Oxera

# Price discrimination in craft-user licence fees

## Report prepared for British Waterways

March 14th 2005

Final report: strictly confidential

Oxera Consulting Ltd is registered in England No. 2589629. Registered office at Blue Boar Court, Alfred Street, Oxford OX1 4EH, UK. Although every effort has been made to ensure the accuracy of the material and the integrity of the analysis presented herein, the Company accepts no liability for any actions taken on the basis of its contents.

Oxera Consulting Ltd is not licensed in the conduct of investment business as defined in the Financial Services and Markets Act 2000. Anyone considering a specific investment should consult their own broker or other investment adviser. The Company accepts no liability for any specific investment decision, which must be at the investor's own risk.

© Oxera, 2005. All rights reserved. Except for the quotation of short passages for the purposes of criticism or review, no part may be used or reproduced without permission.

# Contents


| | | |
|---|---|---|
| **1** | **Introduction** | **1** |
| **2** | **Economic theory of price discrimination** | **2** |
| 2.1 | Requirements for price discrimination to be possible | 2 |
| 2.2 | Impact on consumers and general welfare | 3 |
| 2.3 | Principles of cost recovery | 4 |
| 2.4 | Summary and implications for BW | 5 |
| **3** | **How price discrimination is viewed in practice** | **6** |
| **4** | **BW's approach to price discrimination** | **10** |
| 4.1 | BW's April 2004 licence fee policy | 10 |
| 4.2 | The Waterways' Ombudsman decision | 13 |
| 4.3 | Defensibility of current policy | 13 |
| **5** | **Conclusions** | **19** |


## List of tables


Table 4.1 Discounts on the licence fees 12
Table 4.2 Review of pricing policies 15


## List of figures


Figure 4.1 Licence fees by boat length 11

# 1 Introduction

Price discrimination—the practice of varying the price that a consumer pays for a good without reference to the costs—is a widespread practice: travellers pay a varying price for the same type of seat on an aeroplane; discounts are offered to particular types of purchaser (eg, pensioner and student discounts); and particular buyers, such as university libraries, pay higher fees than others for items such as academic journals. Some types of taxation could also be considered a form of price discrimination—for example, the air passenger duty, which is levied on all passengers on flights departing from UK airports, has varying levels depending on whether the passenger is seated in a business- or economy-class seat.

Intuitively, charging different prices that do not relate to different costs seems unfair. However, economic theory shows that there are compelling efficiency reasons why price discrimination is desirable in specific circumstances. Furthermore, these efficiency arguments are recognised by various economic regulators and competition authorities in the UK, Europe and the USA, although these institutions also recognise that price discrimination can be harmful in certain situations.

This paper outlines the economic theory of price discrimination, and then examines how this theory is put into practice in the UK by institutions such as the Competition Commission and the OFT. BW's April 2004 boat-user licence fee policy, which contains elements of price discrimination, is then assessed in terms of how defensible these practices are, particularly in light of the recent adverse finding by the Waterways Ombudsman that required BW to refund around £80,000 of licence fee revenue to commercially managed boat-share users.[1] Finally, the paper suggests ways in which future licence fee policies could be amended given this evidence.

[1] Waterways Ombudsman (2004), 'Complaint by Mrs Ann Street against British Waterways ('BW'): Decision', December 15th, para 5.2.7.

# 2 Economic theory of price discrimination

Price discrimination is a well-understood, core component of microeconomic theory and is usually examined in the context of competition policy,[2] or from an industrial organisation perspective.[3]

## 2.1 Requirements for price discrimination to be possible

For price discrimination to be possible, there are three key requirements. First, the company in question needs to have some degree of market power—that is to say that the firm faces a sloped demand curve. Without any market power, the firm will not be able to raise prices for any consumers, since competitors will undercut those prices. Because of this link with market power, a firm's ability to price-discriminate is sometimes used as evidence of market power/dominance in competition policy cases.

A second requirement is that the firm can sort customers in some way such that it can charge different prices depending on their elasticity of demand. There are three versions of this.

– *First degree*—under first-degree price discrimination, a firm knows each consumer's willingness to pay, and charges each of them exactly the maximum amount they would be willing to pay to purchase the good, thus capturing all the consumer surplus. This approach to price discrimination is extremely rare due to the information requirement, although it might be approximated in some bargaining situations—eg, haggling for a second-hand car.

– *Second degree*—second-degree price discrimination occurs when a firm offers a selection of deals to everyone, and lets consumers select the deal that most suits them. This approach is quite common—for example, Carnet tickets, which are books of ten single tickets on the London underground and Paris metro systems, offer a lower unit price than purchasing single tickets individually.

