

Welfare implications of potential leapfrogging

**OFT Pharmacy
Investigation**

*A report prepared for
the Office of Fair
Trading*

November 2002



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Table of contents

Section	Page
Executive Summary	iii
1. Introduction	1
2. Economic welfare effects of deregulation	2
3. Analysis of leapfrogging arguments	5
3.1 Stakeholder argument 1: clustering and monopoly	5
3.2 Stakeholder argument 2: lack of investment in quality	12
3.3 Stakeholder argument 3: wasteful “sunk” costs	15
3.4 Stakeholder argument 4: GP rents	16
4. Conclusion	17
Annex 1: Literature survey	1
The spatial differentiation literature	1
The excess entry literature	6
The empirical literature	7
Annex 2: The impact of the regulations on pharmacy choice of location	1
Annex 3: Current relationship between pharmacy and GP locations	1

Table & Figures

Tables & Figures	Page
Figure 1: An example of leapfrogging	7
Figure 2: Hotelling's equilibrium of minimal differentiation	A1-2
Figure 3: Distance from each GP to its nearest CP, cumulative frequency distribution	A3-1
Figure 4: Distance from each CP to its nearest GP, for those CPs that are not nearest to a GP	A3-2

Executive Summary

Executive Summary

The award of NHS dispensing contracts to pharmacies is currently restricted by regulations stating that for a new contract to be awarded, it must be necessary or desirable to secure adequate provision of pharmaceutical services in the neighbourhood¹. These regulations have the effect of restricting the ability of pharmacies both to enter particular neighbourhoods, and to relocate having entered.

The OFT Pharmacy Investigation is considering the effect these regulations have for competition and consumers². Stakeholders have raised concerns that, in the absence of these regulations, pharmacies would have the incentive and ability to engage in “leapfrogging” – where leapfrogging refers to a situation in which pharmacies relocate closer to GP surgeries (and closer than existing pharmacies). It has further been argued that, if leapfrogging were to occur, this could result in a number of detrimental welfare effects. The OFT has asked Frontier Economics to consider the validity of four arguments that have been made by stakeholders. These are:

- that leapfrogging would result in clustering of pharmacies around GPs, and grant some pharmacies monopoly power;
- that leapfrogging would result in a lack of investment in quality;
- that leapfrogging would result in pharmacies incurring wasteful sunk costs; and
- that deregulation would allow GPs to charge pharmacies for attractive locations within surgeries.

This paper shows that, whilst economic theory does indicate that detrimental welfare effects *could* occur, it does not provide a guide as to whether detrimental welfare effects *would* occur from these effects. Instead, the arguments that have been made by stakeholders depend upon whether the empirical evidence supports them.

¹ Strictly, this test under regulation 4(4) is relevant to applications made in non-controlled areas. A further test – regulation 12 – applies to applications made in controlled (i.e. rural) areas.

² Source: OFT Website. A number of other regulations are relevant to this assessment. In particular, these include the fact that pharmacies cannot alter prices on NHS prescriptions, which account for 80% of turnover, and the nature of the remuneration pharmacies receive for dispensing prescriptions through the Drug Tariff.

Executive Summary

This paper explores the available empirical evidence for these arguments. In considering whether leapfrogging would result in clustering and monopoly power, to the detriment of competition and consumers, we note that:

- in the first instance, a pharmacy relocating to an area which is preferred by consumers is likely to be beneficial to consumer welfare;
- the scope for leapfrogging is restricted by the fact that currently, many pharmacies are located close to a GP, with 17% sharing a postcode;
- whilst the GP is an important origination point of demand for pharmacies, only half of consumers generally travel from the GP, suggesting that pharmacies located in other areas will still have demand to serve;
- the main potential access detriments occur if relocation or entry of pharmacies results in exit of other pharmacies, but the history of past entries suggests that this is not a common phenomenon; and
- there is no evidence to suggest that pharmacy locations close to GP surgeries are particularly attractive to consumers who wish to buy non-prescription items.

For the arguments that pharmacies would reduce quality investments in the face of leapfrogging, and that leapfrogging would incur wasteful sunk costs, we have seen no evidence to suggest that welfare detriments for competition and consumers would occur. Finally, the transfer of rents from pharmacies to GPs does not result in a welfare change that affects competition or consumers.

1. Introduction

The OFT Pharmacy Investigation is considering the effect of the regulations surrounding the award of NHS dispensing contracts for competition and consumers. Stakeholders have raised concerns that, in the absence of these regulations, pharmacies would have the incentive and ability to engage in “leapfrogging” – where leapfrogging refers to a situation in which pharmacies relocate closer to GP surgeries (and closer than existing pharmacies). It has further been argued that, if leapfrogging were to occur, this could result in a number of detrimental welfare effects which may affect competition and consumers. The OFT has asked Frontier Economics to consider the validity of these arguments.

This note describes our analysis. Section 2 sets out our understanding of how the regulations currently affect pharmacy choice of location, and argues that removal of the regulations could make “leapfrogging” by pharmacies towards the location of GPs more feasible. It then describes the four arguments that have been made by stakeholders with respect to the effects of leapfrogging, and that we have been asked to assess. Section 3 then considers each of these four arguments. We discuss the economic theory underlying each argument, then discuss the potential welfare implications for competition and consumers. We then discuss the available empirical evidence to determine whether any such detrimental welfare effects are likely. Section 4 concludes.

The Annexes contain supporting material.

2. Economic welfare effects of deregulation

Frontier Economics has been asked to consider the arguments that have been made by stakeholders in relation to the economic welfare consequences of leapfrogging, following a possible change in the regulations surrounding the award of NHS dispensing contracts.

For the purposes of the subsequent discussion, this report assumes that, whilst the regulations do not currently rule out entry or relocation of pharmacies either within or across neighbourhoods, they do make it more difficult, costly and time-consuming. The impact of the deregulation would therefore be to allow pharmacies to choose their location purely on commercial considerations, and this would be expected to result in a greater number of relocations and/or an increased level of entry.

Annex 2 describes the influence of the regulations on pharmacy location in more detail.

A framework for economic welfare analysis

Economic theory provides a way to analyse the welfare consequences of a policy change. The change in total welfare is generally defined to be the sum of the change in consumer surplus and the change in producer surplus. Consumer surplus is the difference between consumer willingness to pay for a product and the price of that product. Producer surplus is equal to profits (i.e. sales revenues minus the economic costs of supply). Whilst a full welfare analysis would consider both consumer and producer surplus, the OFT Pharmacy Investigation is mainly concerned with the consequences of the regulation for competition and for consumers³. Accordingly, the welfare analyses carried out in this report consider only the effect of changes in consumer surplus.

³ “The investigation is examining the UK market for retail pharmacy services and, in particular, whether consumers are best served by the current statutory control of entry system for dispensing NHS prescriptions. It is important for consumers that a high quality and easily accessible service is available and that there is a ready supply of medicines competitively priced. The control of entry system may have an effect on retail competition and not only in dispensing prescriptions. The OFT is examining how the present restrictions effect competition and consumers as well as investigating whether there are other ways of achieving the public policy objectives behind the present arrangements.”

Source: <http://www.of.gov.uk/Market+investigations/Investigations/pharmacies+.htm>

Consumer surplus needs to be interpreted quite widely in some circumstances. For example, where products are differentiated and individual consumers have different preferences for particular varieties of products, the 'effective price' paid by the consumer for a product is equal to the price plus some measure of how far the consumer is away from his or her 'ideal' product.

In the context of pharmacies, differentiation occurs on location, so that at equal prices, consumers will prefer to purchase products (such as getting their prescriptions dispensed) from the nearer or more convenient pharmacy. Changes in the location of pharmacies will change the distances some consumers will have to travel to their nearest pharmacy. We define this measure, for the purposes of this report, to be the "access" that consumers have to pharmacies. Consumers that have to travel further, other things equal, will see their consumer surplus (access) decline. Consumers that have to travel less far, again other things equal, will see their consumer surplus (access) increase. This measure is considered both in aggregate, and in terms of whether there are winners and losers amongst consumers.

