while Lloyds systems may not currently support fully localised pricing, they would have the ability to implement systems with this capability for the reasons above.

that implementing the technology to introduce and track differential pricing would be difficult for independent pharmacies. Therefore the ability to set this parameter locally differs across pharmacy chains.

155. Therefore the extent to which local pricing is relevant to the investigation depends on whether:

(a) market conditions will change in the near future to incentivise local pricing either as a result of the merger or other, for example technological advances; and

(b) localised pricing could be implemented at a sufficient number of chains to permit an SLC arising at the local level.

Pharmacy services

156. Pharmacies do not charge for services that are commissioned by the NHS. For these services, price to customers is not a relevant competitive parameter. Where prices are negotiated or set through competitive tender, prices charged to local NHS bodies could rise, if an increase in concentration changed the negotiating strengths of local pharmaceutical councils relative to commissioners. We consider that this situation could in theory arise in those local areas in which we find competitive concerns, although we note that services constitute a very small proportion of the Parties' revenues.

157. Pharmacies may charge patients private services. The Parties told us that they set this centrally across stores. Celesio further submitted that 'for Lloyds' private B2C services, there is no regional variation on PQRS, advertising or marketing strategy by region'.

Table containing text of interest extracted from each Lloyds investment proposal

1. This section contains extracts from each Lloyds investment proposal[1], whether the proposal contained a clear link to competition or not.[2] We have reviewed each document in order to make sure that we consider any references to competition in the context of the broader range of motivations for investment (and other changes to QRS).[3] We have highlighted any particular documents of interest in the final report and in the appendix above.

[1] The extracts are verbatim.
[2] The table excludes some documents which appear to be duplicates or reapprovals.
[3] The Parties have provided some comments on a number of these documents. We reviewed these comments to ensure that we are appropriately weighting the relevant documents in our overall assessment. We did not consider that the comments changed the overall points we have drawn from these documents which are outlined in the final report of the report and the appendix above.

Area	Type	Text of interest
[✂]	Health Centre Relocation	"• Local Competition Following the relocation of the [✂] Surgery, in early 2010 from the [✂] area to [✂], there is only Boots as a competitor in central [✂]. There are two other pharmacies each located in supermarkets, Tesco and Sainsbury on the outskirts of [✂], circa 4km" (p3)
[✂]	Health Centre Relocation	"This project will convert a pharmacy from a borderline loss maker to a significant profit earner and secure its future. The Do Nothing is that another pharmacy contract will relocate onto the HC site making [✂] a loss maker in year 1. Current capture of available prescriptions is low at only 17%. It is expected that this will grow to 35% in year 1 and to 50% by year 3 by closer working with the GPs. The [✂] HC is situated on the main town centre car park and the pharmacy extension will have good visibility."
[✂]	Health Centre Relocation	"Extension of the HC pharmacy [✂] will also provide patients with an internal as well as an external entrance to the pharmacy. There will be a new 25 year lease. The lease on the current pharmacy expires in Sep 2013 and the development of the Health Centre leaves Lloydspharmacy with no security without a new lease agreement. The Do Nothing therefore reflects the need to relocate to alternative retail premises if the [✂] Medical Practice used the space for its own use. Alternative retail premises are 150m away on the opposite side of a busy main road."
[✂]	Refurbishment	*"• Local Competition* *There are two competitors within [✂], both located in the town centre, 1/2 mile away; Boots and independent operator, Omnicare Pharmacy. Omnicare has 9 branches in and around [✂] and open usual retailing hours. They also offer a delivery service, as do Boots Pharmacy. There are various other surrounding pharmacies who all also offer a collection and delivery service. It is therefore proposed that a delivery service is introduced to ensure we remain competitive."*

[✂]	Closure	*"• Local Competition* *There are many competitors in the area, due to the nature of the location. The 3 nearest are Boots, Rowlands and [✂] independent pharmacy. Rowlands is located (c400m) nearest to the 2 main surgeries, with 920 being second hit. There are 2 further Lloydspharmacies located approximately 1 mile distant; [✂] which is located in a residential area in a new purpose built retail parade and [✂] also located on the A8 in a terraced tenement building with retail on the ground floor."*
[✂]	Health Centre Relocation	"UK board approval to relocate [✂] to a new build extension to the [✂] Medical Centre was originally granted in 2009. … Board approval was again granted in May 2012. However, the Do Nothing scenario assumed the opening of a 100hr competitor on site which is now unlikely due to the change in regulations. The deal has been renegotiated with the developer and the new terms are included in the revised financial appraisal"
[✂]	Refurbishment	"• Local Competition There are 15 pharmacies in total on [✂], 4 of which are Lloydspharmacies ([✂] Medical Practice branches and [✂], co-located with the [✂] Health Medical Practice branches). The next biggest operator, a very wealthy company, is Healthcare Pharmacies who also have 4 pharmacies, 3 of which are co-located with other surgeries [✂]. The 4th is located within a Waitrose Supermarket. They also have a non-contract health and beauty retail store and service 11 of the islands nursing and residential homes. They are not an AAH customer and are supplied by Phoenix (1st line) and Unichem (2nd line). The third largest operator on [✂] is Pharmacy Locale (backed by the Coop), who have 2 pharmacies within its supermarkets. This company is an AAH first line customer with 5 accounts on Jersey and 2 [✂]. The Co-op owns a third share in the Edgar Holdings Group. Boots have 1 pharmacy located on the High Street in the main shopping area of [✂]. It should be noted that there is no limitation of contracts in [✂] (providing the premises are suitable and meet general professional premises registration requirements). It is therefore possible to open a new contract relatively easily. There are, however, immigration and housing restrictions which apply." "This includes a full refit in the first year due to taking on extra space and an increase in staff costs of £25k to account for a new delivery driver service. The premium would be paid this year" "Dispensary capacity issues restrict PACT capture growth and it is therefore proposed to refit the pharmacy as soon as possible after the new lease has completed"

[✂]	Health Centre Relocation	Map with Sainsbury's & Tesco located outside 500m radial [Text missing]
[✂]	Retail Relocation	"We are currently the only pharmacy provider within [✂]. The next nearest pharmacy is located 7 miles away in the town of [✂]. All 3 pharmacies here are competitors. As mentioned above, [✂] have recently been granted a new contract to trade from a unit on the High Street. We appealed the Health Board's decision, however this was upheld by the National Appeals Panel. We have recently submitted a legal challenge against the decision and await hearing" "Due to the solus nature of the branch, any previous attempts to relocate have not been financially favourable. Larger premises also rarely come up for lease in the right location."
[✂]	Health Centre Relocation	*Map with other pharmacies – none Supermarkets*
[✂]	Health Centre Relocation	"GPs entering into "profit share scheme" with Lloyds and will oust independent which is inside the GP surgery but in inadequate premises"
[✂]	See above	
[✂]	Health Centre Relocation	"• Local Competition There are 2 other pharmacy operators in the town; Rowlands who are located on the High Street in the town centre and an independent pharmacy ([✂]) who is located in a small retail parade within a residential area to the east of the town centre. There are various discounted independent traders in the town, a Superdrug and an operator retailing mobility aids and independent living equipment. A Coop supermarket is located opposite the shopping centre. Tesco's are rumoured to open in the future."

[✂]	Retail Relocation	"• Local Competition There is a Boots and Superdrug pharmacy located in the [✂] in the town centre of [✂]. An independent ([✂]) is located to the north of town centre in the suburb of [✂] and there is a neighbourhood Boots located opposite [✂] medical centre to the south of the town centre. The nearest Lloydspharmacy ([✂]) is located approximately 0.8 miles to the west of the branch." "Our pharmacy is currently located in a dying retail parade and is at maximum capacity (137%). Growth of the business is therefore at risk. This proposal would therefore allow us to expand the business and secure our future in this location"
[✂]	Retail Relocation	*"• Local Competition* *The nearest competitor pharmacy is a branch of Rowlands 600m from [✂] further out from the city. All other local retailers are small independent companies along with banks and building societies"*
[✂]	Relocation	*"• Local Competition* *The only other pharmacy in [✂] is Lloydspharmacy [✂] which is co-located with the two GP Practices that serve the town at the [✂]."*
[✂]	Closure	*"There are no viable relocation options and closure is therefore mandatory. The nearest surgery is half a mile away and has an onsite pharmacy."*
[✂]	Refurbishment	Map with Boots "This branch has seen no substantial investment on the ground floor since acquisition, the refit in 2005 relates to the creation of the CDS area on the first floor. The refit will allow an Extension of the dispensary, creation of a confidential separate methadone handover point, creation of 2 new consultation rooms and bring the store in line with brand standard. The pharmacy has a dispensary capacity of 154% which is restricting the future business growth and is the cause of the current high level of dispensing errors. During 2012 the pharmacy has had a visit from the Society Inspector who has verbally cautioned the Pharmacy Manager as to the poor dispensing standards within the branch. In addition, in a rolling 12 month period, the pharmacy has recorded 9 serious dispensing errors of which 30% were relating to controlled drugs. Should the project not proceed, then there is a real risk that a more formal course of action will be taken by the Health Board which could include closure"

[✂]	Refurbishment	*"Dispensary storage is inadequate for the level of business. The capacity measure states only 109% however it is much higher than this as the shelving is a basic DIY shelving system with little depth. There is also nowhere to store scripts waiting. This combination has led to high waiting times (average 13 minutes with 54% above 10 minutes) and increased dispensing errors, 27 reported in the last 12 months. The graph below demonstrates the loss in prescription market share from the branch over the period Jan 11 to Jun 12. Branch 575 capture is declining whilst the surgery is growing." … "This action will address the Professional Standards and Health and Safety concerns and provide the branch with the necessary environment to concentrate on growing their business again"* *Map with Sainsbury's*
[✂]	Health Centre Relocation	"[✂] is a [✂] town located in [✂] with a population of circa 36k. The town is served by five medical practices and seven pharmacies; [✂], [✂], Boots, Superdrug, Tesco, Co-op & Sainsbury. The [✂] is located opposite [✂]. It has 9415 patients at present & annual prescription volume of 167,200 items. It is moving into a new Primary Care Centre which will be built to provide services for up to 12,000 patients, together with an onsite integral pharmacy and parking beneath the building. All the [✂] pharmacies could potentially relocate to the new site and there is a small risk that a new contract will be granted if no pharmacy chose to relocate. The do nothing scenario therefore assumes a competitor in the new site. [✂] will be unaffected by this surgery move"
[✂]	Health Centre Relocation	[✂] is a village in the [✂] with a population of 4,5k. It has a small high street with a mix of independent and main stream stores including Barclays and the CoOp foodstore. There is limited on street parking and the main car park is adjacent to the proposed development site. [✂] and [✂] are virtually opposite each other on the high street with the surgery approximately 100m away across a busy road at the top of the high street. There are no other competitors in the village, the closest pharmacy being Tesco just over a mile north of [✂]. The CoOp pharmacy are located close to the branch practice in [✂]. "[✂] [proposed closure] is underinvested and is a low profit store that acts as a protection branch for [✂]." "To relocate branch [✂] to the new site and close branch [✂] as Lloydspharmacy would operate the prime site and the risk of losing business to a competitor would be minimal."
[✂]	Health Centre Relocation	"Lloydspharmacy is in a solus position in 80sqm premises in a secondary retail parade approximately 150m from both surgeries. The pharmacy had a sales floor refresh in 2007 but this did not include the dispensary which has a dispensary capacity measured at 146%. The nearest competitor pharmacy is over 1,500m away."

[✂]	*See above*	
[✂]	Refurbishment	– “capacity constrained (91%), inspector concerns that staff cannot supervise properly due to layout” “The branch is located in [✂] in [✂] with a population of approx 25k, and has 3 main GP practices. The practices have a combined prescribing figure of 469k per annum. There are 2 Alliance Boots located in the town centre and an independent pharmacy approx half a mile away. The Do Nothing assumption has taken into account the current space constraints and configuration and has used the year end forecast for NHS and OTC.”
[✂]	Refurbishment	*Relocation due to dispensing error concerns capacity concerns (152% capacity)* *TEXT MISSING but only an independent nearby on maps*
[✂]	New 40hr License	“[✂] is a market town with a population of 11,500. [✂] opened as a 100hr pharmacy in 2009 in the new [✂] Hospital and Primary Care Centre, situated just inside the secondary entrance adjacent to the PCC which accomodates two surgeries generating a total of 305,000 items. Current capture is 98,400 items, 31% from the [✂] Surgery and 26% from the [✂] Surgery. In addition [✂] services 330 care home beds generating 33,600 items pa and 82 CDS generating 25,500 items pa. High labour costs, service charges and amortisation of the initial premium payment have resulted in negative operating profit. Alliance Boots currently operate three standard contracts in [✂] and have offered the opportunity to purchase one of these contracts for the consideration of £125,000 which will enable us to reduce trading hours to 57 hrs pw (subject to PCT approval). This action will ensure that [✂] returns a profit of £55,224 in year 1.” “• Local Competition There are 4 other pharmacies in [✂]. Tesco operate a 100hr contract on the edge of town, remote from surgeries. Boots operate three standard contract pharmacies in the town centre. The smallest of these pharmacies is isolated after the [✂] surgery relocated to the new hosptial site and Boots are offering to sell this contract.” “The opportunity to purchase a standard contract enables us to reduce to 57hrs pw giving a pharmacist cost saving of £56,000 pa and staff savings of £40,000 pa bringing the labour cost ratio into line with comparable branches.”

[✂]	New 40hr License	"[✂] is a small [✂] town situated between [✂] and [✂] with a population of 25,000. Lloydspharmacy opened a 100hr pharmacy in a new medical centre development in 2009 which has traded very successfully. The medical centre generates 260,000 items pa and has grown by 7.4% in Q1 2012. [✂] captures 44% of the available items and also services 100 care home beds generating 10,800 items pa. An opportunity has arisen to purchase and minor relocate one of the Boots standard contracts in the town centre for the consideration of £125,000. This will enable us to reduce trading hours from 100pw to 54.5pw (subject to PCT approval) realising labour cost savings of £67,000 and improving operating profit by £72,400 or 66% in year 1. "Alliance Boots have two branches in the town centre precinct approximately 400m from [✂]. Both branches require refit and the shopping centre is declining with several empty units. Tesco operate a standard contract in their edge-of-town supermarket on [✂] and are the furthest away from the surgeries. [✂] pharmacy ([✂]) is a long-standing independent operating from a secondary parade of shops in a large housing estate."
[✂]	Health Centre Relocation	"We strongly believe that this proposal to relocate [✂] will prevent a new contract from being granted to the [✂] and will protect our current businesses to secure their longevity" "The doctors are building a pharmacy unit at their new building and have their own pharmacy application pending. LloydsPharmacy have been granted relocation consent for [✂] to the new [✂] Surgery. It is too far to relocate [✂] to the new site and in any case, a branch surgery will remain in [✂]. We have negotiated terms which would persuade the doctors to withdraw their contract application and permit the relocation of [✂]. Our relocation prevents the competition threat and enable us to maintain and grow our pharmacies; where otherwise they would become low profit stores in around three years time." "[✂] is part of the town of [✂], a [✂] in [✂] with a population of 15,000. It has an elderly and affluent demographic with over 60% of residents aged over 65 years. [✂] and [✂] have four pharmacies between them; two owned by LloydsPharmacy, [✂] and [✂] and two owned by Boots."
[✂]	Relocation	"To relocate branch [✂] from a small listed building with disabled access issues (that increases the risk of a pharmacy competitor entering the town) to a much larger retail premises that will allow LloydsPharmacy to open a Health and Skin Extra EPN store in this affluent market town and capitalise on the considerable retail potential. The total lease liability for the new unit is £301,500 (10 years at £33,500 per annum with 12 months rent free). Capital cost to refit the store is £229,696"

[✂]	Health Centre Relocation	"There are two pharmacies in the town, [✂] and a Boots. The Boots pharmacy is currently closest to the surgery, being only 150m away. [✂] is located on the opposite side of the town some 500m from the surgery. The large distance between 6220 and the surgery means that Lloydspharmacy only captures 15% of items. Boots on the other hand capture 66%."
[✂]	Refurbishment	"This disparity between budget and actuals is due to the pharmacy being hindered by dispensing capacity constraints (which leads to long wait times at peak periods), coupled with the Co-Op improving their own wait times (market data shows the Co-Op have increased their items by 11.5%). The 100 hour pharmacy that opened in December 2012 on the estate a few hundred metres from the shopping centre is also starting to have an increasing impact." In an attempt to claw back items from local competitors, it has been agreed to increase the opening times of the pharmacy to 7pm in line with the health centre and take advantage of our position located outside of the shopping centre. Year 2 items are projected to increase by 5.2%, as the pharmacy starts to take items from the local 100 hour and capture patients who leave the surgery after 6.30pm. The staffing budget has been adjusted to take account of the additional opening hours. The 'do nothing' continues a downward trend in items to reflect the continued impact of the 100 hour contract." *No info on identify of 100hr competitor*
[✂]	Health Centre Relocation	*Health Centre Relocation*
[✂]	OTHER	"The EPN Lite rollout that provides an EPN 'look and feel' in branches that do not require full refits is programmed to continue in 2015. One hundred stores have been nominated following a selection process that takes into account learnings from the 2014 rollout. The selection process includes: · Stores that have been refitted since 2007 (undergone what was named a 'One Vision' refit). These stores have standardised shelving ensuring accurate EPN planogram implementation and minimising the disruption to the network. · Stores categorised as high or core affluence as the EPN proposition is more suited to this type of customer. · Stores with more than 20 bays as stores with less than this are unable to accommodate full Skin and Pain builds. "

[✂]	Refurbishment	"The current dispensary size is just 28sqm and not fit for purpose, it is unable to process the present volume of items efficiently. The GPhC inspector has expressed concerns at the capacity issues and the safety of the current situation." "The nearest pharmacy is [✂], over 1 mile away, located on the [✂] and near to [✂]. A Boots and Tesco pharmacy are located nearly 2 miles away, on the [✂]. [✂] operates out of large premises (they have extended the building within the last 5 years). It is a large surgery with 10 GPs and over 12,000 patients. In total the GPs prescribe nearly 230,000 items per annum. [✂] captures 59% of these items. The branch has always performed well, but is becoming increasing space constrained for the number of items that they dispense"
[✂]	Health Centre Relocation	"There are 3 other pharmacies in [✂]. LloydsPharmacy branch 106 is 600m to the [✂] of branch [✂] and is due to relocate to more prominent retail premises opposite a Boots pharmacy at the end of April 2015. The nearest other pharmacy competition is an independent pharmacy located 1.3km to the south of [✂]."
[✂]	Relocation	*Extension*
[✂]	Refurbishment	"A new 15k sq ft extension to the shopping centre is due to complete imminently and terms can be secured to walk away from our existing unit at nil cost. It is therefore proposed to relocate to a new unit extending to 223 m2 to allow us to expand our retail offering. A larger, more prominent unit would allow a much needed Extension of high end skin and fragrance lines, and also enable a display of Betterlife products which neither branch can currently offer." "Over the 2 stores, LP captures 100% of the Pact from the medical centre. [✂] is also small, extending to only 80m2. Currently, there is no real growth potential for either store in this affluent and expanding town and in order to future proof our business here, it is proposed to relocate [✂] to a larger retail unit within a new extension to the shopping centre."
[✂]	Relocation	"Our current landlord is Tesco, who have been planning to demolish the parade and build a new superstore but Tesco have now publicly confirmed that they will not progress the proposed scheme and have put the land up for sale. As a result the future of [✂] is uncertain." "[✂] is currently situated on a small retail parade with no on street parking, poor visibility from the main road and limited supporting retail. There is only one other pharmacy in the immediate area, a Boots 100 hour contract operating from the [✂] approximately 450 m away."

[✂]	Relocation	"The dispensary extends to only 12m2 and due to the cramped conditions the team has struggled to grow the business in recent years. The branch also suffers from various health and safety issues; the stockroom shelving is very high and staff are required to use step ladders to access stock and CDS trays; the basement area, also used for storage, has a very low ceiling, is very damp and often floods" "A larger and more prominent unit has recently become available further along [✂] on the opposite side of the road. This end of the town is busier than our current location and the new unit benefits from a small amount of parking immediately outside. It is therefore proposed to relocate [✂] to this new unit in order to resolve the issues mentioned above and expand the retailing offering in this affluent town." "In the 'do nothing' scenario the size of the dispensary is increased to ensure the safety of the patient and therefore the retail footprint and retail sales are decreased"
[✂]	Health Centre Relocation	"It is also proposed to increase opening hours upon relocation to match the surgery. The branch is currently open for 47.5 hours per week. It is proposed to extend this to 54 hours per week. This has resulted in an increase in Pharmacist and staff costs." "The 'do nothing' assumes that branch [✂] does not relocate to the new medical centre and continues to trade in its current location. In the first year, it is predicted that items would reduce by 20% with further impacts as more patients chose to use Asda, which is closer to the new medical centre development"
[✂]	Relocation	"[✂] trades from a tired old building that requires significant investment. However, the ground floor does not provide a large enough sales area for a city like Salisbury nor does it have enough footfall. Sales are in decline as shoppers are attracted to the other more interesting side of the market square, and due to the high property costs for the turnover, it is predicted that the store will become lossmaking" "There are 4pharmacies on the outskirts of the city co-located with surgeries. There is also a large Boots within the market square area and a Superdrug with a pharmacy in the [✂]. [✂] captures items from a wide area and is not affiliated to any particular surgery. An improved trading position provides both retail and NHS growth opportunities"

[✂]	Closure	"To close [✂] after transferring over 80% of its current NHS business into branch [✂] which amounts to 40,000 items per annum. Merging the business into [✂] will reduce operating costs and overhead costs from running two contracts in relatively close proximity to each other. It will also remove a loss making business from the portfolio." The branch is underinvested and is currently over 100% dispensing capacity. There are two other pharmacies in the [✂], Superdrug and a medium sized Boots. [✂] is located some 900 metres from the shopping centre.
[✂]	Refurbishment	"The dispensary is far too small for the volume of items and only having one till impedes customer service at peak times. The branch captures 56.5% of the surgeries items but there is potential to capture more if the right environment is provided... negotiations have resulted in an agreement to expand the pharmacy to 67 sqm with access immediately off the surgery waiting room and two service points meaning patients will be served more efficiently and there will also be ample waiting space at peak times" "[✂] is a large town in [✂], [✂] with a population of 84,000. [✂] is located to the west of the town centre within [✂] in a residential location. There are no adjacent retailers and the closest competitors are Boots and Superdrug 500m away in the town centre. [✂] has 13,300 patients and prescribes 211,000 items per annum. The population of [✂] continues to grow and there is potential to capitalise on an increased surgery output given the correct environment" Only having one till point to serve and limited standing space at the counter results in patients by-passing the pharmacy, leaving the surgery and having their prescription dispensed at another pharmacy (Boots, Superdrug and [✂] are all only about 500m away). Therefore the improved dispensing and store environment will allow the team to improve service and reverse the items decline so market share will improve.
[✂]	Refurbishment	"A 100hr HBS pharmacy opened in 2012 opposite the [✂] Medical Centre resulting in a 17% decline in NHS items in branch [✂] which was 400m away. The board approved its relocation to the [✂] Medical Centre to protect and grow the business. The [✂] Medical Centre currently prescribes 232,000 NHS items pa.It is proposed to build a 30sqm extension and reconfigure branch [✂] to open up the entrance and retail area and thereby reduce the loss of patients to the nearby 100hr competitor. This will enable further growth in capture of the prescribing of the [✂] Medical Centre to 42% in year 1."

[✂]	Closure	Essential small pharmacy, future of status unlikely so reduced payment, rent increase, therefore close
[✂]	Closure	"[✂], [✂] is a long term loss making branch with no future potential. The branch made a loss of over £55k in 2014. It trades from a small unit on a run down street with no supporting retail and no car parking provisions." "The main shopping area in [✂] is the [✂]. This is anchored by a medium sized Tesco supermarket and has ample car parking facilities. The centre also contains a small Boots pharmacy and a Well Pharmacy. The largest surgery in [✂] is called [✂] and is some 400 metres from the [✂]. This surgery has 8 GPs and prescribes over 340,000 items per annum. [✂] is co-located with the surgery as is the [✂]. This is a 100 hour pharmacy which opened in 2013 and which some of the GPs have a financial interest in. [✂] captures 45% of the items from [✂], with the 100 hour capturing 30% and branch 7079 capturing just 5% of the available items."
[✂]	Relocation	"Proposal to relocate an unbranded Lloydspharmacy into a new retail development to include an 80,000 sq ft Tesco and 6 other retail units due for completion in October 2012. It is considered that the current location will decline once the new development is open. Tesco is assumed to open a 100hr pharmacy contract although no application has been approved to date. These financials are therefore a worst-case scenario. " "• Location of Pharmacy [✂] is a town to the [✂] in [✂]. [✂] is located at the far end of the main shopping area in the town. [✂] HC is 250m away and is co-located with the only GPs in the town. There is a Co-op pharmacy within a Co-op supermarket between the two Lloydspharmacy branches. It is considered that [✂] HC will not be affected by this proposal. • "Local Competition The Co-op pharmacy was formerly owned by an independent contractor and was bought and moved into the Co-op supermarket in 2011. This is located half way between [✂] HC and the current location of [✂]."
[✂]		• "Local Competition There is an independent pharmacy ([✂]) located on the opposite side of the [✂]. The next nearest pharmacy is over 3 miles away in [✂] (Boots and a Coop)."

[✂]	Extension	• “Local Competition There is no immediate competition, the nearest being Boots, Asda, and an independent pharmacy in the centre of [✂] approximately 800m away.”
[✂]	Health Centre Relocation	• “Local Competition HBS pharmacy opened their 100hr contract in June 2010 having acquired land, zoned as residential and getting reapproval for a pharmacy build. The pharmacy is on land adjacent to the surgery. HBS do not enjoy a good relationship with some of the GPs at the surgery due to poor service. However, they have bid on the opportunity to relocate into the surgery in a move to strengthen relationships, block development of our business and force a sale of our 40hr contract. HBS have offered to purchase our contract for circa £300,000. We are aware that HBS have very poor capture from the [✂] Medical centre (15%) despite being first hit. Boots have a small pharmacy further up the High Street. [✂] chemist is close to [✂] surgery in a small retail unit, they capture the bulk of [✂] prescription items.”
[✂]	Relocation	• “Local Competition An independent pharmacy, [✂], is co-located with the [✂]. It is one of a group of 5 pharmacies which uses AAH as 1st line wholesaler. Tesco has an in-store 100hr pharmacy within its 24hr store.” “The new unit is 149sqm and has a car park directly opposite with additional car parking to the side. It will be visible to those coming from the [✂] Health Centre by car and by foot. It will also be visible to those accessing [✂] from outlying towns. The current capture of the available prescriptions is 33% despite the poor current location and premises. This is due to the work done on the prescription collection service by the good pharmacy team in advance of the Tesco 100hr contract opening.” “Many of these have been converted to ExRx. The pharmacy also has 60 CDS patients prescribed by [✂].”
[✂]	Relocation	“• Local Competition The main competitor is a Health & Beauty Boots store, which is located on the opposite side of the road to the target unit. There is an independent pharmacy 250m south of our current unit on [✂], adjacent to [✂] surgery. Sainsbury's is located within the [✂] and has an outstanding NHS contract application for a 100 hour pharmacy. [✂] contains most of the major brand retailers you would expect to find in an affluent market town and also includes an independant department store, [✂]. Tesco Supermarket is a mile north west out of town and has a standard pharmacy contract. [✂] is a mile to the south west of the town and will be unaffected by the relocation.”

[✂]	Health Centre Relocation	"• Local Competition Approximately 600m to the south of [✂] there are two independent pharmacies ([✂] and [✂]) on the main road running east from [✂] station. There is another independent ([✂]) in a residential location 550m east of our current location."
[✂]	Health Centre Relocation	"• Local Competition [✂], with its growing population of 40,000, has 10 pharmacies within a 2km radius. The nearest town centre pharmacies are Boots, Superdrug, Tesco, [✂] Pharmacies. However, Asda, Day Lewis, [✂], Co-Op and Rowlands are also represented. Asda operates the only 100 hours licence in [✂] at present, although Morrisons may apply. An independent operator, [✂], just over 1km away, has a good relationship with [✂] and offered to open a 100 hours pharmacy, closing his existing pharmacy."
[✂]	Emergency Refurbishment	"During a period of extreme weather at the beginning of January, the roof to the shopping parade was severely damaged resulting in the branch being flooded. The flooding was so severe that the branch was forced to close on 6th January."
[✂]	Relocation	"• Local Competition The only other competitor in the town is Boots Alliance who currently trade from a single retail unit which is in a similar dilapidated state as our branch. It has been suggested that they will take a new double unit in the proposed redevelopment, thereby allowing an increased retail range and offer. A new contract application to the south of the town by an independent operator has recently been refused by the Health Board. An appeal has, however, been lodged and we should know within the next few weeks whether this will go to an Oral Hearing at the National Appeals Panel or be quashed. No financial impact has been taken into account in this model"
[✂]	Relocation	"• Local Competition There is one competitor in the village, an independent pharmacy operator, [✂]. This pharmacy is also located on [✂], within a parade of shops further away from the Health Centre." "The branch has reached 100% capacity and the team are struggling to take on any more business due to the cramped conditions. The new location would put us as first hit, whereas currently it is equi-distant to either pharmacy operator in the village."

[✂]	Health Centre Relocation	"• Local Competition Two years ago, a new contract was granted to the northern side of [✂]. [✂] is independently owned and located adjacent to [✂] surgery, on a residential estate. In addition, a new 100 hours pharmacy has just opened adjacent to our [✂]. Lloyds Pharmacy owns all the other pharmacies within a 1 mile radius. These are [✂] and [✂]. We also own three further pharmacies just outside of a mile radius. Other competitors outside a mile radius are Boots, Asda & Morrison's at [✂]." "This practice is a high volume prescribing practice and with a potential impact on three local stores, LP were keen to dissuade 100hrs competitors from a viable location"
[✂]	Health Centre Relocation	"• Local Competition There are two competitors located in [✂] (Boots and Rowlands), both of which are situated in the town centre itself. Both of these pharmacies offer a delivery service, which we intend on matching should the project be successful. We have various branches in nearby towns such as [✂] (2.5 miles distant), [✂] (4.25 miles distant) and [✂] (5.5 miles distant)."
[✂]	Relocation	"There are 5 other pharmacies in the area, 2 of which are located in the town centre; Boots located on the High Street and CoOp pharmacy that trades from a hatch dispensary within the [✂] surgery. Tesco Pharmacy is located in the suburb of [✂] to the south of the town, an independent pharmacy is located in the suburb of [✂] to the north of the town and [✂] is located in the suburb of [✂] to the west, within the [✂] Health Centre."
[✂]	Health Centre Relocation	"• Local Competition Around 18 months ago a competitor moved into a shopping parade c500 metres from the surgery. Some remedial work was done to the pharmacy during the application to defend against it, this has also helped to retain patients but will result in some write-offs (£34k)."
[✂]	Health Centre Relocation	Maps of pharmacies

The Willows	New 40hr License	"• Local Competition Within a 1mile radius of [✂] Pharmacy there are eight other competitor pharmacies, and within 1 mile of [✂] there are nine. A branch of Boots operates in [✂] and another Boots licence in the [✂] medical practice. Co-Op operates two licences, in [✂] and in [✂]. LP operates at the [✂] and at [✂], Billing operates another contract at [✂] and there are two additional independent operators to the north of [✂]." "[✂] is a 100 hours operating pharmacy which opened in 2009., In 2011, the branch made a loss of £345k through excessive costs relating to a service contract which is no longer operated by Lloyds. An action plan seeks to improve relationships with the Practice improve visual impact of the pharmacy, review skill mix in the pharmacy, increase prescription capture using an incentive scheme (My Pharmacy). These actions aim to reduce the business losses and achieve profitability in two years. The action plan is intended to increase capture to 35% in year 1 and 40% in year 2. Acquisition of this standard hours licence would make the branch profitable in the first year post acquisition through immediate reduction in staff costs."
St Albans	New 100hr license	"• Local Competition [✂] is a competitive neighbourhood of dense population and there are 7 pharmacies within 1km of [✂] Surgery. [✂] Pharmacy is the closest competitor located 120m away on the opposite side of road towards the town centre. The other main competitors are within the town centre over 500m away including Boots (large Health & Beauty format), [✂] (independent) and [✂] (independent attached to a 18,000 patient surgery). Lloyds pharmacy [✂] is located 500 metres from the proposed site at the rear of the high street. [✂] currently captures 2% from [✂], therefore it is assumed that this branch will not be affected by the new opening."

[✂]	Health Centre Relocation	"• Local Competition [✂] has 4 pharmacies within 1km of the new site, the closest is [✂] Pharmacy located 300m away on the opposite side of the road. [✂] is a modern looking double fronted pharmacy on a busy parade of shops. Boots is located on [✂] within the main shopping area about a mile away. It is a small Health and Beauty store with limited dispensing. Tesco Instore Pharmacy has a standard contract located 700m to the south. Further south and closest to [✂] Surgery is [✂]. [✂] is a very small run down independent pharmacy." "This proposal involves the development of a disused PCT building by the developer GPI, into a new health centre and pharmacy. To the rear of the development and with a shared car park is the local community library. Both [✂] Surgery and [✂] Surgery are signed to the scheme and there was competition for the pharmacy site which Lloydspharmacy will secure for a premium of £250,000. As there is a mile between [✂] and the new site the only secure way of obtaining an NHS contract is via 100 hour pharmacy" "[✂] currently captures 54% of the items emanating from [✂] Surgery and only 2% from [✂]. [✂] is only 74sqm in total and is already over 100% dispensing capacity. With 15,000 patients in the new health centre, another pharmacy contractor would take the opportunity to work with the developer if we were not to participate in this development. We have also considered disposal of our contract at our current site and the sale of our contract to Sainsbury's as well as a closure upon opening at the new location. The proposed option of trading on will help to secure our business and manage the transition between sites as well as still offering us the opportunity of disposal or sale of our current site at a later date if required."
[✂]	New 40hr License	"Superdrug currently trade in [✂] close to the shopping centre and have decided not to renew their lease. We have the opportunity to purchase their standard pharmacy contract." "• Local Competition Within the shopping centre, Boots and Co-op currently capture the majority of NHS items from the [✂], Boots 37% total PACT capture and Co-op 24% total PACT capture. Approximately 72% of NHS items from the [✂] stay within the shopping centre with 28% going elsewhere. Boots has entrances from the mall and [✂] and has a new fascia but the shop fit is very old. Co-op currently occupy a corner site near the [✂] entrance and are also seeking the same unit to reduce their rental liability. Coop will become third hit pharmacy if Lloyds secure the proposed lease. We have mitigated the risk of Co-op (or any other pharmacy) relocating closer to the Health centre by requesting exclusivity on future first lettings. Neither Asda ([✂] unit), or the landlord are keen to split the existing vacant unit and costs to do so would be prohibitive to Co-op."