– *Third degree*—third-degree price discrimination involves charging different prices to consumers with different observable characteristics. Again, this approach is also quite common; student and pensioner discounts are an example of this. BW's boat-user licence policy is also an example of third-degree price discrimination, as it charges different user types different prices based on characteristics that BW can observe, such as whether the user is a commercial operator.

The third requirement for effective price discrimination is the ability to stop reselling of the good by one consumer, who might be charged a low price by the price-discriminating firm, to another consumer, who might be charged a high price (this reselling is referred to as arbitrage). If such reselling can occur, it will undermine the firm's ability to price-discriminate since a larger-than-intended number of consumers will have access to the lower price than the firm intended. However, this is usually only a problem with physical goods as it is much more difficult to engage in such arbitrage trade in services, since they cannot be transported,

[2] See for example, Motta, M. (2004), *Competition Policy: Theory and Practice*, Cambridge University Press, section 7.4.
[3] See for example, Church, J., and Ware, R. (2000), *Industrial Organization: A Strategic Approach*, McGraw-Hill, chapter 5.

and many require some form of identification (eg, plane travel). Since BW is selling boat licences, which require craft-specific information to be provided, arbitrage is unlikely to be significant problem.

## 2.2 Impact on consumers and general welfare

The impact of price discrimination can be welfare enhancing (ie, positive) or welfare destroying. Consequently, each example of price discrimination needs to be examined separately to assess whether it is desirable. There are two ways this can approached; the first is to consider the output effect of the introduction of price discrimination when compared with a single/uniform tariff structure (this approach is discussed here), and the second is to examine the impact of price discrimination on competition (this approach is discussed further in section 3).

Economic theory recognises two main ways in which price discrimination can actually enhance welfare (the sum of consumer and producer surplus). For both, the theory shows that welfare is enhanced (or at least, it is not reduced) as long as price discrimination results in a greater level of output than would have been the case with a uniform pricing structure.[4] If output remains the same, the theory shows that welfare is always reduced, hence it is often important to be able to demonstrate an output effect. The ways in which welfare is enhanced are as follows.

– *Serving areas/customers that would otherwise not be served*—price discrimination may allow a company to serve customers with a lower willingness to pay in a new market if it is able to charge lower prices than in its traditional markets where customers have a higher willingness to pay. Serving these additional markets should be welfare enhancing, since consumers are willing to trade with the firm, and hence consumer surplus must be generated. Price discrimination is welfare enhancing if total output is higher than under uniform pricing. Examples of this in practice are the lower prices charged by large pharmaceutical firms for drugs in developing countries relative to the prices charged in developed countries.

– *Fixed-cost recovery*—price discrimination is also efficient in industries with high fixed costs and economies of scale, where marginal costs are below average total costs. It is well established in theory and utility regulation that a Ramsey-style price discrimination, where customers with the higher willingness to pay are charged higher prices for identical products, is the most efficient departure from marginal cost pricing.[5]

  Microeconomic theory shows that allocative efficiency is achieved when prices are set equal to marginal costs. However, this will not recover all costs for those industries with high fixed costs, so a mark-up over marginal costs is required. Ramsey pricing attempts to minimise the loss of output caused by the imposition of this mark-up by raising price most for those with the least elastic demand, and hence results in the smallest loss of output. If a uniform mark-up were adopted, there would be a greater loss of output, since prices would be higher for consumers with highly elastic demand (ie, there would be a large reduction in demand), and lower for consumers with less elastic demand (ie, there would be a small increase in demand).

[4] See for example Scmalensee, R. (1981), 'Output and Welfare Implications of Monopolistic Third-Degree Price Discrimination', *American Economic Review*, **71**, 242–47.

[5] See for example, Baumol, W.J., and Bradford, D.F. (1970), 'Optimal Departures from Marginal Cost Pricing', *American Economic Review*, June, **60**, 265–83.

While the theory shows that welfare can be enhanced if output is increased, it is worth considering in more detail the impact of price discrimination on the different groups involved, as introducing price discrimination does not necessarily benefit all participants.

Section 2.1 pointed out that BW's pricing structure is akin to third-degree price discrimination, where different groups of consumer face different prices. The impacts of introducing third-degree price discrimination when compared to a uniform tariff are as follows.

– *The company*—if the firm acts in a profit-maximising manner, instituting price discrimination increases its profits. If instead, it acts in a manner designed to yield a fixed amount of revenue (this is the approach usually adopted under the Ramsey-style price discrimination), its profits are unchanged.