Other factors that influence consumer surplus for pharmacy products are the price of the goods purchased by consumers, and the quality of service offered by pharmacies. The potential for price changes post-deregulation is somewhat restricted in the case of pharmacies since prices of NHS prescriptions, accounting for approximately 80% of the revenues of an independent pharmacy⁴, are regulated. However, price changes are possible on P-only and GSL medicines. Further discussion of price and quality responses to deregulation may be found in Section 3.1 and 3.2 respectively.

Arguments made by stakeholders

The OFT has received a number of arguments from stakeholders in relation to the possible detrimental effects of pharmacy leapfrogging. It has asked Frontier Economics to assess these arguments in terms of their effect on economic welfare, in particular for competition and consumers. The arguments we have been asked to consider are set out below.

- *Leapfrogging would result in clustering and monopoly power.* Many consumers wish to get their prescriptions dispensed at the same time as receiving a prescription from their GP. Pharmacies would therefore wish to locate close to GPs to provide convenience and capture a high

⁴ Source: OFT Small Pharmacy Questionnaire.

share of this demand. Following deregulation, leapfrogging of pharmacies could result in clustering around GPs, potentially reducing access to consumers. A pharmacy acquiring a particularly attractive location could also benefit from monopoly power.

- *Lack of investment in quality*: Pharmacies need to invest money in order to improve the quality of their retail offer. These investments are sunk – the costs cannot be recovered once made. If a pharmacy considered that it may be leapfrogged, and hence its revenues might decline, this would increase the business risk it faces. The pharmacy may therefore no longer carry out such investments in quality as these would not be commercially viable.
- *Wasteful sunk costs*: Relocating pharmacies involves the expenditure of a set of sunk costs. Excessive movement of pharmacies would therefore be wasteful.
- *GP rents*: GP surgeries are attractive locations for pharmacies. If leapfrogging were a possibility, GPs may be able to “auction” locations to the highest bidder, resulting in higher costs for pharmacists.

3. Analysis of leapfrogging arguments

Pharmacy consumers often wish to travel from the GP to a nearby pharmacy in order to get their NHS prescription dispensed. Pharmacies therefore have an incentive to locate close to GP locations, since this allows them to provide greater convenience for consumers and serve a high share of pharmacy demand. “Leapfrogging” is the phenomenon whereby pharmacies that are currently located some distance away from a GP relocate closer to that GP – and closer than other existing pharmacies.

This Section analyses the four arguments that have been made by stakeholders in relation to the possible detrimental effects of pharmacy leapfrogging. For each, this report describes the stakeholder argument, analyses the argument from the perspective of economic theory, and considers whether the argument raises any possible welfare effects for competition and consumers. Finally, the relevant empirical evidence is considered.

3.1 Stakeholder argument 1: clustering and monopoly

Stakeholders have argued that pharmacies have an incentive to engage in leapfrogging towards GP locations, as consumers with NHS prescriptions often prefer to travel to the pharmacy directly from the GP. After deregulation, this would result in clustering of pharmacies around GP surgeries. Since the pharmacy or pharmacies nearest the GP would be expected to capture the lion’s share of demand, pharmacies that are located in the community, and far away from GP surgeries, could be forced to exit. This would have detrimental effects on consumer access to pharmacy services.

Stakeholders have further argued that, in the extreme, leapfrogging would result in one firm locating in a GP surgery, and consequently having monopoly power due to having the most attractive location. This would allow such pharmacies to raise prices to consumers.

Economic theory

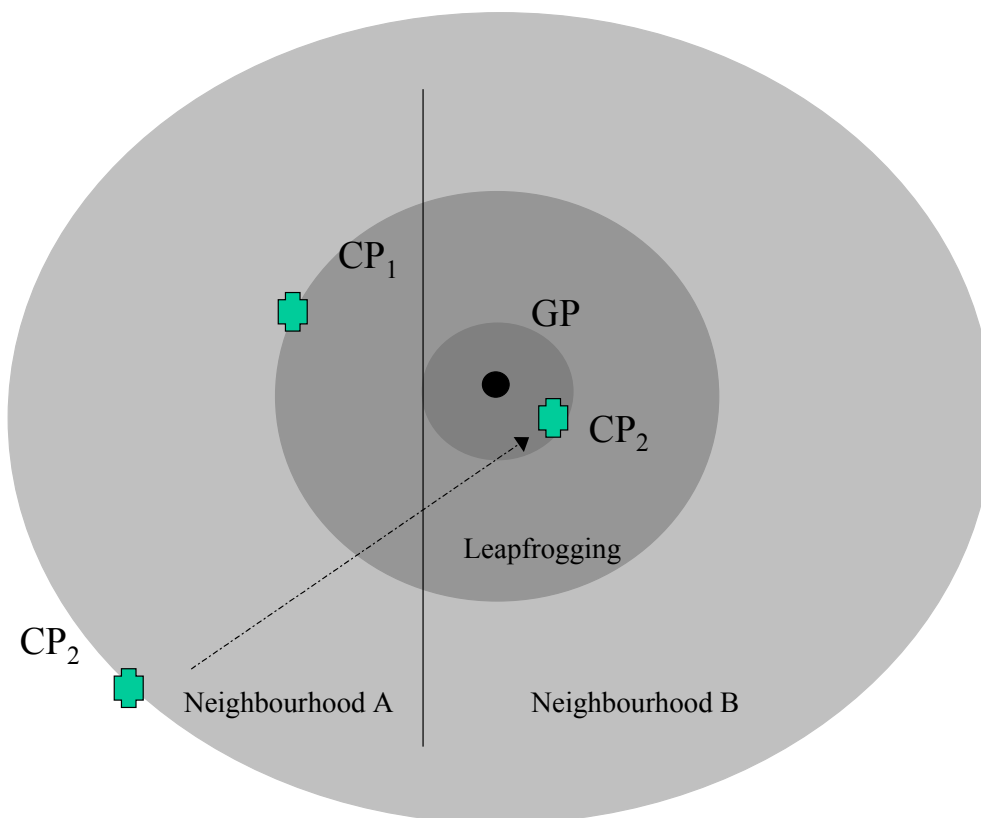
There are two potential implications of deregulation for the possibility of leapfrogging. Firstly, deregulation would allow existing pharmacies to relocate with greater ease. Secondly, deregulation may result in the entry of new pharmacies, if the effect of the regulations has been to create “pent-up demand” for pharmacies in particular areas. In particular, if GPs are

attractive, high demand locations, there exists an incentive for pharmacies to try to locate near them, as this would result in higher sales and profits. A relocation by one pharmacy, or the entry of a new pharmacy, may reduce the sales of rival pharmacies if their locations become relatively less attractive to consumers. From the perspective of economic theory, therefore, leapfrogging is a possibility. However, it is not inevitable that leapfrogging will occur.

An example of leapfrogging is illustrated in Figure 1 below. There are two CPs and one GP. The CPs are located in neighbourhood A, and the GP is located in neighbourhood B. CP₁ is relatively close, and so is likely to get a greater proportion of the custom from the GP. CP₂ is further away and so is likely to get a lesser proportion. The level of custom from the GP is indicated by the shaded circles, where the darker the circle, the greater the level of custom for a pharmacy at that location – and hence the greater the incentive for pharmacies to locate in that position⁵.

⁵ In this case the level of custom does not correspond to the population in a particular area. Rather, it reflects the fact that many customers will choose to travel to a pharmacy from the GP (i.e. at the same time as getting a prescription prescribed), and hence locations close to the GP, being more convenient, are more attractive to customers.