[✂]	Relocation	“It is proposed to relocate [✂] to a prominent unit with increased footfall and a 183 sqm ground floor retail area and 99 sqm first floor (formerly occupied by QS stores). It is the first large retail unit that customers and patients pass close to the centre of town and before reaching Superdrug and Boots.”
[✂]	Refurbishment	“There are 4 pharmacies in the town, LloydsPharmacy, Boots, Tesco and an independent. Boots is the nearest competitor approximately 400m away in the town centre.” “The 33 sqm OTC space has old and battered mahogany wood fixturing which together with its low level lighting makes the unit feel dark and gloomy. Patients often go elsewhere as the pharmacy feels claustrophobic even though queues are given prompt attention.”
[✂]	Health Centre Relocation	“This deal was done in response to a new 100 hour competitor in this village with no other pharmacy competitor within a 5 mile radius.”
[✂]	Refurbishment	“[✂] is a small community pharmacy (84 sqm total) and is considered too small for its community. Dispensary capacity is over 130% and sales intensity is at £4,000 per sqm. Consideration has been given in the past to relocation however the only suitable retail unit in the village is occupied by Spar. The library was also approached but was not available. The option to relocate to the health centre was also considered, but they could only provide 15sqm. The branch currently occupies a great position within the village. Lloydspharmacy is the only pharmacy in the village though there has been interest from an Independent contractor. The PACT at the surgery is 107,000.During 2011 [✂] was visited by both the Superintendants Office after complaints from patients to the PCT and the Health and Safety department after a team member fell down the stairs. The stairs have a steep gradient and the depth of the step is only 150mm. The Health and Safety report is attached with this memo. The two actions required within the refit are therefore to increase the size of the dispensary and improve the staircase.”
[✂]	Refurbishment	No Details

[✂]	Health Centre Relocation	"[✂] is currently located on a run-down parade of shops approximately 200 metres from [✂]. Our lease expiry is the 23rd June 2012 and we will hold over until relocation. Dilapidations have been estimated at £30,000 by our estates manager. In May 2011 a Tesco Express adjacent to our branch expanded into new premises (ex [✂] behind the parade) to become a Tesco Metro and opened a 100 hour pharmacy contract the following November. Consequently the branch is trading 17% down on items and 10% down on sales to last year." "The surgery is on an isolated site with plenty of parking and has 9,346 patients and a PACT of 150,000. The unit is 150 sqm and has integrated surgery access. The new Tesco metro situated close to our current location has a 100 hour contract and has had a negative and worsening impact. We have agreed a premium of £150,000 and rent of £32,500 per annum for a 20 year co-terminus lease. We are not yet legally committed."
[✂]	Health Centre Relocation	"[✂] is at 75% PCS/ExRx and has been working hard to secure business prior to the surgery relocating. However, in the 'do' scenario it is assumed that items from the [✂] will decrease by 18% to 40% capture as the integral pharmacy will have an impact."
[✂]	Extension	"There are 3 other pharmacies in the town of [✂], 2 of which are LloydsPharmacies. [✂] is located opposite the [✂] in a smaller retail parade and branch [✂] is located to the east of the [✂] on the main arterial road that runs through the town. Sainsbury's operate a 100 hour pharmacy from its supermarket adjoining branch [✂]." "To expand branch [✂] into the adjoining retail unit in order to increase the Betterlife retail offering and provide for an efficient and improved workflow in the current cramped dispensary. A new 9 year lease with a tenant only break option in year 5 has been negotiated at a rental of £16,000 p.a. for the new unit. A rent free period of 6 months has also been negotiated. The landlord has stipulated that the main use of the new unit needs to be the sale of mobility aids, and accordingly the signage will need to be split with the new unit trading as Betterlife and the existing unit as LloydsPharmacy. There will therefore be 2 front entrances. The landlord has, however, permitted consent for the majority of the wall to be removed to create an open plan unit which will allow for improved customer flow around the store and especially at the counter"
[✂]	Health Centre Relocation	"The Do Nothing scenario is that an independent pharmacy would open in the new development and Lloydspharmacy would remain in its existing premises. A 50% reduction in business has therefore been factored in to account for this"

[✂]	Health Centre Relocation	"Completion is due in July 2012. Lloyds is reliant on this practice for 92% of our items. Recently, our capture rates declined from 74% to 60% following the opening of a new competitor pharmacy in May 2011. This pharmacy opened between us and the new surgery site and we believe he is attempting to relocate into the new medical practice ahead of Lloyds." "Further to new competition, we have successfully concentrated our efforts on providing excellent service. With greater staffing levels, Lloyds has retained more items than originally forecast. Our revised projections therefore increase NHS items and Yr 1 Staffing Costs, in both the "Do Nothing" & Forecast. i.e. a higher base. OTC is also amended in line with current performance." "• Present Situation We are currently solus in [✂], the new contract has been granted and MedicX the developer for the new HC has waited for that before issuing the tender to maximise their return. The competitor will open and impact our business in both Do Nothing and Forecast but the hit will be less if we secure the health centre position. The health centre is adjacent to a new Waitrose supermarket and so visibility is expected to improve, patients are likely to park in Waitrose and use the Health Centre / pharmacy. Waitrose do not have a pharmacy. The Waitrose is likely to pull footfall away from our current location so if we don't move we are likely to lose OTC because of this, as well as the independent opening in the health centre. The developer MedicX have insisted that we progress with the approval process whilst they consider the offers, a decision is expected in mid-December"
[✂]	Relocation	*"Previously approved* *The proposed premises will allow growth of 22% in NHS items (as the branch will also be the closest to the surgery) and 178% in OTC sales in year 1 vs the Do Nothing scenario arising from improved position adjacent to M&S in the middle of the busy and affluent retail area in the centre of [✂]."*
[✂]	Health Centre Relocation	"In 2009 MCD approached Lloydspharmacy stating their intension to add value to their investment by building a pharmacy unit extension. They offered this to Lloydspharmacy in the first instance. The Health Centre Relocation"
[✂]	Health Centre Relocation	"The proposed premises will allow growth of capture of available prescriptions from 42% to 53% in year 1 and nearly doubling of OTC sales in year 1 to £60k pa"

[✂]	Health Centre Relocation	“A proposal to relocate Br 6216 to the redeveloped [✂] and block the introduction of a 100hr competitor was originally board approved in June 2010. The project financials are represented and the proposal requires updated approval by the board”
[✂]	Extension	“In November 2011 Lloydspharmacy Board approved a project to take an additional 20sqm of space from the Medical Centre to effect a small Extension and to support and reduce the high dispensing capacity at the branch.”
[✂]	Health Centre Relocation	“The unit is far from ideal as it is set back from the surgery entrance and the view is obstructed by an external stairwell and entrance leading to the first floor of the surgery. The size of the store also means that there is no consultation room, it has a dispensing capacity of 199% and there is little room for more than 2 people in the branch at any one time. Despite these shortcomings the branch captures 52% of the surgery’s 212,000 items per annum and this represents 98% of [✂] 2’s business.” “The new pharmacy unit will not only ensure the long term security of the branch but will also enable increased market share” “The surgery intends to open on a Saturday morning and extended hours on a Monday evening and labour costs have been increased accordingly.” Asda on Map
[✂]	Refurbishment	“[✂] is located in dated, former residential property with low ceilings, and stepped floor levels making it non DDA compliant. It has a very small dispensary and poor staff facilities. The narrow and L- shaped 138 sqm pharmacy was last refitted in 1999 and requires refurbishment. It was removed from the EPN schedule; considered too narrow and irregularly configured to achieve significantly enhanced OTC sales in situ. As a result, LloydsPharmacy is unable to benefit from the significant retail potential of this affluent market town with its mix of retailers and tourism” “The branch becomes marginally loss making in the Do Nothing in year 10, however, we would continue to trade due to the pharmacy being a protection branch for our [✂] Medical Centre store.”

[✂]	Extension	“The closest competitor pharmacy is a branch of [✂] which is also 500m to the north of [✂].” “It is proposed to expand branch [✂] into the adjacent retail premises to create a pharmacy totalling 115sqm on the ground floor and 126sqm on the first floor enabling growth of 4.4% in NHS items arising from the EPN refit and 146% in OTC sales from EPN and Betterlife merchandise in this affluent area with a high index of retirees.”
[✂]	Health Centre Relocation	“The new Health Centre is located at the eastern edge of the village 500m from the existing pharmacy location. A competitor 100 hour pharmacy opened between the current locations of [✂] and the GP surgery in April 2011 and has therefore had 12 months to build prescription capture ahead of the Lloydspharmacy Health Centre Relocation”
[✂]	Extension	“A new pharmacy licence ([✂]) was granted which is co-located with the surgery owned and operated by the GP’s. Pharmacy Operators were offered the contract but couldn’t pay the £1M premium required by the doctors. In the following year, Boots and Lloyds each closed one pharmacy whilst Asda and Sainsbury opened new 100 hours pharmacies .There are now six pharmacies in [✂]; a net gain of one since 2013. The nearest competitor to branch [✂] which adversely impacts our items business as it grows. The majority of our NHS work is planned business CDS, PCS and ExRx but there is no EPS2 at present.” “Our unit is just 61sqm in total comprising a 19sqm dispensary, 22sqm sales area and a combined area with CDS/staff/office/ consultation room of 20 sqm. In addition, we have a storage container in a rear service yard. We have been unsuccessful in negotiating formal consent to retain our container and it must be removed with immediate effect. This leaves the pharmacy without storage, causing health and safety problems and GPhC premises issues.” “The extension will enhance the customer experience in the pharmacy by improving our retail offer and providing more waiting space in an otherwise very compact pharmacy. This will enable us to increase our market share of OTC sales and protect NHS items whilst preventing GPhC premises and H &S issues”

[✂]	Health Centre Relocation	"• Local Competition We currently have 4 branches in the town of [✂]. [✂] is located in the [✂] Medical Centre to the west of the town, [✂] is located in a Tesco-anchored shopping parade to the north of the town. [✂] is located in the pedestrianised shopping area of the town centre. There is a Boots and a Co-op also located in the town centre and several independent pharmacies in other suburbs of [✂]. It has become apparent that the Co-op has approached the [✂] surgery and it is therefore almost certain that if we do not proceed with the project, then they will." "If the branch stays in its current location, the Co-op will no doubt relocate to the surgery and we would stand to lose circa 50% of the current capture from this surgery. Although the 'do nothing' scenario is strong, the project is proposed in order to secure the long term future of the branch. We would also need to refit the store fully due to its current unbranded and dilapidated state"
[✂]	Relocation	"• Local Competition [✂] is currently the most prominent pharmacy in [✂] and closest to the surgeries. It is a large double fronted unit and includes an optician. [✂] is second hit between the surgeries and [✂]. There is no other local pharmacy competition" "A retail relocation proposal to premises adjacent to [✂] MC and closer to [✂] and [✂] Surgeries which will result in both an NHS items and anOTC uplift, to be considered vs. a significant year 1 hit."
[✂]	Health Centre Relocation	"• Local Competition The closest competitor is Boots who is approximately 300m away at the busier north end of [✂]. As a shopping area, [✂] has low footfall and despite having a double fronted fascia, this branch of Boots is reportedly a poor performer and was a key competitor in the bidding process for the primary care centre. There is also an independent pharmacy situated a further 150m away on the [✂]"
[✂]	Health Centre Relocation	"Over 50,000 of the NHS items dispensed by [✂] come from various surgeries further afield and these will be retained as the new pharmacy is in a prominent position. It is considered that an independent would find the location attractive for a 100hr pharmacy contract. Completion for the build is expected by the end of July 2012. We have entered into a 1 year rolling lease on our current premises."

[✂]	Relocation	"• Local Competition An Independent pharmacist operates on [✂], equal distance between [✂] and [✂]. Another Independent operates some 650 metres from [✂] located on the [✂] for the area. A 100 hour pharmacy has recently opened next to [✂] Medical Centre which is over 1 mile away." "Approval is required to close and merge [✂] into [✂], whilst simultaneously relocationg [✂] to larger and improved premises"
[✂]	Extension	"• Local Competition There are 6 pharmacy contracts inclusive of [✂] within a kilometre radius of [✂]. All are in different neighbourhoods, but the closest is [✂] approximately 850m to the north west of [✂]. There are a further 2 independants, a Superdrug and Boots within the town centre"
[✂]	Relocation	"[✂] is located in a secondary retailing position, just off the pedestrianized shopping area, and is surrounded by many vacant units" "There are 3 other pharmacies located within the town centre itself; Boots; [✂] and a consortia pharmacy located within the [✂] HC."
[✂]	Extension	"[✂] is adjacent to [✂], in a small neighbourhood parade in the town of [✂]. The GPs have applied to open their own 100 hour pharmacy. In an attempt to stop this we have been in negotiations with the GPs to take the area they had designated for their pharmacy to create an internal access route between the medical centre and our own unit."

[✂]	Extension	"Proposal to build a 25sqm extension to the rear of [✂] and reconfigure the internal space to provide improved retail and dispensary accommodation. [✂] is located within a community hub in [✂], is the closest pharmacy to the surgery and is very busy on both sales and items but fails to fully capitalise on either due to property contstraints. The surgery generates 250,000 items pa and [✂] currently captures 34% and is operating at 145% dispensary capacity. The extension proposal increases capture to 36%, regaining some of our lost market share. The proposal also includes a new shop front to enhance the Lloydspharmacy image and become more inviting." "[✂] is operating inefficiently due to space constraints and does not provide an adequate environment for our customers to browse and shop." "• Local Competition Boots is located on the same parade as [✂] and is approximately 50m away in a double fascia unit. It is a the smallest categorised Health & Beauty store for Boots. The next closest pharmacy is ✂], a mile away in a different neighbourhood and will be unaffected by the proposal."
[✂]	Health Centre Relocation	"This is a HC relocation in competition with a 100hr contract application by [✂] MC via APM Healthcare to protect a solus Lloydspharmacy. There will be an increase in prescriptions captured from the Health Centre but also a small loss of other items and loss of OTC due to reduced visibility by moving from the high street"
[✂]	Relocation	"• Local Competition Within 500m of [✂] there are 3 pharmacy contracts, all independents with standard contracts. The closest independent, [✂], is 80m to the south on the opposite side of the road to [✂] and shares a building with the [✂] surgery although there is a separate entrance. Within a kilometre there are a further 6 contracts mainly to the south of [✂], including a Tesco and Boots on [✂]." "By moving into this unit there is minimal risk of losing our customer / patient base therefore maintaining turnover with considerable decrease in operating and establishment costs."

[✂]	Relocation	"The branch is located on the high street in the town centre along with a mix of independent and national retailers, including a Boots pharmacy." "The branch extends to 103m2 on the ground floor, however due to the structural and narrow nature of the building, the sales area is only 25m2. A consultation room was installed in 2010 to comply with the Health Board regulations. Unfortunately this had to be positioned in the front window due to the size of the front shop. This has created a very narrow walkway into the branch which customers regularly complain about. The branch is also very dark due to all the natural light being blocked. With no significant investment since acquisition the branch is in poor condition."
[✂]	Relocation	"Due to its location with the [✂], [✂] has little competition for pharmacy. The nearest pharmacy is LloydsPharmacy branch [✂] approximately a mile away in the village of [✂]. The larger town of [✂] is 2.5 miles away. This has LloydsPharmacy [✂], a Boots and an independent pharmacy." "The proposed unit has major advantages over our current premises: · Its adjacency to Sainsbury's and opposite the CoOp will increase footfall · 214sqm area at ground level improving the customer shopping experience and current DDA issues · The sales area will be 152sqm (currently 57sqm) · Improvements in the dispensary size, fittings and layout will improve efficiency and allow capacity for NHS growth. · A main car park is immediately behind the store and a small amount of car parking immediately in front of the store providing better access"
[✂]	Refurbishment	"To refit [✂] and increase the size of the dispensary and retail area to ensure the branch is fit for the increase in business due to the relocation of the main surgery." "The larger dispensary is needed to cope with the expected increase from 75,000 NHS items in 2014 to 106,000 by the end of year 3 from increased capture of available prescriptions and erosion of those currently dispensed by the Boots pharmacy colocated with [✂]."
[✂]	Relocation	"The store extends to only 52 m2 which includes a dispensary of 10m2 and 11 retail bays. There are no staff facilities and storage is limited. Access to the dispensary from the sales floor is very narrow with a step up which is difficult for the staff to navigate. Since acquisition, there have been many issues with the cellar including flooding and fly infestations. The development strategy for the store has therefore always been to relocate to new premises."

[✂]	Relocation	"• Local Competition Local competition comes from Boots who have four pharmacies within [✂] town centre. All four branches will be closer to the new health centre site, than our proposed relocation site, albeit within the town centre area where parking is difficult. Two of the branches are on the pedestrianised [✂]. There is also an independent located further out of town, [✂], who are known locally for their out of hours service" "The retail relocation of the above branch will see it move from a tertiary retail pitch to a more exposed, vibrant location. with the move of all GP surgeries to the centralised location, coupled with limited access and amenities at the current location, we predict the pharmacy to become a 'loss maker' in the first year the surgeries move. This is due to a prediction of only retaining our collected prescription items and 50% of walk in NHS business. Conversely with the move and the benefits the new location will bring we predict to maintain and build on our NHS buisiness, meaning a continued profit and growth for this Lloydspharmacy branch."
[✂]	New 40hr License	"[✂] opened as a 100hr pharmacy on 5th December 2011 trading in the new [✂]. Four surgeries were originally signed up to relocate to the new PCC but only 3 surgeries are currently operating from the new premises; they have an available PACT of 286,283 and 40% planned capture in Year 1. A local independent ([✂]) relocated opposite the PCC prior to the surgery relocations and has now offered to sell this standard contract to Lloyds Pharmacy for £250,000. This ensures an improvement in Year 1 operating profit from (£10,238) to £108,631. Assuming that only 3 surgeries continue to operate from the PCC in the foreseeable future the benefit of purchasing this contract will be a reduction to 62 trading hours per week and a total labour saving of 30% equating to £85,893 in the first year. Corporate Controlling have agreed that this proposal does not need to be treated as an acquisition." "• Local Competition An independent contractor, ([✂]), is situated directly opposite the Primary Care Centre. Within 1km there are 4 independent pharmacies, a Co-op and a Boots."
[✂]	Relocation	"Proposal to relocate an unbranded Lloydspharmacy into a new retail development to include an 80,000 sq ft Tesco and 6 other retail units due for completion in October 2012. It is considered that the current location will decline once the new development is open. Tesco is assumed to open a 100hr pharmacy contract although no application has been approved to date. These financials are therefore a worst-case scenario."

[✂]	Extension	"The dispensary and consultation room occupy 30 sqm, but there are virtually no 'back areas for staff rest facilities and stock storage which causes health and safety issues. It was last refitted in 2004 and is in poor condition with constant wear from the customers' baskets and trolleys." "LloydsPharmacy owns 10 of the 20 pharmacies on [✂]"
[✂]	Relocation	"There are two other pharmacies in the town; [✂] is 100m from [✂] and Boots is 120m away. Despite being first hit to both GP practices branch [✂] does not capture its share of the NHS items due to its poor internal configuration and the need for patients to cross a busy road on a dangerous bend"
[✂]	Refurbishment	"there are three competitor pharmacies and two other health centres. It is proposed to undertake a partial refit in 205 [✂] to bring the pharmacy up to current EPN standards and allow full planogram implementation. The work will include replacing gondolas and wall bays which came from the previous supplier and which are of differing heights and widths. The care room will also be repositioned"
[✂]	Extension	"The extra space will allow continued growth in all of the sales lines for future years in one of LloydsPharmacy's busiest dispensing branches. It is predicted that the larger footprint will allow OTC sales to grow in year 1 by 15% vs 2014 actual, in line with other large health centre branches." "As the current lease has expired, there is a risk that if LloydsPharmacy does not enter into the new agreement, then the GP's would look to take the space back themselves."
[✂]	Refurbishment	"In September 2015, the GPhC Inspector visited [✂] and failed the pharmacy on premises (details shown on the report below)." "To refit [✂] to ensure that the premises is fit to dispense the volume of business required at [✂]" "To do nothing is not an option. Therefore, the 'do nothing' assumption is a full refit of the ground floor only without the structural alterations. This will mean including 50% of the current sales floor as dispensary. This will mean standing room in the pharmacy would be minimal and this refit is therefore the least desirable option given a large Health and Beauty Boots next door."
[✂]	Extension	"[✂] is in a solus location with the nearest competitor pharmacy being 1km away. By expanding into this unit it is estimated that the sales floor will increase from 56sqm to 88sqm and will be on one level making shopping the store much more accessible to all. It will also give greater visibility of the pharmacy to car users coming from the [✂]."

[✂]	Extension	"[✂] has always performed well, and its items have grown by 4.6% from 2012 to 2013 and by 7% between 2014 and 2015. The current dispensary size is just 15 sqm and not fit for purpose, it is unable to process the present volume of items efficiently. There is little space for scripts waiting and as such these items have become a trip hazard in the already cramped rear areas. Staff facilities are also poor. The sales floor is just 28 sqm yet despite this the branch does nearly £80k per annum in OTC. The branch has significant opportunity to grow in terms of both NHS market share and OTC given larger premises." "There is also a Boots pharmacy in the town centre."
[✂]	Refurbishment	"There are a further five pharmacies in Hertford town centre." "The branch dispenses nearly 11,000 items pa in a space that is cramped and not fit for purpose" "The surgery is also growing with the GPs prescribing increasing by 5% between 2013 and 2014." "There is virtually no space for scripts waiting and as such these items have become major hazards within the pharmacy. Staff facilities are poor. The sales floor is just 33sqm and due to the configuration of the branch, a fair majority of the sales floor is not shopped." "The branch received a visit from the GPhC Inspector in late September 2015 and judged four of the five main scoring principles as poor" "The 'do nothing' assumes the dispensary has to be expanded in its current location to address the capacity issues"
[✂]	Refurbishment	"The current dispensary size is just 26sqm, old fashioned, poorly configured and inefficient. It has insufficient workbench to accommodate the pace of dispensing required to give great service to the walk in patients who present from each surgery simultaneously. There is little space for scripts waiting and these items have become a trip hazard in the already cramped dispensary where they spill onto the floor. Branch staff are forced to store equipment, DOOP, confidential waste in WC; OTC stock is stored on shelving in the corridor blocking the fire exit."
[✂]	Relocation	"The ground floor has a noticeable slope from the door to the counter and also smells of damp due to the cellar that floods." "This unit is in a better position than Boots for both surgeries"

[✂]	Relocation	“Boots and a CoOp pharmacy are also located on the high street and there are two further pharmacies located outside of the [✂]; [✂], a small independent chain and another CoOp pharmacy branch” “The unit is very small, however, extending to only 86m2 which is restricting growth of the business for both of the major sales lines. Staff and stock areas are cramped and irregularly configured.” “The lease on the existing unit is due to expire in March 2016 and it is therefore proposed to relocate to a larger unit that has recently become available. The new layout will allow for a larger and safer dispensary and a larger sales area for an improved retail proposition and a dedicated Betterlife area.”
[✂]	Refurbishment	“Our operation is restricted through lack of space and our store measures just 49sqm” “Most importantly the pharmacy is unable to fulfil its NHS contract because it has no consultation room and cannot deliver MURs and advanced services.”
[✂]	Refurbishment	“There are 4 pharmacies located in [✂], all of which are located on the [✂], the main thoroughfare in the town. [✂] and Boots are located in the prime section and both the Coop and independent pharmacy, [✂], are located at either end in secondary trading positions.” “The sales floor is dated with ripped blue carpets, wooden gondolas, shelving and directional signage. The dispensary is raised with all equipment dated and in need of repair.” “The do nothing assumes no investment in the unit and a steady decline in business due to the continuing deterioration of the unit condition.”
[✂]	Refurbishment	“Due to the construction of the property the floor space is impeded by various pillars, restricting the pharmacy design. As such, the current store layout is poor with much wasted space – the care room extends to 7m2, almost double the size of the new mini care rooms used (3.7m2). The sales floor is very dark due to the windows being vinyled out to allow for shelving and most of this area cannot be seen from the till point due to the structural pillars. “ “The dispensary is small at only 16m2 and it has reached capacity for assembly and storage space. Concerns have been raised about dispensing safety by the RQM” “There are 7 other pharmacies located within a 1 mile radius, [✂] c0.2 miles further down [✂], 2 x local Boots, 3 other independents and our [✂] which has recently relocated to larger premises”

[✂]	Health Centre Relocation	“Both the GP and Lloydspharmacy have been trading from temporary portakabins since establishment of the new businesses in 2005, however following pressure from the Council to build permanent premises, a new scheme is now underway”
[✂]	Extension	“There are 3 pharmacies, all located in the town centre, 2 of which are LloydsPharmacies, and the 3rd ([✂]) is an independent operator.” “The branch extends to only 47m2 and due to its very small 12m2 dispensary, has serious dispensary capacity issues. Concerns have also been raised as to the whether the existing consultation room complies with the GPHC regulations due to the size and specification of the room. The branch also does not currently have any staff facilities”
[✂]	Refurbishment	“A Well Pharmacy is the only other competition in the area and is within the Morrisons complex.” “Four members of long standing staff, including the Pharmacist left at the beginning of the year, mainly due to working conditions. Service levels since have been impacted and this in turn has had a massive impact on the number of items dispensed at the branch. Trading to September 2015 showed the branch to be 20% behind budget in terms of items and 18% behind budget in terms of OTC. Current staff members have described how it is very difficult to attract new team members because of the state of the premises. Those that have been recruited have then left after only a short period of time. Staff morale is very low currently and without carrying out a full refit we risk the branch declining even further.” “There is not enough workbench or storage area for the volume of items dispensed. There is little space for scripts waiting and as such these items have become a trip hazard in the already cramped areas. Branch staff are forced to store equipment in communal areas of the complex which is causing issues with other tenants” “The dispensary is considered to be a high GPhC risk.”
[✂]	Relocation	“Rowlands, Lloydspharmacy’s only competitor, has 2 branches in [✂]; one close to the [✂] Medical Centre just north of the town centre and 1 located on [✂]” “The new unit extends to 165 m2 all on ground floor which will allow an expanded dispensary and sales floor.”
[✂]	Refurbishment	“A 100hr independent pharmacy occupies premises 2 doors away in the same retail parade”
[✂]	Relocation	“An internet pharmacy, the ‘[✂]’ opened in 2012 on a retail pitch around the corner from [✂] and the branch lost circa 19% of its items business Landlord also for Lloyds, terminated lease.”

[✂]	Relocation	“The next nearest competitor is an independent 2 miles away in ” “[✂] is a small 80m2 community pharmacy, which requires Refurbishment. However it is off pitch and considered too small and narrow, irregularly configured, and non DDA compliant to refit in situ” “NHS items have been forecast to recover as market share has been lost to Boots following its relocation to the medical centre”

Empirical analysis of quality and margins

Introduction

1. This appendix summarises our analysis of the available empirical data on QRS parameters and profit margins at a local pharmacy level, and how these relate to measures of competition in the local market.

2. The appendix is structured as follows:

   (a) First we outline the Parties' analysis of the relationship between quality parameters and competition across local markets.

   (b) We then present our own analysis of the relationship between quality parameters and competition.

   (c) Finally we consider the relationship between margins and competition, where margins act as an indirect signal for quality.

3. Overall, our own empirical analysis and the analysis provided by the Parties suggests that there is substantial variation in quality parameters between local Lloyds stores, including on: opening hours; average waiting times; years since refurbishment; locum hours; and mystery shopper ratings.

4. We do not find a clear relationship between individual quality variables and indicators of competition in a local area. While quality parameters vary locally, the majority of the estimated relationships between quality and concentration are not precisely estimated. However, we note that neither our analysis nor that of the Parties has been able to control adequately for other local factors which might be affecting levels of quality.

Analysis of variation in quality between pharmacies

The Parties' analysis

5. The Parties submitted their own analysis plotting the relationship between four quality parameters at Lloyds' pharmacies and the fascia count in the local catchment of each store. The quality parameters they considered were: average waiting time; years since refurbishment; locum hours; and mystery shopper ratings.

6. Figure 1 shows the relationship the Parties found between fascia count and waiting times. The average waiting time for each number of fascias is plotted

in orange. Figure 1 does not demonstrate a clear relationship between the variables but does show that there is significant variation in waiting times across the Lloyds estate, despite Lloyds stating that it has a uniform [✂] target across its estate. We also note that Lloyds' Competitive Edge document states that, [✂].

Figure 1: Waiting times for Lloyds plotted against number of fascias

[✂]

Source: The Parties.

7. Figure 2 shows the relationship between the years since a Lloyds' pharmacy was last refurbished and the number of fascias in the area. The Parties have calculated the average number of years since the last refurbishment for each number of fascias, plotted in orange. Figure 2 does not demonstrate a clear relationship between the variables. We note that there is significant variation in the years since last refurbishment. We also note Lloyds' comment that it refurbished stores in response to local competition (see final report, paragraph 7.115).

Figure 2: Years since last refurbishment for Lloyds plotted against number of fascias

[✂]

Source: The Parties.

8. The Parties found a similar lack of relationship for locum hours and mystery shopper ratings.

9. The Parties said that this indicated that there was no evidence of competition at a local level on any of these parameters. However, the Parties' analysis does not prove there is not a relationship, only that there is limited correlation between individual quality parameters and the fascia count, which might be explained by other characteristics of the local areas aside from the strength of competition.[1] Their analysis did not attempt to control for any other factors. As noted above, the Parties' own documents and statements indicate that some of these parameters are flexed in response to competition.

CMA analysis of quality parameters and strength of competition

10. We analysed a range of quality parameters, including opening hours, opening late at night or on Sundays and average waiting times.

[1] For example, some elements of quality parameters might be affected by the level of demand in a local area, which in turn might be correlated with the number of fascias in the area.

11. In order to empirically explore the relationship between quality parameters and concentration, we have used a framework similar to the entry-exit analysis described in Appendix H. Therefore, the relationship we find may be different from that which the Parties find for the same variable. Since we did not have access to time series data on quality, we were not able to use a fixed-effects specification, so relied on ordinary least squares regressions. Our findings can be interpreted as correlations between quality and concentration, which may provide information about the existence, and direction, of an association between two variables.

12. Our quality concentration analysis uses the following framework:

(a) Once we control for market size, the number of stores acts as a proxy for concentration. We use the number of GP practices and the total number of prescription medicines to control for differences in the size of the market.[2]

(b) We have counted the number of stores within fascia-specific distance bands from each party's store and grouped these into five categories:

(i) Lloyds;

(ii) supermarket pharmacy chains including Sainsbury's;

(iii) pharmacy chains with at least ten stores in England; and

(iv) pharmacy chains with fewer than ten stores in England.

(c) The analysis is run separately for urban and rural areas. The category-specific distance bands mimic those used in the catchment areas, but we have aggregated them into only two categories: urban and rural.[3] They are:

(i) In urban areas, 1.4 miles for Lloyds, independent and multiple chains' stores and 2.4 miles for Sainsbury's and other supermarket pharmacy chains.

[2] As distance bands to evaluate market size, we have used 1.4 miles in urban areas and 1.6 miles in rural ones for Lloyds and 2.4 miles in urban and 3.4 in rural ones for Sainsbury's. Our choice was informed from the catchment areas of the market definition, aggregated at the urban-rural level, and motivated by the need to account as extensively as possible for the potential demand faced by the Parties.
[3] Those areas classified as 'conurbation', corresponding to ONS classification A1/B1, are considered urban areas. While, 'city and town', 'rural' and 'very rural', corresponding to ONS classification from C1 to F2, are considered rural areas. The catchment areas for this latter category are averages of the individual catchment areas of the market definition.

(ii) In rural areas, 1.6 miles for Lloyds, independent and multiple chains' stores and 3.4 miles for Sainsbury's and other supermarket pharmacy chains.

(d) We have corrected the standard errors in order to account for store-specific variation for the following two reasons:

(i) in a panel specification, the error terms of an individual store may be correlated across time; and

(ii) OLS estimates on binary variables violates the assumption of independent and identically distributed error terms;

(e) Absent this correction, the model estimates are still unbiased but standard errors may be wrong, leading to incorrect inference.

13. In order to assess the robustness of our findings, we have estimated the following alternative specifications of the model designed above:

(a) As we are interested in understanding whether the effect of local competition differs across supermarket brands, we have estimated the effect of entry of supermarket pharmacies on quality, treating the different brands as distinct categories. However, the small number of observations for individual supermarket pharmacies may have limited our ability to accurately estimate the effect of local competition for each supermarket brand, therefore our preferred specification pools all supermarket brands together.

(b) Because we have used a continuous variable as a proxy for competition (ie the number of stores in the local area), the analysis implicitly assumes that there are no decreasing marginal effects of concentration on quality.[4] To address this issue, we have followed the Parties' approach[5] and included a set of dummy variables for the different number of stores in a local area.[6] Since we have reservations about the Parties' large number of dummy variables, we have included fewer in our models.

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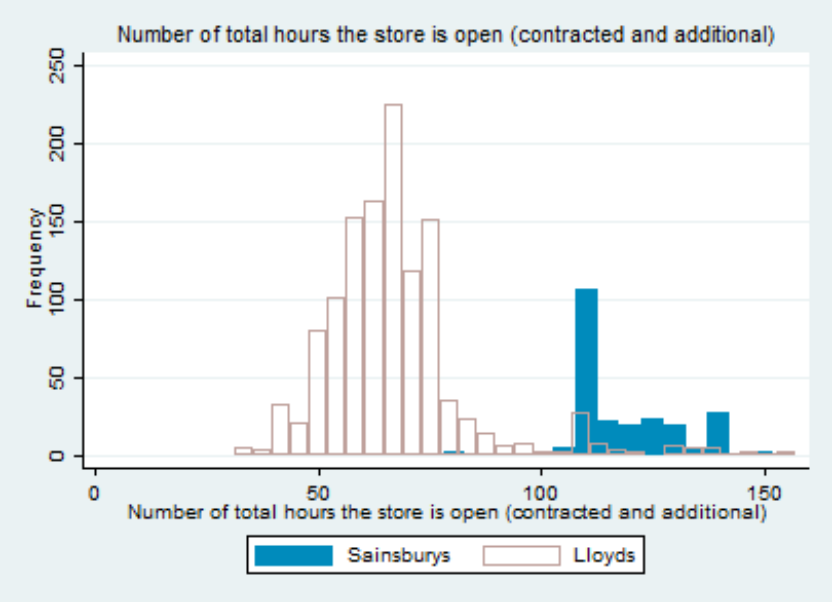
[4] For example, we implicitly assumed that the effect on quality due to the opening of a second additional store in a local area, where previously there was only one store, is the same as the effect of the third store, or the fourth.
[5] Celesio/Sainsbury's response to provisional findings, Appendix 3.
[6] We have included five dummy variable: the first one takes value of 1 if there is only one store in the local area and 0 otherwise, the second one takes value of 1 if there are only two stores and 0 otherwise, and so on up to five stores in the local area. We have not included a dummy variable for when there are no other stores in the local area, but the existing one. This latter group acts as the reference category. Therefore, the coefficients signal the impact on the dependent variable from an additional store compared with the outcome in local monopoly areas.