– *Low-elasticity consumers*—consumers in the groups with lower elasticities are worse off, since the price has increased for them.;

– *High-elasticity consumers*—consumers in the groups with higher elasticities are better off, since the price has decreased.

Ultimately, the balance between these gains and losses determines whether the price discrimination is welfare enhancing (this considers all three categories above) and whether it is good for consumers as a group (this considers the last two categories alone).

## 2.3 Principles of cost recovery

The discussion of price discrimination above largely concerns a single-product firm. However, most firms are multi-product firms, producing a range of outputs. In the multi-product environment, the allocation of costs between product groups can be an important issue since some groups of customers may be substantially more expensive to serve than others.

When allocating costs across a business, two extreme approaches are possible.

– *Stand-alone costs*—the stand-alone costs of an activity are the costs that a business would incur were it to only produce one output. For example, once could consider the stand-alone costs of providing Britain's rail network for use by passengers only and not freight; the costs are unlikely to be substantially less than for a network which could carry freight and passengers.

– *Incremental costs*—in contrast, the incremental costs of an activity are the additional costs that have to be incurred to produce one additional type of output, given that all others are to be produced. Put another way, the incremental costs are those that could be saved were a business to stop producing one of its outputs. These costs will consist of the direct costs associated with the new activity; together with any increase in common costs. Returning the to the railway example, currently operators of freight trains pay Network Rail only for the incremental costs of accessing its network. The passenger train operators, supported by public subsidy, pay for the stand-alone costs of the rail network.

In general, competition authorities do not consider prices excessive unless they exceed the stand-alone costs of an activity; they do not consider prices below-cost unless they fall below the incremental costs of that activity. Thus, theoretically, pricing at any point between these two extremes is acceptable to at least some degree.

However, what this does imply is that, if there are specific costs associated with serving certain customer groups, which are not incurred when serving other groups, this may be reflected to some extent in the prices charged. Returning to the rail example, different types

of freight wagons cause varying amounts of wear to railways tracks, therefore Network Rail charges them different amounts per train mile.

However, the key point to note here is that charging customers different prices based on different costs is not a form of price discrimination; indeed, in this situation, charging all customers the same amount would be considered price discrimination. This is why geographically averaged prices, such as Royal Mail's one-price-goes-anywhere service, is sometimes referred to a as a form of price discrimination.

## 2.4 Summary and implications for BW

The discussion above has highlighted that price discrimination can be an efficient way of expanding output relative to a uniform pricing schedule, either by making it possible to serve new areas, or by allowing fixed costs to be recovered with the minimum reduction in output via Ramsey-style pricing. However, price discrimination can also be problematic, and in some circumstances may be considered an abuse of dominance. The two key implications for BW are:

– that it should try to identify which elements of its charging structure are cost-reflective, and which parts of its tariff structure could be argued to represent price discrimination (this is examined further in section 4);
– that to make sure that its price discrimination policies are defensible, it needs to be able to demonstrate to at least some degree that its price-discrimination policy results in an increase in output relative to a uniform pricing schedule.

# 3 How price discrimination is viewed in practice

As was noted in the introduction, price discrimination is a widespread practice used in many industries. This section examines how price discrimination is viewed by competition authorities and sectoral regulators. Since BW is not a regulated firm, the focus is primarily on competition authorities.

Price discrimination—and discrimination in general—by a dominant firm may be an abuse of dominance under Article 82 of the EC Treaty and/or Chapter II prohibition under the Competition Act 1998. Discriminatory pricing can also be prohibited under sector-specific regulation. However, it is also a commonly accepted business practice since, as discussed in section 2, it can actually benefit consumers overall by expanding demand and/or allowing the firm to serve new customers.

In the UK, many regulated companies in the telecoms, electricity, gas, water and rail industries have specific conditions in their licences prohibiting undue discrimination or undue preference. Under competition law, price discrimination is usually assessed more narrowly than under utility regulation as a result of a tighter interpretation of the term 'undue'. As is explored further below, competition authorities usually consider the economic effects of price discrimination (ie, whether it has negative effects on economic welfare or competition), while regulators also have to consider its social or distributive effects.

For example, regulators such as Oftel (now Ofcom), have stated that the undue discrimination and undue preference prohibition:

> does not necessarily require the identification of a dominant position, but an assessment of whether any discrimination or preference is 'undue' will have regard to [the investigated firm's] market power and the potential for the behaviour to have an effect on competition.[6]

Thus, in Oftel's interpretation, 'undue' does refer to the effects on competition, although 'undue' stops short from being considered as an abuse of dominance. However, UK regulators in general also give regard to social considerations when assessing price discrimination.