Figure 1: An example of leapfrogging



Prior to deregulation, it is difficult for pharmacies to relocate across neighbourhoods, and hence CP_1 and CP_2 are constrained to remain in their current locations⁶. After deregulation, however, relocation – and hence leapfrogging – becomes a possibility. CP_2 would have an incentive to move to a location closer to the GP, as it would access greater demand by so doing, and would therefore consider this to be a profitable opportunity. Potentially, this relocation could also result in the exit of pharmacy CP_1 , if there is a sufficiently large negative impact on its sales⁷.

⁶ Note that the regulations do not currently place the same level of restriction on movement within neighbourhoods, so one might expect that CP_2 would have an incentive to relocate closer to the GP in any event, but within the same neighbourhood.

⁷ In general, one would expect that the impact of the relocation will be greater for those pharmacies that are closer to the new location of the pharmacy. For example, if the pharmacy that leapfrogged was a new pharmacy (instead of CP_2 relocating), it would be expected to have a greater impact on the sales of CP_1 than on the sales of CP_2 . This assumes that pharmacies actually get their sales from a variety of locations, so if all the demand emanates from the GP

It is also possible that instead of CP₂ relocating, there might be entry of a new pharmacy in this location. In this case, the net effect of deregulation would be to increase the number of pharmacies, unless there were to be exit of another pharmacy at the same time. The impact of deregulation on the total number of pharmacies is therefore ambiguous.

It is possible that pharmacies could choose to locate within GP surgeries, if these locations were sufficiently attractive to consumers. This would be more likely to happen if demand for pharmacy services was heavily concentrated at the point of the GP, and hence locating in a GP's surgery was a highly advantageous position. In general, this argument appears to reflect the consumer desire for a convenient location to pick up their prescriptions.

It is not necessarily the case, however, that locating in the GP surgery would allow a pharmacy to exercise monopoly power over prices. As discussed above, it is not possible for pharmacies to change prices on NHS prescriptions due to their being regulated. For pharmacies to be able to raise prices on non-prescription items, it would need to be the case that consumers also valued the ability to purchase non-prescription items from a pharmacy located in a GP surgery. If consumers prefer to purchase these products separately, or together with other shopping trips, then locating at a GP surgery would not be especially advantageous and no monopoly power would be expected to result.

Economic welfare

The implications of the economic literature

If relaxation of the regulations surrounding the award of NHS dispensing contracts provided profitable opportunities for pharmacies to relocate, this would result in a different pattern of pharmacy locations. Two elements of the economic literature consider whether a particular pattern of retail locations would be beneficial or detrimental to consumers, compared to the "ideal" set of locations from the perspective of a benevolent "social planner". These are the literatures on the welfare implications of free entry, and on spatial competition and location choice. Both sets of literature are explored in more detail in Annex 1.

The literature on the welfare implications of free entry considers whether free entry will result in "too many" or "too few" firms from a welfare perspective, although it does not identify particular locations as such. The analysis is driven by the identification of two externalities. Firms enter

and none from the community, the impact on each would be similar in proportionate terms.

where they make positive economic profits, but do not take into account the impact of their entry on other firms' profits (the "business stealing effect". However, for industries that are characterised by differentiated products (such as differences in retail location), a new firm also does not take into account the impact of its entry on the extra benefits some consumers gain from the introduction of a new store location (the "consumer surplus" effect). Free entry may therefore yield either too many firms (if the business stealing effect dominates) or too few firms (if the consumer surplus effect dominates).

The spatial competition literature analyses firms' incentives to locate in particular areas given the location of consumers, the extent of price competition, and the level of perceived differentiation between locations. The main lesson from the literature is that the theoretical predictions of the various models – for location choice, the degree of entry and so consumer welfare – are extremely sensitive to changes in the assumptions of customer location, the nature of competition, and the level of perceived differentiation. These factors are often hard to measure accurately.

Both these literatures compare the free entry outcome to the ideal level of entry for the welfare maximising "social planner". The social planner construct considers the sum of both producer and consumer surplus. When considering consumer surplus alone, the free entry literature demonstrates that consumer surplus always increases with a greater number of firms both in the case of differentiated and homogenous products. This is because the "business stealing" effect only affects producer surplus. The spatial competition literature has ambiguous implications for consumer surplus as well as total welfare⁸.

To conclude, the sensitivity of the theoretical literature to particular assumptions on empirical factors, and the fact that the regulations do not currently appear to approximate to those of the social planner, suggest that it is not possible to make strong predictions about consumer welfare from theory. It is therefore necessary to analyse the welfare implications of deregulation using the available empirical evidence on a case-by-case basis.

⁸ It is unlikely that the current set of regulations, which apply simple rules to decisions affecting pharmacy locations, are a good approximation to a social planner's optimum, although it should be noted that this is not the role of Health Authorities or Primary Care Trusts. Moreover, interpretation of the rule may vary across Health Authorities and Primary Care Trusts, and it is not clear that the information taken into account by the decision makers would be sufficient to carry out a full welfare analysis. See Frontier Economics, Three case studies of pharmacy entry, November 2002 for examples.

Stylised examples of possible welfare implications

In the first instance, one would expect that deregulation would lead to improved consumer access to pharmacies, as pharmacies would wish to locate to areas of high demand – in other words, those locations that are more preferred by customers. However, it is also possible to construct more sophisticated theoretical arguments in which these benefits may be offset. This can happen in some (but not all) instances where entry of one pharmacy results in the exit of other pharmacies.

To illustrate the difficulty of making theoretical predictions as to the impact of deregulation, we explore some stylised examples of the types of leapfrogging that might occur. Below, we outline the welfare implications of leapfrogging for consumers, measured in terms of access to pharmacies as discussed in Section 2 above.

A number of different types of leapfrogging are possible, and each may have different implications for consumer access. These result from combinations of two separate factors. Firstly, whether leapfrogging occurs as a result of new entry or from relocation of existing pharmacies in the neighbourhood. Secondly, whether this leapfrogging results in the exit of any pharmacies in the neighbourhood, or whether all existing pharmacies remain active.

- *New entrant/no exit*: If there is entry by a new pharmacy closer to a GP than any existing pharmacy, and no other pharmacy is forced to exit, the access implications for consumers are *unambiguously positive*. Some consumers (e.g. those that travel to the pharmacy from the GP) now have access to a pharmacy closer than before. Other consumers can continue to go to their current pharmacy.
- *New entrant/exit*: The access implications are *ambiguous* from theory. For some consumers, access will be enhanced by the introduction of the new pharmacy. For other consumers, access will be diminished, as they will have to go to a pharmacy that is further away than the exiting pharmacy.
- *Existing pharmacy leapfrogs/no exit*: Consumers that choose to go to the new pharmacy have increased welfare. Other consumers will prefer the pharmacy in its original location, and will therefore have decreased welfare. However, if a pharmacy has chosen to relocate, it must be the case (other things equal) that it is preferred by more consumers after moving than before, as otherwise it would not have an incentive to do so. However, the overall implications for consumer welfare are *ambiguous* from theory, as this does not take into account strength of preference.

- *Existing pharmacy leapfrogs/exit*: Some of the consumers that choose the leapfrogging pharmacy in its new location will have increased welfare. Consumers who would have preferred the existing location of the leapfrogging pharmacy, or the existing locations of the exiting pharmacy, have reduced welfare. Here the welfare implications are also *ambiguous*.

The overall conclusion on consumer welfare, measured by the level of access, is ambiguous from a theoretical perspective⁹.

Empirical evidence

The discussion above has demonstrated that it is not possible to make unambiguous theoretical predictions as to whether deregulation will have beneficial or detrimental effects for consumer access. The welfare effects will depend upon particular empirical factors, such as the level and type of entry, whether any pharmacies exit, and upon the exact locational distribution of consumer demand. It is necessary to explore these empirical factors, in the context of the pharmacy market, to come to a view as to whether detrimental effects would be expected to occur. From the perspective of consumer access, the most detrimental effects would occur if there were “clustering” of pharmacies in areas where there was limited demand for pharmacies, and exit of pharmacies in areas where consumer demand for pharmacies were high¹⁰.