(c) We have included indicators for the region where the store is located. These indicators aim to take into account possible differences between local areas due to socio-economic and demographic characteristics that could have an effect on our variables of interest, for example different levels of income or health between regions. However, including these indicators may result in an over-fitted model, which hinders the ability of the model to accurately estimate the relationship between quality and local concentration.

14. In relation to opening hours, Figure 3 shows the distribution of opening hours for Lloyds and Sainsbury's stores. Opening hours are given by the sum of contracted and additional hours. Sainsbury's pharmacies have, on average, longer opening hours compared with Lloyds' pharmacies. Sainsbury's said that the reason was that its pharmacy opening times were generally linked to store opening times, and that the percentage of 100-hour licences was much higher for Sainsbury's than for Lloyds. However, for both Lloyds and Sainsbury's we note that there is significant variation in opening hours between stores. This demonstrates that it is possible to vary the number of opening hours at a store level, subject to it being open for at least the minimum number of hours stipulated in the store's licence.

Figure 3: Opening hours across Lloyds and Sainsbury's pharmacies



Source: CMA analysis.

Table 1: Weekly opening hours across Lloyds and Sainsbury's pharmacies

	Hours		
	Average	*Minimum*	*Maximum*
Lloyds	67	31	157
Sainsbury's	119	78	152

Source: CMA analysis.
Note: Pharmacy of 40 core contractual hours are allowed to apply to open for less than 40 hours.

15. Figure 4 shows the relationship between opening hours and the number of competitors in the local store catchment. It suggests a positive correlation, for Lloyds only, between opening hours and competition.[7] This could be explained if Lloyds opens for more hours where there are more competitors and shorter hours where there are fewer competitors, which would occur if Lloyds is responding to increased competition by opening its pharmacies longer. The same relationship does not hold for Sainsbury's pharmacies, where the opening hours are linked to wider store opening decisions, and are constrained by the high proportion of its licences which are 100 hours.

Figure 4: Store opening hours plotted against number of competitors

Source: CMA analysis.

16. Tables 1 to 6 in Annex 1 further explore the relationship suggested in Figure 4. We have regressed the total number of hours a store stays open on the number of competitors controlling for market size, using the method described in paragraphs 12 of this appendix.

[7] Note that the fitted line in Figure 5 does not control for an additional factors that might influence demand. We present the regression results in Table 1 below.

17. Our findings suggest that opening hours vary at the local level and may be correlated with the number of competing stores in the local area. Controlling for the size of the local market, the greater the number of other small pharmacy chains near an existing Lloyds, the longer the existing Lloyds stays open. However, the cross-sectional nature of this model and the presence of coefficients of the opposite signs in some of the estimated specifications suggest that these findings may not be sufficiently robust and need to be interpreted carefully.

18. We also used the information on whether a pharmacy is open late at night or on Sundays as a measure of quality. We have constructed an indicator that assumes a value of 1 if the store stays open on Sundays or late at night and 0 otherwise. A pharmacy may use extended opening hours to gain and retain customers in response to a competitive threat. Table 2 presents the percentage of pharmacies offering this service for Lloyds and Sainsbury's. As expected, we note that Sainsbury's pharmacies are more likely to be open on Sundays or late at night.

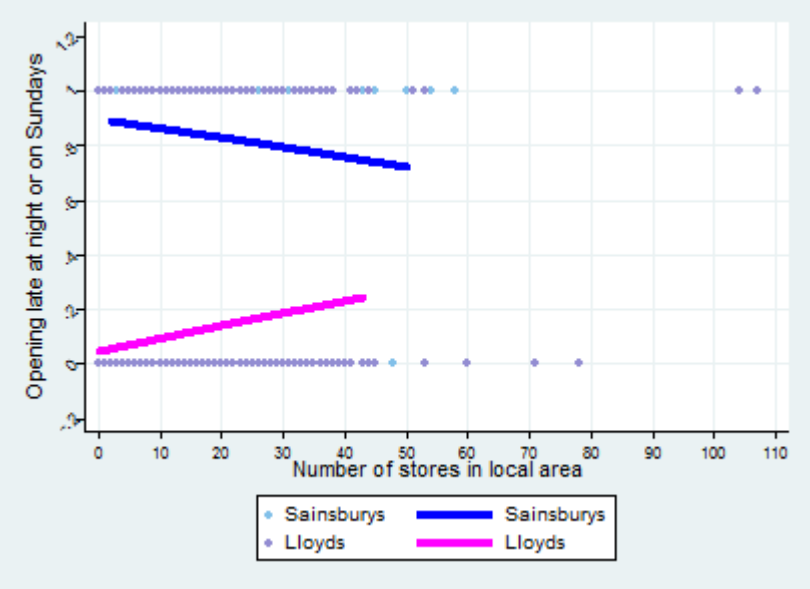
Table 2: Percentage of Lloyds and Sainsbury's pharmacies offering an extended hours service (open late at night or on Sundays)

	%
	Extended hours service
Lloyds	[✂]
Sainsbury's	[✂]

Source: CMA analysis.
Note: Pharmacies are identified as open late at night if they are open after 8pm for at least one day a week.

19. In Figure 5 we plot the extended hours service offered by Lloyds and Sainsbury's against the number of stores within a given distance band. The figure suggests that there is a positive correlation, for Lloyds only, between Sundays or late at night opening and the number of pharmacies in the area. This could be explained if Lloyds opens on Sundays and at weekends in response to competition. For Sainsbury's we do not find a similar relationship.

Figure 5: Whether the store stays open late at night or on Sunday plotted against the number of competitors



Source: CMA analysis.
Note: Pharmacies are identified as open late at night if they are open after 8pm for at least one day in a week.

20. As for the length of opening hours, we have conducted regression analysis to see if the relationship is the same when we control for other factors, which is shown in Tables 7 to 12 in Annex 1. Our findings are not sufficiently robust to provide evidence to support the statement that being open on Sundays or late at night is a response to competitive pressure at the local level. But they show that whether the store stays open late at night or on Sundays varies at the local level and is correlated with local concentration.

21. Finally, we used the information on average waiting times. Similar to the extended opening-hours service, a pharmacy might differentiate itself from its competitors by offering additional services and may be more likely to do this when there are more competitors in a local area (the longer the waiting time, the more customers will be inconvenienced).

22. Figure 6 indicates that there is substantial variation in performance on waiting times across local areas. We do not consider that the graph shows any relationship between waiting times and concentration, we note that the line of best fit for Lloyds is upwards sloping but the R^2 value, which measures the goodness of fit, is 0.005.

Figure 6: [✂]

[✂]

Source: CMA analysis.

23. The Parties submitted that Figure 6 shows that waiting times **increase** with more intense competition (ie as the number of competitor stores nearby increases). All else being equal, they believe that this suggests that waiting times are **not** an important competitive parameter, otherwise one would expect to see the opposite result (ie waiting times **decreasing** with more intense competition). The Parties said that this analysis therefore support their submissions that: (i) Lloyds has a consistent national target for waiting times of [✂] and does not flex its position on this target in response to local competitive conditions; (ii) competitive pressure from Sainsbury's does not influence Lloyds' approach to waiting times at the local level; (iii) the merged firm will not have an increased incentive to alter waiting times as a result of the transaction; and (iv) the transaction is not likely to result in any adverse effects for customers in connection with waiting times.

24. Similarly to opening hours, we analysed average waiting times to explore whether there is a relationship with local concentration, once we control for other factors. These findings are shown in Table 13 to 18. Our findings are not sufficiently robust to provide evidence to support the statement that average waiting times are correlated with the level of competition at the local level. However, we observe a certain degree of variation at the local level.

CMA analysis of refurbishments

25. In addition to considering the variation in quality parameters across a cross-section of local areas, we also considered whether there was evidence that quality parameters had changed over time in response to entry by a competitor. There was very limited data available on changes in quality over time, but we were able to gather data on dates of store refurbishments by Lloyds. This allowed us to analyse whether Lloyds' stores were refurbished more recently where a store of an alternate fascia had entered than otherwise.[8]

26. We conducted a simple test to see whether the average length of time between entry of a competitor and refurbishment differed depending on whether the entrant was an independent, a multiple or a supermarket.

27. Specifically, for those stores that had experienced entry by only one of these fascia types in the period before the last known refurbishment date, we calculated the number of years which elapsed between entry and

[8] We did not find a relationship between time since last refurbishment and concentration when conducting simple cross-sectional analysis.

refurbishment.[9] We then performed a t-test to compare the average elapsed time at these stores with the average for the reference category.

28. Finding an appropriate reference category for this analysis was not straight-forward. Given the variable we were testing, we could not use Lloyds' stores which did not experience any entry as the reference group, since for these stores it is by definition impossible to calculate the number of years between entry and refurbishment.[10]

29. We consider that Lloyds will be optimising its store portfolio, and therefore should not respond to its own entry. Put differently, it would not be rational for Lloyds to refurbish an existing store to prevent business being lost to another store it has recently opened nearby:[11] absent complicating factors, it gets the same revenue whichever store its customers visit. Therefore Lloyds entry is an event for which we would not expect to see a response. They are therefore appropriate as a benchmark against which to test whether entry by other fascias (where we may expect a response) invokes a reaction.

30. A further advantage of this reference group is that it may control for some drivers of entry which drive both refurbishment and entry. For example, the Parties said that decisions to refurbish were in part driven by volumes in the local area. An increase in volumes, for example because the population has aged, may therefore drive both refurbishment and competitor entry (as a new pharmacy becomes necessary to process the volumes required).

31. Because the areas in both our reference groups and our testing groups have all experienced entry, we consider that such factors are more likely to be the same between these areas than average, and therefore that endogeneity problems are mitigated (although not eliminated) in this design.

32. Our results are shown in Table 3.

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[9] We considered only those stores which experienced entry by only one fascia type in order to reduce complexity in interpreting the results. This limited the sample size available in the analysis, as many Lloyds stores experienced entry by more than one fascia type over the period, particularly over larger distances. This led to a trade-off in increasing the distance over which we tested for an effect. Using larger distance bands meant that we increased the set of stores which experienced entry recently, but decreased the incidence rate of Lloyds stores which experienced entry by only one fascia type.

[10] We also had data on only the most recent refurbishment, so could not calculate how often these stores were refurbished. Even if we had this data, such a comparison would not be like with like: because entry occurs between refurbishments, the time interval between entry and the next refurbishment will always be less than or equal to the time interval between refurbishments. Making a comparison between stores with no entry against the time interval between entry and refurbishments would (by construction) be very likely to find a significant effect, but the effect would have no interpretation.

[11] Our entry/exit analysis suggests that customers do switch to another Lloyds nearby following entry, however in this analysis we are interested in the response to volume losses, not whether such volume losses occur.

Table 3: Refurbishment analysis

Category	*Mean number of years between entry and Lloyds refurbishment*	*Number of observations in category*
Lloyds entry	7.1	17
Independent entry	3.4***	83
Multiple entry	6.7	71
Supermarket entry	4.7*	38

Source: CMA analysis.
1. Levels of statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.
2. The reference category is entry from other Lloyds.
3. Supermarket entry includes Sainsbury's entry.

33. Our results showed that Lloyds refurbishes its stores more quickly following entry of a competing independent or supermarket store than entry of a store of its own brand within 0.2 miles. This difference was statistically significant. We did not find a statistically significant difference with Sainsbury's stores,[12] and we did not find an effect when tested at 1 mile and 1.4 miles.

34. The Parties made the following points in relation to this analysis:

(a) The analysis did not indicate that Lloyds responded to Sainsbury's entry.

(b) The sample size of the reference category was small.

(c) The distance over which our results suggested a reaction to supermarket entry was small, and different from the wider catchment areas established in market definition.

(d) Even if Lloyds were to respond to entry, three to four years was a long time after entry for refurbishment to take place, indicating that:

(i) the refurbishments did not actually occur as a response to entry because a reaction should occur as soon as possible;

(ii) the number of instances where there was a response to entry were few in number; or

(iii) a modest change in the timing of refurbishment was not a material consideration for customer detriment.

(e) Lloyds did not currently make decisions in relation to refurbishments in a manner consistent with CMA theory.

35. We address these points in order below.

[12] We note that the sample size for Sainsbury's stores was two-thirds of the size of the supermarket sample.

36. First, we consider that a result indicating that Lloyds responds to other supermarket entry suggests that it would respond to Sainsbury's entry. The Parties told us that 'this analysis itself constitutes evidence that Lloyds may respond differently to entry by a Sainsbury's relative to entry by other supermarket pharmacies'. We consider that absence of a statistically significant effect does not provide evidence that there is no effect.[13] We have no evidence to suggest that Lloyds views entry by different supermarkets differently; to the contrary we note that its own internal documents consider supermarkets as a whole, suggesting that it views them as a relatively homogenous group.[14]

37. Second, the Parties told us that all of the results were based on a comparison group with a sample size that is 'essentially the same (only 17 stores)' as the sample affected by Sainsbury's opening. We acknowledge that the smaller sample size may reduce the precision of our estimates.

38. Third, the Parties said that 'even taken at face value, they did not believe the results as presented can be interpreted as evidence of an effect of (non-Sainsbury's) supermarket or independent rivals on refurbishment if they are located any more than 0.2 miles away from Lloyds'. We acknowledge that we did not find evidence of effects over larger distances. However, we consider that the results are indicative that Lloyds does respond if supermarket entry is sufficiently close, and do not rule out that reactions could occur to entry further away. Nevertheless, we have taken into account the smaller distance found in this analysis in our competitive assessment of the local areas.

39. Fourth, we consider the Parties' point that the average interval between entry and refurbishment is above three years for all testing groups is likely to be explained by Lloyds not responding to every entry. Doing so may not make financial sense in every instance, and cases where it does not respond at all would pull the average up. In relation to their point that three years is a long time, we note that many refurbishments require regulatory approval and will also take time to arrange with staff and customers. We consider therefore that an average of three years does not necessarily suggest that the Parties do not respond to entry.

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[13] We looked for evidence to show whether Lloyds refurbished less quickly in response to Sainsbury's entry than supermarket entry by testing whether the differences in average time intervals between entry and refurbishment across the Sainsbury's group and a group of non-Sainsbury's supermarkets were statistically significant. At 0.2 miles, where we found the difference between Lloyds and supermarket averages to be marginally significant, we did not find the difference between Sainsbury's and other supermarket averages was statistically significant. The analysis does not therefore constitute evidence that Lloyds may respond differently to entry by a Sainsbury's relative to entry by other supermarket pharmacies.

[14] For example, a Lloyds internal email to regional development managers which updated the risk weighting on the estate assigned the same risk weighting to all supermarkets.

40. In relation to their points concerning materiality, we consider that refurbishment is only one of a number of variables on which we believe the Parties compete. Therefore refurbishing on average three years sooner contributes to (rather than constitutes) a benefit consumers may gain from competition which, when all such benefits are considered in the round, are material.

41. Fifth, we consider that the Parties do take into account competition as a motivation for refurbishment, alongside a number of other factors. We note that this is consistent with the Parties' previous submissions, and discuss this further in Appendix F.

42. We therefore conclude that this analysis is indicative evidence of Lloyds accelerating its refurbishment schedule in response to local competition by supermarkets, and by extension to competition by Sainsbury's. We acknowledge that the analysis does not fully control for other factors and is limited by sample size, and these factors place a limit on the weight that can be assigned to it.

Other approaches including analysis of margins data

43. The relationship between any one quality indicator and concentration is unlikely to fully explain how quality responds to changes in concentration, as there are many dimensions of quality and they need not all respond to a change in concentration in the same way. In principle there are two ways to try to estimate the aggregate relationship between quality and concentration:

    (a) Construct a composite index of all quality measures.

    (b) Use margin information.

44. We did not have sufficient information on the relative values consumers place on different quality parameters to construct a quality index, but considered whether we could analyse pharmacy-level margins data.

45. The analysis of pharmacy-level margins to indirectly retrieve quality rests on two hypotheses:

    (a) higher store-level quality is valued by customers, therefore pharmacies may choose to respond to entry by increasing store-level quality in order to retain customers;

    (b) quality is costly, therefore an increase in quality at a pharmacy is associated with an increase in costs, which in turn implies a reduction in margins.

We would expect, therefore, margins to be lower in areas where quality is high and vice versa.

46. In order to explore this relationship, we have built on the analysis of margins data that the Parties' advisers submitted. Since we have access to panel data we have used a fixed effects model. This allows us to control for the impact of store characteristics that do not vary over time, such as a particularly good store location persistently affecting demand.

47. We have also included dummy variables for each quarter, in order to account for possible seasonal effects that could have driven the demand for prescription medicines, for example seasonal flu.

48. However, there may be unobserved factors that drive both local concentration and quality and that we are not able to adequately control for. Not adequately controlling for these unobserved factors implies that our analysis is not capable of proving a causal link from concentration to quality; at most it can highlight the existence of a correlation between the two variables.

49. The Parties submitted their own analysis of the relationship between average margins and the level of competition in a local area. They argued that there was no clear relationship between margins and competition.

50. The Parties have used gross margins (ie sales minus wholesale cost and other staff costs) as percentage of total sales as the dependent variable and have argued that:

(a) this measure takes account of variable costs but not fixed costs, which could not be adjusted by the firm in the short to medium run;

(b) Lloyds viewed the following costs as being fixed in the short to medium run, since these were all costs that were incurred by just having a pharmacy:

(i) distribution costs;

(ii) overheads;

(iii) building expenses;

(iv) depreciation; and

(v) pharmacist wage costs; and

(c) using gross margins was preferable to using EBIT, which takes into account both variable costs and some fixed costs.

51. We agree with the Parties that only costs that are variable in the short to medium term should be included when calculating margins. However, since both sales price and wholesale costs of prescription medicines are regulated at the national level, gross margins do not reflect accurately pharmacies' ability to flex locally the parameters of competition. EBIT may, instead, provide useful information on costs – such as employee and refurbishment costs – that are fixed in the short run but are flexible in the medium to long run. And some of these costs may be responsive to competition at a local level.

52. As EBIT includes also information on costs that pharmacies can flex in response to entry, we have estimated and reported both the specifications, gross margins and EBIT, and we consider that they represent a lower and an upper bound for the estimate of margins.

53. Figure 7 plots gross margins as a percentage of total sales against the total number of competitors in the local area for the last quarter of 2015.[15] Figure 8 does the same for EBIT. Figure 8 points towards the expected negative correlation between margins and concentration, while Figure 7 towards zero correlation. Both figures, however, display substantial variation at the local level.

Figure 7: Gross margins as percentage of total sale and number of competitors

[✂]

Source: CMA analysis.
Note: Based on latest data available, Q4 2015.

Figure 8: EBIT as percentage of total sale and number of competitors

[✂]

Source: CMA analysis.
Note: Based on latest data available, Q4 2015.

54. Tables 4 and 5 provide insights on the evolution across time of the average values for gross margins, EBIT, total sales, number of competitors and of supermarket pharmacies within the pharmacy's catchment area.

Table 4: Gross margins, EBIT, total sales and number of competitors across time – urban areas

[✂]

Source: CMA analysis.
[✂]

[15] This is the latest quarter where we have information about the number of stores in the local area, ie the last quarter of 2015.

Table 5: Gross margins, EBIT, total sales and number of competitors across time – rural areas

[✂]

Source: CMA analysis.
[✂]

55. The model was estimated on quarterly store-level observations from the first quarter of 2013 to the first quarter of 2015.[16]

56. Tables 19 to 24 present the findings of our analysis of the relationship between margins and number of competitors, applying the framework of the entry-exit analysis described above. We have not found consistent and robust results on the relationship between margins, either measured as gross margins or as EBIT, and concentration, either measured as a continuous variable or as a discrete one.

Summary

57. In summary, our analysis of quality variables suggests that in some cases there is a correlation between quality and the number of competitors in a local area. This may be indicative of a causal link, whereby an increase in the number of competitors leads to an increase in some quality parameters. However, we also acknowledge that the relationship between quality and concentration is hard to identify in our data and our results could be driven by factors that we are not able to adequately control for.

58. More importantly, these analyses suggest that there is significant variation in the quality parameters across the Lloyds estate, which shows that these factors can vary at a local level.

[16] At the start of the investigation, data on the number of pharmacies was available only up to the first quarter of 2015. As data on the whole of 2015 became available and considering that the Parties have submitted information on store-level margins up to December 2015, we have assessed how results changed when extending the analysis to include the additional quarters. We refer to this analysis as the analysis on extended time period. It is reported in Annex 2 to this appendix. As a robustness check, we have also estimated the model on the extended time period. We found that margins are statistically significantly lower in those areas where the number of supermarket pharmacies is higher. However, the results suggest merely a correlation between margins and concentration.

Regression tables

Total weekly opening hours

Table 1: Regression analysis – store opening hours and number of competitors – urban areas

	Lloyds	*Lloyds*	*Sainsbury's*	*Sainsbury's*
Number Lloyds stores within 1.4 miles	–0.93	–1.12	–1.51*	–0.41
	(0.81)	(1.05)	(0.88)	(1.25)
Number of multiple pharmacies stores within 1.4 miles	–0.72**	–0.21	0.13	0.09
	(0.33)	(0.43)	(0.47)	(0.72)
Number of independent stores within 1.4 miles	1.01***	0.66*	–0.37	–0.36
	(0.24)	(0.37)	(0.34)	(0.58)
Number of supermarket stores (Sainsbury's included) within 2.4 miles	0.47	1.21	–1.42	–1.90
	(0.66)	(0.85)	(0.96)	(1.52)
Constant	69.98***	64.71***	119.78***	108.76***
	(2.05)	(2.29)	(3.63)	(6.10)
Regional dummies to control for differences across regions		Yes		Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes	Yes	Yes
R-square	0.059	0.166	0.073	0.393
Number of observations	425	388	90	82

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 2: Regression analysis – store opening hours and number of competitors – urban areas – supermarkets are split by brand

	Lloyds	*Lloyds*	*Sainsbury's*	*Sainsbury's*
Number Lloyds stores within 1.4 miles	–0.82	–0.86	–1.16	0.27
	(0.86)	(1.09)	(0.85)	(1.25)
Number of multiple pharmacies stores within 1.4 miles	–0.71**	–0.21	0.12	–0.34
	(0.33)	(0.42)	(0.46)	(0.67)
Number of independent stores within 1.4 miles	0.97***	0.60	–0.42	–0.31
	(0.26)	(0.38)	(0.34)	(0.60)
Number of ASDA pharmacy stores within 2.4 miles	0.17	1.75	–2.95*	–5.40**
	(1.58)	(1.96)	(1.49)	(2.23)
Number of Tesco pharmacy stores within 2.4 miles	0.49	0.25	–0.47	–0.12
	(1.26)	(1.61)	(1.45)	(2.03)
Number of Sainsbury's pharmacy stores within 2.4 miles	1.42	2.97*	–1.24	–2.12
	(1.47)	(1.79)	(1.68)	(2.83)
Number of Morrison pharmacy stores within 2.4 miles	–1.51	–1.51	–2.06	–6.75*
	(2.34)	(2.65)	(2.64)	(3.74)
Constant	70.04***	73.19***	119.66***	110.56***
	(2.03)	(3.55)	(3.69)	(6.22)
Regional dummies to control for differences across regions		Yes		Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes	Yes	Yes
R-square	0.062	0.171	0.091	0.441
Number of observations	425	388	90	82

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Regression analysis – store opening hours and number of competitors – urban areas – non–linear effects

		Lloyds	*Lloyds*	*Sainsbury's*	*Sainsbury's*
Number of stores within [Lloyds or Sainsbury's] catchment area [1.4m for Lloyds; 2.4m for Sainsbury's]					
	1	–11.43***	–7.99**		
		(3.22)	(3.49)		
	2	7.86	24.03	–2.53	–14.75
		(11.29)	(14.69)	(10.00)	(10.29)
	3	0.11	1.17		
		(3.27)	(3.55)		
	4	–4.26*	–3.11	–7.98***	–9.62**
		(2.28)	(4.31)	(2.82)	(4.64)
	5	0.26	1.62	–9.91***	–14.79**
		(3.39)	(3.71)	(2.67)	(7.31)
Constant		67.11***	95.38***	122.22***	125.99***
		(2.49)	(10.27)	(3.29)	(4.98)
Regional dummies to control for differences across regions			Yes		Yes
Number of GPs and total volumes of prescription medicines to control for local market size		Yes	Yes	Yes	Yes
R-square		0.013	0.155	0.023	0.394
Number of observations		425	388	90	82

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Regression analysis – store opening hours and number of competitors – rural areas

	Lloyds	*Lloyds*	*Sainsbury's*	*Sainsbury's*
Number Lloyds stores within 1.6 miles	0.62	0.19	–0.56	–0.20
	(0.60)	(0.78)	(0.98)	(1.32)
Number of multiple pharmacies stores within 1.6 miles	0.46	0.77*	–0.52*	–0.11
	(0.34)	(0.43)	(0.29)	(0.55)
Number of independent stores within 1.6 miles	0.81**	0.23	–0.17	–0.21
	(0.33)	(0.43)	(0.49)	(0.45)
Number of supermarket stores (Sainsbury's included) within 3.4 miles	0.44	0.53	0.93	–0.73
	(0.44)	(0.54)	(0.80)	(1.41)
Constant	65.72***	63.41***	118.99***	113.90***
	(0.93)	(2.62)	(2.19)	(7.97)
Regional dummies to control for differences across regions		Yes		Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes	Yes	Yes
R-square	0.026	0.171	0.049	0.489
Number of observations	789	765	156	152

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Regression analysis – store opening hours and number of competitors – rural areas – supermarkets are split by brand

	Lloyds	*Lloyds*	*Sainsbury's*	*Sainsbury's*
Number Lloyds stores within 1.6 miles	0.70	0.09	–0.48	–0.23
	(0.62)	(0.78)	(0.97)	(1.32)
Number of multiple pharmacies stores within 1.6 miles	0.51	0.74*	–0.50	0.05
	(0.33)	(0.43)	(0.30)	(0.56)
Number of independent stores within 1.6 miles	0.83**	0.20	–0.23	–0.29
	(0.33)	(0.42)	(0.47)	(0.44)
Number of ASDA pharmacy stores within 3.4 miles	0.13	0.26	–0.06	–2.40
	(1.03)	(1.26)	(1.88)	(2.53)
Number of Tesco pharmacy stores within 3.4 miles	0.82	–0.22	0.25	–0.26
	(0.93)	(1.14)	(1.42)	(2.01)
Number of Sainsbury's pharmacy stores within 3.4 miles	0.69	1.52	0.04	–0.90
	(0.90)	(1.09)	(2.72)	(3.71)
Number of Morrison pharmacy stores within 3.4 miles	–1.03	1.64	5.14*	2.86
	(2.23)	(2.70)	(2.75)	(3.89)
Constant	65.66***	64.47***	118.81***	110.93***
	(0.92)	(2.77)	(2.20)	(8.69)
Quarter dummies to control for seasonality or time-shocks		Yes		Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes	Yes	Yes
R-square	0.027	0.174	0.069	0.500
Number of observations	789	765	156	152

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Regression analysis – store opening hours and number of competitors – rural areas – non-linear effects

		Lloyds	*Lloyds*	*Sainsbury's*	*Sainsbury's*
Number of stores within [Lloyds or Sainsbury's] catchment area [1.6m for Lloyds; 3.4 for Sainsbury's]					
	1	–0.31	–0.15		
		(1.62)	(1.87)		
	2	–0.55	–1.57	0.18	–2.82
		(1.79)	(1.95)	(2.41)	(9.87)
	3	–3.83**	–3.43*	–0.14	1.61
		(1.83)	(1.94)	(4.09)	(5.44)
	4	–0.85	–1.36	2.56	0.38
		(2.60)	(2.80)	(3.02)	(3.95)
	5	–1.75	–2.78	–1.62	1.50
		(1.64)	(1.75)	(3.36)	(4.87)
Constant		66.02***	64.40***	118.01***	109.51***
		(1.47)	(2.91)	(2.67)	(4.23)
Regional dummies to control for differences across regions			Yes		Yes
Number of GPs and total volumes of prescription medicines to control for local market size		Yes	Yes	Yes	Yes
R-square		0.007	0.167	0.030	0.485
Number of observations		789	765	156	152

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Extended opening hours service

Table 7: Regression analysis – extended opening hours service and number of competitors – urban areas

	Lloyds	*Lloyds*	*Sainsbury's*	*Sainsbury's*
Number Lloyds stores within 1.4 miles	–0.01	–0.01	0.03	0.03
	(0.01)	(0.02)	(0.03)	(0.05)
Number of multiple pharmacies stores within 1.4 miles	0.00	0.01	0.01	–0.00
	(0.01)	(0.01)	(0.02)	(0.02)
Number of independent stores within 1.4 miles	0.01***	0.02**	–0.00	0.00
	(0.00)	(0.01)	(0.01)	(0.02)
Number of supermarket stores (Sainsbury's included) within 2.4 miles	0.00	0.01	0.02	0.01
	(0.01)	(0.01)	(0.04)	(0.06)
Constant	0.11***	0.02	0.74***	0.88***
	(0.04)	(0.06)	(0.14)	(0.21)
Regional dummies to control for differences across regions		Yes		Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes	Yes	Yes
R-square	0.045	0.115	0.028	0.271
Number of observations	429	392	90	82

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 8: Regression analysis – extended opening hours service and number of competitors – urban areas – non-linear effects

	Lloyds	*Lloyds*	*Sainsbury's*	*Sainsbury's*
Number Lloyds stores within 1.4 miles	–0.01	–0.00	0.03	0.03
	(0.01)	(0.02)	(0.03)	(0.05)
Number of multiple pharmacies stores within 1.4 miles	0.00	0.01	0.00	–0.01
	(0.01)	(0.01)	(0.01)	(0.03)
Number of independent stores within 1.4 miles	0.01***	0.01**	–0.00	–0.00
	(0.00)	(0.01)	(0.01)	(0.02)
Number of ASDA pharmacy stores within 2.4 miles	–0.01	–0.01	0.00	–0.05
	(0.03)	(0.03)	(0.06)	(0.12)
Number of Tesco pharmacy stores within 2.4 miles	–0.01	–0.01	0.05	0.02
	(0.02)	(0.02)	(0.05)	(0.09)
Number of Sainsbury's pharmacy stores within 2.4 miles	0.03	0.07*	–0.06	–0.06
	(0.03)	(0.03)	(0.08)	(0.11)
Number of Morrison pharmacy stores within 2.4 miles	0.00	–0.01	0.04	0.13
	(0.04)	(0.05)	(0.15)	(0.23)
Constant	0.11***	–0.03	0.72***	0.92***
	(0.04)	(0.07)	(0.15)	(0.22)
Regional dummies to control for differences across regions		Yes		Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes	Yes	Yes
R-square	0.049	0.129	0.050	0.290
Number of observations	429	392	90	82

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 9: Regression analysis – extended opening hours service and number of competitors – urban areas – non-linear effects

		Lloyds	*Lloyds*	*Sainsbury's*	*Sainsbury's*
Number of stores within [Lloyds or Sainsbury's] catchment area [1.4m for Lloyds; 2.4 for Sainsbury's]					
	1	–0.10***	–0.05		
		(0.04)	(0.05)		
	2	0.10	0.31	–0.07	0.24
		(0.18)	(0.28)	(0.30)	(0.47)
	3	–0.03	–0.02		
		(0.08)	(0.07)		
	4	–0.11***	–0.09*	0.27**	1.16***
		(0.03)	(0.05)	(0.12)	(0.19)
	5	–0.05	–0.03	0.26**	0.53
		(0.06)	(0.08)	(0.11)	(0.52)
Constant		0.09*	0.46	0.76***	–0.08
		(0.05)	(0.37)	(0.14)	(0.20)
Regional dummies to control for differences across regions			Yes		Yes
Number of GPs and total volumes of prescription medicines to control for local market size		Yes	Yes	Yes	Yes
R-square		0.014	0.093	0.026	0.281
Number of observations		429	392	90	82

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.
3. The constant captures the average for a local monopoly, which acts as the reference category.

Table 10: Regression analysis – extended opening hours service and number of competitors – rural areas

	Lloyds	*Lloyds*	*Sainsbury's*	*Sainsbury's*
Number Lloyds stores within 1.6 miles	0.02	0.01	–0.01	0.00
	(0.01)	(0.01)	(0.03)	(0.05)
Number of multiple pharmacies stores within 1.6 miles	0.01**	0.02**	–0.00	–0.02
	(0.01)	(0.01)	(0.01)	(0.02)
Number of independent stores within 1.6 miles	0.01**	0.00	0.01	0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Number of supermarket stores (Sainsbury's included) within 3.4 miles	–0.00	–0.00	–0.03	0.02
	(0.01)	(0.01)	(0.03)	(0.04)
Constant	0.05***	0.47**	0.96***	1.16***
	(0.02)	(0.22)	(0.05)	(0.24)
Regional dummies to control for differences across regions		Yes		Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes	Yes	Yes
R-square	0.029	0.186	0.032	0.449
Number of observations	798	774	157	153

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 11: Regression analysis – extended opening hours service and number of competitors – rural areas – supermarkets are split by brand

	Lloyds	*Lloyds*	*Sainsbury's*	*Sainsbury's*
Number Lloyds stores within 1.6 miles	0.01	0.01	–0.01	0.01
	(0.01)	(0.01)	(0.03)	(0.05)
Number of multiple pharmacies stores within 1.6 miles	0.01**	0.02*	–0.00	–0.02
	(0.01)	(0.01)	(0.01)	(0.02)
Number of independent stores within 1.6 miles	0.01**	0.00	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Number of ASDA pharmacy stores within 3.4 miles	–0.00	0.01	–0.05	–0.00
	(0.02)	(0.02)	(0.05)	(0.07)
Number of Tesco pharmacy stores within 3.4 miles	0.02	–0.00	0.05	0.08
	(0.01)	(0.02)	(0.04)	(0.05)
Number of Sainsbury's pharmacy stores within 3.4 miles	–0.03*	–0.01	–0.13*	0.02
	(0.01)	(0.02)	(0.07)	(0.13)
Number of Morrison pharmacy stores within 3.4 miles	0.01	0.02	–0.13	–0.21
	(0.03)	(0.04)	(0.09)	(0.13)
Constant	0.05***	0.47**	0.93***	1.37***
	(0.02)	(0.22)	(0.05)	(0.27)
Regional dummies to control for differences across regions		Yes		Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes	Yes	Yes
R-square	0.034	0.187	0.096	0.481
Number of observations	798	774	157	153

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 12: Regression analysis – extended opening hours service and number of competitors – rural areas

		Lloyds	*Lloyds*	*Sainsbury's*	*Sainsbury's*
Number of stores within [Lloyds or Sainsbury's] catchment area [1.6m for Lloyds; 3.4 for Sainsbury's]					
	1	–0.02	–0.01		
		(0.03)	(0.04)		
	2	–0.05*	–0.05**	0.06	0.09
		(0.03)	(0.02)	(0.06)	(0.27)
	3	–0.01	0.01	–0.12	–0.10
		(0.04)	(0.04)	(0.19)	(0.28)
	4	–0.01	–0.03	–0.06	–0.06
		(0.04)	(0.04)	(0.11)	(0.13)
	5	–0.04	–0.04	0.01	–0.03
		(0.03)	(0.03)	(0.09)	(0.14)
Constant		0.06**	0.49**	0.95***	1.08***
		(0.03)	(0.22)	(0.06)	(0.10)
Regional dummies to control for differences across regions			Yes		Yes
Number of GPs and total volumes of prescription medicines to control for local market size		Yes	Yes	Yes	Yes
R-square		0.012	0.179	0.018	0.442
Number of observations		798	774	157	153

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
3. The constant captures the average for a local monopoly, which acts as the reference category.