As regards to competition authorities, according to the Office of Fair Trading (OFT), to assess price discrimination it is often relevant to consider whether the pricing structure in question allows the efficient recovery of fixed costs and expands existing demand substantially or opens up new markets.[7]

From a competition perspective, there are three main ways in which price discrimination would be problematic:

- certain customers may be charged excessively high prices–ie, customers may be exploited;
- certain customers may be charged excessively low prices, which could allow the firm to exclude competitors from the market;

[6] Case BX/663/315, Complaint against NTL in relation to Internet services provision to Colloquium. See OFTEL (2000), *Competition Bulletin Issue 15*, March.
[7] OFT (2004), 'Assessment of Conduct—Draft Competition Law Guideline for Consultation', OFT414a.

– price discrimination in an upstream input or facility may distort downstream competition

Each of these effects is discussed below.

### 3.1.1 Exploitation of consumers

In the case of excessive prices, a complaint of price discrimination would be dealt with along the lines of an excessive pricing inquiry, with prices being compared with the appropriate level of costs and returns. In this case it is often considered to be of minor relevance that the company charges lower prices to other customers; the relevant issue is whether the high prices charged to the complaining customer are excessive, not whether they are discriminatory.

In UK and EC competition law, excessive pricing is addressed under the abuse-of-dominance provisions. Under Chapter II, Section 18 of the Competition Act 1998, 'directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions' may constitute an abuse of a dominant position. This phrasing is directly based on Article 82 of the EC Treaty.

In its 1978 *United Brands* decision, the European Court of Justice (ECJ) stated that 'charging a price which is excessive because it has no reasonable relation to the economic value of the product supplied […] is an abuse'.[8] Economic value can be interpreted as referring to the economic cost of the product. The ECJ stated that a detailed analysis of costs would be required before any judgement could be reached, and said that the question to be asked was:

> whether the difference between the costs actually incurred and the price actually charged is excessive, and if the answer to this question is in the affirmative to consider whether a price has been charged which is either unfair in itself or when compared to other competing products.

The main case for prohibiting excessive pricing is that it creates allocative inefficiency in the form of a 'dead-weight' welfare loss to society—ie, prices are too high and outputs too low compared with the competitive market outcome. In this view, dominant firms should be forced to charge prices that reflect costs, including the appropriate cost of capital, in order to approach the efficient, competitive outcome.

Cases involving excessive pricing under EU competition law have been relatively rare. This is partly explained by the fact that, if prices are excessive, supra-normal profits will induce entry if barriers to entry are relatively low. Regulating prices may distort this efficient market signal, and slow down the process of erosion of a dominant position. Therefore, instead of regulating prices, in some cases the European Commission has taken measures to reduce barriers to entry.[9] However, when the incumbent owns an essential facility, the case of controlling prices is stronger since the dominant firm can increase barriers to entry in the downstream market by charging excessive access prices.

### 3.1.2 Exclusion of competitors

Charging excessively low prices to certain customers may have the effect of excluding competitors from the market. This is sometimes referred to as primary-line injury to

[8] Case 27/76 *United Brands v. Commission* [1978] E.C.R. 207; [1978] 1 C.M.L.R. 429.

[9] To determine excessive pricing, competition authorities must determine a 'reasonable' profit margin, which requires complex cost calculations. Once the optimal price associated with that level of profits has been determined, competition authorities must regulate and monitor the prices of the dominant firm.

competition through price discrimination. There are two ways that this could occur—either via a complaint concerning predatory pricing or one concerning targeted discounting. Similar to the discussion above concerning excessive pricing, a predatory pricing inquiry would primarily be concerned with whether the price being charged was excessively low, and not that it was discriminatory. For prices to be excessively low, a *dominant* firm *deliberately* incurs short-term losses in order to eliminate its competitors, so as to be able to charge monopolistic prices in the long term. This requires prices to be below cost, and entry barriers to be high such that the future monopolistic prices can be sustained long enough to recoup the short-term losses.