Annex 3 discusses the evidence that is available on the current locations of pharmacies, the reasons for consumer choice of pharmacy for different types of products, and the previous history of entry and exit. It should be observed that this evidence is based on the current situation and current regulatory framework. It is possible that, post-deregulation, these empirical factors would alter. However, we have seen no evidence to suggest that this is the case.

Annex 3 concludes that analysis of the available evidence suggests that welfare detriments from reduced access are unlikely to occur, for a number of reasons:

⁹ Note also that these scenarios do not allow responses (other than exit) by existing or exiting pharmacies. For instance, if a pharmacy leapfrogs to a location near a GP, this may provide a gap in the market at its existing location where potentially displaced pharmacies may choose to relocate to.

¹⁰ This is the reverse situation to that predicted by leapfrogging – that pharmacies would relocate closer to areas of high pharmacy demand.

- the scope for further leapfrogging is restricted by the fact that currently, many pharmacies are located close to a GP, with 17% sharing a postcode;
- whilst the GP is an important origination point of demand for pharmacies, only half of consumers generally travel from the GP, suggesting that pharmacies located in other areas will still have demand to serve; and
- the main potential access detriments occur if relocation or entry of pharmacies results in exit of other pharmacies, but the history of past entries suggests that this is not a common phenomenon.

The economic assessment above also demonstrated that it was not possible to make an unambiguous theoretical prediction about the possibility of monopoly power being exercised by pharmacies in particular locations. Annex 3 also considers the empirical evidence on this issue. It demonstrates that whilst consumers value location and convenience for their choice of pharmacy for non-prescription items, it does not appear that consumers have a particular preference to purchase these items from locations that are easily accessible from a GP surgery. Instead, locations that are close to home, or that can be linked with other shopping trips, appear more valued.

There are a large number of potential competitors for such items, including other non-pharmacy chemists and supermarkets, such that consumers may have the ability to substitute to alternative providers. In any event, no evidence has been presented as to the extent to which pharmacy consumers wish to purchase prescription items and non-prescription items together. This suggests that pharmacies are unlikely to be able profitably to raise the prices of these products, even if they were to acquire an attractive location. Moreover, any attempt by pharmacies to introduce such a price increase would be expected to result in entry of other pharmacies close to the GP to compete for the custom of these consumers.

3.2 Stakeholder argument 2: lack of investment in quality

Stakeholders have argued that, if relocation of pharmacies were to be possible, this would reduce the level of investment in quality and services that would be carried out by pharmacies. Our understanding of the process by which this would occur is as follows. Pharmacies currently face the possibility of carrying out quality improvements, which incur costs. These costs are sunk, in the sense that they cannot be recouped after the

investment is made. The current regulatory system provides pharmacies with certainty over their income streams, and this allows the costs of these investments to be recouped over time. However, if leapfrogging were to be allowed, a pharmacy would face uncertainty as to its ability to make a return on these investments, as its level of business may at any point be reduced by an entrant. As a result, under deregulation such investments would not be made. The result would be reduced investment and lower quality to the detriment of consumers.

Economic assessment

Following deregulation, quality investments for which the costs have already been sunk will not be unmade, as the costs cannot be recouped by so doing. However, when considering future investments in quality, pharmacies will take into account any increase in business risk as a result of the possibility of increased competition. It is therefore possible that there could be reduced investment in quality improvements.

The argument of increased business risk only applies to quality improvements which involve sunk costs. For example, suppose a pharmacy were to increase its opening hours. This involves some increased costs, such as increased wages, heating and lighting. However, these costs are not sunk, but rather are variable. If leapfrogging were to occur, the pharmacy could subsequently reduce its opening hours again if it wishes, and would no longer incur these extra costs. As a result, investments that do not involve sunk costs would be unaltered by any increase in business risk from prospective entry.

The current regulatory framework may also increase the potential business risk faced by pharmacies, as it is difficult for pharmacies to relocate in response to any reduction in demand. For example, a pharmacy locating next to a GP might be reluctant to invest in the knowledge that the GP may move away or close down¹¹. Deregulation may make quality investments (if they could be moved from location to location) less risky as a result, and one might expect in this instance to observe higher levels of quality and a consequent increase in consumer surplus.

It is also not clear from theory whether the prospect of increased competition would increase or decrease the incentives for pharmacies to invest in quality improvements¹². The key question to consider is whether

¹¹ See for example Case Study 2 in Frontier Economics, Three case studies of pharmacy entry, November 2002.

¹² Analogous arguments have been made in the literature on R&D investment incentives and competition, which show that investment incentives can be highest in intermediate market

the pharmacy would attract, at the margin, a greater or lesser quantity of additional sales as a result of the quality improvement. Finally, if sunk costs were substantial, this would tend to reduce entry and leapfrogging, as this increases the cost of entry or relocation for entering or relocating pharmacies, and therefore makes these strategies less attractive.

Empirical evidence

To demonstrate that pharmacies would reduce investment in quality following deregulation, a number of factors would need to hold.

Quality investments involving sunk costs must be identified

As far as we are aware, stakeholders have not been explicit as to the nature of quality investments that are at risk. The quality measures investigated in the Frontier Economics report “The relationship between quality measures and local concentration”¹³ are opening hours, the provision of a repeat collection service, home delivery, and the provision of a consultation area. Each of these affects variable costs, but does not appear to involve any significant sunk costs¹⁴.

Possible investments that would incur sunk costs include advertising campaigns and substantial refurbishments to existing fixtures and fittings. A stakeholder has presented evidence to the OFT that suggests that the cost of refurbishing and rebranding a store is approximately £90,000. We were not asked to review this evidence in detail as to whether all these costs are sunk, and whether they would apply to all pharmacies. We are not aware of any further evidence from stakeholders as to the nature and extent of current sunk investments in quality.

One other type of sunk investment in quality is training for staff. These investments, however, are not location-specific, but rather are market-specific. If a pharmacy were to be leapfrogged, it would be possible for it to move to a more attractive location, and the trained staff could move as well. However, we have not seen any evidence that investigates the level of such investments in training.

structures between perfect competition and monopoly. See for example Aghion, Bloom, Blundell, Griffith and Howitt (2002), “Competition and Innovation: An Inverted U relationship”, IFS Working Paper 02/04.

¹³ Frontier Economics, The relationship between quality and local concentration, November 2002.

¹⁴ Potentially removal of a consultation area might involve some alteration of fixtures and fittings, but it does not appear that these costs would be substantial.

Consumers must care about such quality investments

Assuming quality investments involving sunk costs can be identified, for increased business uncertainty to have a detrimental effect on welfare it must be the case that consumers value these quality improvements. For example, do consumers value advertising, and do they smarter-looking shops with improved fixtures and fittings? We have not seen any evidence that investigates this matter.

The marginal benefit of quality improvements must fall with the prospect of increased competition

As discussed above, theory does not yield clear predictions as to whether increased competition would increase or reduce the marginal incentives for firms to carry out investments in quality. If customers sufficiently value quality, it is possible that increased competition can lead to a pharmacy carrying out greater investments in quality, if more customers are persuaded to remain with that pharmacy as a result, rather than switching away. We have seen no evidence on this issue.

3.3 Stakeholder argument 3: wasteful “sunk” costs

Stakeholders have argued that leapfrogging incurs wasteful sunk costs on behalf of pharmacies. When a pharmacy changes location, it needs to pay the costs of the move and the expenses incurred in fixtures and fittings. By allowing more moves, deregulation of entry controls may result in more sunk costs being incurred.

Economic assessment

Any relocation will result in pharmacies incurring costs, and if deregulation results in a greater regularity of relocations, this will reduce the length of time within which these costs may be recovered. This effectively increases the level of costs incurred by pharmacies. However, since these costs are fixed, there is no incentive for pharmacies to change their output or pricing decisions, and there is therefore no direct impact on consumer welfare.