Waiting times

Table 13: Regression analysis – average waiting times and number of competitors – urban areas

	Lloyds	*Lloyds*
Number Lloyds stores within 1.4 miles	–0.27*	–0.29
	(0.15)	(0.19)
Number of multiple pharmacies stores within 1.4 miles	0.17*	0.21**
	(0.10)	(0.11)
Number of independent stores within 1.4 miles	–0.10*	–0.02
	(0.06)	(0.07)
Number of supermarket stores (Sainsbury's included) within 2.4 miles	–0.06	–0.19
	(0.15)	(0.17)
Constant	[✂]	[✂]
	[✂]	[✂]
Regional dummies to control for differences across regions		Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.044	0.236
Number of observations	405	372

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
3. Average waiting times were computed across the period April 2015 – January 2016.

Table 14: Regression analysis – average waiting times and number of competitors – urban areas – non–linear effects

	Lloyds	*Lloyds*
Number Lloyds stores within 1.4 miles	–0.23	–0.22
	(0.14)	(0.19)
Number of multiple pharmacies stores within 1.4 miles	0.16*	0.21**
	(0.09)	(0.11)
Number of independent stores within 1.4 miles	–0.10*	–0.02
	(0.06)	(0.07)
Number of ASDA pharmacy stores within 2.4 miles	0.21	–0.26
	(0.25)	(0.36)
Number of Tesco pharmacy stores within 2.4 miles	–0.60*	–0.43
	(0.33)	(0.27)
Number of Sainsbury's pharmacy stores within 2.4 miles	0.27	0.23
	(0.27)	(0.32)
Number of Morrison pharmacy stores within 2.4 miles	0.09	–0.17
	(0.45)	(0.61)
Constant	[✂]	[✂]
	[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks		Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.058	0.241
Number of observations	405	372

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
3. Average waiting times were computed across the period April 2015 – January 2016.

Table 15: Regression analysis – average waiting times and number of competitors – urban areas – non-linear effects

		Lloyds	*Lloyds*
Number of stores within 1.4 miles of an existing Lloyds			
	1	–0.63	0.11
		(1.16)	(1.60)
	2	0.22	0.78
		(1.27)	(1.38)
	3	0.17	0.49
		(0.56)	(0.70)
	4	2.04**	2.02*
		(0.97)	(1.11)
	5	0.58	1.10
		(0.71)	(0.78)
Constant		[✂]	[✂]
		[✂]	[✂]
Regional dummies to control for differences across regions			Yes
Number of GPs and total volumes of prescription medicines to control for local market size		Yes	Yes
R-square		0.023	0.217
Number of observations		405	372

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.
3. Average waiting times were computed across the period April 2015 – January 2016.
4. The constant captures the average for a local monopoly, which acts as the reference category.

Table 16: Regression analysis – average waiting times and number of competitors – rural areas

	Lloyds	*Lloyds*
Number Lloyds stores within 1.6 miles	–0.11	–0.17
	(0.21)	(0.20)
Number of multiple pharmacies stores within 1.6 miles	–0.07	–0.08
	(0.08)	(0.09)
Number of independent stores within 1.6 miles	–0.18**	–0.18*
	(0.09)	(0.10)
Number of supermarket stores (Sainsbury's included) within 3.4 miles	0.07	0.04
	(0.11)	(0.14)
Constant	[✂]	[✂]
	[✂]	[✂]
Regional dummies to control for differences across regions		Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.018	0.128
Number of observations	735	711

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.
3. Average waiting times were computed across the period April 2015 – January 2016.

Table 17: Regression analysis – average waiting times and number of competitors – rural areas – supermarkets are split by brand

	Lloyds	*Lloyds*
Number Lloyds stores within 1.6 miles	–0.09	–0.16
	(0.20)	(0.20)
Number of multiple pharmacies stores within 1.6 miles	–0.05	–0.07
	(0.08)	(0.09)
Number of independent stores within 1.6 miles	–0.17**	–0.18*
	(0.08)	(0.10)
Number of ASDA pharmacy stores within 3.4 miles	0.18	0.08
	(0.21)	(0.34)
Number of Tesco pharmacy stores within 3.4 miles	0.26	0.19
	(0.26)	(0.27)
Number of Sainsbury's pharmacy stores within 3.4 miles	–0.17	–0.24
	(0.23)	(0.31)
Number of Morrison pharmacy stores within 3.4 miles	–0.39	0.41
	(0.45)	(0.57)
Constant	[✂]	[✂]
	[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks		Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.021	0.129
Number of observations	735	711

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
3. Average waiting times were computed across the period April 2015 – January 2016.

Table 18: Regression analysis – average waiting times and number of competitors – rural areas – non-linear effects

		Lloyds	*Lloyds*
Number of stores within 1.6 miles of an existing Lloyds			
	1	–0.65	–1.07
		(0.46)	(0.66)
	2	–0.47	–0.82
		(0.55)	(0.69)
	3	–0.64	–0.80
		(0.50)	(0.65)
	4	0.86	0.78
		(0.79)	(0.82)
	5	0.03	–0.33
		(0.48)	(0.64)
Constant		[✂]	[✂]
		[✂]	[✂]
Regional dummies to control for differences across regions			Yes
Number of GPs and total volumes of prescription medicines to control for local market size		Yes	Yes
R-square		0.015	0.130
Number of observations		735	711

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.
3. Average waiting times were computed across the period April 2015 – January 2016
4. The constant captures the average for a local monopoly, which acts as the reference category.

Margins

Table 19: Regression analysis – quarterly data from Q1 2013 to Q1 2015 – store margins and number of competitors – urban areas

	Gross margins	*EBIT*
Number Lloyds stores within 1.4 miles	0.41	0.86
	(0.41)	(0.74)
Number of multiple pharmacies stores within 1.4 miles	0.16	0.17
	(0.33)	(0.44)
Number of independent stores within 1.4 miles	0.05	0.04
	(0.15)	(0.26)
Number of supermarket stores (Sainsbury's included) within 2.4 miles	–2.71	–3.26
	(2.50)	(4.02)
Constant	[✂]	[✂]
	[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.064	0.047
Number of observations	3,870	3,870

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 20: Regression analysis – quarterly data from Q1 2013 to Q1 2015 – store margins and number of competitors – urban areas – supermarkets are split by brand

	Gross margins	*EBIT*
Number Lloyds stores within 1.4 miles	0.41	0.86
	(0.41)	(0.74)
Number of multiple pharmacies stores within 1.4 miles	0.16	0.17
	(0.33)	(0.44)
Number of independent stores within 1.4 miles	0.05	0.04
	(0.15)	(0.26)
Number of ASDA pharmacy stores within 2.4 miles	0.00	0.00
	(.)	(.)
Number of Tesco pharmacy stores within 2.4 miles	0.00	0.00
	(.)	(.)
Number of Sainsbury's pharmacy stores within 2.4 miles	–2.71	–3.26
	(2.50)	(4.02)
Number of Morrison pharmacy stores within 2.4 miles	0.00	0.00
	(.)	(.)
Constant	[✂]	[✂]
	[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.064	0.047
Number of observations	3,870	3,870

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 21: Regression analysis – quarterly data from Q1 2013 to Q1 2015 – store margins and number of competitors – urban areas – non-linear effects

		Gross margins	*EBIT*
Number of stores within 1.4 miles of an existing Lloyds			
	1	1.61	0.63
		(1.31)	(2.02)
	2	1.85	2.44
		(1.31)	(1.99)
	3	1.94	2.27
		(1.41)	(2.20)
	4	1.60	2.32
		(1.26)	(1.99)
	5	1.26	0.88
		(1.04)	(1.49)
Constant		[✂]	[✂]
		[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks		Yes	Yes
Number of GPs and total volumes of prescription medicines to control for local market size		Yes	Yes
R-square		0.063	0.046
Number of observations		3,870	3,870

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.
3. The constant captures the average for a local monopoly, which acts as the reference category.

Table 22: Regression analysis – quarterly data from Q1 2013 to Q1 2015 – store margins and number of competitors – rural areas

	Gross margins	*EBIT*
Number Lloyds stores within 1.6 miles	0.27	0.02
	(0.49)	(0.83)
Number of multiple pharmacies stores within 1.6 miles	–0.22	0.07
	(0.29)	(0.49)
Number of independent stores within 1.6 miles	0.04	–0.09
	(0.17)	(0.29)
Number of supermarket stores (Sainsbury's included) within 3.4 miles	0.53	1.01
	(1.07)	(2.12)
Constant	[✂]	[✂]
	[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.037	0.017
Number of observations	7,182	7,182

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 23: Regression analysis – quarterly data from Q1 2013 to Q1 2015 – store margins and number of competitors – rural areas – supermarkets are split by brand

	Gross margins	*EBIT*
Number Lloyds stores within 1.6 miles	0.27	0.03
	(0.49)	(0.83)
Number of multiple pharmacies stores within 1.6 miles	–0.22	0.07
	(0.29)	(0.49)
Number of independent stores within 1.6 miles	0.05	–0.09
	(0.17)	(0.29)
Number of ASDA pharmacy stores within 3.4 miles	–0.18	0.43
	(0.49)	(1.27)
Number of Tesco pharmacy stores within 3.4 miles	0.54	–0.74
	(1.05)	(1.88)
Number of Sainsbury's pharmacy stores within 3.4 miles	1.17	2.13
	(2.31)	(4.55)
Number of Morrison pharmacy stores within 3.4 miles	0.00	0.00
	(.)	(.)
Constant	[✂]	[✂]
	[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.037	0.017
Number of observations	7,182	7,182

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 24: Regression analysis – quarterly data from Q1 2013 to Q1 2015 – store margins and number of competitors – rural areas – non-linear effects

		Gross margins	*EBIT*
Number of stores within 1.6 miles of an existing Lloyds			
	1	0.51	–0.88
		(2.51)	(2.83)
	2	1.41	–0.87
		(2.24)	(2.65)
	3	1.31	–2.48
		(2.01)	(2.52)
	4	–0.09	–2.08
		(1.52)	(2.00)
	5	0.69	1.05
		(1.15)	(1.60)
Constant		[✂]	[✂]
		[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks		Yes	Yes
Number of GPs and total volumes of prescription medicines to control for local market size		Yes	Yes
R-square		0.037	0.017
Number of observations		7,182	7,182

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
3. The constant captures the average for a local monopoly, which acts as the reference category.

Regression tables – robustness checks

Margins

Table 1: Regression analysis – quarterly data from Q1 2013 to Q4 2015 – store margins and number of competitors – urban areas

	Gross margins	*EBIT*
Number Lloyds stores within 1.4 miles	–0.04	–0.04
	(0.49)	(0.76)
Number of multiple pharmacies stores within 1.4 miles	0.20	0.08
	(0.34)	(0.52)
Number of independent stores within 1.4 miles	0.03	–0.12
	(0.18)	(0.28)
Number of supermarket stores (Sainsbury's included) within 2.4 miles	–1.70*	–3.15*
	(0.96)	(1.61)
Constant	[✂]	[✂]
	[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.055	0.044
Number of observations	5,160	5,160

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 2: Regression analysis – quarterly data from Q1 2013 to Q4 2015 – store margins and number of competitors – urban areas – supermarkets are split by brand

	Gross margins	*EBIT*
Number Lloyds stores within 1.4 miles	0.20	0.38
	(0.49)	(0.75)
Number of multiple pharmacies stores within 1.4 miles	0.26	0.20
	(0.34)	(0.53)
Number of independent stores within 1.4 miles	0.06	–0.06
	(0.18)	(0.28)
Number of ASDA pharmacy stores within 2.4 miles	–14.66***	–26.30***
	(4.77)	(7.31)
Number of Tesco pharmacy stores within 2.4 miles	–1.39*	–2.65**
	(0.82)	(1.32)
Number of Sainsbury's pharmacy stores within 2.4 miles	–0.60	–1.15
	(0.76)	(1.21)
Number of Morrison pharmacy stores within 2.4 miles	0.00	0.00
	(.)	(.)
Constant	[✂]	[✂]
	[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.058	0.048
Number of observations	5,160	5,160

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Regression analysis – quarterly data from Q1 2013 to Q4 2015 – store margins and number of competitors – urban areas – non-linear effects

		Gross margins	*EBIT*
Number of stores within 1.4 miles of an existing Lloyds			
	1	0.39	–3.67
		(2.44)	(3.78)
	2	0.35	–1.50
		(2.50)	(3.91)
	3	1.41	–0.41
		(2.24)	(3.30)
	4	0.69	–0.20
		(1.62)	(2.30)
	5	0.88	0.12
		(1.19)	(1.83)
Constant		[✂]	[✂]
		[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks		Yes	Yes
Number of GPs and total volumes of prescription medicines to control for local market size		Yes	Yes
R-square		0.054	0.043
Number of observations		5,160	5,160

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.
3. The constant captures the average for a local monopoly, which acts as the reference category.

Table 4: Regression analysis – quarterly data from Q1 2013 to Q4 2015 – store margins and number of competitors – rural areas

	Gross margins	*EBIT*
Number Lloyds stores within 1.6 miles	–0.04	–0.16
	(0.45)	(0.71)
Number of multiple pharmacies stores within 1.6 miles	–0.20	–0.03
	(0.28)	(0.43)
Number of independent stores within 1.6 miles	–0.10	–0.47
	(0.32)	(0.48)
Number of supermarket stores (Sainsbury's included) within 3.4 miles	0.68	1.08
	(1.09)	(2.09)
Constant	[✂]	[✂]
	[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.007	0.003
Number of observations	9,576	9,576

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 5: Regression analysis – quarterly data from Q1 2013 to Q4 2015 – store margins and number of competitors – rural areas – supermarkets are split by brand

	Gross margins	*EBIT*
Number Lloyds stores within 1.6 miles	–0.04	–0.17
	(0.45)	(0.71)
Number of multiple pharmacies stores within 1.6 miles	–0.20	–0.03
	(0.28)	(0.43)
Number of independent stores within 1.6 miles	–0.09	–0.47
	(0.32)	(0.49)
Number of ASDA pharmacy stores within 3.4 miles	0.09	0.35
	(0.71)	(1.35)
Number of Tesco pharmacy stores within 3.4 miles	0.42	–0.68
	(1.00)	(1.76)
Number of Sainsbury's pharmacy stores within 3.4 miles	1.33	2.36
	(2.33)	(4.48)
Number of Morrison pharmacy stores within 3.4 miles	0.00	0.00
	(.)	(.)
Constant	[✂]	[✂]
	[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Number of GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.007	0.003
Number of observations	9,576	9,576

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Regression analysis – quarterly data from Q1 2013 to Q4 2015 – store margins and number of competitors – rural areas – non-linear effects

		Gross margins	*EBIT*
Number of stores within 1.6 miles of an existing Lloyds			
	1	5.06	6.57
		(4.14)	(6.67)
	2	6.96	8.79
		(5.18)	(8.04)
	3	7.63	7.76
		(6.22)	(9.55)
	4	8.65	10.80
		(7.11)	(10.89)
	5	0.03	0.08
		(1.39)	(2.39)
Constant		[✂]	[✂]
		[✂]	[✂]
Quarter dummies to control for seasonality or time-shocks		Yes	Yes
Number of GPs and total volumes of prescription medicines to control for local market size		Yes	Yes
R-square		0.009	0.005
Number of observations		9,576	9,576

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
3. The constant captures the average for a local monopoly, which act as the reference category.

Econometric analysis of the impact of entry and exit

Introduction

1. This appendix examines how the entry or exit of a competitor in a local area affects the volume of prescriptions that other pharmacies in that area fulfil.

2. This analysis can help us measure how closely (i) the Parties and (ii) different types of pharmacies compete with one another. For example, if the volume of prescriptions falls significantly at Sainsbury's when a Lloyds pharmacy enters in the same local area, this suggests that the Parties compete with one another. Conversely, if there is little or no significant volume effect, this may indicate that the new entrant is not imposing a strong competitive constraint on the incumbent. However, it should be stressed that the models can only indicate the existence of an effect, not the absence of one.

3. We found that:

   (a) Lloyds stores appear to be constrained by:

      (i) independent/small multiple pharmacy chains opening a store within 1.4 miles of an existing store in urban areas and within 1.6 miles in rural ones;

      (ii) large multiple pharmacy chains opening a store within 1.4 miles of an existing store in urban areas and within 1.6 miles in rural ones.

   (b) Sainsbury's stores appear to be constrained by other supermarket pharmacies entering within 2.4 miles of an existing store in urban areas.

4. The ability of this model to estimate the effects of entry-exit events on volumes relies on two important assumptions:

   (a) There are no unobserved factors driving the firms' location decisions that change over time.

   (b) There are enough entry-exit events in the local markets in order to allow effects to be identified statistically.

   Unfortunately, we observe a relatively small number of entry-exit events by supermarkets and we do not observe all the factors that could drive Sainsbury's or Lloyds decisions of entering or leaving a local market.

Hypotheses and analytical framework

5. The model treats entry and exit as equal but opposite events: if a store in store type p enters within distance d, then the store count at that distance, s_{ipdt}, increases. If the store exits, s_{ipdt} decreases. If both entry and exit were to occur in the same quarter (for example, because the pharmacy has relocated within a very short distance), then s_{ipdt} does not change as we would not consider this an entry/exit event.

6. We would expect that the store count coefficient will have a negative sign, where the entrant competes with the incumbent store.[1] For example, if a new store enters, some consumers might switch away from the incumbent store to the new fascia, reducing the number of prescriptions fulfilled at the incumbent store. If we find a statistically significant[2] negative effect, we interpret this to indicate that stores within a certain store type and distance compete with the incumbent pharmacy. Since the model is only able to suggest that entry does have an effect, should we find that the results are not statistically significant, we are only able to say that the model provides no evidence of an effect of entry/exit on volumes.[3] We use the model to test which store types compete with Lloyds and Sainsbury's pharmacies within their catchment areas.

7. The model also assumes that each entry or exit event has the same effect on the incumbent store's volumes within a given distance band, and that this effect does not change as the number of competitors changes.[4] That is to say that a pharmacy entering in an area where Lloyds is currently the monopoly supplier is assumed to have the same impact on Lloyds' volume as in areas where Lloyds has many competitors. As this is likely to represent a shortcoming of our model,[5] following parties' suggestions,[6] we have also estimated an alternative specification of the model in order to investigate the presence of non-linear effects between volumes and number of competitors.[7]

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[1] In our econometric specification we also include an own-brand effect. We still would expect entry of a store owned by the same brand to have a negative effect.
[2] ie we find at a prescribed level of certainty that the effect is different from zero.
[3] Note that if we do not find a negative and statistically significant coefficient we are not able to conclude that the effect does not exist.
[4] This is a consequence of using a linear specification. We have tested the sensitivity of the model to this assumption by using a non-linear specification. A linear specification is, however, a common assumption of this class of model.
[5] We would expect the effect of entry on the volume of an incumbent store to decrease as the number of stores in an area increases.
[6] Celesio/Sainsbury's response to provisional findings, Appendix 3.
[7] For example, we implicitly assumed that the effect on volume due to the opening of a second additional store in a local area, where previously there was only one store, is the same as the effect of the third store, or the fourth. We have included five dummy variables: the first one takes value of 1 if there is only one store in the local area and 0 otherwise, the second one takes value of 1 if there are only two stores and 0 otherwise, and so on up to five stores in the local area. We have not included a dummy variable for when there are no other stores in the local area, but the existing one. This latter group acts as the reference category. Therefore, the coefficients signal the impact on the dependent variable from an additional store compared with the outcome in local monopoly areas.

8. We regress the volume of prescriptions dispensed at pharmacies on store counts and both the number of GPs and the total number of medicines they have prescribed within certain distance bands. We estimate the following reduced form equation:

$$log(V_{it}) = \alpha_i + \sum_{d=1}^{D}\sum_{p=1}^{P}\beta_1 s_{ipdt} + \sum_{d=1}^{D}\beta_2 \log(x_{2,it}) + \sum_{d=1}^{D}\beta_3 x_{3,it} + \gamma T_t + \varepsilon_{it}$$

Where:

V_{it} is volume at store i in time t;

α_i is the store fixed effect for store i (and therefore a measure of the time invariant effects which are constant at each store through time);

s_{ipdt} is the count of store type p (out of a possible P store types) within distance d (of a possible D distances for that store type) of store i in quarter t;

$x_{2,it}$ is the logged total volume of items dispensed by GP practices[8] within a distance d (of a possible D distances) of store i in quarter t;

$x_{3,t}$ is the total number of GP practices within a distance d (of a possible D distances) of store i in quarter t;

γT_t is a set of dummy variables for each quarter to control for seasonal variation, and

ε_{it} is the variation in each store's volumes across time not explained by the model.

9. For each fascia type p and distance band d, there is a coefficient β_{dp}, which approximates the percentage change in the incumbent pharmacy volume of sales following entry/exit.

Limitations and interpretation

10. Our analysis considers changes in volumes of prescription items dispensed by each pharmacy. Since prices for prescriptions are set nationally and we do not expect demographics within each area to change substantially over the

[8] We include GP volumes to control for changes in total demand in each area. We can therefore interpret the regression as holding the total volume of demand constant when asking what impact the entry of any given store type will have on the anchor fascia. Given that the number of GP prescriptions in any area is large, we use logged total volumes that can be directly interpreted in percentage terms.

three years of data used in the analysis, we consider that item volume changes are a good proxy for customers diverting to a new entrant or incumbent. In particular, we do not have to consider price effects on the change in volume.[9]

11. We have used a fixed-effects regression specification, which controls the impact of both observable and unobservable store characteristics that do not vary in time, such as a particularly good store location persistently affecting demand and leading both volumes and number of stores to be high.[10]

12. A fixed-effects estimator exploits the variation across time for each store to identify a causal effect of an explanatory variable, in our case the role played by the variation in the number of stores within a local area. If not enough stores experience events of entry or exit in their local area, then it might not be possible to estimate the model and we are also less likely to be able to identify a statistically significant effect on volumes.

13. We include quarterly dummy variables which allow us to control for all unobserved industry-wide changes, provided these affect pharmacies homogenously (eg macroeconomic shocks, industry-wide seasonality). However, there may be other time-variant drivers of a store's volumes which our specification does not control for. These unobserved drivers might bias our estimates if they are also systematically related to entry or exit. Two potential sources of bias are the omitted variable bias and the measurement error.

Omitted variable bias

14. There are two sources for omitted variable bias in the current model:

    (a) Any reaction of incumbents to entry or exit which would lead to a volume changing by less than would otherwise be the case. For instance, it may be that a store may increase its prescription counter staffing following the entry of a competing fascia into the area, to reduce waiting times in an attempt to retain patients. This could reduce the volume of prescription items that the store loses to the new entrant.

    (b) Footfall effects which lead to a change in the total size of the market in a particular area following entry or exit. For instance, a new grocery store,

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[9] We note that there appear to be no price-related competition factors for prescription medicines, for example discounts, which might affect volume. We discuss this issue below.

[10] There is a multitude of factors, which could cause pharmacy volumes in one area to be higher or lower than in some areas rather than others. As a result, several other observable and unobservable characteristics would need to be accounted for in a standard model. The fixed-effects model in effect uses the average values of each area as its own control, and therefore avoids many of the problems with omitted variable bias associated with standard models.

or retail development on which a pharmacy is located, may attract more people into the area and lead to more prescriptions being fulfilled in the area. This could cause the entry of one store type to lead to an increase in volumes at the other.

15. We do not observe the incumbents' reaction to variations in the number of stores in their local area through changes to their quality levels. Therefore, we have not considered it in our static model. The fact that such dynamic effects are likely to occur means that the regression model does not control for endogeneity and that our estimated coefficients may be biased upwards. If we find a negative and statistically significant effect (as we would expect), the worst-case scenario is that we would be underestimating the magnitude of that effect. Nevertheless, we can be confident that there is an effect. However, if we do not find an effect or even find a positive effect, we are not able to draw any conclusions. Similarly we are unable to control for footfall effects.

16. We are not able to identify any likely sources of negative bias stemming from omitted variables. Therefore, all other things being equal, we should place more weight on any instances where statistically significant negative effects are found, and less weight on any positive or insignificant coefficients.

Measurement error

17. We recognise that limitations in the way data is recorded by pharmacies may influence the quality of the results. In particular, in some months pharmacies do not submit data for all of the prescriptions that they have fulfilled in that month (or submit data covering only a portion of the items), with the remaining items pooled together and submitted at a later point in time as 'abated volumes'. No information is available to match these abated volumes to the month in which the prescriptions were dispensed. This gives rise to two potential issues that may introduce excessive noise in the data:

    (a) Reported volume data may be subject to some large additional variation in some months.

    (b) In other months, volumes may appear normal, but their variation does not actually reflect any meaningful information.

18. To address this issue, we have removed all pharmacies from the analysis that reported large variation in abated volumes.[11] Because pharmacies reporting

[11] We identified a problematic pharmacy as one that both *(a)* reported a maximum abated volume, which is twice as high as its minimum reported volume; and *(b)* reported a maximum reported volume of at least 50. These thresholds were not sensitive to alternate specifications of *(a)* triple the minimum reported volume; and *(b)* a

low variation in abated volumes remain, this issue still affects the data set, however to a relatively limited degree.[12]

19. This noise is best treated analytically as measurement error in the dependent variable. This reduces the precision of our estimates and therefore reduces the precision of our estimated coefficients. It does not bias our estimates however, if the reasons that the pharmacies do not correctly report volumes are not related to entry/exit events.

Data sources and preparation

20. Our analysis used publically available data acquired from the Health and Social Care Information Centre, the NHS Business Services Authority and the ONS.

21. We used quarterly data containing information on the volumes of items dispensed by pharmacies and prescribed by GP practices. We measured volumes dispensed in terms of items, as we are interested in the revenue that the pharmacy would receive by attracting each customer. Since pharmacies are remunerated on an item rather than a script basis, we consider that it is appropriate to use the volume of items rather than the volume of prescriptions. As a result, customers who require more items are weighted more heavily in the data than would be the case if we used the number of prescriptions to measure volumes.

22. We assigned geographic Cartesian coordinates to each GP practice and pharmacy, relying on ONS data for February 2015. This allowed us to calculate straight-line distances from each Lloyds and Sainsbury's pharmacy to every other pharmacy in England. We also assigned a rural/urban designation to each GP practice and pharmacy based on ONS data, as we have found that the catchment areas differ depending on urbanicity. This suggests that stores in urban areas may respond to entry/exit within a narrower catchment area than stores in rural areas.

23. We counted the number of stores (of defined store types) within a specific radius for each Lloyds and Sainsbury's pharmacy, which differed depending on whether the store was in a rural or an urban area. For Sainsbury's we used

maximum volume of 100. We were unable to drop all pharmacies with abated volumes as these comprised a quarter of our sample of pharmacies.

[12] This procedure reduced our sample of pharmacies that enter and/or exit by around 3%, and our sample of pharmacies that are present throughout the data set by around 2%. We consider these numbers to be very low and therefore not to have an impact on the results.

a radius of 2.4 miles in urban areas and of 3.4 miles in rural ones. For Lloyds we used a radius of 1.5 miles in urban areas and of 1.6 miles of in rural ones.

24. We assumed that all supermarkets had catchment areas similar to Sainsbury's and that all non-supermarket pharmacy chains had catchment areas similar to Lloyds. This approach is consistent with the catchment areas of the market definition, even though the model does not rely on the same four area types[13] used there, but only on the distinction between urban and rural areas.

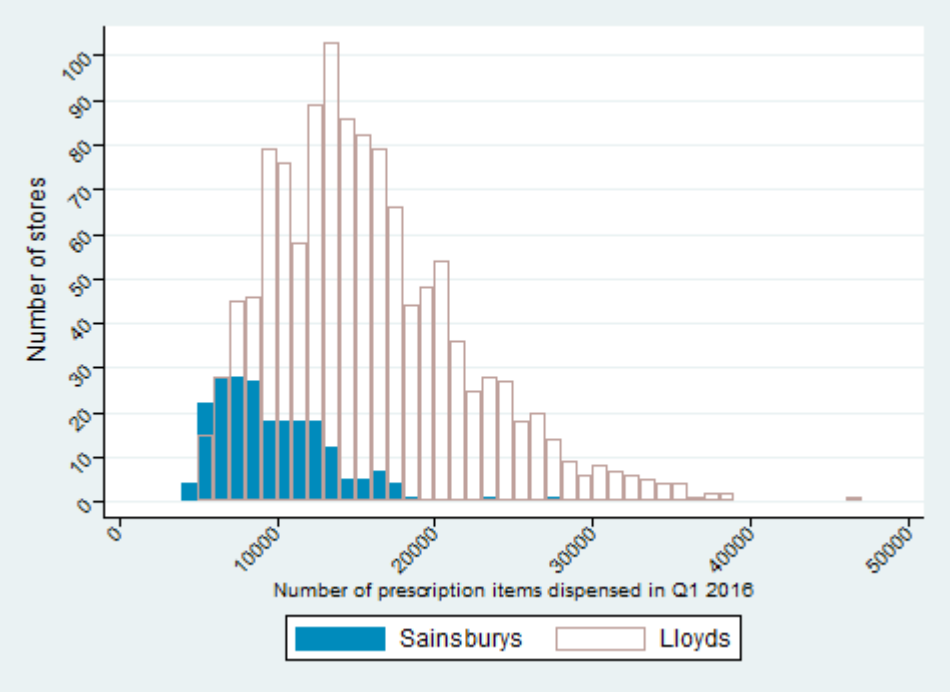
25. The model is estimated on a data set that includes quarterly pharmacy-level observations from the last quarter of 2011 to the first quarter of 2015. This time frame was the one where the data on the number of pharmacies was available at the start of the investigation. As data on the whole of 2015 became later available, we have kept the original time frame as the main specification and used the additional year of data to assess the robustness of our results.

Descriptive statistics

26. Figure 1 shows the distribution of prescription item volumes across all Lloyds and all Sainsbury's pharmacies for the first quarter of 2016. This figure indicates that Sainsbury's volumes are on average lower than Lloyds' volumes. It also indicates that Lloyds has a greater number of stores and, overall, fulfils more prescriptions than Sainsbury's. We also note that prescription medicines make up a lower overall share of Sainsbury's business than Lloyds.

[13] ie Conurbation, City and Town, Rural and Very Rural areas.

Figure 1: Distribution of volumes of prescription items dispensed by party in the first quarter of 2016



Source: CMA analysis.

27. Table 1 shows the number of entries, exits and relocations[14] of pharmacies we have observed from Q4 2011 to Q1 2016. We observed that all fascias have relocated at least once and that only the category of multiple store pharmacies has experienced pharmacy closures.

Table 1: Entries, exits and relocations by fascia within the period from Q4 2011 to Q1 2016

			N			*%*
Fascia	*Entries*	*Exits*	*Relocations*	*Entries*	*Exits*	*Relocations*
Lloyds	11	0	90	11	0	89
Multiple stores pharmacies	545	1,051	379	28	53	19
Independent/small multiple pharmacies	1,007	0	346	74	0	26
ASDA	42	0	8	84	0	16
Morrisons	0	0	10	0	0	100
Sainsbury's	24	0	24	50	0	50
Tesco	34	0	22	61	0	39

Source: CMA analysis.

28. Tables 1 and 2 in Annex 1 show the number of entry and exit events that a Lloyds or a Sainsbury's pharmacy has experienced. The number of entry-exit events provides a measure of the competitive pressure[15] faced by the store in the local area, but more importantly provides an insight on how reliable the estimates of the model are. The greater the number of entry-exit events, the

[14] Relocation refers to two different instances: *(a)* the licence holders has moved to a different postcode; *(b)* the licence holder has sold the licence.
[15] They do not provide, however, an exact picture of the overall number of stores present in the area. As example, if there are two Lloyds one in front of the other and nine other stores around them, the average number of stores within a Lloyds catchment area is 10, but the total number of stores in the area is 11.

greater the within-pharmacy variability in the data, which makes the model more accurate and precise. Jointly, these tables suggest that for some categories, such as supermarket, we may not have enough local variation to accurately estimate the effect of entry or exit on volumes.

Econometrics findings

29. The model identifies a statistically significant impact on Lloyds' volumes in the following cases:

    (a) Lloyds stores entering within 1.6 miles of an existing Lloyds store in rural areas, which leads to a reduction in volume at the existing Lloyds store of around 5%.

    (b) Independent and small pharmacy chains with fewer than ten stores entering within 1.4 miles of an existing Lloyds store in urban areas and within 1.6 miles in rural areas, leading to a fall of around, respectively, 1% and 3% of volumes.

    (c) Larger pharmacy chains with at least ten stores entering within 1.4 miles of an existing Lloyds store, in urban areas and within 1.6 miles in rural areas, leading to a fall of around, respectively, around 3% and 2% of volumes.

30. The analysis identifies a statistically significant impact on Sainsbury's volumes in the following case:

    (a) supermarket pharmacies entering within 2.4 miles of an existing Sainsbury's store in urban areas, leading to a fall in Sainsbury's sales of 6%.

31. In some specifications, we have estimated a positive effect from entry on Sainsbury's sales. These findings may point to the presence of unobserved factors that we do not adequately control for, such as possible footfall effects, that influence both the number of prescriptions a pharmacy sells and the pharmacy's location decision.

32. In order to assess the reliability of our findings, we have performed the following series of robustness checks, besides the one discussed in paragraph 25 of this appendix.

33. As we are interested in understanding whether the effect of local competition differs across supermarket brands, we have estimated the effect of entry of supermarket pharmacies treating the different brands as distinct categories. However, the small number of observations for individual supermarket

pharmacies may have limited our ability to accurately estimate the effect of local competition for each supermarket brand, therefore our favourite specification pools all supermarket brands together. When we split the supermarkets into individual categories, we have found that:

(a) Tesco pharmacies entering within 3.4 miles of an existing Lloyds store in rural areas lead to a reduction in volume at the existing Lloyds store of around 3%.