For detrimental effects to occur for consumer welfare, it would need to be the case that the increase in sunk costs reduced the overall number of pharmacies and resulted in a reduced level of competition. For this to occur it would need to be the case that these costs were large, that there was no pent-up demand for new pharmacy entry (and hence that the regulations do not currently restrict entry), and that potential entrants

would anticipate a substantially reduced timescale within which they would need to recover these costs.

Apart from the data from one stakeholder relating to its costs of refurbishment, we have seen no evidence relevant to the level of costs incurred by an entrant. Nor have we seen evidence to suggest that pharmacists would anticipate a reduced timescale within which these investments could be recovered. In contrast, some supermarket chains have presented evidence to the OFT that suggests that they would like to introduce more pharmacies, but are currently prevented from so doing.

It may also be incorrect to consider the costs of relocation to be “wasteful”. If pharmacies relocate to locations that are preferred by customers to the existing locations, the increase in consumer surplus due to reduced transport costs could more than outweigh the costs of entry or relocation. This argument is considered further in Section 3.1 above.

3.4 Stakeholder argument 4: GP rents

Stakeholders have argued that, if leapfrogging were to result in a desire on the part of pharmacies to locate in GP surgeries, GPs would be able to charge pharmacies for access to this location. This would be a detriment to these pharmacies.

Economic assessment

In our view, such negotiations could well occur. If a location in a surgery were particularly attractive to a pharmacy, the GP would be able to charge a rent £X (over and above the market rental rate) for the privilege of using that location. Here, £X would reflect the difference between the benefit to the pharmacy of locating in the GP surgery and the benefit to the pharmacy of the next best location.

From a welfare perspective, this phenomenon would result only in a transfer of rents between the GP and the pharmacy. Since the transaction is effectively a lump sum transfer, there is no change in the pricing incentives faced by the pharmacy. This transfer would have no detrimental effect on either competition or consumers. Consequently, our view is that this argument does not result in a welfare detriment relevant to this investigation.

4. Conclusion

This paper has discussed four arguments that have been made by stakeholders in relation to the potential for detrimental welfare effects to result from pharmacy “leapfrogging”. This paper has concluded that economic theory does not provide a guide as to whether detrimental welfare effects would occur. Rather, the arguments that have been made by stakeholders depend upon whether the empirical evidence supports them.

We have reviewed the available empirical evidence, although we note that the appropriate “counterfactual” for such an analysis – a state of the world in which the regulations are not present – does not exist. Nevertheless, we conclude that for three of the arguments – the possibility of the clustering of pharmacies around GPs, the possibility of firms incurring wasteful sunk costs as a result of leapfrogging, and the possibility of reduced quality investments due to increased uncertainty – the available empirical evidence does not suggest that welfare detriments to competition or consumers would either occur or be substantial. In addition, this paper has concluded that the transfer of rents from pharmacies to GPs does not result in a welfare change that affects competition or consumers.

Annex 1
Literature survey

Annex 1: Literature survey

This Annex discusses some of the academic literature that is of potential relevance to the investigation of the welfare effects of leapfrogging. Whilst no paper directly considers this issue, there are a number of strands of potential relevance:

- the theory of competition with spatial differentiation;
- the incentives for excess entry under free-market conditions; and
- the empirical literature.

For each area of the theoretical literature, the framework of the main paper is summarised. Other relevant papers are then dealt with more briefly.

The spatial differentiation literature

Models of spatial differentiation (or location choice) may be divided into those that assume that firms do not compete on price, and those that allow price competition in addition.

Models without price competition

The location model of Hotelling (1929)¹⁵ is the foundation of the spatial product differentiation literature. Hotelling's model makes the fundamental assumptions that:

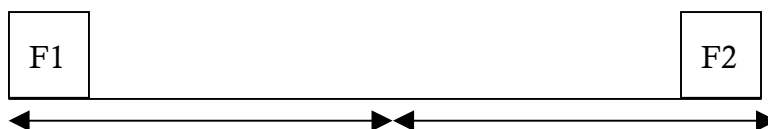
- consumers are located uniformly along a linear city of fixed length;
- consumers maximise utility by minimising their transportation costs (assumed to be linear), which involves choosing their nearest supplier;
- two identical firms (with no further entry) aim to maximise profits by capturing maximum consumer demand; and
- firms differentiate themselves through location only – there is no price competition.

¹⁵ Hotelling, H. (1929) "Stability in Competition", *Economic Journal* 39.

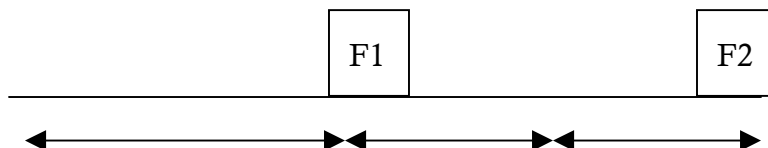
Evaluation of the conditions necessary for utility and profit maximisation of the consumers and producers, respectively, yields an equilibrium of ‘minimal differentiation’ in which producers locate next to each other and share the market. This result is demonstrated in Figure 2. In scenario A, firms are located at the extremes of the linear city and the market is divided equally between them, as consumers choose the firm that is closest to them. Scenario B demonstrates that this is not an equilibrium, as a move towards the centre by any one firm will result in an increase in market share, and hence profits, to the detriment of its rival. This is commonly termed the ‘market stealing effect’. The unique equilibrium is achieved in scenario C, with both firms located at the mid point of the city. Here, market shares are equal and there is no incentive to deviate for either firm as this would result in a loss of market share (scenario B).

Figure 2: Hotelling's equilibrium of minimal differentiation

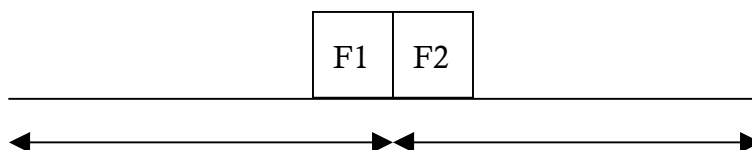
Scenario A:



Scenario B:



Scenario C (Equilibrium):



As further firms are included, this strong result breaks down. For example, suppose a third firm is introduced. If it locates at the centre (say to the right of F3) F2 would no longer be located optimally, and would wish to relocate. More generally, when the number of firms is greater or equal to three, there is no equilibrium in the Hotelling model.

From the perspective of consumer welfare, the Hotelling model with two firms predicts that the firms locate “too close together”. Since there is no price competition in this model, consumer welfare is maximised where transport costs are minimised across consumers as a whole. This occurs where the two firms located at one-quarter and three-quarters along the length of the line, rather than both locating at the centre point.

Eaton and Lipsey (1975)¹⁶ reconsider Hotelling’s model and alter the assumption of uniform customer densities. They investigate the effect of non-uniform consumer densities on the achievement of an equilibrium in location, and also expand Hotelling’s model into two dimensions, using a uniform density.

In the case of one dimensional, non-uniform demand, equilibrium only occurs if the number of firms does not exceed the number of modes (demand peaks). For a greater number of firms, ‘local clustering’ occurs (meaning that firms congregate in pairs). Once all demand peaks have been satiated, the optimal location is to share the market for the largest peak by locating at the same place (as in the original Hotelling model).

The principal welfare consideration raised by the authors concerns the occurrence of ‘local clustering’. Although entry will generally increase consumer welfare, as firms locate at the various local peaks of demand, entry in clusters has no further effect on consumer welfare as there is no differentiation between the firms. Entry therefore serves only as a detriment to producer welfare. The authors conclude that “*the results are very sensitive to changes in the number of firms, to changes in conjectural variation, and to changes in the distribution of consumers throughout the market*”¹⁷.