(b) ASDA pharmacies entering within 2.4 miles of an existing Sainsbury's store in urban areas lead to a reduction in volume at the existing Sainsbury's store of around 9%.

(c) Sainsbury's pharmacies entering within 2.4 miles of an existing Sainsbury's store in urban areas lead to a reduction in volume at the existing Sainsbury's store of around 11%.

34. As we have used a continuous variable as our concentration measure (ie the number of stores in the local area), the analysis implicitly assumes that there are no decreasing marginal effects of competition. In order to address this issue, we used a similar approach to the Parties' and included a set of dummy indicators for each different number of stores in a local area.[16] However, we find a mix of positive and negative coefficients, which may suggest that our model does not adequately control for all unobservable not time-invariant factors that might simultaneously affect the left-hand side and right-hand of the regressions.

[16] We note that, however, the parties' approach resulted in excessively over-fitting the model, whereas the number of variables included was close to the number of observations.

Regression tables

Table 1: Entry events experienced by Lloyds and Sainsbury's pharmacies in their catchment areas from Q4 2011 to Q1 2015

Entry events	*Sainsbury's*	*Supermarket*	*Lloyds*	*Independent*	*Pharmacy chains*
Lloyds					
Urban areas	14	112	0	1,639	122
Rural areas	35	185	5	1,171	149
Sainsbury's					
Urban areas	1	20	0	283	18
Rural areas	2	26	3	281	54

Source: CMA analysis.

Table 2: Exit events experienced by Lloyds and Sainsbury's pharmacies in their catchment area from Q4 2011 to Q1 2015

Exit events	*Sainsbury's*	*Supermarket*	*Lloyds*	*Independent*	*Pharmacy chains*
Lloyds					
Urban areas	0	–1	–112	–663	–43
Rural areas	–8	–8	–75	–494	–118
Sainsbury's					
Urban areas	0	0	–12	–191	–14
Rural areas	0	–1	–35	–153	–26

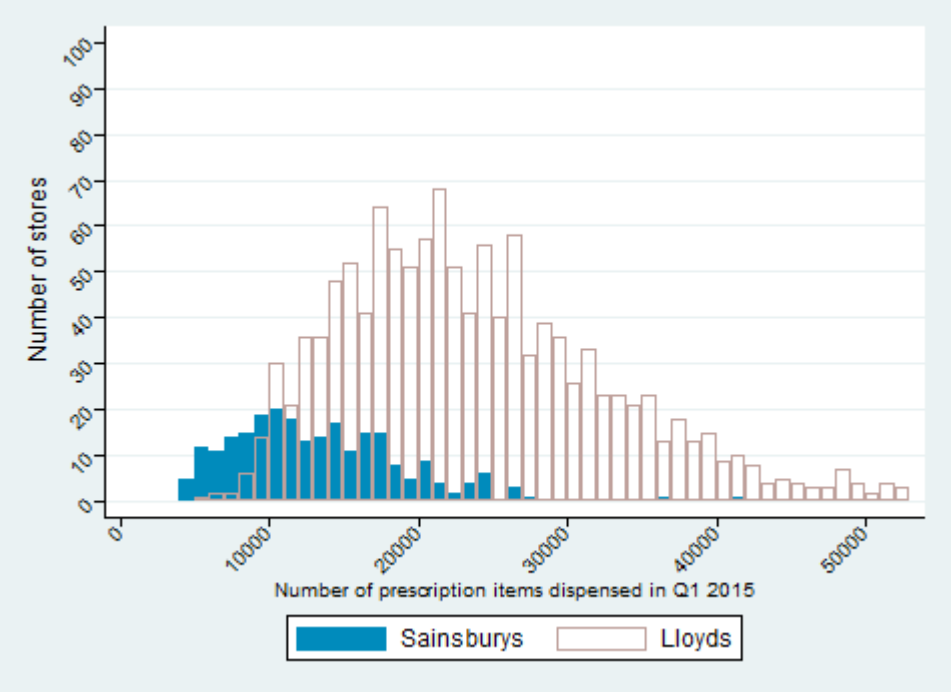
Source: CMA analysis.

Table 3: Percentage of entries, exits and relocations by fascia within the period from Q4 2011 to Q1 2016

	N			*%*		
Fascia	*Entries*	*Exits*	*Relocations*	*Entries*	*Exits*	*Relocations*
Lloyds	11	0	90	11	0	89
Multiple stores pharmacies	545	939	379	29	50	20
Independent/small multiple pharmacies	1,007	0	346	74	0	26
ASDA	42	0	8	84	0	16
Morrisons	0	0	10	0	0	100
Sainsbury's	24	0	24	50	0	50
Tesco	34	0	22	61	0	39

Source: CMA analysis.

Figure 1: Distribution of volumes of prescription items dispensed by party in the first quarter of 2015



Source: CMA analysis.

Table 4: Regression analysis – quarterly data from Q4 2011 to Q1 2015 – urban areas

	Lloyds	*Sainsbury's*
Effect on volumes due to entry by Lloyds stores within 1.4 miles of [Lloyds or Sainsbury's] catchment area	–0.02	0.04*
	(0.01)	(0.02)
Effect on volumes due to entry by multiple pharmacies stores within 1.4 miles of [Lloyds or Sainsbury's] catchment area	-0.03***	–0.00
	(0.01)	(0.01)
Effect on volumes due to entry by independent stores within 1.4 miles of [Lloyds or Sainsbury's] catchment area	–0.01***	-0.01
	(0.00)	(0.01)
Effect on volumes due to entry by supermarket stores (Sainsbury's included) within 2.4 miles of [Lloyds or Sainsbury's] catchment area	–0.01	–0.06**
	(0.01)	(0.03)
Constant	10.06***	9.52***
	(0.18)	(0.86)
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Effect on volumes due to entry by GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.041	0.064
Number of observations	6,040	1,260

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Regression analysis – quarterly data from Q4 2011 to Q1 2015 – urban areas – supermarkets are split by brand

	Lloyds	*Sainsbury's*
Effect on volumes due to entry by Lloyds stores within 1.4 miles of [Lloyds or Sainsbury's] catchment area	–0.02	0.04*
	(0.01)	(0.02)
Effect on volumes due to entry by multiple pharmacies stores within 1.4 miles of [Lloyds or Sainsbury's] catchment area	–0.03***	–0.00
	(0.01)	(0.01)
Effect on volumes due to entry by independent stores within 1.4 miles of [Lloyds or Sainsbury's] catchment area	–0.01***	–0.01
	(0.00)	(0.01)
Effect on volumes due to entry by ASDA pharmacy stores within 2.4 miles of [Lloyds or Sainsbury's] catchment area	–0.02	–0.09***
	(0.02)	(0.03)
Effect on volumes due to entry by Tesco pharmacy stores within 2.4 miles of [Lloyds or Sainsbury's] catchment area	–0.01	–0.03
	(0.02)	(0.03)
Effect on volumes due to entry by Sainsbury's pharmacy stores within 2.4 miles of [Lloyds or Sainsbury's] catchment area	0.01	–0.11***
	(0.02)	(0.02)
Effect on volumes due to entry by Morrisons pharmacy stores within 2.4 miles of [Lloyds or Sainsbury's] catchment area	0.00	0.00
	(.)	(.)
Constant	10.05***	9.53***
	(0.18)	(0.85)
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Effect on volumes due to entry by GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.042	0.068
Number of observations	6,040	1,260

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Regression analysis – quarterly data from Q4 2011 to Q1 2015 – rural areas

	Lloyds	*Sainsbury's*
Effect on volumes due to entry by Lloyds stores within 1.6 miles of [Lloyds or Sainsbury's] catchment area	–0.05***	–0.01
	(0.02)	(0.05)
Effect on volumes due to entry by multiple pharmacies stores within 1.6 miles of [Lloyds or Sainsbury's] catchment area	–0.02**	–0.05
	(0.01)	(0.05)
Effect on volumes due to entry by independent stores within 1.6 miles of [Lloyds or Sainsbury's] catchment area	–0.03***	–0.03**
	(0.01)	(0.01)
Effect on volumes due to entry by supermarket stores (Sainsbury's included) within 3.4 miles of [Lloyds or Sainsbury's] catchment area	0.00	–0.05
	(0.01)	(0.04)
Constant	10.26***	9.59***
	(0.08)	(0.43)
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Effect on volumes due to entry by GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.077	0.135
Number of observations	11,186	2,201

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Regression analysis – quarterly data from Q4 2011 to Q1 2015 – rural areas – supermarkets are split by brand

	Lloyds	*Sainsbury's*
Effect on volumes due to entry by Lloyds stores within 1.6 miles of [Lloyds or Sainsbury's] catchment area	–0.05***	–0.01
	(0.02)	(0.05)
Effect on volumes due to entry by multiple pharmacies stores within 1.6 miles of [Lloyds or Sainsbury's] catchment area	–0.02**	–0.05
	(0.01)	(0.05)
Effect on volumes due to entry by independent stores within 1.6 miles of [Lloyds or Sainsbury's] catchment area	–0.03***	–0.03**
	(0.01)	(0.01)
Effect on volumes due to entry by ASDA pharmacy stores within 3.4 miles of [Lloyds or Sainsbury's] catchment area	0.01	–0.05
	(0.01)	(0.07)
Effect on volumes due to entry by Tesco pharmacy stores within 3.4 miles of [Lloyds or Sainsbury's] catchment area	–0.02	–0.05
	(0.01)	(0.05)
Effect on volumes due to entry by Sainsbury's pharmacy stores within 3.4 miles of [Lloyds or Sainsbury's] catchment area	0.00	0.05
	(0.02)	(0.20)
Effect on volumes due to entry by Morrisons pharmacy stores within 3.4 miles of [Lloyds or Sainsbury's] catchment area	0.00	0.00
	(.)	(.)
Constant	10.27***	9.56***
	(0.08)	(0.43)
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Effect on volumes due to entry by GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.077	0.136
Number of observations	11,186	2,201

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Regression tables – robustness checks

Table 1: Entry events experienced by Lloyds and Sainsbury's pharmacies in their catchment areas from Q4 2011 to Q1 2016

Entry events	*Sainsbury's*	*Supermarket*	*Lloyds*	*Independent*	*Pharmacy chains*
Lloyds					
Urban areas	25	118	4	1867	152
Rural areas	35	186	7	1288	175
Sainsbury's					
Urban areas	1	20	0	309	22
Rural areas	2	26	3	310	62

Source: CMA analysis.

Table 2: Exit events experienced by Lloyds and Sainsbury's pharmacies in their catchment area from Q4 2011 to Q1 2016

Exit events	*Sainsbury's*	*Supermarket*	*Lloyds*	*Independent*	*Pharmacy chains*
Lloyds					
Urban areas	–3	–8	–116	–879	–87
Rural areas	–8	–18	–83	–651	–171
Sainsbury's					
Urban areas	–2	–2	–12	–238	–22
Rural areas	0	–1	–37	–199	–44

Source: CMA analysis.

Table 3: Regression analysis – quarterly data from Q4 2011 to Q1 2016 – urban areas

	Lloyds	*Sainsbury's*
Effect on volumes due to entry by Lloyds stores within 1.4 miles of [Lloyds or Sainsbury's] catchment area	–0.01	0.06**
	(0.01)	(0.03)
Effect on volumes due to entry by multiple pharmacies stores within 1.4 miles of [Lloyds or Sainsbury's] catchment area	–0.02**	–0.01
	(0.01)	(0.01)
Effect on volumes due to entry by independent stores within 1.4 miles of [Lloyds or Sainsbury's] catchment area	–0.02***	–0.01
	(0.00)	(0.01)
Effect on volumes due to entry by supermarket stores (Sainsbury's included) within 2.4 miles of [Lloyds or Sainsbury's] catchment area	–0.01	–0.07***
	(0.01)	(0.02)
Constant	9.94***	9.24***
	(0.17)	(0.67)
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Effect on volumes due to entry by GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.544	0.401
Number of observations	7,764	1,620

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Regression analysis – quarterly data from Q4 2011 to Q1 2016 – urban areas – supermarkets are split by brand

	Lloyds	*Sainsbury's*
Effect on volumes due to entry by Lloyds stores within 1.4 miles of [Lloyds or Sainsbury's] catchment area	–0.01	0.06**
	(0.01)	(0.03)
Effect on volumes due to entry by multiple pharmacies stores within 1.4 miles of [Lloyds or Sainsbury's] catchment area	–0.02**	–0.01
	(0.01)	(0.01)
Effect on volumes due to entry by independent stores within 1.4 miles of [Lloyds or Sainsbury's] catchment area	–0.02***	–0.01
	(0.00)	(0.01)
Effect on volumes due to entry by ASDA pharmacy stores within 2.4 miles of [Lloyds or Sainsbury's] catchment area	–0.02	–0.10***
	(0.02)	(0.04)
Effect on volumes due to entry by Tesco pharmacy stores within 2.4 miles of [Lloyds or Sainsbury's] catchment area	–0.02	–0.05
	(0.02)	(0.03)
Effect on volumes due to entry by Sainsbury's pharmacy stores within 2.4 miles of [Lloyds or Sainsbury's] catchment area	0.01	–0.09**
	(0.02)	(0.03)
Effect on volumes due to entry by Morrisons pharmacy stores within 2.4 miles of [Lloyds or Sainsbury's] catchment area	0.00	0.00
	(.)	(.)
Constant	9.93***	9.22***
	(0.17)	(0.67)
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Effect on volumes due to entry by GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.544	0.402
Number of observations	7,764	1,620

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Regression analysis – quarterly data from Q4 2011 to Q1 2016 – rural areas

	Lloyds	*Sainsbury's*
Effect on volumes due to entry by Lloyds stores within 1.6 miles of [Lloyds or Sainsbury's] catchment area	–0.05***	0.00
	(0.01)	(0.05)
Effect on volumes due to entry by multiple pharmacies stores within 1.6 miles of [Lloyds or Sainsbury's] catchment area	–0.02**	–0.04
	(0.01)	(0.04)
Effect on volumes due to entry by independent stores within 1.6 miles of [Lloyds or Sainsbury's] catchment area	–0.03***	–0.02
	(0.01)	(0.01)
Effect on volumes due to entry by supermarket stores (Sainsbury's included) within 3.4 miles of [Lloyds or Sainsbury's] catchment area	–0.00	–0.06
	(0.01)	(0.04)
Constant	10.21***	9.40***
	(0.06)	(0.30)
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Effect on volumes due to entry by GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.551	0.297
Number of observations	14,382	2,829

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Regression analysis – quarterly data from 2011q4 to 2016q1 – rural areas – supermarkets are split by brand

	Lloyds	*Sainsbury's*
Effect on volumes due to entry by Lloyds stores within 1.6 miles of [Lloyds or Sainsbury's] catchment area	–0.05***	0.00
	(0.01)	(0.05)
Effect on volumes due to entry by multiple pharmacies stores within 1.6 miles of [Lloyds or Sainsbury's] catchment area	–0.02***	–0.04
	(0.01)	(0.04)
Effect on volumes due to entry by independent stores within 1.6 miles of [Lloyds or Sainsbury's] catchment area	–0.03***	–0.02
	(0.01)	(0.01)
Effect on volumes due to entry by ASDA pharmacy stores within 3.4 miles of [Lloyds or Sainsbury's] catchment area	0.00	–0.07
	(0.01)	(0.07)
Effect on volumes due to entry by Tesco pharmacy stores within 3.4 miles of [Lloyds or Sainsbury's] catchment area	–0.03**	–0.05
	(0.01)	(0.05)
Effect on volumes due to entry by Sainsbury's pharmacy stores within 3.4 miles of [Lloyds or Sainsbury's] catchment area	0.01	0.05
	(0.02)	(0.23)
Effect on volumes due to entry by Morrisons pharmacy stores within 3.4 miles of [Lloyds or Sainsbury's] catchment area	0.00	0.00
	(.)	(.)
Constant	10.21***	9.36***
	(0.06)	(0.30)
Quarter dummies to control for seasonality or time-shocks	Yes	Yes
Effect on volumes due to entry by GPs and total volumes of prescription medicines to control for local market size	Yes	Yes
R-square	0.552	0.297
Number of observations	14,382	2,829

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. Levels of statistical significance: $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Determining the initial filter

1. This appendix describes how we used the survey results to formulate our initial filter. In each case, we compare the results of a competition metric to the survey estimated diversion ratio. A metric that gives a strong correlation with the diversion ratios from the survey is likely to provide a good measure of the competitive conditions in an area, which can be used to rule out unproblematic local areas.

Fascia count

2. A count of the number of independent fascias in a local market has been used as an initial filter in a number of previous pharmacy mergers. Indeed, fascia counts are a common methodology which have been used in a range of different local retail cases.

3. The rationale for using a fascia count to identify areas which require a more detailed effects analysis is twofold. First, a fascia test takes account of the fact that stores under common ownership may be standardised in terms of competitive parameters, such as prices and service levels. Second, it provides a shorthand measure for the economic presumption that a common owner will internalise competition between its retail outlets to maximise profits.

4. Fascia counts are particularly good measures when customers choose between brands and either there are no capacity constraints at the local level or each player in a local market has a similar degree of capacity. For instance, a large supermarket normally has the capacity to take additional customers without a significant deterioration in the quality of service it is able to offer and as such if it is present in an area it is capable of exercising a competitive constraint on a rival. In contrast, if a business is small and already very busy serving current customers it may not have sufficient spare capacity for it to represent a competitive constraint on rivals.

5. Fascia counts suffer from a number of weaknesses which can limit their ability to provide a valid filter in some cases. These weaknesses include the following:

   (a) A fascia count assumes that each competitor in an area is equally strong and as such would be expected to receive an equal amount of diversion. This is more likely to be true where stores are relatively homogenous. As within-area heterogeneity increases, parties may be closer or more distant competitors depending on where on the price-quality spectrum they

decide to locate their offering. Since the fascia count is not able to account for this, it may either under or overstate the probability of an SLC in an area, depending on the relative offering of both the Parties and third parties in an area.

(b) A fascia count does not give any weight to whether a party has more than one store in an area. The number and density of a local store network may be an important factor in determining diversion, particularly if geographic proximity is likely to be an important factor driving the closeness of competition.

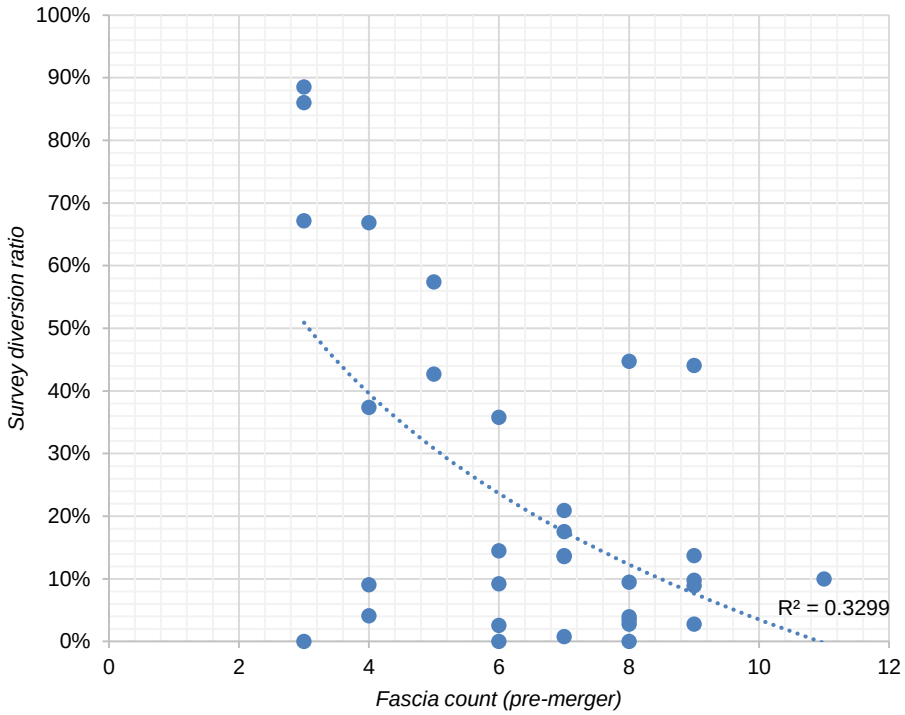
(c) Fascia counts are normally implemented over the local geographic market as identified through a customer catchment area. As such they count each independent fascia within a set radius (or isochrone) around a focal store and assign the same weight to each fascia. Thus the fascia count can overstate the competitive constraint that a firm on the edge of a catchment area exerts on the focal store and understate the competitive constraint exerted by proximate stores. This is a particular problem when geographic proximity is likely to be an important factor driving the closeness of competition.

6. Irrespective of the weaknesses of a fascia count, it is a measure of concentration that has proven capable of identifying problematic areas in the past so may provide a good screen in this case. As such it is one of the measures that we have examined.

7. Figure 1 shows fascia count[1] against diversion plot for all survey areas. As expected, the estimated diversion ratio tends to fall as the number of alternative fascia in a local area increases. However, the R^2 value is only 33%, indicating that there is a relatively weak relationship between the two variables.

[1] This fascia count has treated independents in an areas as a single fascia.

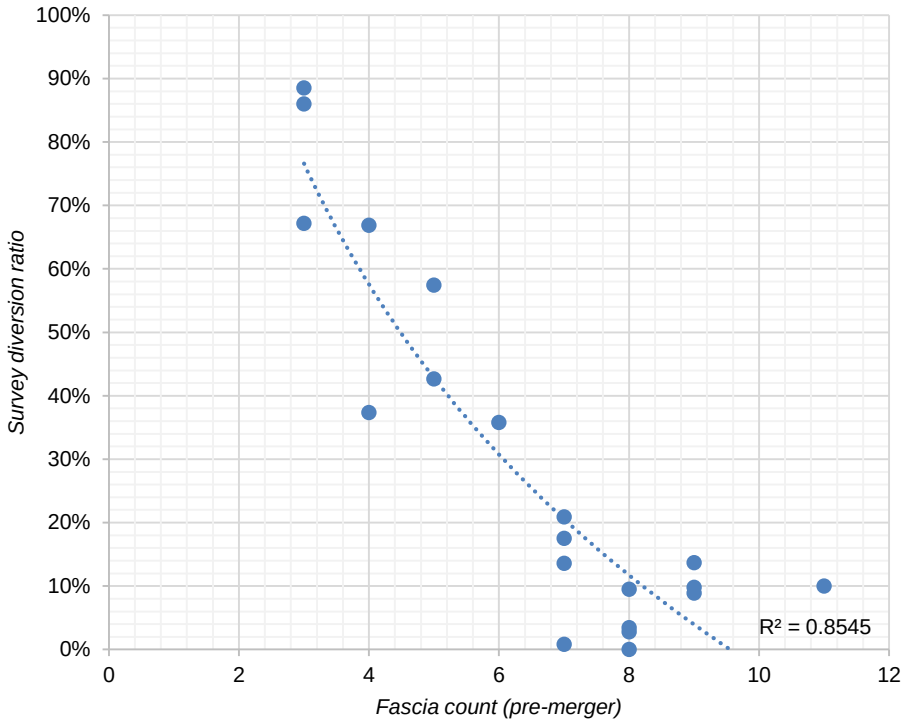
Figure 1: Relationship between fascia count and diversion ratio (UK)



Source: CMA analysis.

8. If the sample is restricted to those survey areas located in England, the relationship between the diversion ratio and fascia count becomes much stronger, as shown in Figure 2. The R^2 value is 85% indicating that there is a strong relationship between the two variables. This is the strongest relationship of any of the variables we have tested.

Figure 2: Relationship between fascia count and diversion ratio (England)



Source: CMA analysis.

9. When counting fascias we have aggregated all independent pharmacies in a local area and treated them as a single fascia. We recognise that this approach may result in additional areas being flagged by this filter, as it will decrease the number of fascias we count in any area where more than one independent is present. However, the evidence suggests that although brand may be one of the factors that drive diversion, geographic proximity is an important factor, with some third parties suggesting that consumers choose between pharmacy stores rather than fascia. Therefore, treating each independent as a separate fascia but Lloyds as a single fascia when it has multiple stores in an area risks understating the competitive impact of the merger.

10. Thus, we do not consider that a simple fascia count can be justified in this case, as it is likely to understate the constraint that Lloyds imposes on Sainsbury's relative to the constraint imposed by independents. For this reason we consider that a store count may be a better measure of concentration than a fascia count as it requires no ad hoc adjustment to control for fascias operating a different number of stores in an area.

Store count

11. A count of the number of stores in a local geographic market can provide a good proxy for the closeness of competition between parties and has been

used in some past OFT/CC/CMA cases, most recently Greene King/Spirit. Where one or both of the Parties has multiple stores in a local market, it may be the case that customers choose between stores rather than between fascia. This will be particularly the case when the stores are heterogeneous. If consumers are choosing between stores, then if two merging parties have more stores in an area relative to their competitors they are likely to be closer competitors to each other than if they have fewer than their competitors.

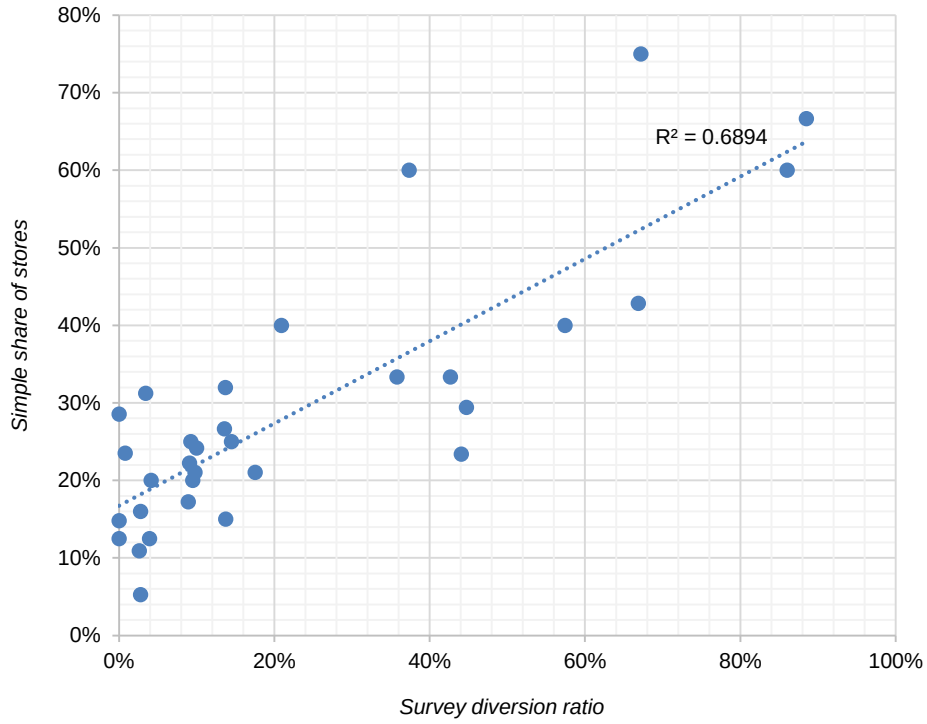
12. The store count can suffer from similar problems to a fascia count, namely:

(a) A store count assumes that each competitor in an area is equally strong and as such would be expected to receive an equal amount of diversion. This is more likely to be true where stores are relatively homogenous. As within-area heterogeneity increases, parties may be closer or more distant competitors depending on where on the price quality spectrum they decide to locate their offering. Since the store count is not able to account for this it may either under or overstate the probability of an SLC in an area, depending on the relative offering of both the Parties and third parties in an area.

(b) Store counts are normally implemented over the local geographic market as identified through customer catchment areas. As such they count each store within a set radius (or isochrone) around a focal store and assign the same weight to each. Thus the store count can overstate the competitive constraint that a firm on the edge of a catchment area exerts on the focal store and understate the competitive constraint exerted by proximate stores. This is particularly a problem when geographic proximity is likely to be an important factor driving the closeness of competition.

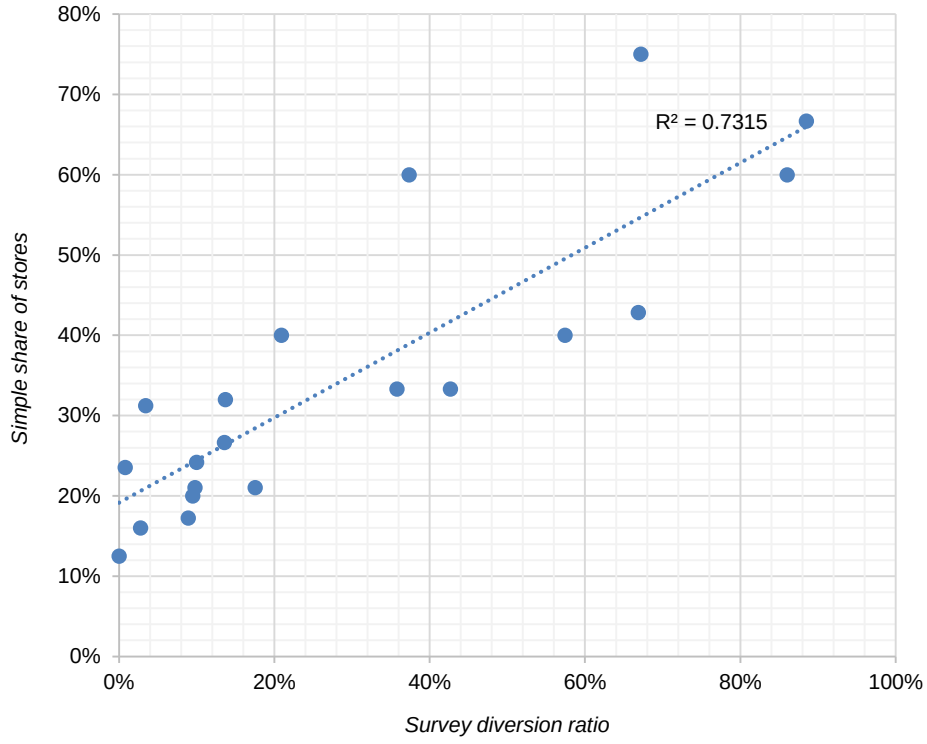
13. The store count has a strong relationship with diversion across both the UK and England, achieving an R^2 of 69% for the UK and 73% for England. This contrasts with the fascia count, which has a good fit when data from only English stores is used, but a poor fit when data for the whole of the UK is used.

Figure 3: Relationship between share of stores and survey diversion ratio (UK)



Source: CMA analysis.

Figure 4: Relationship between share of stores and survey diversion ratio (England)



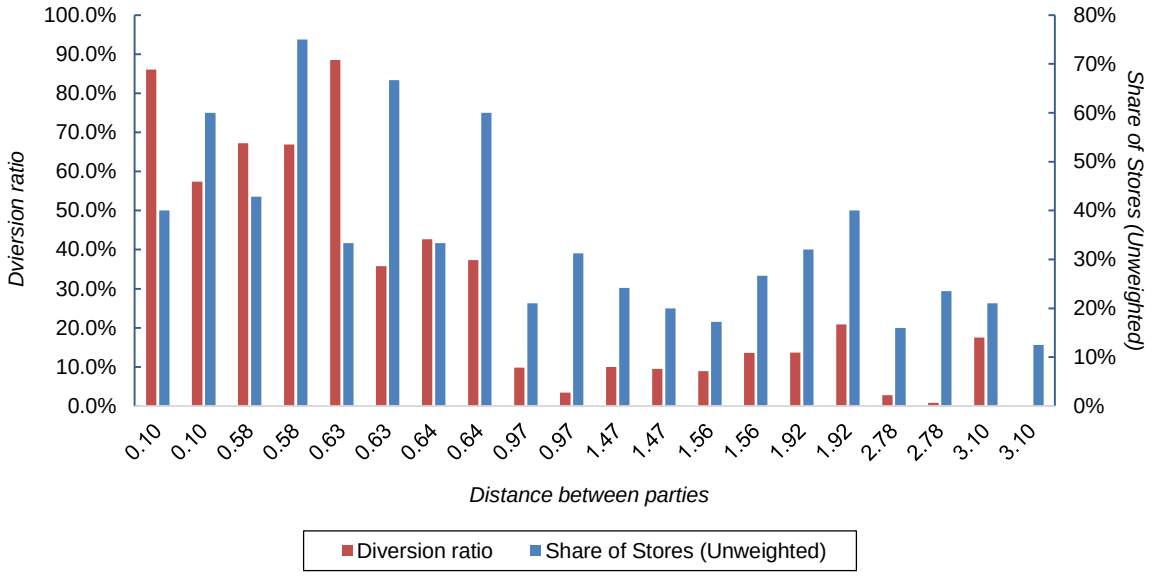
Source: CMA analysis.

14. The relationship between the store count and diversion may be partly driven by a correlation between the store count and the geographic proximity of the

Parties. If in the surveyed areas the store count is only high in areas where the Parties are geographically close, then for this sample of stores the plot of store count against diversion may be capturing the fact that the Parties are close together. This is a problem if, across the population of overlap areas, there are a range of different distances between the Parties which have a low fascia count. If this is the case, then the sample may not be representative of the population, which would limit the inference we could draw from it.

15. Figure 5 charts diversion, which is on the left-hand axis, and share of stores, which is on the right-hand axis, against the distance between the Parties. As can be seen, the share of stores and the diversion ratio are both high when the Parties are close together and are both low when the Parties are far apart.

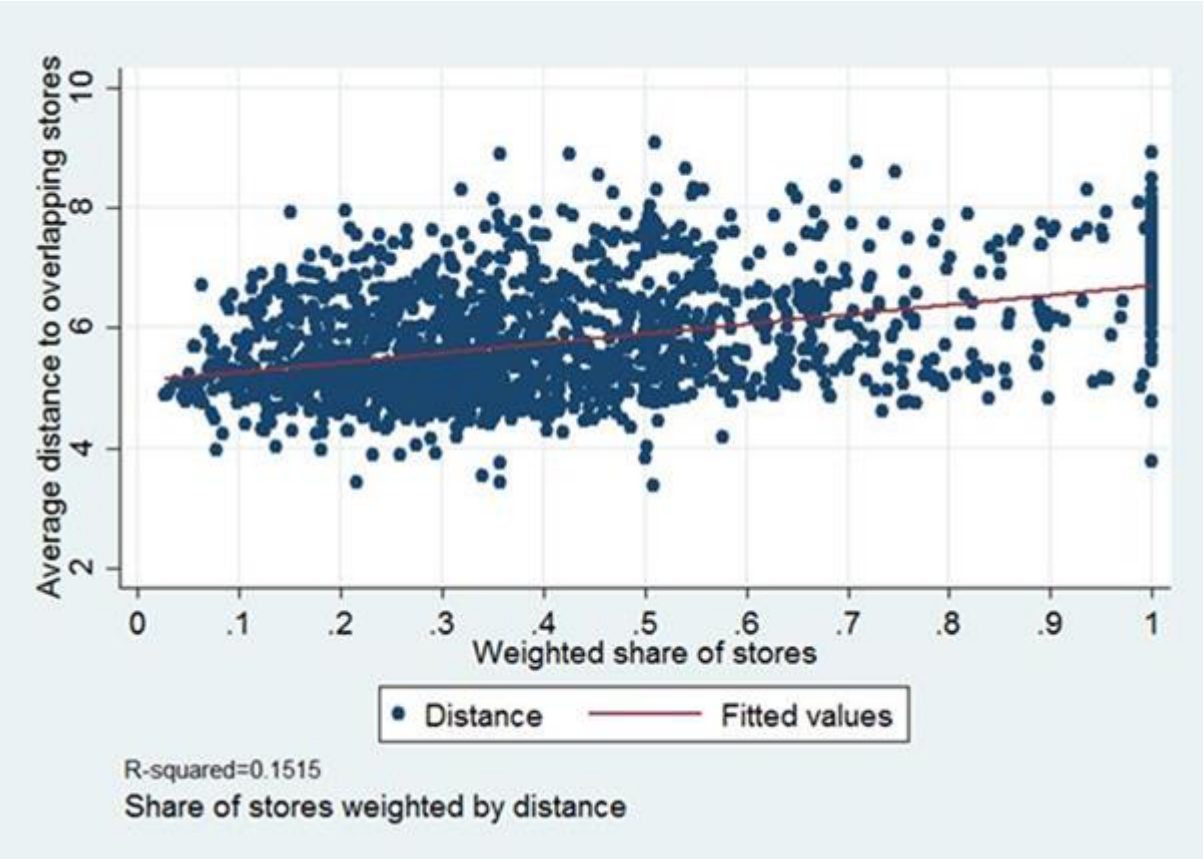
Figure 5: Relationship between share of stores, diversion ratio and distance (England)



Source: CMA analysis.

16. This relationship is a problem if, for the population of stores, there are areas where the share of stores is high, but the Parties are far apart. If this occurs, then the relationship we find between share of stores and diversion for the sample is biased as we are not controlling for distance and this will lead us to identify more areas as problematic than is actually the case. The figure below shows the distribution of share of stores by distance for all overlap stores. This shows that there is a wide range in the distance between the Parties in areas where the share of stores is high. Consequently we have considered whether we might introduce a weighting to the share of stores measure to take account of distance between stores.

Figure 6: Relationship between distance and weighted share of stores



Source: CMA analysis.

Share of stores weighted by distance

17. Distance can be an important driver of competition in many retail markets.[2] In this case our consumer survey has shown that 73% of respondents indicated that convenience was the most important reason for them deciding to visit the pharmacy on that day.[3] Thus, it is likely that any measure of concentration that fails to take account of distance will fail to be a good predictor for closeness of competition between the Parties.

18. In order to attempt to control for the likely impact of distance on closeness of competition, we have tested a number of different models which apply a decreasing weight to each store based on how far away it is from the focal store. The models we have tested are:

    (a) **Linear weighting**. We apply a decreasing weight to each competitor located within the catchment area of the focal store based on its straight-

[2] OFT/CC (2011), *Commentary on retail mergers*. This guidance was originally published jointly by the OFT and the CC and has been adopted by the CMA board.
[3] We note that convenience can have many different elements, however the most important individual element of convenience for customers of both Parties was closeness to home/work.

line distance from the focal store. This means that a store located near the edge of the catchment area counts for less when calculating the share of stores than a store located near the focal store. To illustrate this, consider a Lloyds store in an urban area, where the catchment area is 1.4 miles for high street pharmacies and 2.4 miles for a supermarket pharmacy. Each high street pharmacy is weighted by dividing the distance that it is from Lloyds by the catchment area radius for a traditional pharmacy and subtracting this from 1. So a pharmacy located 1 mile from Lloyds will receive a weighting of 29%.[4] Since the Sainsbury's catchment area is larger, its weighting is based on the supermarket catchment area radius, so if it is 1 mile away it will receive a weighting of 58%[5] and if it is 2 miles away it will receive a weighting of 17%.[6,]

The Parties argued that this weighting methodology would overweight a supermarket relative to a high street pharmacy, as the supermarket had a larger catchment area. By placing a higher weight on supermarkets the Parties submitted that we risked flagging more areas as potentially problematic than was actually the case, given the nature of the merging parties' business. However, we note that in order for the supermarket weighting not to drop to 0 between 1.4 and 2.4 miles, the supermarket must have a higher weighting than the high street pharmacy, at least for a proportion of distances. We agree with the Parties that this could flag more areas as potentially problematic than is actually the case. However, this is only an initial filter to identify areas for further analysis, and as such any overweighting does not affect our ultimate assessment of whether an SLC arises in an area.

(b) **A weighting based on the area of overlap**. We apply a decreasing weight to each competitor based on the percentage of its catchment area that overlaps with the focal store's catchment area. To do this we assume:

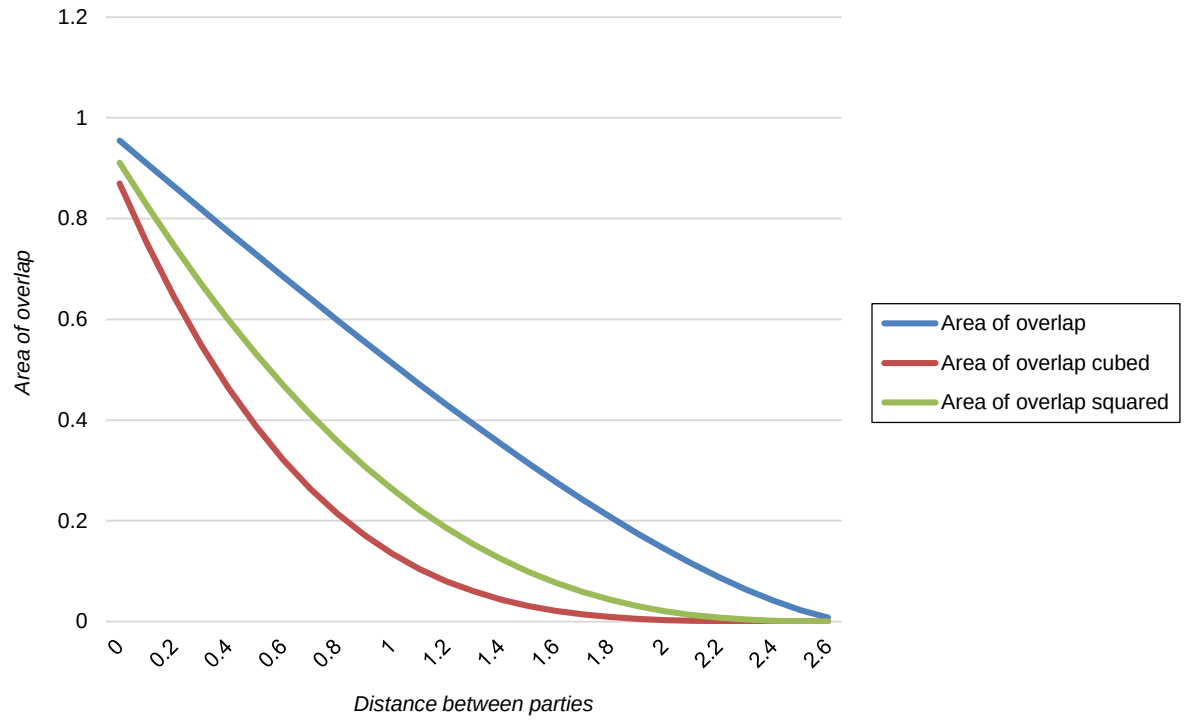
(i) that customers are evenly distributed throughout the catchment area. This is more likely to be true in urban areas than in more rural areas, but is a necessary assumption for us to work out the degree of geographic overlap between two parties in the absence of complete customer location data for the Parties and all third parties; and

[4] ie. 1 – 1/1.4.
[5] ie 1- 1 / 2.4.
[6] ie 1 – 2 / 2.4.

(ii) if the competitor store is a high street pharmacy it will have the same catchment area as a Lloyds store and if it is a supermarket it will have the same catchment area as a Sainsbury's store.

19. Since we expect – and the diversion against distance analysis in Appendix J suggests[7] – that the relationship between distance and diversion is non-linear (ie diversion falls rapidly as distance increases), we have tested different formulations that apply a square or a cube term to the weighting. The relationship between the area of overlap and each formulation is shown in Figure 7 below. As can be seen, using a square or a cube term increases the effect of a change in distance on diversion, particularly when the Parties are close together.

Figure 7: Relationship between area of overlap and distance between stores

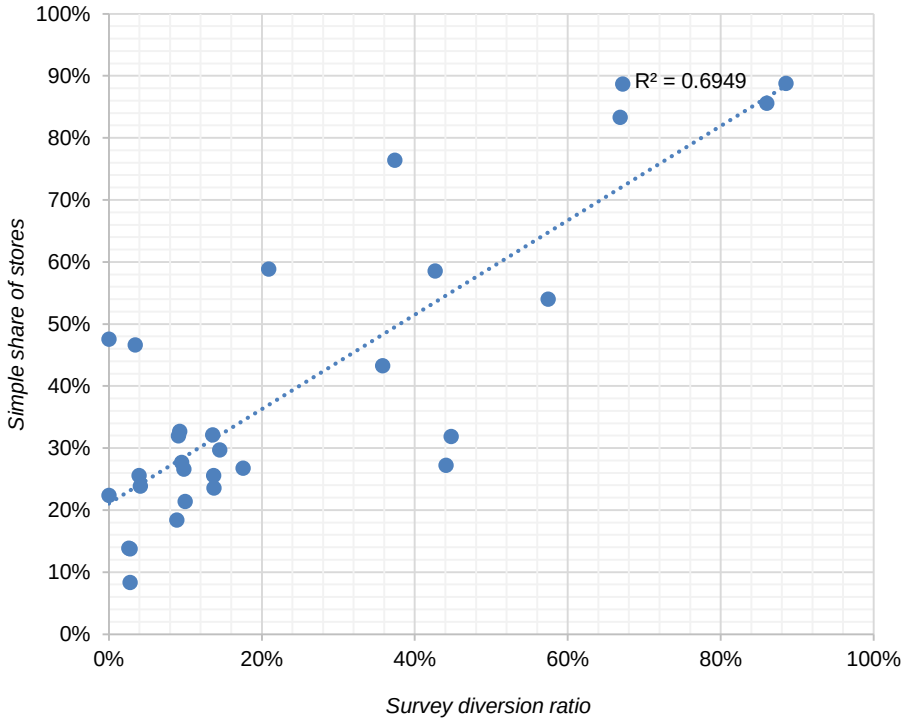


Source: CMA analysis.

20. Figures 8 and 9 show the relationship between the share of stores, weighted according to linear distance, for the UK and separately for England.[8] The R^2 is 69% for the UK and 79% for England. The graphs indicate that there is a strong relationship between this measure and the diversion ratio.

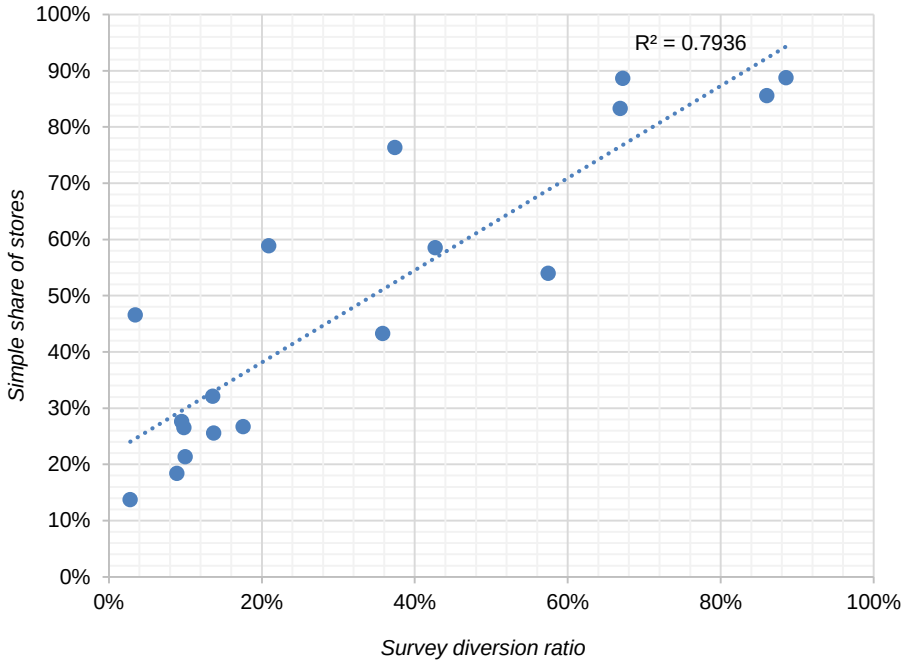
[7] The analysis suggests that being the closest competitor results in a large diversion ratio and accounts for most of the distance effect.
[8] In each of the following charts the concentration variable is plotted against the diversion ratio. Each chart is fitted with a trend line, which shows the relationship between the two variables and reports an R2 value. The R2 value is a measure of how well the trend line fits the data. If it is 100 the line fits perfectly and passes through all of the points. As the number of points lying a long way from the line increases, the R2 value falls.

Figure 8: Relationship between the share of stores (weighted by linear distance) and survey diversion ratio (UK)



Source: CMA analysis.
Note: The chart excludes the two surveyed stores which were found not to overlap using the radial catchment areas from market definition.

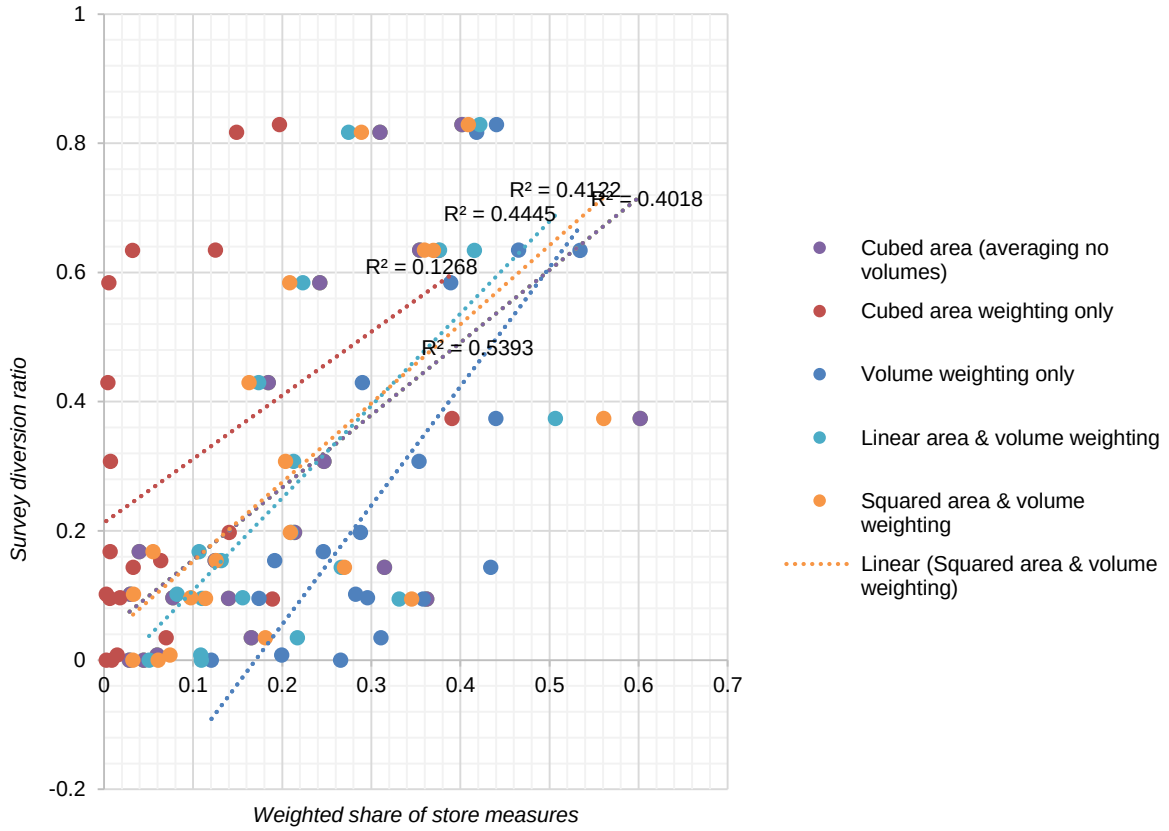
Figure 9: Relationship between share of stores (weighted by linear distance) and survey diversion ratio (England)



Source: CMA analysis.
Note: The chart excludes the two surveyed stores which were found not to overlap using the radial catchment areas from market definition.

21. Figure 10 shows the relationship between the store count adjusted by different formulations of the area of overlap and by share of stores against the diversion ratio. The relationship is not particularly strong (maximum R^2 48% when weighting by volume only) for any formulation. This suggests that the more complicated methods of weighting distance give a worse relationship between diversion and the concentration measure than using linear distance and that weighting by volume does not improve the analysis.

Figure 10: Relationship between various area weighted share of store measures and diversion (England)



Source: CMA analysis.

22. Therefore, our preferred initial metric is the share of stores, weighted by linear distance as described above.

Relationship between survey diversion ratios and relative proximity of pharmacies

23. While our primary approach involves looking at the relationship between survey diversion estimates and measures of the strength of competition in a local area, we have also considered two other approaches which we believe can also inform an initial filter. The first considers the impact of relative proximity on likely patterns of diversion between stores. The second uses the

results of our demand estimation model to imply likely diversion rates in different local areas.

24. The survey evidence suggests that convenience of location was the most important factor when deciding to visit the store for 73% of Lloyds' customers and 57% of Sainsbury's customers. It also ranked among the top three reasons for 91% of Lloyds' customers and 86% of Sainsbury's customers. Convenience could account for a number of different parameters of competition, but a previous question indicated that proximity to home/work and proximity to GP were the most important convenience factors for both Sainsbury's and Lloyds. As a result we have sought to explore the relationship between diversion and distance for the surveyed areas.

25. We have used an econometric model to analyse the relationship between survey diversion estimates and distance between the Parties. This is set out in detail in Appendix J. The model shows a strong relationship between diversion and distance, with a statistically significant impact in all specifications. In the base model, if the distance between the Parties is doubled, then the diversion ratio decreases by around 17 percentage points.

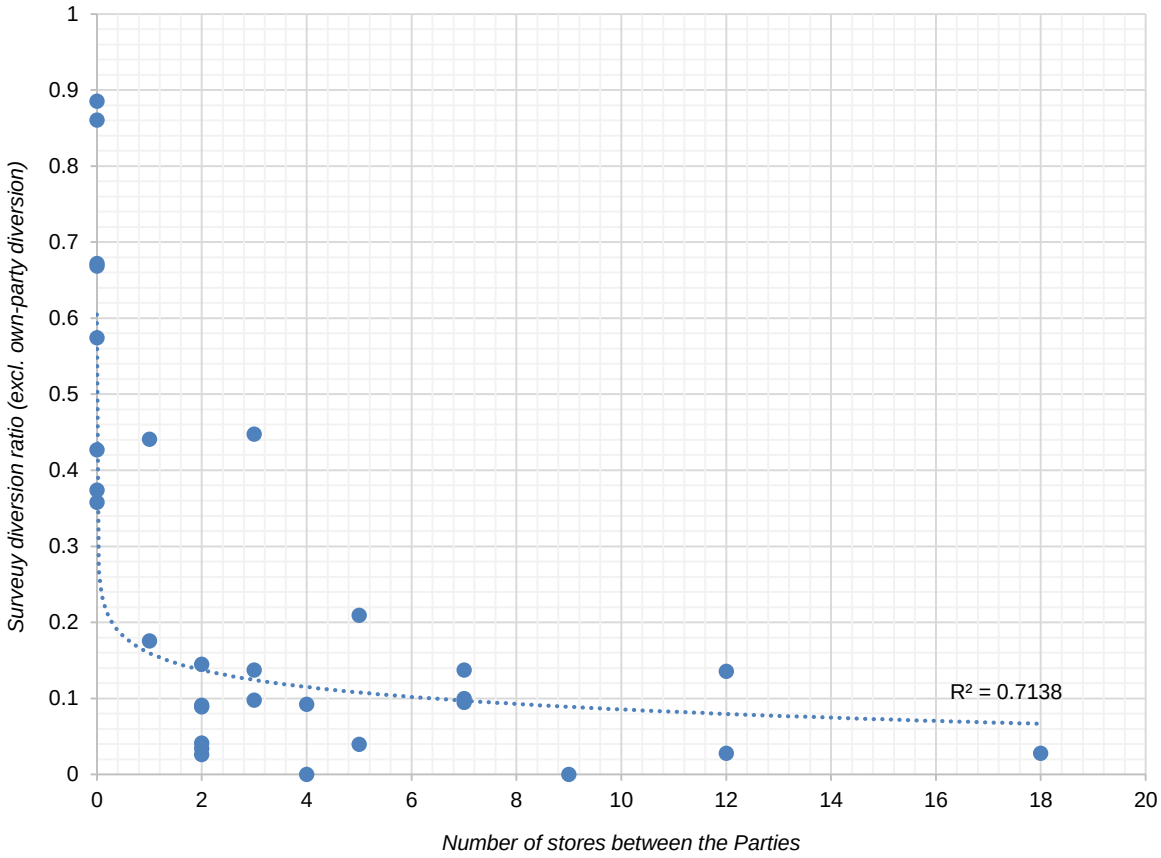
26. The strongest effect is observed when the other merging party is the closest geographic competitor, which results in an increase in the diversion ratio of around 40 percentage points (ie if Lloyds is closest to Sainsbury's diversion is 43% higher than if a third party is closest). Therefore, we might expect that an SLC is more likely to occur in areas where the Parties are geographically close together, particularly when there are few rivals between them.

27. We have data on the straight-line distance between a focal pharmacy and every other pharmacy in the UK for each pharmacy in the UK based on a geocoded data set. We have used this data to construct a filter by taking the distance from a focal pharmacy, say Lloyds, to the nearest pharmacy belonging to the other merging party, and then counting the number of other competing pharmacies that are at least as close to the focal pharmacy. This filter can flag areas where the Parties are geographically closest to each other and where there are few competitors a similar distance from the focal pharmacy. However, since it does not account for the spatial location of the pharmacy, it cannot say whether any competitors are located between the Parties.

28. The relative proximity filter has a strong overall relationship with the diversion ratio, with an R^2 of 71%, as we can see in Figure 11. In all but two of the survey areas with diversion over 20% there are either no competitors at least as close to the focal pharmacy as the other merging party, or only one competitor. This suggests that the Parties are likely to be close competitors in

areas where there are few fascias in between them. Since this measure of relative proximity is based on linear distance from the focal store, it is not able to account for the spatial location of stores in the local area. As such, diversion may be high[9] in areas where there is one or fewer fascia between the Parties.

Figure 11: Relationship between relative proximity and diversion ratio



Source: CMA analysis.

Results of the demand estimation model

29. As an alternative to the survey estimates of diversion, the demand estimation model[10] can be used to produce a measure of the diversion between the Parties in each local area in England. Diversion ratios are calculated by looking at the sensitivity of consumers to a change in the opening hours of the pharmacy, when we control for distance and other unobserved quality factors.

[9] Although diversion above 50% was only observed in areas where the Parties were each other's closest geographic competitors, we observed diversion of over 40% in two other areas. However, we have a limited number of observations (2) in areas where there is only one other competitor between the Parties, so cannot discount higher diversion ratios in these areas.
[10] The demand estimation model is described in detail in Appendix E.

In addition, diversion ratios depend on the market share of the pharmacies between which the diversion takes place.

30. The main quality factor used in the model was pharmacy opening hours, as opening and closing hours are recorded by the NHS so there is comprehensive data on this parameter for all pharmacies. Although in principle we could gather information on other quality parameters (and did so for some other Lloyds and Sainsbury's quality parameters), it was not feasible for us to collect comprehensive quality data from all pharmacies, particularly given the very large number of independent pharmacies. Hence, although we are concerned about a deterioration in a number of quality parameters we can only include opening hours in our demand estimation.[11] A further important limitation of the model is that we do not have information on the location of individual customers, so we have had to treat GP practices as customers.

31. The relationship between the estimate of diversion from the demand estimation and the survey is shown in Figure 12.[12] The demand estimation diversion ratio is on average slightly lower than the survey diversion ratio. However, we believe that the demand estimation may systematically underestimate diversion to stores that are close by and overestimate it to stores that are far away, for the reasons set out in Appendix E.

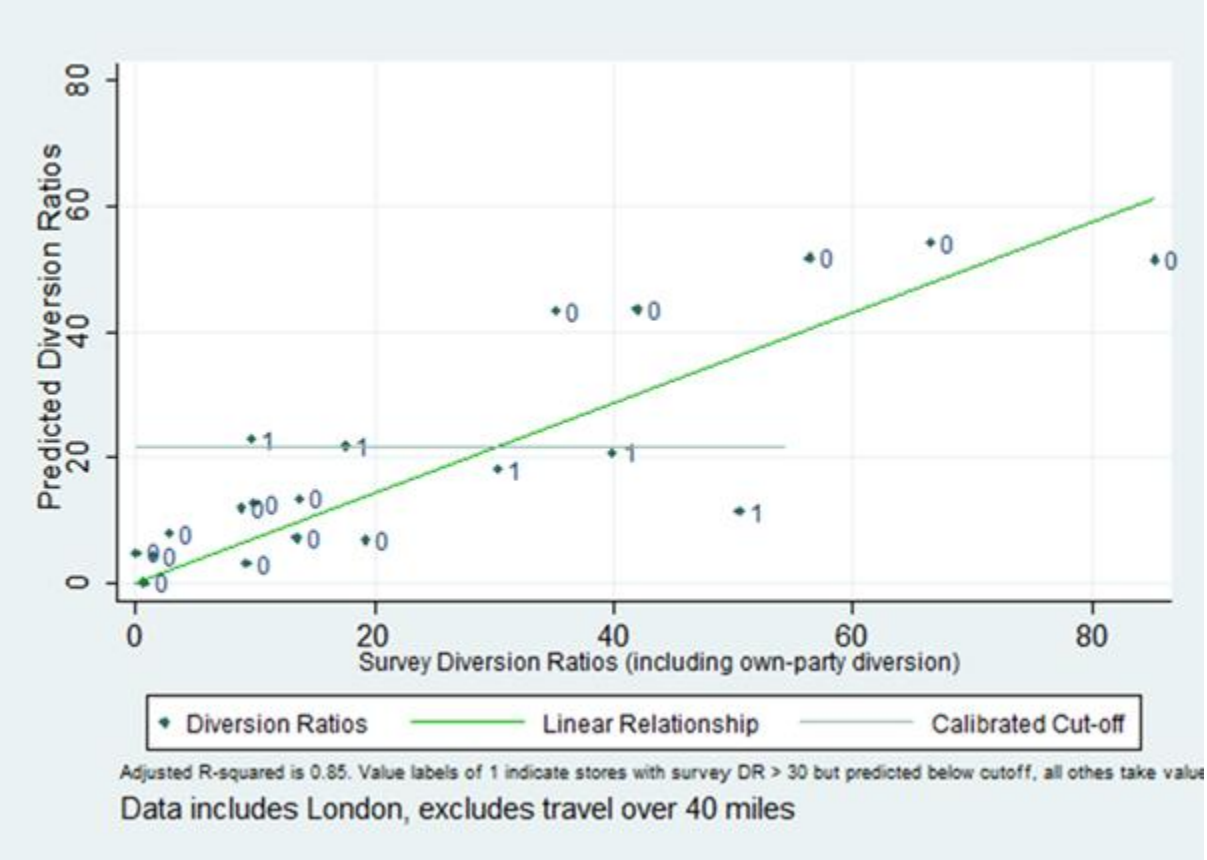
32. The Parties submitted that the difference in results might be as a result of the more targeted question asked by the demand estimation, which specifically models what will happen to marginal consumers in response to a change in opening hours (rather than the more general closure question asked in the survey). The Parties infer from this that the results should be taken at face value.

33. We accept that the difference in questions may also be a reason why the results differ, if the preferences of marginal and average consumers differ. However, we do not have evidence to suggest that preferences do differ and as such are not able to untangle the magnitude of this effect relative to the magnitude of the bias we have outlined above.

[11] We included fixed effects in the model to account for wider differences in quality between pharmacy brands. However, those pharmacy fixed effects do not control for local level differences in quality.
[12] Following our provisional findings, we conducted additional analysis of the demand estimation and have corrected the calculation methodology. As a result the demand estimation diversion ratios match those from the survey much more closely than previously.

34. On a cautious basis for the purposes of the filtering, we have therefore used a 25% threshold as the cut-off level in the demand estimation. This is substantially above the diversion ratio threshold typically used in retail mergers of around 15% to reflect the differentiation between the Parties.

Figure 12: Relationship between demand model diversion and survey diversion ratios in England



Source: CMA analysis.

Stores that fail the initial filter

35. Annex 1 shows a list of the 171 stores that fail the initial filter.

36. We included one additional area for further analysis that did not fail the initial filter – this was Cardiff. We chose to include this area as we conducted a consumer survey which revealed that there was high diversion between the Parties. Given the need to adopt an approach which included any areas where there was evidence that competition concerns could arise we assessed this area in more detail.

List of the 171 stores failing the initial filter

CRA ID	*Fascia*	*Address*	*Postcode*	*Country*	*Weighted share of stores*		*Demand estimation diversion ratio (%)*	*Number of stores nearer than other party*
					Combined (%)	*Increment (%)*		
Filtered in by the 40% (including 15% increment) weighted share of stores test								
5207	LLOYDS	[✂]	[✂]	ENGLAND	96	21	3.4	2
5059	LLOYDS	[✂]	[✂]	ENGLAND	95	20	1.8	2
5610	LLOYDS	[✂]	[✂]	ENGLAND	91	18	10.0	1
5839	LLOYDS	[✂]	[✂]	ENGLAND	89	17	6.4	1
5236	LLOYDS	[✂]	[✂]	ENGLAND	89	24	6.1	5
6048	LLOYDS	[✂]	[✂]	ENGLAND	89	30		0
5172	LLOYDS	[✂]	[✂]	ENGLAND	89	31	20.7	0
5976	LLOYDS	[✂]	[✂]	ENGLAND	89	39	51.5	0
6047	LLOYDS	[✂]	[✂]	ENGLAND	86	21	35.3	0
4774	LLOYDS	[✂]	[✂]	ENGLAND	86	36	11.3	0
6034	LLOYDS	[✂]	[✂]	ENGLAND	85	15		8
3553	SAINSBURY'S	[✂]	[✂]	ENGLAND	84	38	54.2	0
5977	LLOYDS	[✂]	[✂]	ENGLAND	80	21	5.7	3
5048	LLOYDS	[✂]	[✂]	ENGLAND	79	20	5.8	2
5235	LLOYDS	[✂]	[✂]	ENGLAND	77	25	7.3	1
5067	LLOYDS	[✂]	[✂]	ENGLAND	77	27	18.1	0
5075	LLOYDS	[✂]	[✂]	ENGLAND	75	25	12.2	0
5077	LLOYDS	[✂]	[✂]	ENGLAND	73	24	10.3	0
5333	LLOYDS	[✂]	[✂]	ENGLAND	72	18	2.2	10

5119	LLOYDS	[✂]	[✂]	ENGLAND	70	24	1.0	1
5832	LLOYDS	[✂]	[✂]	ENGLAND	70	21	2.9	1
4964	LLOYDS	[✂]	[✂]	ENGLAND	69	21	13.2	1
4676	LLOYDS	[✂]	[✂]	ENGLAND	67	19	16.4	2
4688	LLOYDS	[✂]	[✂]	ENGLAND	67	25	3.0	2
5675	LLOYDS	[✂]	[✂]	ENGLAND	67	20	9.1	1
5190	LLOYDS	[✂]	[✂]	ENGLAND	67	25	7.3	0
5788	LLOYDS	[✂]	[✂]	ENGLAND	67	23	12.7	2
4773	LLOYDS	[✂]	[✂]	ENGLAND	66	23	9.0	1
4721	LLOYDS	[✂]	[✂]	ENGLAND	66	27	8.5	0
5054	LLOYDS	[✂]	[✂]	ENGLAND	66	20	9.0	1
6032	LLOYDS	[✂]	[✂]	ENGLAND	66	21	6.9	1
5848	LLOYDS	[✂]	[✂]	ENGLAND	66	25	6.9	1
5339	LLOYDS	[✂]	[✂]	ENGLAND	65	16	5.2	5
3382	SAINSBURY'S	[✂]	[✂]	ENGLAND	65	17	57.7	0
5767	LLOYDS	[✂]	[✂]	ENGLAND	64	27	5.8	0
4648	LLOYDS	[✂]	[✂]	ENGLAND	64	21	8.9	1
5404	LLOYDS	[✂]	[✂]	ENGLAND	64	26	11.1	1
5979	LLOYDS	[✂]	[✂]	ENGLAND	64	22	9.1	0
4963	LLOYDS	[✂]	[✂]	ENGLAND	64	21	0.9	10
6077	LLOYDS	[✂]	[✂]	ENGLAND	63	16	0.6	8
4933	LLOYDS	[✂]	[✂]	ENGLAND	63	22	6.5	1
4874	LLOYDS	[✂]	[✂]	ENGLAND	62	16	5.7	8
5013	LLOYDS	[✂]	[✂]	ENGLAND	62	29	19.6	1
4675	LLOYDS	[✂]	[✂]	ENGLAND	62	16	1.9	3
3504	SAINSBURY'S	[✂]	[✂]	ENGLAND	62	25	34.6	1
4677	LLOYDS	[✂]	[✂]	ENGLAND	62	18	13.0	4
5021	LLOYDS	[✂]	[✂]	ENGLAND	61	24	7.3	7
5736	LLOYDS	[✂]	[✂]	ENGLAND	60	23	7.6	7
5644	LLOYDS	[✂]	[✂]	ENGLAND	60	24	5.4	1
5508	LLOYDS	[✂]	[✂]	ENGLAND	59	20	7.2	0