Price competition

A number of papers have considered whether relaxing other assumptions of the Hotelling model – in particular, the restriction of no price competition – alter its strong predictions. D’Aspremont et al. (1979)¹⁸ demonstrated the non-existence of an equilibrium for a linear city with price competition and linear transport costs. Consider scenario C in Figure 2. Since the only differentiating factor is location, this reflects a situation

¹⁶ Eaton, C. E., and R. G. Lipsey (1975) “ The Principle of Minimum Differentiation Reconsidered: Some New Developments in the Theory of Spatial Competition”, *The Review of Economic Studies* 49(129)

¹⁷ Source: *ibid*, footnote 20, p39. It should also be observed that this paper does not attempt to generate a free entry equilibrium.

¹⁸ d’Aspremont, C., J. Gabszewicz and J. Thisse (1979) “On Hotelling’s Stability in Competition”, *Econometrica* 17.

in which firms offer entirely homogenous products. Bertrand competition will therefore result, and profits will be driven to zero. By moving away from one another, firms can gain some local market power, and will make positive profits as a result. The minimum differentiation result therefore falls away.

However, D'Aspremont et al. also show that under this set-up there is no equilibrium – that is, there is no pair of locations for which neither pharmacy cannot improve its position (and hence it is not possible to derive implications for consumer welfare). It has subsequently been demonstrated by Tirole (1988)¹⁹ that an equilibrium in location and prices can be achieved under the assumption of quadratic rather than linear transportation costs, in which firms locate at the ends of the city. This exhibits “too much” differentiation. Again, to minimise transport costs for consumers, the social planner would wish for firms to locate one-quarter and three-quarters along the length of the line, rather than locating at the edges²⁰.

Salop (1979)²¹ demonstrated the existence of an equilibrium with location and price competition by removing the edges of the city. His ‘circular city’ model proves the existence of an equilibrium between a given number of equally spaced firms²². Salop then discusses the socially optimum number of firms. The social planner wishes to maximise welfare by minimising the sum of the firms’ fixed costs and consumers’ transportation costs. Salop shows that free entry results in too little differentiation (i.e. too many firms). This trade off between firms’ economies of scale and consumers’ transport costs anticipates the “excess entry” model of Mankiw and Whinston (1986)²³, and will be considered further in the following section. Note that by construction in this model consumer transport costs are minimised for any particular number of firms, due to the assumption of equidistance.

¹⁹ Tirole, J. (1988) “*The Theory of Industrial Organization*”, 1st Edition, London: MIT Press

²⁰ Note that consumer surplus in this model is a function of both transport costs and prices. Given that price competition is greater the closer together two firms locate, the consumer welfare optimum must be for firms to locate closer together than at one-quarter and three-quarters along the length of the line. The excess differentiation result continues to hold.

²¹ Salop, S. (1979) “Monopolistic Competition with Outside Goods”, *The Bell Journal of Economics* 10

²² The assumption of equal firm spacing is useful in that it facilitates his demonstration. However, it does not offer an explanation as to the dynamics of the equilibrium, in that firms faced with new entry immediately adjust to their new optimal locations.

²³ Whinston, M. D. and N. D. Mankiw (1986), “Free Entry and Social Inefficiency”, *RAND Journal of Economics* 17(1).

Prescott and Visscher (1977)²⁴ further demonstrate the sensitivity of Hotelling's model to slight changes in its assumptions, by proving the existence of a maximal differentiation equilibrium when firms are allowed to enter in sequence. An entering firm's location decision is guided by the location of incumbent firms in the market place with the result of 'maximum differentiation'. Aside from the order of entry, the fundamental characteristics that determine this outcome is the model's employment of a one shot game (relocation after initial entry is not permitted), with all entrants knowing the total number of firms that will eventually enter²⁵.

Implications for pharmacy deregulation

The Hotelling model and its variants collectively describe a situation that is relevant to the location choice of a deregulated pharmacy. Some of the factors that vary in the models appear to reflect empirical factors relevant to the case of pharmacies.

- ❑ Price competition is limited, since approximately 80% of sales on average are for prescription goods whose price is set externally. This would tend to lead pharmacies to locate closer together.
- ❑ Customer demand is non-uniform and likely to be multi-modal. The model of Eaton and Lipsey suggests that this would tend to result in pharmacies locating further apart.
- ❑ The issue of whether consumer transport costs should be considered as linear or quadratic is an empirical issue for which we have not seen evidence.

The sensitivity of these theoretical results to slight changes in the parameters of the model, in terms of location choice, the degree of entry and so consumer welfare, is a central feature of this survey. This has the implication that policy makers will be unable to accurately predict the equilibrium state of pharmacy location on anything other than a case by case approach. Simple rules applying to pharmacy location (as set down in the current regulations) are highly unlikely to approximate to a social planner's optimum.

²⁴ Prescott, E., and M. Visscher (1977) " Sequential Location among Firms with Foresight", *The Bell Journal of Economics* 8

²⁵ Prescott and Visscher (1977) do not explore a free entry equilibrium, so we do not explore the issue of consumer welfare in this instance.

The excess entry literature

Some models of spatial location, such as that of Salop (1979), suggest that a free entry equilibrium will naturally tend towards excess entry. This argument was explored in a more general setting by Mankiw and Whinston²⁶, which compares, under fairly general conditions, the number of firms in the free entry equilibrium to the number of firms in the social welfare optimum. Mankiw and Whinston demonstrate that, in a homogeneous products market, the free entry equilibrium always has too many firms compared to the social planner's optimum. This is because of an externality caused by entry: when choosing to enter, firms do not consider the impact their entry will have on the profits of rival firms (known as the "business stealing" effect)²⁷.

However, this applies only to the special case of homogeneous products. Where products are differentiated, Mankiw and Whinston show that the free entry equilibrium may have too many or too few firms. This is because there is a further externality that firms do not consider when making entry decisions – that the addition of an extra product creates extra consumer surplus (the "consumer surplus" effect). Whether the free entry equilibrium has too many or too few firms will therefore depend upon the trade-off between the consumer surplus and the business stealing effect, and there is no general result in either direction. Since pharmacies (and other retail outlets) are best regarded as differentiated products, where the differentiating factor is location, the Mankiw and Whinston "excess entry" result is not applicable in this case²⁸.

A paper by Waldfogel (1999)²⁹ investigates empirically an analogous issue: the number of radio stations that can be accommodated in a particular market. Entry by radio stations will occur until the size of the market is unable to sustain the (sunk) costs of the marginal supplier. Consumers will listen to their preferred supplier, until a new entrant offers programmes that satisfy their tastes better. If such entry results in a lessening in demand

²⁶ Whinston, M. D. and N. D. Mankiw (1986), "Free Entry and Social Inefficiency", *RAND Journal of Economics* 17(1).

²⁷ Cabral, L. M. B., (2002) "Simultaneous Entry and Welfare", *New York University and CEPR* draft, tests the robustness of these free entry models by allowing for simultaneous entry in a variety of models characterised by homogenous products.

²⁸ Moreover, it should be noted that the OFT's stated aim is to consider the implications of the regulations surrounding the award of NHS dispensing contracts for competition and consumers. It is not clear that business stealing effects should be considered in the OFT's welfare function, so excess entry could be considered to be positive for consumers.

²⁹ Waldfogel, J., (1999) "Preference Externalities: An Empirical Study of Who Benefits Whom in Differentiated Product Markets", *NBER Working Paper* 7391

for the original product to that below the minimum efficient scale, this will force exit of that radio station.

Thus, under certain cost conditions, this switch imparts a ‘negative preference externality’ on those reliant on the services of the departing firm (i.e. those consumers who prefer the radio programmes of the exiting station can no longer access their preferred choice). Entry in this model will be beneficial for consumer surplus under the conditions that each radio station has the same minimum efficient scale, and consumers of each station have the same preferences. In this case, the gains to the consumers of the new product will outweigh the detriment to the consumers of the exiting product, given that each set of consumers are treated equally in the welfare function.