5017	LLOYDS	[✂]	[✂]	ENGLAND	59	18	7.4	1
4698	LLOYDS	[✂]	[✂]	ENGLAND	59	29	6.8	5
4727	LLOYDS	[✂]	[✂]	ENGLAND	59	16	0.9	10
5897	LLOYDS	[✂]	[✂]	ENGLAND	59	21	2.2	7
4657	LLOYDS	[✂]	[✂]	ENGLAND	59	22	11.2	0
5618	LLOYDS	[✂]	[✂]	ENGLAND	59	22	14.6	1
3507	SAINSBURY'S	[✂]	[✂]	ENGLAND	59	21	43.5	0
5480	LLOYDS	[✂]	[✂]	ENGLAND	58	21	17.4	1
5186	LLOYDS	[✂]	[✂]	ENGLAND	57	20	11.5	1
5536	LLOYDS	[✂]	[✂]	ENGLAND	56	19	12.4	2
5078	LLOYDS	[✂]	[✂]	ENGLAND	56	24	1.7	1
6059	LLOYDS	[✂]	[✂]	ENGLAND	56	18	2.8	1
6101	LLOYDS	[✂]	[✂]	ENGLAND	56	15	0.3	3
4932	LLOYDS	[✂]	[✂]	ENGLAND	55	19	34.0	1
4782	LLOYDS	[✂]	[✂]	ENGLAND	55	24	3.4	1
5555	LLOYDS	[✂]	[✂]	ENGLAND	55	18	6.1	1
5033	LLOYDS	[✂]	[✂]	ENGLAND	54	18	11.8	1
3534	SAINSBURY'S	[✂]	[✂]	ENGLAND	54	20	51.8	0
3561	SAINSBURY'S	[✂]	[✂]	ENGLAND	53	20	41.5	1
5080	LLOYDS	[✂]	[✂]	ENGLAND	53	17	10.9	1
5090	LLOYDS	[✂]	[✂]	ENGLAND	53	24	7.6	0
4903	LLOYDS	[✂]	[✂]	ENGLAND	53	22	4.9	2
5417	LLOYDS	[✂]	[✂]	ENGLAND	53	21	3.0	1
4926	LLOYDS	[✂]	[✂]	ENGLAND	53	23	13.0	0
2057	LLOYDS	[✂]	[✂]	ENGLAND	52	22	4.9	0
3532	SAINSBURY'S	[✂]	[✂]	ENGLAND	52	18	28.4	1
4842	LLOYDS	[✂]	[✂]	ENGLAND	52	19	12.6	2
5010	LLOYDS	[✂]	[✂]	ENGLAND	52	19	5.0	10
4960	LLOYDS	[✂]	[✂]	ENGLAND	51	21	2.1	2
5974	LLOYDS	[✂]	[✂]	ENGLAND	51	19	1.6	7
5020	LLOYDS	[✂]	[✂]	ENGLAND	51	22	5.6	3

5173	LLOYDS	[✂]	[✂]	ENGLAND	50	22	4.1	2
5405	LLOYDS	[✂]	[✂]	SCOTLAND	50	16		3
3607	SAINSBURY'S	[✂]	[✂]	ENGLAND	49	18	33.8	1
6110	LLOYDS	[✂]	[✂]	ENGLAND	49	17	21.7	3
3393	SAINSBURY'S	[✂]	[✂]	ENGLAND	49	19	40.4	2
3519	SAINSBURY'S	[✂]	[✂]	ENGLAND	48	18	41.0	1
5280	LLOYDS	[✂]	[✂]	ENGLAND	48	19	3.4	4
3457	SAINSBURY'S	[✂]	[✂]	ENGLAND	48	22	9.8	2
5299	LLOYDS	[✂]	[✂]	ENGLAND	47	15	2.9	3
5244	LLOYDS	[✂]	[✂]	ENGLAND	47	18	3.0	4
5991	LLOYDS	[✂]	[✂]	ENGLAND	47	17		3
5781	LLOYDS	[✂]	[✂]	ENGLAND	46	17	3.7	3
4948	LLOYDS	[✂]	[✂]	ENGLAND	46	22	17.1	1
5491	LLOYDS	[✂]	[✂]	ENGLAND	46	18	2.8	0
3520	SAINSBURY'S	[✂]	[✂]	ENGLAND	45	15	57.5	1
3570	SAINSBURY'S	[✂]	[✂]	ENGLAND	45	18	48.2	0
4887	LLOYDS	[✂]	[✂]	ENGLAND	43	21	14.7	2
5355	LLOYDS	[✂]	[✂]	ENGLAND	43	19	8.4	2
5357	LLOYDS	[✂]	[✂]	ENGLAND	43	21	10.4	0
4670	LLOYDS	[✂]	[✂]	ENGLAND	43	20	5.4	0
3564	SAINSBURY'S	[✂]	[✂]	ENGLAND	43	18	30.7	2
4709	LLOYDS	[✂]	[✂]	ENGLAND	43	18	3.2	12
5443	LLOYDS	[✂]	[✂]	ENGLAND	43	18	4.6	1
3515	SAINSBURY'S	[✂]	[✂]	ENGLAND	43	18	43.4	0
6115	LLOYDS	[✂]	[✂]	ENGLAND	42	19	1.8	22
5091	LLOYDS	[✂]	[✂]	ENGLAND	42	17	1.8	5
5784	LLOYDS	[✂]	[✂]	ENGLAND	42	17	1.3	0
3584	SAINSBURY'S	[✂]	[✂]	ENGLAND	42	17	29.1	2
5983	LLOYDS	[✂]	[✂]	ENGLAND	41	19		1
5994	LLOYDS	[✂]	[✂]	ENGLAND	41	15	1.3	3

5209	LLOYDS	[✂]	[✂]	ENGLAND	40	17	1.6	11
Filtered in by the proximity test								
3535	SAINSBURY'S	[✂]	[✂]	ENGLAND	31	12	21.2	0
4771	LLOYDS	[✂]	[✂]	ENGLAND	43	15	3.7	0
5495	LLOYDS	[✂]	[✂]	ENGLAND	42	13	9.0	0
5547	LLOYDS	[✂]	[✂]	ENGLAND	40	15	6.3	0
4991	LLOYDS	[✂]	[✂]	ENGLAND	33	16	22.9	0
3400	SAINSBURY'S	[✂]	[✂]	ENGLAND	34	10	47.0	0
3622	SAINSBURY'S	[✂]	[✂]	ENGLAND	34	10	31.4	0
4681	LLOYDS	[✂]	[✂]	ENGLAND	100	11	6.4	0
3582	SAINSBURY'S	[✂]	[✂]	ENGLAND	44	11	45.5	0
3505	SAINSBURY'S	[✂]	[✂]	ENGLAND	54	14	35.9	0
5986	LLOYDS	[✂]	[✂]	ENGLAND	35	16		0
3398	SAINSBURY'S	[✂]	[✂]	ENGLAND	41	14	30.3	0
4686	LLOYDS	[✂]	[✂]	ENGLAND	42	14	2.3	0
5210	LLOYDS	[✂]	[✂]	ENGLAND	30	13	10.2	0
5061	LLOYDS	[✂]	[✂]	ENGLAND	100	11	6.0	0
4968	LLOYDS	[✂]	[✂]	ENGLAND	36	16	6.4	0
5669	LLOYDS	[✂]	[✂]	ENGLAND	40	12	2.3	1
3518	SAINSBURY'S	[✂]	[✂]	ENGLAND	35	17	28.8	1
4779	LLOYDS	[✂]	[✂]	ENGLAND	41	10	7.1	1
5528	LLOYDS	[✂]	[✂]	ENGLAND	31	11	3.7	1
5764	LLOYDS	[✂]	[✂]	ENGLAND	31	12	16.1	1
3536	SAINSBURY'S	[✂]	[✂]	ENGLAND	37	14	25.3	1
4983	LLOYDS	[✂]	[✂]	ENGLAND	41	11	4.8	1
4750	LLOYDS	[✂]	[✂]	ENGLAND	39	16	9.6	1
4784	LLOYDS	[✂]	[✂]	ENGLAND	40	15	1.8	1
4722	LLOYDS	[✂]	[✂]	ENGLAND	31	11	3.6	1
5772	LLOYDS	[✂]	[✂]	ENGLAND	32	15	16.5	1
4760	LLOYDS	[✂]	[✂]	ENGLAND	40	12	2.3	1

3627	SAINSBURY'S	[✂]	[✂]	ENGLAND	35	11	18.2	1
4788	LLOYDS	[✂]	[✂]	ENGLAND	53	14	3.7	1
5050	LLOYDS	[✂]	[✂]	ENGLAND	36	12	16.4	1
3611	SAINSBURY'S	[✂]	[✂]	ENGLAND	31	11	21.1	1
6013	LLOYDS	[✂]	[✂]	ENGLAND	33	14	5.1	1
Filtered in by demand estimation diversion ratio test								
3549	SAINSBURY'S	[✂]	[✂]	ENGLAND	23	11	54.1	0
3565	SAINSBURY'S	[✂]	[✂]	ENGLAND	39	9	48.3	0
3568	SAINSBURY'S	[✂]	[✂]	ENGLAND	46	11	45.5	5
3575	SAINSBURY'S	[✂]	[✂]	ENGLAND	33	9	42.3	2
3491	SAINSBURY'S	[✂]	[✂]	ENGLAND	19	4	40.2	0
12066	SAINSBURY'S	[✂]	[✂]	ENGLAND	39	15	39.9	3
3631	SAINSBURY'S	[✂]	[✂]	ENGLAND	35	10	38.5	2
3571	SAINSBURY'S	[✂]	[✂]	ENGLAND	25	12	36.7	6
3589	SAINSBURY'S	[✂]	[✂]	ENGLAND	33	4	35.0	0
3508	SAINSBURY'S	[✂]	[✂]	ENGLAND	36	12	32.1	2
3630	SAINSBURY'S	[✂]	[✂]	ENGLAND	20	6	32.0	11
3543	SAINSBURY'S	[✂]	[✂]	ENGLAND	40	11	31.6	3
3567	SAINSBURY'S	[✂]	[✂]	ENGLAND	27	6	30.2	5
3481	SAINSBURY'S	[✂]	[✂]	ENGLAND	23	8	30.2	0
3477	SAINSBURY'S	[✂]	[✂]	ENGLAND	25	4	30.1	0
3635	SAINSBURY'S	[✂]	[✂]	ENGLAND	38	7	29.6	0
3511	SAINSBURY'S	[✂]	[✂]	ENGLAND	34	13	28.8	3
4896	LLOYDS	[✂]	[✂]	ENGLAND	34	9	28.5	6
3417	SAINSBURY'S	[✂]	[✂]	ENGLAND	32	11	28.1	5
3610	SAINSBURY'S	[✂]	[✂]	ENGLAND	24	7	27.7	0
3377	SAINSBURY'S	[✂]	[✂]	ENGLAND	38	18	27.0	2
3383	SAINSBURY'S	[✂]	[✂]	ENGLAND	21	6	26.8	0
3619	SAINSBURY'S	[✂]	[✂]	ENGLAND	24	6	25.9	2
3420	SAINSBURY'S	[✂]	[✂]	ENGLAND	20	8	25.6	0

3578	SAINSBURY'S	[✂]	[✂]	ENGLAND	34	15	25.6	3
3556	SAINSBURY'S	[✂]	[✂]	ENGLAND	22	7	25.0	1

Relationship between survey diversion and distance between pharmacies

Introduction

1. In this appendix we seek to estimate the relationship between the survey diversion ratio between two stores and the straight-line distance between them.

2. Diversion ratios provide a measure of how closely the Parties compete. Large diversion ratios between the merging parties suggest that the firms might be close competitors. We are interested in understanding whether and how diversion between the Parties is affected by the distance between them.

3. We have conducted our analysis on two bases. The first only uses the survey diversion ratios between the Parties. The second extends the model by including diversion ratios to third party stores. In this analysis we have used the diversion ratios estimated by our consumer survey excluding own party diversion.

4. From our analysis, we have found a negative relationship between diversion ratios and distances. All else equal, if distances were to double, diversion ratios are predicted to drop by:

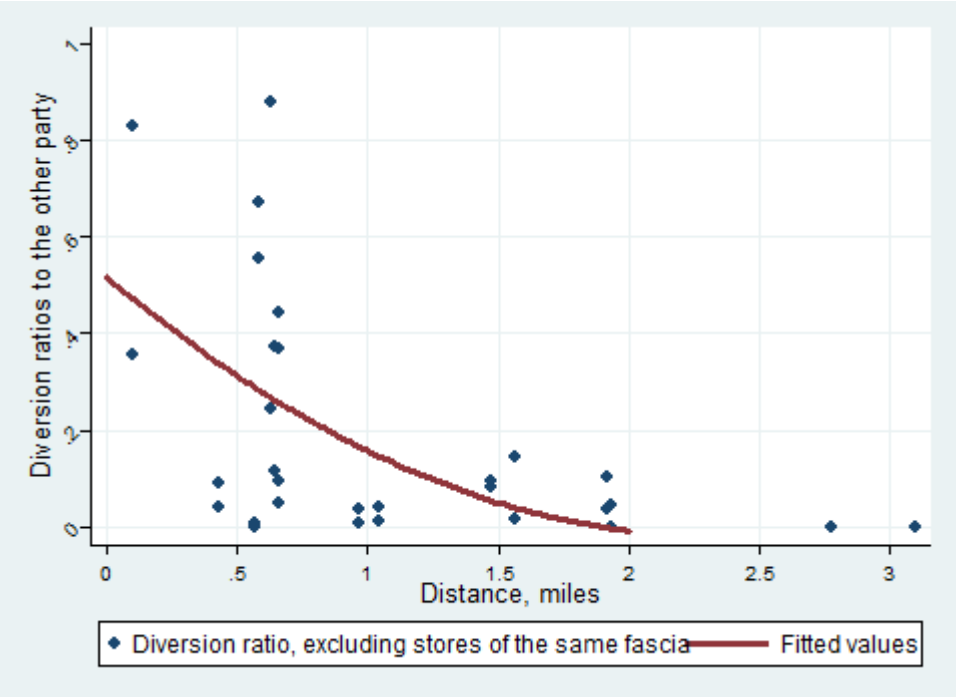
   (a) around 17 percentage points if customers can divert only to the other party; and

   (b) between 2 and 4 percentage points if customers can divert also to stores of other third parties.

5. In areas where the Parties were each other's geographically closest competitor, diversion ratios are around 40 percentage points higher than if there are other competitors between them.

6. If we focus solely on the diversion ratios between the Parties, the relationship between diversion ratios and distance is illustrated in Figure 1. As can be seen, as distance increases, the diversion ratio decreases. Furthermore, as distance increases, the diversion ratio decreases less than proportionally.

Figure 1: Relationship between diversion ratios and distance – only surveyed areas



Source: CMA analysis.

Methodology

7. In order to quantify whether there is a relationship between diversion ratio and distance, we have used the following OLS model:

$$Diversion\ Ratio_{from\ party\ i\ to\ party\ j} = \beta Distance_{between\ i\ and\ j} + \gamma Concentration_{around\ i} + \varepsilon_i$$

where the dependent variable, $Diversion\ Ratio$, is the probability that customers leaving store i would divert to store j, if store i permanently closed. We have further discussed diversion ratios in the next section.

8. Being a probability, the dependent variable is bounded between 0 and 1. However, the OLS model estimates a line which is not bounded, and the predicted values may lie outside the 0–1 interval. Nevertheless, a simple OLS, in place of other more complicated econometric models, to explore the relationship between two variables is generally accepted. In addition, we have corrected the standard errors in order to account for store-specific variation.[1]

[1] OLS estimates on binary variables violates the assumption of independent and identically distributed error terms.

9. The main independent variable is $Distance$, which is computed as the straight-line distance between store i and store j expressed in miles. We have further discussed how this variable enters the model in the next section.

10. We then extended the model by including, separately in different models, the following measures of $Concentration$:

    (a) An indicator taking value 1 if the closest geographic competitor is the other merging party.

    (b) An indicator taking value 1 if the closest geographic competitor is a third-party.

    (c) The number of fascias in the area pre-merger compared with the post-merger outcome.

11. In some instances, particularly when we are only including diversion ratios between the Parties' stores, we have a limited number of observations and this reduces the precision of our estimates. In instances where we are using a dummy variable (such as whether a store is the geographically closest competitor) this might also prevent us from estimating the relationship correctly.

12. We emphasise that these regressions merely indicate whether two variables are associated with each other and whether this association is positive or negative. We are not able to infer any causal effect from distance on diversion.

Diversion ratios

13. Diversion ratios are used to measure possible unilateral effects arising from a merger. The diversion ratio measures the proportion of customers that are captured by party A if party B were to close. Diversion ratios provide a measure of how closely the Parties compete. Large diversion ratios between the merging parties suggest that firms might be close competitors.

14. In this case we obtained diversion ratios by asking customers what stores they would have gone to if the store they were visiting had permanently closed. The higher the rate of diversion between the Parties, the stronger the pre-merger constraint that they exert on each other.

15. Diversion ratios were calculated both between the Parties and from each Party to each third party, based on the results of a consumer survey. In this analysis we have used the diversion ratio that excludes own party diversion.

16. In this analysis, we have used diversion ratios calculated using the results of a question that did not allow customers to divert to another store of the same brand. This measure can be interpreted as giving an estimate of the proportion of sales that would be lost by all Lloyds stores in the area to the relevant Sainsbury's store. It can also be used to provide a measure of the remaining competitive constraint on a Lloyds store from outside sources.

Distance

17. We have tested two alternative specifications of the distance term in the model. They are:

    (a) distance between stores computed in miles that enters our specification as a natural log; and

    (b) distance between stores computed in miles that enters our specification directly as miles. In this set of models we have also included a squared term to allow for a non-linear relationship between diversion and distance.

18. We have found that there is not a meaningful difference between the results obtained using either distance measure. As the logarithm transformation allows us to consider how diversion changes as distance increases in percentage rather than absolute terms, the interpretation is easier, so we have only reported the results of that specification.

Results

Parties' stores only

19. When we have restricted the analysis to only include diversion between the Parties' stores we have found a negative relationship between diversion ratios and distances. All else equal, if distances were to double, diversion ratios decrease by around 17 percentage points.

20. When we have included a dummy variable that takes the value of 1 in areas where the Parties are each other's geographically closest competitors, we have found that this is strongly and positivity correlated with diversion. If the Parties' stores are the closest geographical competitors, diversion ratios are around 40 percentage points higher than when they are not the closest ones.

21. When we have included the dummy variables to identify the number of different brands in the local area, we have observed that diversion ratios to the other merging party are higher in more concentrated local markets than in less concentrated areas. In addition, this relationship might be non-linear. The

magnitude of the relationship appears robust to the inclusion of this concentration measure.

Table 1: Regression results (distances in logarithms) – only merging parties

	(1) *Diversion ratios Excluding own party stores*	*(2)* *Diversion ratios Excluding own party stores*	*(3)* *Diversion ratios Excluding own party stores*
Distance between the Parties	**–0.17***** **(0.04)**	–0.04 (0.04)	**–0.17**** **(0.06)**
The closest competitor is the other merging party		**0.43***** **(0.10)**	
3 to 2			0.49** (0.19)
4 to 3			0.12 (0.11)
5 to 4			0.01 (0.09)
5 to 5			0.17** (0.07)
6 to 5			0.06 (0.05)
7 to 6			0.17*** (0.05)
8 to 7			0.27*** (0.09)
8 to 8			0.19** (0.07)
9 to 8			0.11* (0.06)
Constant	0.16*** (0.03)	0.07*** (0.02)	
R-square	0.33	0.71	0.76
Number of observations	32	32	32

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. The number of fascias passing from 11 to 10 is the reference category for the dummies of the fascia count.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Including both the Parties and third parties

22. We have extended the analysis to include not only diversion between the Parties' stores, but also from each of the Parties to each third party in the survey area. We have found a negative relationship between diversion ratios and distances. All else equal, if distances were to double, diversion ratios would drop by between 2 and 4 percentage points.

23. The lower estimates we have obtained in this second model are due to the presence of a large number of stores that, although located within a close distance to the surveyed store, did not attract any diversion. Therefore they

enter our model with a zero diversion ratio and artificially drive the estimated coefficients towards zero. We believe this is a conservative approach, whereas the alternative approach would have been to include in the analysis only those stores with a positive diversion ratio. We deem the results of this second model lower bound estimates for the relationship between diversion ratios and distance.

24. As in the previous model including only the Parties' stores, we have observed a strong and positive correlation of the closest geographical competitor variable with diversion ratios. We have found that being the closest geographic competitor increases diversion ratio by around 20 percentage points with respect to not being the closest one.

25. Furthermore, if the stores of the Parties are the closest geographical competitors, diversion ratios are around 40 percentage points higher than when they are not the closest ones.

26. As in the previous model including only the Parties' stores, when we have included the dummy variables to identify the number of different brands in the local area, we have observed that in more concentrated local markets diversion ratios to the other merging parties are higher with respect to less concentrated areas.

27. This second analysis aims to assess whether the relationship between diversion ratio and distance is sensitive to the number of alternatives customers can diver to. Even though we observe smaller estimates with respect to the previous case, we are able to confirm that there is a negative correlation between diversion ratio and distance. Moreover, we are able to confirm the strong effect on diversion ratio from being the closest geographic competitor.

Table 2: Regression results (distances in logarithms) – all parties

	(1) *Diversion ratios* *Excluding own party stores*	*(2)* *Diversion ratios* *Excluding own party stores*	*(3)* *Diversion ratios* *Excluding own party stores*
Distance between the Parties	**–0.04***** **(0.00)**	**–0.02***** **(0.00)**	**–0.04***** **(0.00)**
The closest competitor is the other merging party		**0.45***** **(0.08)**	
The closest geographical competitor is a third party		**0.19***** **(0.04)**	
3 to 2			**0.07***** **(0.01)**
4 to 3			**0.06***** **(0.01)**
5 to 4			**0.07***** **(0.01)**
5 to 5			**0.04***** **(0.01)**
6 to 5			**0.05***** **(0.01)**
7 to 6			**0.06***** **(0.01)**
8 to 7			**0.05***** **(0.01)**
8 to 8			**0.05***** **(0.01)**
9 to 8			**0.05***** **(0.00)**
Constant	0.06*** (0.01)	0.03*** (0.00)	
R-square	0.25	0.56	0.26
Number of observations	2,343	2,343	2,343

Source: CMA analysis.
Notes:
1. Standard errors in parentheses.
2. The number of fascias passing from 11 to 10 is the reference category for the dummies of the fascia count.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Maps of areas where we have found an SLC

1. This appendix presents the maps of the areas where we have found an SLC. Each map shows the location of the Parties' pharmacies, of the other local pharmacies, and of GP practices (see Table 1 below for a key to the symbols used). For each pharmacy, the map shows the number of prescriptions per month, computed as an average over the period between August and October 2015. Also indicated are the catchment areas (defined in Section 5, Table 4 of the final report) for all the Parties' local pharmacies failing our filter, as discussed in paragraphs 7.150 to 7.220 of the final report. A green circle is used for Lloyds and an orange circle for Sainsbury's stores.[1] In most areas, although multiple Lloyds pharmacies are present, in most cases we are particularly concerned about one of them. This has been circled in red in the maps. However, in two areas – Christchurch and Sandy/Biggleswade/Potton – our competitive concerns are more general and do not refer to a specific pharmacy.

Table 1: Key to the symbols used in the maps

Symbol	Party
Green circle	Lloyds
Orange square	Sainsbury's
Blue diamond	Boots
Red point-up triangle	Tesco
Green point-up triangle	Asda
Yellow point-up triangle	Morrisons
Pink point-down triangle	Superdrug
Light blue point-down triangle	Well
Brown point-down triangle	Rowlands
Grey point-down triangle	Day Lewis
Green point-down triangle	Cohens
Red star	Other chains and independents
Blue pin	GP practices

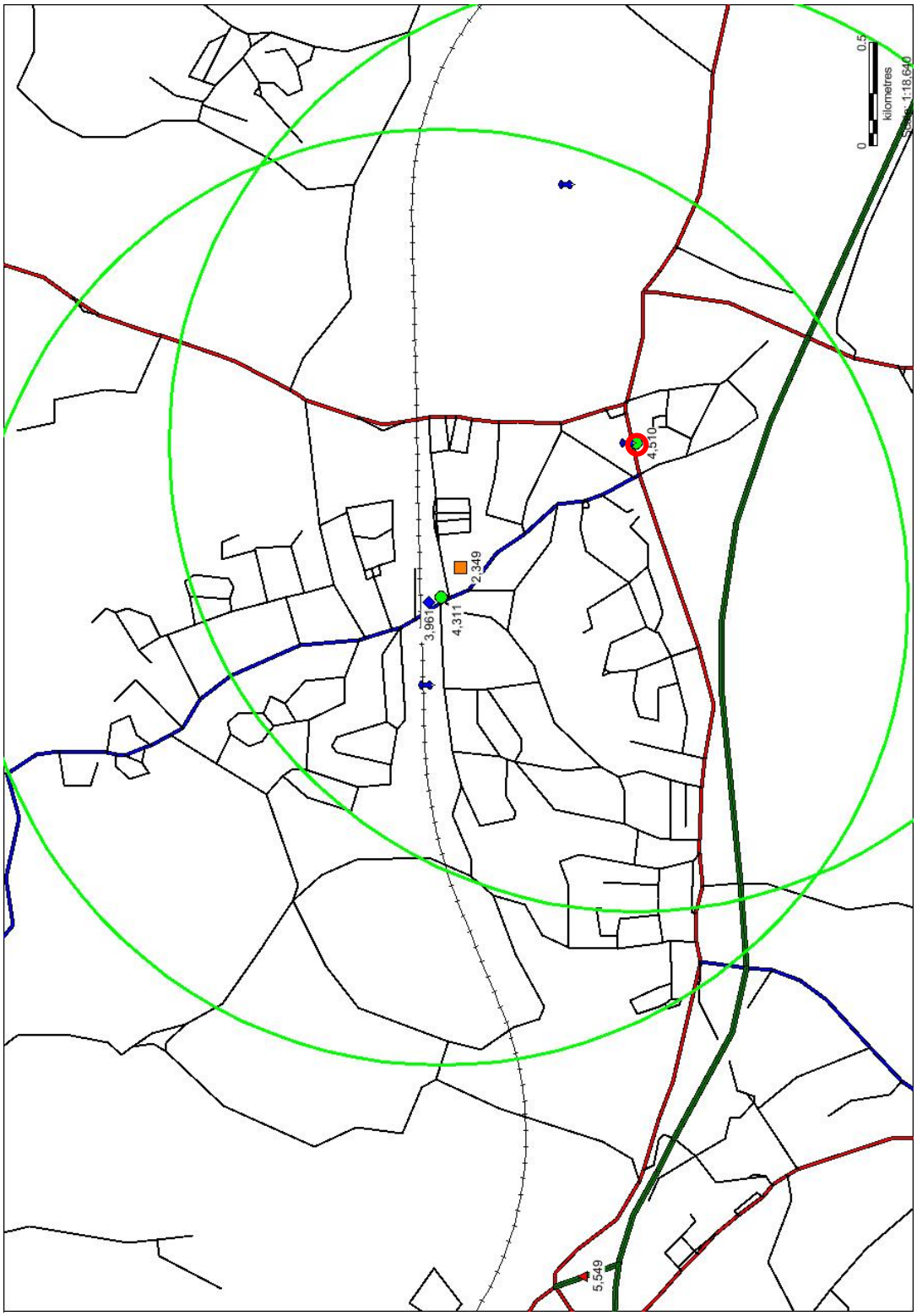
2. Each map includes the geographic distribution of the prescription customers for the Lloyds store under consideration. Yellow circles are used to identify the areas where customers live, the size of the circle proportional to the number of prescriptions. As the Parties have also provided data on the location of Sainsbury's prescription customers for a sample of pharmacies, we have included this information in the maps where available, using light blue circles. This is the case for Reading/Theale and Sainsbury's Biggleswade. Please

[1] The catchment area is indicated also for the Lloyds pharmacy in Cardiff because of the high diversions indicated by the consumer survey. It does not fail our filtering process.

note that the sizes of the circles for Lloyds and Sainsbury’s customers are not directly comparable, as customer data is obtained from different sources and is represented using different scales. Please also note that the data on customer location has been excised.

Beaconsfield

30-32 London End, Beaconsfield, Buckinghamshire HP9 2JH (customer location data excised)[2]



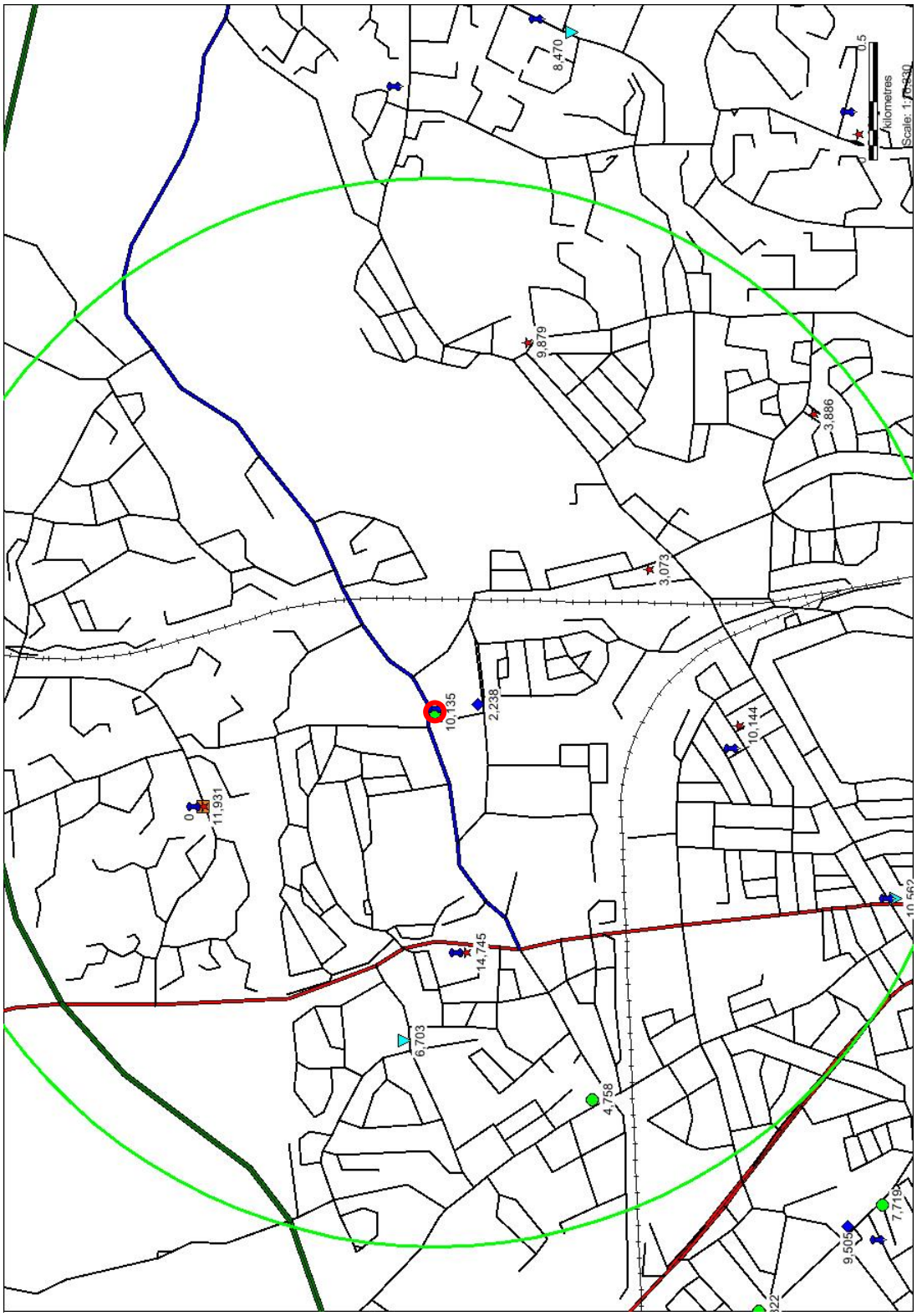
[2] Note, as discussed in paragraph 9.46 of the final report, we agreed with Celesio that the Lloyds pharmacy in Beaconsfield new town (5 The Highway, Beaconsfield, Buckinghamshire HP9 1QD) would be the more appropriate pharmacy to be divested to remedy the SLC in Beaconsfield.