The empirical literature

To our knowledge, few empirical works exist that deal with the specific issue of pharmacy location, or more generally, retailers of a heterogeneous good that do not compete in prices. In their study into the existence of manufacturing clusters, Ellison and Glaeser (1997)³⁰ allow for two types of empirically supported ‘agglomerative forces’: spillovers (externalities which accrue to firms in a location due to the existence of other firms in that location) and natural advantage (where the demand or supply conditions are particularly attractive for firms). Spillovers do not appear to be relevant to pharmacy location – there is no obvious benefit to be had by occupying a space adjacent to another pharmacy, in terms of knowledge or any physical benefits (e.g. distribution economies). Pharmacies may however have a natural advantage by locating themselves in areas of peak demand. Where neither of these is present Ellison and Glaeser hypothesise that firms adopt a ‘dartboard approach’ to their location decision process.

Waterson (1993)³¹ analyses a model of retail pharmacy distribution using data from Melbourne, Australia. The author compares the predictions of the model with data on actual pharmacy distribution, thus facilitating an analysis of the welfare implications for free entry of pharmacies. The fundamental analysis surrounds the trade-off that exists between the ‘Hotellian’ benefit derived from a consumer’s minimisation of transportation costs and the fixed costs incurred by firms.

³⁰ Ellison, G. and E. L. Glaeser (1997) “ Geographic Concentration in US Manufacturing Industries: A Dartboard Approach”, *The Journal of Political Economy* 105(5)

³¹ Waterson, M. (1993) “ Retail Pharmacy in Melbourne: Actual and Optimal Densities”, *The Journal of Industrial Economics* 41(4)

Waterson finds that the Australian industry differs from that of the UK in a few respects. Firstly, there is no restriction on pharmacy entry. Secondly, ownership is limited to small, often family run firms. This has the important result that the retailer's sole source of differentiation is location, to an even greater extent than retailers in the UK who have a more developed non-pharmacy aspect to their activities. The density of Melbourne pharmacies relative to the population was considerably higher than that of the UK in 1978 (1:2600 and 1:5000 respectively). He attributes this to the generosity of government remuneration.

Transport costs are estimated, from regression analysis, to be non-linear with respect to prescription demand. The model of Tirole, discussed above, suggests that this could be a factor that would lead to greater rather than less locational differentiation. The regression analysis also shows that the proportion of residents over the age of 65 had a considerable influence upon script demand. Actual demand was higher than predicted in the central business district, suggesting that pharmacy visits occur alongside visits to other retailers (and hence GPs would not provide the only source of demand).

Waterson's overall conclusion is that free entry has resulted in excessive entry, in the sense that a reduction in the number of pharmacies would reduce fixed costs to a greater extent than transport costs would rise (in other words, there are "too many" small pharmacies). This "excessive entry" result appears to have been driven primarily by the generosity of the remuneration system in driving down the minimum efficient scale of pharmacies.

Annex 2

The effect of the regulations on leapfrogging

Annex 2: The impact of the regulations on pharmacy choice of location

Two areas of the regulations surrounding the award of NHS dispensing contracts to pharmacies have potential effects on pharmacy choice of location. Firstly, applications for new NHS dispensing contracts in a particular location need to satisfy the ‘necessary or desirable’ test under regulation 4(4). Secondly, applications from a pharmacy in a particular ‘neighbourhood’ to relocate within that neighbourhood or change ownership are the subject of minor relocation applications under regulation 4(3)(a). The main constraint appears to be the control of new entry under regulation under 4(4), rather than the control of pharmacy location within a neighbourhood under regulation 4(3)(a)³².

These regulations were introduced in 1987 (and modified in 1992). Prior to that date, it might be expected that entry and location patterns reflected those that would be observed in a free market. Following the introduction of the regulations, entry of pharmacies into new neighbourhoods appears to have been made more difficult. However, no regulations were introduced that affected the ability of pharmacies to exit from a neighbourhood. One would expect the following effects to therefore occur in different areas.

- In areas of growing demand compared to 1987³³, one would expect that there may now be a potential under-supply of pharmacies, if the interpretation of the regulation was to consider new entry not to be ‘necessary or desirable’ in at least some cases where a free entry system would have observed entry.
- In areas of declining demand, no such constraint exists, and one would expect the number of pharmacies in these areas to have declined appropriately.

The net effect is therefore to cause potential under-supply in areas of demand growth.

³² For example, see the discussion of Case Study 2 in the report “Three case studies of pharmacy entry”, Frontier Economics, November 2002. In this instance there were a number of applications for new contracts, some of which were accepted and some rejected. There were also a number of minor relocation and change of ownership applications, all of which were accepted subject to the caveat that they did involve changes within the same neighbourhood.

³³ Demand growth or decline may result from demographic changes affecting particular areas, both in terms of the population and its composition, or from more micro-level changes such as the movement, introduction or exit of GP surgeries and the impact of road alterations.

If there were to be deregulation, such that pharmacies were to be allowed to make location decisions on the basis of commercial considerations alone, one would expect to see entry of pharmacies into areas of demand growth. Within a neighbourhood that is adequately served by pharmacies, it is our understanding that the removal of the regulations may not have a great effect on pharmacy location. This is because the ability of pharmacies to relocate within a neighbourhood appears not to be particularly restricted by regulation 4(3)(a), although this appears to depend on the interpretation of the term “neighbourhood” by Health Authorities and Primary Care Trusts.

For the purposes of the analysis of arguments made in relation to the welfare effects of leapfrogging, this note assumes that, whilst the regulations do not currently rule out entry or relocation of pharmacies either within or across neighbourhoods, they do make it more difficult, costly and time-consuming. The impact of the deregulation would therefore be to ease these constraints, and this would be expected to result in a greater number of relocations as result.

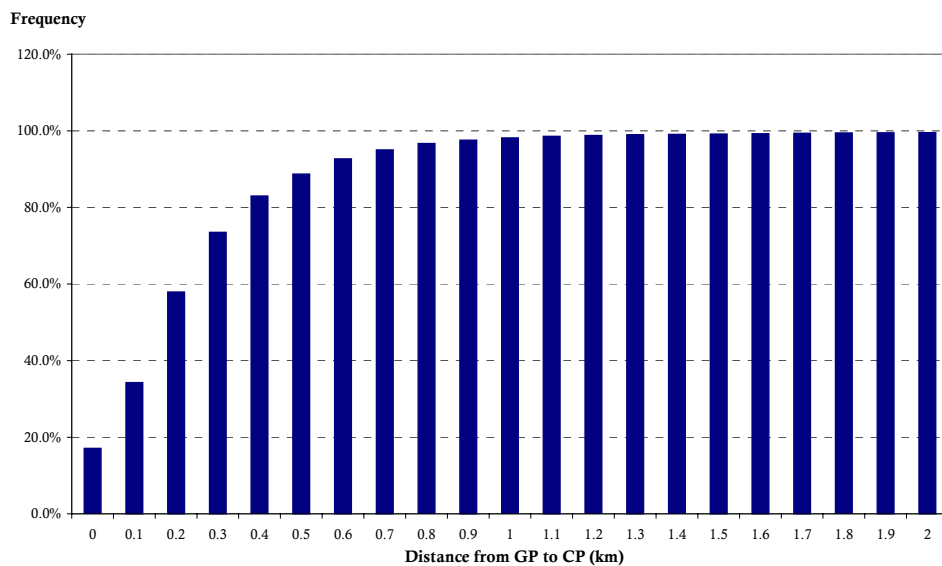
Annex 3

Empirical evidence on clustering and monopoly

Annex 3: Current relationship between pharmacy and GP locations

The theoretical literature described in Annex 1, and summarised in Section 3.1 above, suggests that whilst leapfrogging is a theoretical possibility, there is no definitive conclusion available from the theoretical literature on the welfare implications of leapfrogging for consumers. It is necessary therefore to consider the empirical facts of the case. A potential detriment could occur if leapfrogging resulted in reduced access for a large number of consumers (in other words, that they now had to travel further to get to their preferred pharmacy). To frame this discussion, it is useful to consider the current locations of pharmacies relative to GPs. Figure 3 shows the distance from each GP in Great Britain to its nearest community pharmacy (CP)³⁴.

Figure 3: Distance from each GP to its nearest CP, cumulative frequency distribution

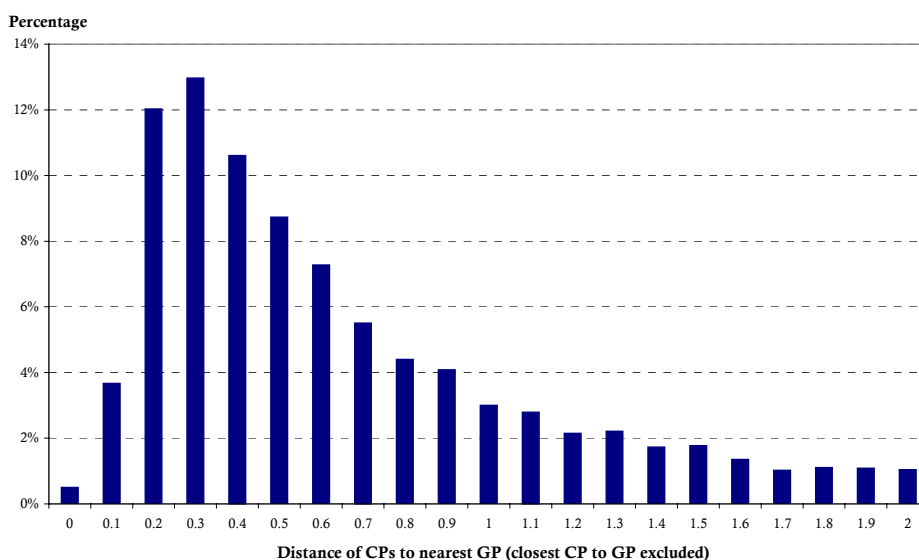


³⁴ This relates to GPs with a CP within 2km only. There are a further 33 GPs with a CP between 2km and 5km.

Figure 3 demonstrates the current opportunities for leapfrogging. It can be seen that approximately 17% of GPs have a CP located on the same postcode, and 73% of GPs have a pharmacy located within 300m. This suggests that for a large proportion of CPs, locating close to the GP has already happened.

Figure 4, in contrast, shows the distance from each CP in Great Britain to its nearest GP, for those CPs that are currently not located nearest to a GP. This demonstrates the extent to which pharmacies are currently able to survive without having potentially advantageous locations.

Figure 4: Distance from each CP to its nearest GP, for those CPs that are not nearest to a GP



In total, around 4,800 CPs are not located nearest to a GP. Figure 4 shows that of these, around half are located more than 500m away³⁵. Given that the level of pharmacy exits is around 40 per year³⁶, this suggests that it is possible to survive without the benefits of a location close to a GP.

³⁵ For presentational purposes, Figure 4 does not show information on 500 further pharmacies that are located more than 2km away from their nearest GP, and are not themselves closest to a GP.

³⁶ Source: Community Pharmacies in England and Wales, 31 March 2001, Table 5.

This evidence suggests that the majority of pharmacies are currently located relatively close to their closest GP. However, there are a significant minority that are not located particularly close, and which appear to survive under the current regulations.

OFT customer survey into shopping patterns

The OFT's consumer survey provides a number of items of evidence on customer behaviour that are relevant to the likely implications of leapfrogging.

- *Location is an important choice determinant:* 57% of consumers said that locality was the reason for choice of outlet, with 29% saying it was “convenient/handy/quicker” and 4% saying there was “no choice”. The main other reason mentioned was quality of service, where 8% of consumers said that the reason for choice of pharmacy was “pleasant/helpful/knowledgeable staff”, and 4% of consumers stated that the reason for their choice was that service was good or reliable³⁷. This suggests that restricting the current analysis to choice of location only is a good first approximation.
- *Around half of the consumers travel from the GP to the pharmacy to purchase their prescriptions:* 48% of consumers say they travel from the GP, with 29% from home, 6% from work, 3% from food shopping, and 13% for whom it varies³⁸. Those consumers who travel from home are slightly more likely to be repeat consumers³⁹. This suggests that whilst GPs are an important origination point for demand for prescriptions, they are not the only origination point.
- *Collection and delivery may provide an alternative:* Whilst 68% of consumers agreed or agreed strongly with the statement that they “prefer to use a chemist close to the doctor”, on the same basis 55% would consider using a chemist offering collection/delivery services, and 38% would consider this to be helpful. This latter proportion is higher for some groups such as the infirm/disables (76%) and those aged 71+ (51%)⁴⁰. Data from IMS Health suggests that 82% of pharmacies sampled offer a home delivery service to all patients or to

³⁷ Source: OFT Consumer Survey, Chart 3.4/3.

³⁸ Source: OFT Consumer Survey, Chart 3.5/1.

³⁹ Source: OFT Consumer Survey.

⁴⁰ Source: OFT Consumer Survey, Chart 3.6/1 and p22.

those in need only⁴¹. If such a service were to develop, this could reduce the importance of location in the customer choice decision.

- *The reliance on pharmacies for non-prescription items is lower.* Around half of consumers who had cashed a prescription item usually bought contraceptives and GSL medicaments from a pharmacy. However, these figures fell to 23% for baby products and 13% for toiletries. Location was a less important choice determinant for consumers, with only around a quarter (for most products) saying that their choice was due to the pharmacy being local. (This figure was higher, at 40%, for toiletries.)⁴² Consumers who did not usually buy these products from pharmacies said that this was either because it was easier to buy them together with their main shop (around 50%) or that it was cheaper elsewhere (around 30%). 62% of consumers purchasing P-only medicaments said that location was important. However, the fact that this figure was 82% for consumers choosing supermarkets and 80% for Lloyds pharmacies suggests that location close to a GP is not particularly relevant. Overall, this evidence suggests that the extent to which pharmacies located close to GPs would be able to raise prices on non-prescription items is likely to be limited, as the importance of being close to a GP is substantially less strong⁴³. It also suggests that the demand for these products comes from the community and would provide a reason for pharmacies to continue to locate there.

Are there a large number of marginal pharmacies?

If many pharmacies are on the borderline between viability and non-viability, then the introduction of a new pharmacy in an attractive location would be expected to have a larger effect on the number of existing pharmacies in that location. In this study, it has not been possible to acquire information on the financial performance of pharmacies. However, other parts of the study provide indirect evidence on this issue.

Firstly, there have been a limited number of pharmacies closing down entirely each year. Department of Health data suggests that only around 40 pharmacies per year have closed down over the last four years⁴⁴. Secondly, analysis of entries and exits of pharmacies in GB suggests that for those areas that have observed entry, it is extremely rare for this entry

⁴¹ Source: Frontier Economics, The relationship between quality and local concentration, November 2002.

⁴² Source: OFT Consumer Survey, Chart 3.7/4.

⁴³ Source: OFT Consumer Survey, Chart 3.7/5.

⁴⁴ Source: Community Pharmacies in England and Wales, 31 March 2001, Table 5. A similar number of pharmacies opened in each of these years (1998-2001, year to 31 March).

to result in a net decline, over time, in the number of pharmacies in this area (though subsequent exit of existing pharmacies). It is much more common for entry to result in net new entry over the same period⁴⁵.

These two factors suggest that there are not currently a large number of pharmacies that are close to the borderline such that a small change in their profitability would be sufficient to lead to large numbers of closures.

⁴⁵ Source: Frontier Economics, Analysis of entry-exit data, November 2002.