Bracknell

97 Liscombe, Birch Hill Rd, Bracknell, Berkshire RG12 7DE (customer location data excised)

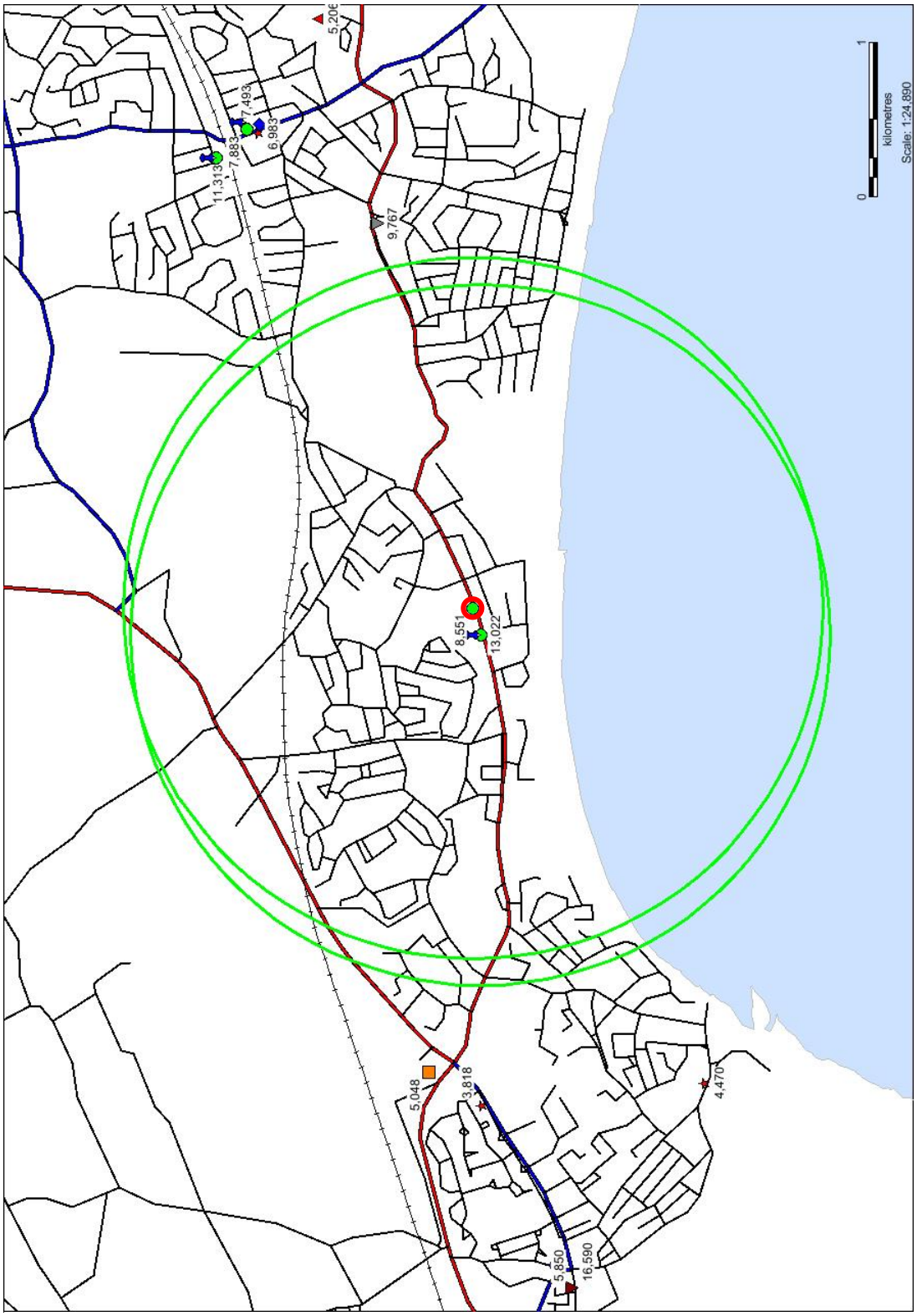
Cardiff

44 Station Road, Cardiff CF14 5LT (customer location data excised)

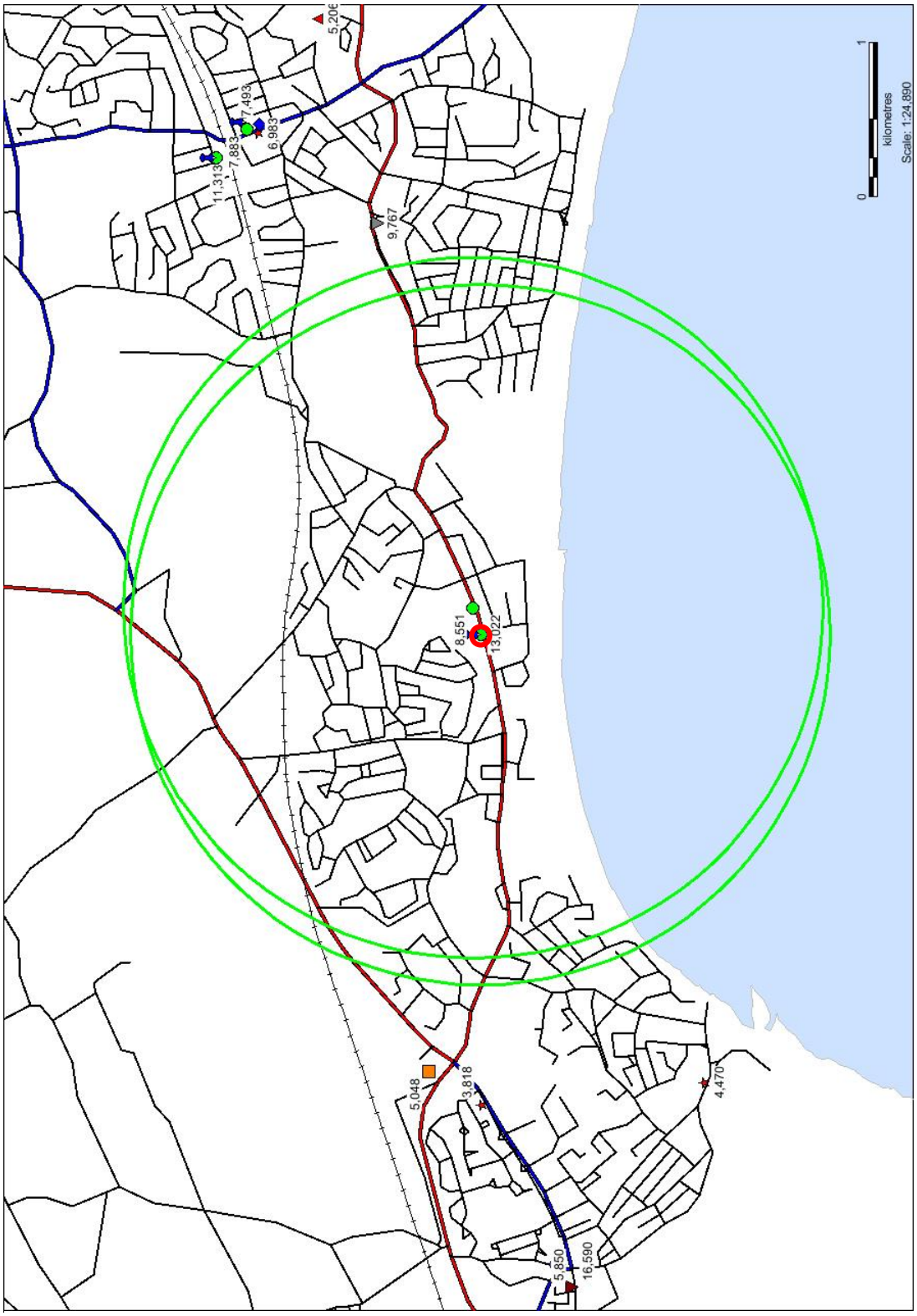


Christchurch

344-346 Lymington Road, Christchurch, Dorset BH23 5EY (customer location data excised)



248 Lymington Road, Christchurch, Dorset BH23 5ET (customer location data excised)



Kempston

242 Bedford Road, Kempston, Bedfordshire MK42 8PP (customer location data excised)

Kidlington

18 The Parade, Kidlington, Oxfordshire OX5 1DB (customer location data excised)

Leeds

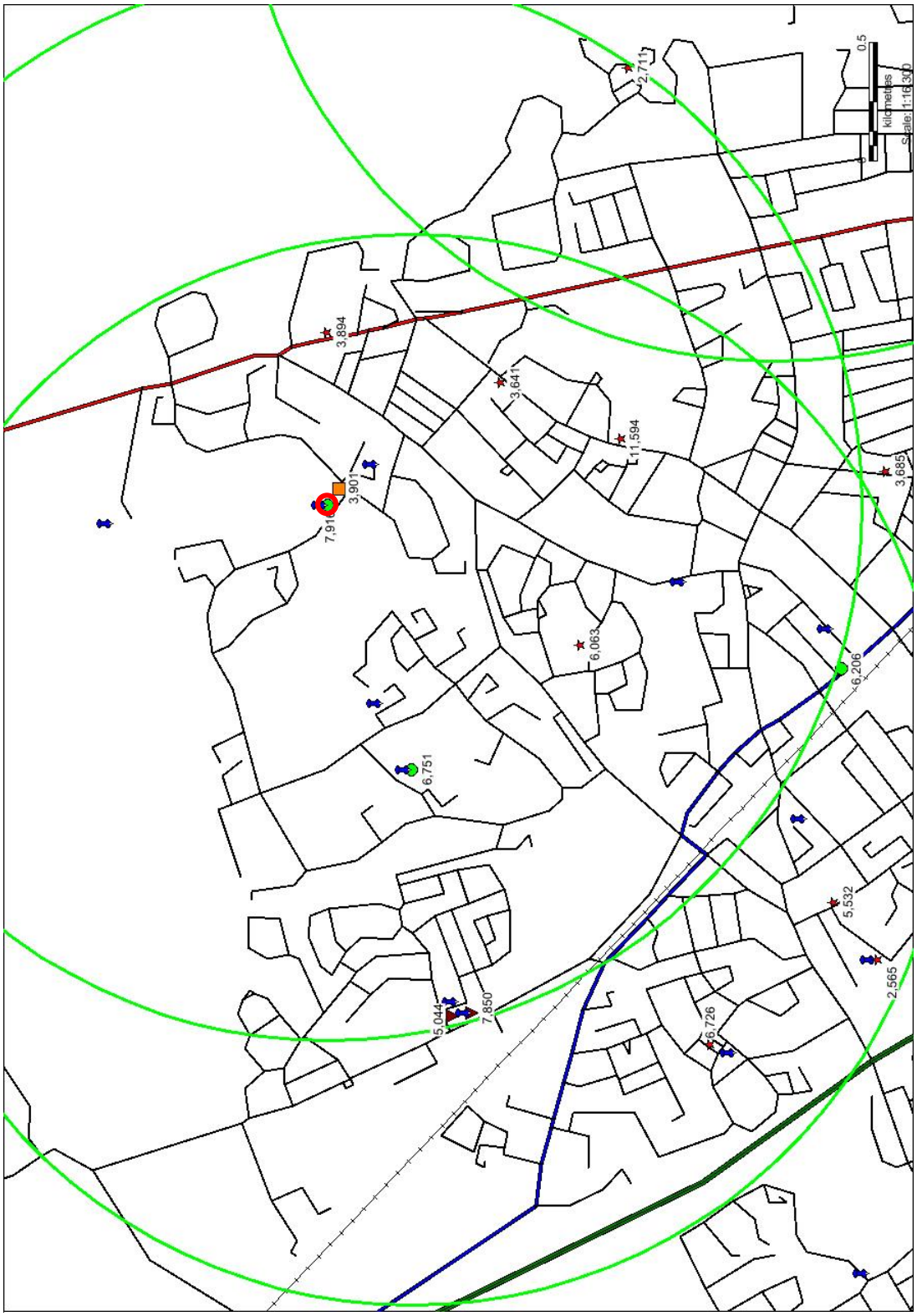
195/197 Butcher Hill, Leeds, West Yorkshire LS16 5BQ (customer location data excised)

Liverpool

1-3 Rice Lane, Liverpool L9 1AD (customer location data excised)

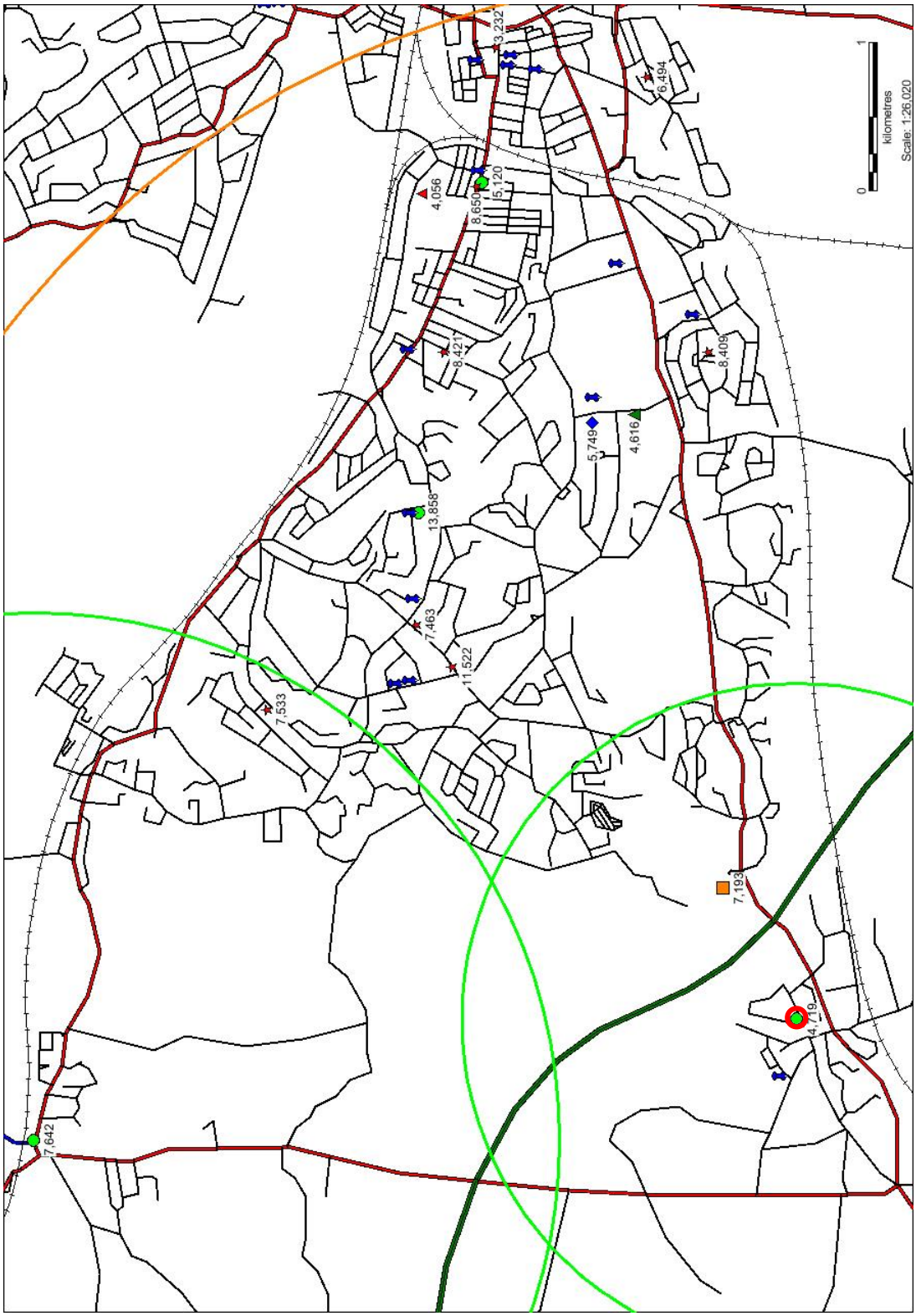
Luton

2 Whitehorse Vale, Luton, Bedfordshire LU3 4AD (customer location data excised)



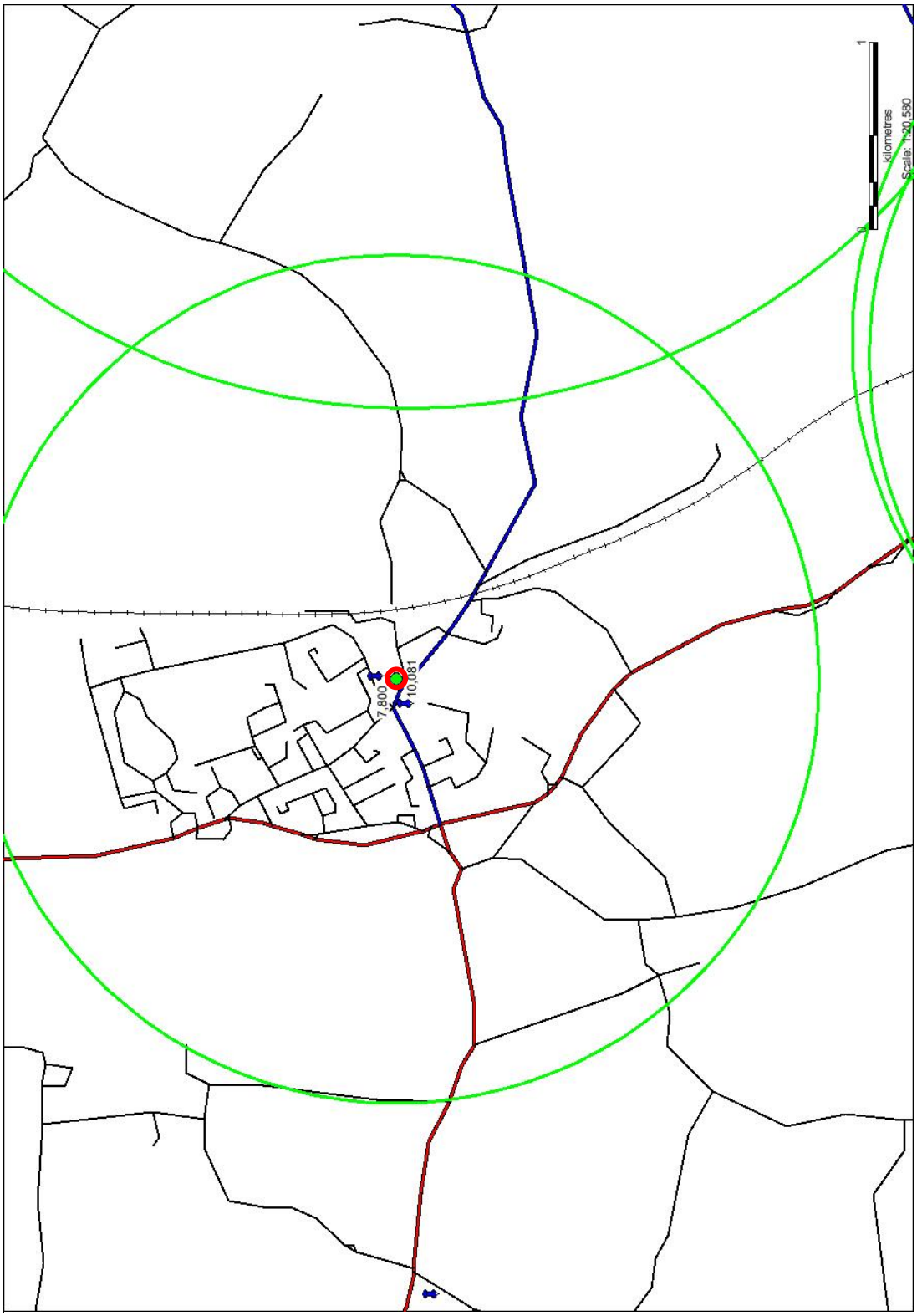
Reading/Theale

27 High Street, Theale, Reading, Berkshire RG7 5AH (customer location data excised)



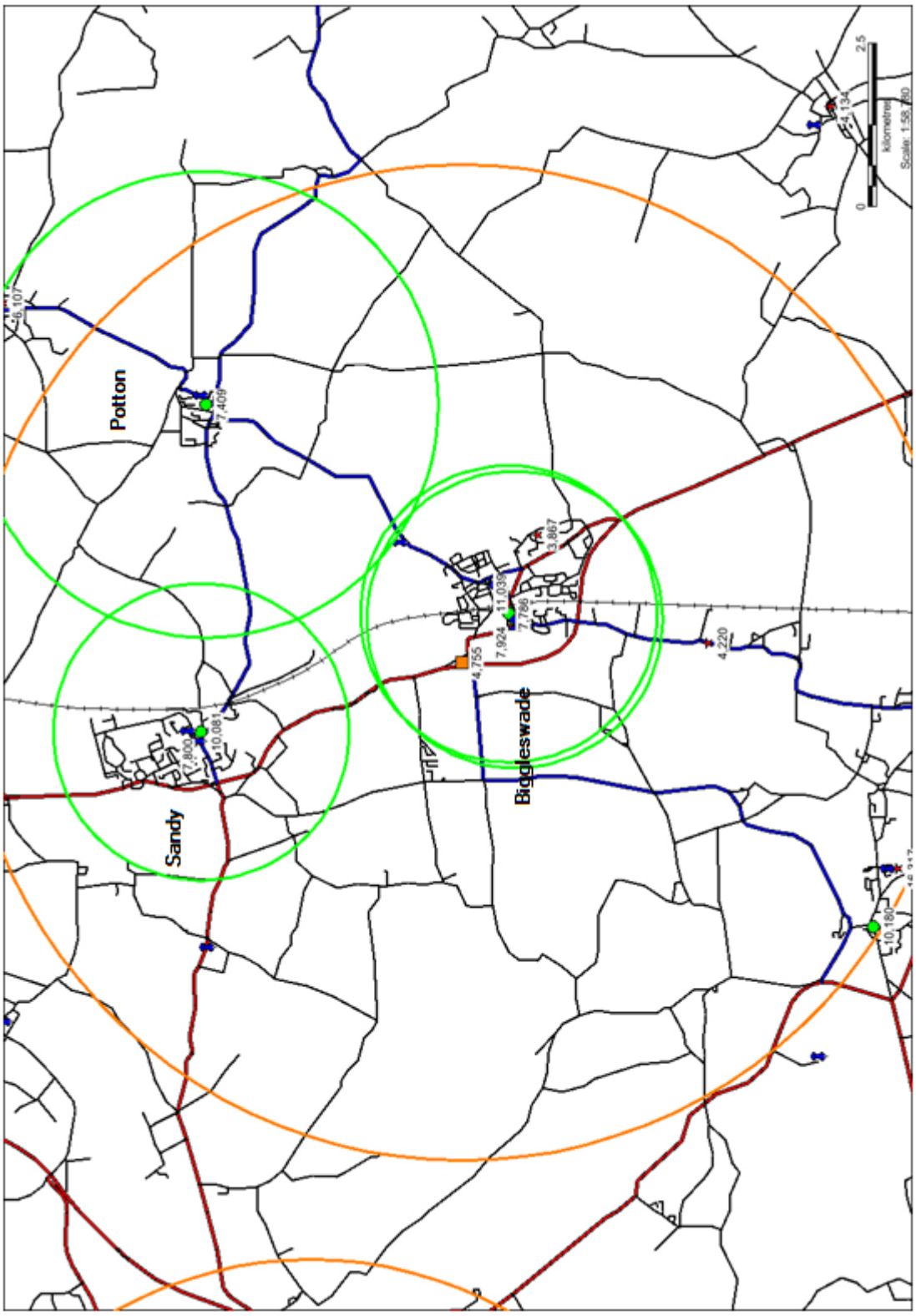
Sandy

5 Market Square, Sandy, Bedfordshire SG19 1HU (customer location data excised)



4 Market Square, Sandy, Bedfordshire SG19 1HU (customer location data excised)

Location of pharmacy customers of Sainsbury's Biggleswade (customer location data excised)



Warlingham

46-48 The Green, Warlingham, Surrey CR6 9NA (customer location data excised)

Glossary

100-hour pharmacy	A pharmacy with 100 core contractual hours.
40-hour pharmacy	A pharmacy with 40 core contractual hours.
AAH	AAH Pharmaceuticals Ltd, **Celesio**'s pharmaceutical wholesaling business.
Actavis	Actavis UK Ltd. A global pharmaceutical company that manufactures and supplies medication.
Acute patient	A patient who requires a one-off prescription to be fulfilled.
Additional fees	Additional dispensing prescription fees include expensive items, home delivery of certain appliances, measured and fitted appliances, prescriptions for controlled drugs, prescriptions for oral liquid methadone and unlicensed medicines.
Alliance Healthcare	Alliance Healthcare (Distribution) Ltd. Retails, wholesales and distributes pharmaceutical products; a subsidiary of Walgreens Boots Alliance.
ASA	The Advertising Standards Authority.
ASDA	ASDA Stores Limited. A supermarket company in the UK that has in-store pharmacies at some of its stores. A subsidiary of Walmart.
AstraZeneca	AstraZeneca plc. A multinational pharmaceutical company, a subsidiary of Investor AB.
BMI Research	An international research firm, a subsidiary of Fitch Ratings.
Boots	Boots UK. A health and beauty chain in the UK, with in-store pharmacies; a subsidiary of Walgreens.
BSA	Business Sale Agreement. The agreement entered into by **Lloyds** and **Sainsbury's** on 29 July 2015 whereby **Sainsbury's** agreed to sell, and **Lloyds** agreed to purchase, the assets and liabilities of the target business.
Cambrian Alliance	Cambrian Alliance Group. A support and buying group for independent pharmacies.

Catchment area	The area from which prospective customers are drawn.
CC	Competition Commission, a predecessor of the CMA.
CCG	Clinical Commissioning Group (England only). These commission most of the hospital and community **NHS** services in the local area for which they are responsible, which includes deciding what services are needed and ensuring they are provided. CCGs are overseen by **NHS England**.
Celesio	Celesio AG. A Pharmaceutical wholesaler and retailer which also provides logistics and services to the pharmaceutical and healthcare sectors.
ChemistDirect.co.uk	A **DSP** based in England.
Chronic patient	A patient who requires repeat prescriptions to be fulfilled.
Colorama	B & S Colorama (Laxmico) Ltd. A supplier to wholesalers and pharmacies.
Community pharmacy	A pharmacy that provides services for the **NHS** irrespective of where they are situated, excluding outpatient and inpatient dispensaries.
Community Pharmacy Wales	The representative body for community pharmacies in Wales.
Consumers	For the purposes of this report, consumers are patients using pharmacy services.
Cooperation agreement	The agreement entered into between **Sainsbury's** and **Lloyds** on 29 July 2015, which will govern the ongoing relationship between the parties post transaction.
Core hours	Minimum opening hours of a pharmacy.
Day Lewis	Day Lewis Pharmacy. A pharmacy chain the UK.
De Louis	De Louis Medical Ltd. A pharmaceutical supplier and wholesaler based in the UK.
DE Pharma	DE Pharmaceuticals. An independent pharmaceutical wholesaler based in the UK, a subsidiary of the DE Group.

Demand estimation	An empirical tool to estimate a demand curve.
Department of Health	Ministerial department responsible for shaping policy and funding health and care in England.
Discharge Medication Review	Discharge Medicines Review. This service builds on the existing Medicine Review Service in Wales, providing support to patients recently discharged between care settings, ensuring that changes to medicines are followed up in the community.
Dispensing doctor	Dispensing doctors require a licence from the **NHS** to dispense pharmaceuticals in this way and must confirm that patients are eligible to receive prescriptions from them.
Diversion ratio	A tool used to simulate the effects of a merger.
Drug Tariff	Outlines what will be paid to contractors for **NHS** services, including the cost of the drugs and appliances supplied against an **NHS** prescription form and professional fees/allowances that are paid as part of the pharmacy contract.
DSP	A Distance Selling Pharmacy provides internet pharmaceutical services under Regulation 25 (and the Conditions set out in Regulation 64) of the Pharmaceutical Services 2013 Regulations. It cannot provide as part of its service. face-to-face access to essential pharmaceutical services.
DTP	Direct to Pharmacy. When a manufacturer supplies its products through a single wholesaler.
EBITDA	Earnings before interest, tax, depreciation and amortisation.
Eli Lilly	Eli Lilly and Company. A pharmaceutical manufacturer and distributer based in the USA, but with offices in the UK.
EPS	Electronic Prescription Service which enables prescriptions to be sent electronically from a **GP** practice to a pharmacy of the patient's choice, without the patient needing to carry a paper form. This is the second release of EPS, all references to EPS imply EPS2.
Essential services	Core services that all pharmacies are obliged to provide contractually.

Establishment fee	A set amount payable to qualifying pharmacies.
Ethical medication	Medication only available to patients who have a prescription from their doctor. Also referred to as **POM**.
Ethigen	Ethigen Ltd. A pharmaceutical distributor based in the UK.
ExpressChemist.co.uk	A **DSP** based in England.
Fascia	For the purposes of this report, fascia refers to ‘bricks and mortar’ pharmacies.
Generic medicine	The scientific name of a medicine, usually named after the active ingredient in the medicine. This name is decided by an expert committee.
GP	General practitioner. Doctors who deal with a range of health problems, offer medical advice, run clinics, give vaccinations and carry out simple surgical operations.
GP surgery pharmacy	A pharmacy that is situated within the same dwelling as a **GP** surgery.
GPhC	General Pharmaceutical Council. This is the independent regulator for pharmacists, pharmacy technicians and pharmacy premises in the Great Britain.
GSK	GlaxoSmith Kline. A global pharmaceutical company based in the UK.
GSL	General Sales List. Medicines that can be sold with reasonable safety without the supervision of a pharmacist, and which are therefore stocked by a range of retailers.
Health and Wellbeing Board	Established under the Health and Social Care Act 2012. These local boards are in England and are a forum where leaders from the health and care system work together to improve the health and wellbeing of their local population and reduce health inequality.
Healthcare at Home	Healthcare at Home Ltd. A **DSP** based in England.
HealthTrust Europe	A group purchasing organisation based in the UK, subsidiary of HealthTrust and Hospital Care America.

High street pharmacy	A pharmacy located on a high street.
HSCIC	Health and Social Care Information Centre. An executive non-departmental body of the **Department of Health** which provides information, data and IT systems for commissioners, analysts and clinicians in health and social care.
HSCNI	Health and Social Care Northern Ireland. Refers to the publicly funded healthcare system in Northern Ireland.
Independent pharmacy	A pharmacist owned private business, these are not linked to any chain of pharmacies or larger corporate entity. For the purposes of this paper we have defined independent pharmacies as operators that range from a single store, to those with a significant number of stores (but fewer than 500).
Lexon	Lexon UK Ltd. A pharmaceutical wholesaler based in the UK.
Licence application	An application submitted by a new entrant to open a new pharmacy within a specific local area.
Lloyds	Lloyds Pharmacy Limited. A pharmacy chain in the UK, subsidiary of **Celesio**.
LSP	Logistics Service Provider. Where a fee is paid to the wholesaler to deliver medicines, the wholesaler is acting as an agent of the manufacturer.
Maltby	F Maltby and Sons Ltd. A pharmaceutical wholesaler based in the UK.
Mawdsley Brookes	Mawdsley Brookes Co Ltd. A pharmaceutical wholesaler based in the UK.
McKesson	McKesson Corporation. An international pharmaceutical company based in the USA; parent company of **Celesio**.
Medicines Act	The Medicines Act 1968 – governs the manufacture and supply of medicines.
MHRA	The Medicines and Healthcare products Regulatory Agency. The MHRA regulates medicines, medical devices and blood components for transfusion in the UK.

Morrisons	Wm Morrison Supermarkets plc. A supermarket chain in the UK that has in-store pharmacies at some of its stores.
MUR	Medicines Use Review. A service whereby pharmacists undertake structured adherence-centred reviews with patients on multiple medicines.
National Pharmacy Association	The trade association for independent community pharmacy professionals in the UK.
NHS	National Health Service. Refers to the publicly funded health care systems in the UK.
NHS Business Services Authority	An executive non-departmental body of the **Department of Health**, it provides central services to the NHS bodies, patients and the public.
NHS England	An executive non-departmental public body sponsored by the Department of Health. Alongside playing a role in the direction of healthcare services in England and informing debate, it commissions the contracts for GPs, pharmacists and dentists, and supports local health services that are led by groups of GPs called Clinical Commissioning Groups.
NHS prescription levy	The amount a patient pays per item on their prescription. This is only applicable in England.
NHS Scotland	National Health Service Scotland. Refers to the publicly funded healthcare system in Scotland.
NHS Wales	National Health Service Wales. Refers to the publicly funded health care system in Wales.
NMS	New Medicines Service. An advanced service that provides support for people with long-term conditions newly prescribed a medicine to help improve medicines adherence.
Norchem	Norchem Group Ltd. A pharmaceutical wholesaler based in the UK.
OFT	Office of Fair Trading, a predecessor of the CMA.
OLS model	Ordinary Least Squares model. An econometric tool to estimate the unknown parameters in a regression model.

Online pharmacy	See **DSP**.
ONS	Office for National Statistics.
OPD	Outpatient dispensing. The dispensing of medication for outgoing patients within a hospital.
OTC	Over-the-counter medication. Medication that can be sold to a patient without a prescription.
OTC Direct	OTC Direct Ltd. A pharmaceutical wholesaler based in the UK.
Parties	**Celesio** and **Sainsbury's**.
Patient	A person receiving or registered to receive medical care.
Pfizer	Pfizer Inc. A global biopharmaceutical company with offices in the UK.
Pharmaceutical Society of Northern Ireland	The regulatory and professional body for pharmacists in Northern Ireland.
Pharmacy services	The exact definition of this differs for each nation, but generally it includes **essential services**, nationally commissioned services and locally commissioned services.
Pharmacy2u.co.uk	A **DSP** based in England.
Pharmaxo	A pharmacy company offering outsourced solutions to healthcare providers.
Phoenix	Phoenix Healthcare Distribution. A pharmaceutical wholesaler based in the UK, the parent company of **Rowlands Pharmacy**.
P-medicines	Pharmacy-only medicines. Medicines available without a prescription which can only be provided by, or under the supervision of, a pharmacist.
PNA	Pharmaceutical Needs Assessment. A commissioning tool under the National Health Service (Pharmaceutical and Local Pharmaceutical Services) Regulations 2013, to identify what is required at a local level to support the commissioning intentions for community pharmaceutical services.

POMs	Prescription-only medicines. Medication only available to patients who have a prescription from their doctor. Also referred to as **ethical medication**.
PPRS	Pharmaceutical Price Regulation Scheme 2014.
PQRS	Price, quality, range and service.
Prescription	A written instruction, from a doctor, that authorises a patient to be issued with medication from a pharmacist.
PSNC	Pharmaceutical Services Negotiating Committee. Promotes and supports the interests of all **NHS** community pharmacies in England and is recognised by the Secretary of State for Health as the body that represents **NHS** pharmacy contractors. It works closely with Local Pharmaceutical Committees to support their role as the local **NHS** representative organisations.
Repeat dispensing annual payment	An annual payment of £1,500, available to pharmacies in England, for facilitating repeat dispensing.
Repeat prescription	A medication that a doctor has authorised on a patient's file which can be supplied for a certain period of time on a regular basis without having to see a doctor each time.
Rowlands Pharmacy	A pharmacy chain in the UK, subsidiary of **Phoenix Healthcare**.
RWS	Restricted Wholesaler Model. Where a limited number of wholesalers are selected by the manufacturer to deliver its products.
Sainsbury's	J Sainsbury's Supermarkets Limited. A supermarket chain in the UK that has in-store pharmacies at some of its stores.
Sangers (Maidstone)	Sangers (Maidstone) Ltd. A pharmaceutical wholesale based in the UK, subsidiary of Paydens Group.
Sants	Sants Pharmaceutical Distributors Ltd. A pharmaceutical wholesaler based in the UK.
Scottish government	The devolved government for Scotland, its responsibilities include health and the **NHS Scotland**.

Sigma	Sigma Pharmaceuticals plc. A pharmaceutical wholesaler and distributor based in the UK.
SLC	Substantial lessening of competition.
Standards for Registered Pharmacies	The standards for registered pharmacies set out the requirements for the provision of pharmacy services at or from a registered pharmacy. The standards apply to all pharmacies registered with the General Pharmaceutical Council.
Superdrug	Superdrug Stores PLC. A health and beauty retailer in the UK, with in-store pharmacies; a subsidiary of A.S. Watson Group.
Supermarket pharmacy	A pharmacy that is based within a supermarket store.
Supplementary hours	Additional hours a pharmacy operates, above its **core hours**.
Target Business	**Sainsbury's** Pharmacy Business, comprising of 277 in-store pharmacies and four **OPD** pharmacies.
Tesco	Tesco PLC. A supermarket chain in the UK that has in-store pharmacies at some of its stores.
Teva	Teva Pharmaceutical Industries Ltd. A global pharmaceutical company that manufactures and supplies medication.
Trident	Trident Pharmaceuticals. A short-line supplier of generic medicine and parallel imports to independent pharmacies; a subsidiary of **AAH**.
UnitedDrug Sangers	UnitedDrug Sangers Ltd. A pharmaceutical wholesaler based in Northern Ireland.
Verdict	Verdict Retail. A retail information specialist, subsidiary of the Informa Group.
W R Evans Chemist	W R Evans (Chemist) Ltd, a pharmacy chain the UK that trades under the name Manor Pharmacy.
Waymade	Waymade plc. A supplier to wholesalers and pharmacies.
Well Pharmacy	A pharmacy chain in the UK, subsidiary of Bestway Group.

Welsh government The devolved government for Wales, its responsibilities include health and the **NHS Wales**.