A wide variety of cost benchmarks can be used to determine whether a firm has engaged in predatory pricing. Initially, the EU predatory pricing standards were established in the ECJ's *ECS/AKZO* decision in 1993.[10] The ECJ determined that prices below average variable cost (AVC) should be presumed to be predatory. Prices in the range between AVC and average total cost (ATC) are predatory if they are set in the context of a plan aimed at eliminating a competitor. Prices above ATC normally do not indicate predation. However, subsequent European Commission and OFT decisions have taken different cost benchmarks into account, such as the long-run incremental cost (LRIC) and the avoidable cost.[11]

Targeted discounting is the practice where a firm specifically targets the customers of a competitor with discounts, the intention being to drive out the competitor. According to the European Commission, the key concern is whether such discounts exclude competitors from the market and not whether they lead to prices below cost.[12]

### 3.1.3 Distortion of downstream competition

Charging one customer more than another may distort downstream competition if the good or service in question is an intermediate product (ie, it is not being sold to an end-consumer). This is sometimes referred to as secondary-line injury to competition. For example, if an airport offered one airline on a particular route a substantially lower price for an airport slot than another airline on that same route, it might give an undue advantage to the first airline in the downstream market for air travel services.

This type of distortion is most likely to be problematic if the good or service is an essential input for competing in the downstream market, and the favoured customer is a subsidiary/affiliated company of the provider of the essential input. For example, in the UK, there have been several complaints regarding undue preference being given to vertically integrated downstream operations. In the telecoms sector, Oftel pursued several complaints, including those against BT for discrimination in the provision of leased lines; against mobile phone network operators Vodafone and BT Cellnet (now O2) for discrimination in the provision of wholesale airtime; and against the cable operator ntl for discrimination in the provision of network access for Internet services.[13]

The secondary-line effect of price discrimination appears to be the main focus of the reference to price discrimination in Article 82 of the EC Treaty. Paragraph (2)(c) of that article states that an abuse of dominance may consist of 'applying dissimilar conditions to

[10] OJ (1985) L 374/1, (1986) 3 CMLR 273; and Case C-62/86 (1991) ECR I 3359: (1993) 5 CMLR 215.

[11] Avoidable costs are those that could be avoided if the firm were to cease the activity in question over the relevant time period. They include both the fixed and variable costs of the activity in question, but do not include common and sunk costs.

[12] The Commission took this position in ECS/AKZO, OJ L 374/1 (1985). On appeal, however, the European Court of Justice determined that predatory pricing does not require below-cost pricing. AKZO Chemie BV v. Commission, Case C-62/86 [1991] ECR I 3359: [1993] 5 CMLR 215.

[13] See Oxera (2000), 'Price Discrimination and Competition', *Utilities Journal*, October for a discussion of these.

equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage'.

In its United Brands (1978) and Hoffmann-La Roche (1979) decisions, the ECJ explicitly established that secondary-line injury is the relevant criterion for applying Article 82(2)(c).[14] In United Brands[15], the Court found that price discrimination between national markets by the dominant supplier of bananas in Europe placed certain downstream distributors at a competitive disadvantage. In Hoffman-La Roche[16], the Commission held that the firm had abused its dominant position by offering loyalty rebates to customers and by granting discounts to those customers that took the whole range of vitamins offered by the company.

[14] E.C.R. 207; [1978] 1 C.M.L.R. 429, and Case 85/76 *Hoffmann-La Roche & Co AG v. Commission* [1979] ECR 461, [1979] 3 CMLR 211.
[15] Case 27/76 *United Brands v. Commission* [1978].
[16] Case 81/76 [1979] ECR 461.

# 4 BW's approach to price discrimination

In much the same way as a car is required to have a road fund licence, BW requires boat users to purchase a licence from it to use their boats on its network of canals and other inland waterways. The licence fee allows unlimited use of the waterway network in return for this annual fee—it is therefore not directly related to the intensity of use of the canal network. BW charges a variety of annual licence fees depending on the specific characteristics of the user; therefore, BW's licence fee is an example of third-degree price discrimination (see section 2.1).

The following sections briefly outline BW's current licence fee policy, analyse the recent adverse finding by the Waterway's Ombudsman, and assess the general defensibility of BW's current policy.

## 4.1 BW's April 2004 licence fee policy

BW currently offers two classes of boat-user licence: private pleasure boat licences, and business licences. There are three main sub-types of business licence: the leisure business licence and the trading licence for shops/stores/workshops (which are the same price but have different discounts that can be applied to them), and the trading licence for cargo carrying (which is substantially cheaper than either of the other business licences). All types of licence are charged on a length basis (longer boats pay more than shorter ones). A number of alternative tariff structures were considered by BW in its 2003 review of licence fees including:[17]

- a uniform charge for all users;
- payment based on actual use;
- payment according to the value of the boat as a proxy for ability/willingness to pay.

BW concluded that the benefit of each of these models over the pre-existing structure of charging by length were not sufficient to outweigh the costs of change.

The private licence type is considerably cheaper than the business alternative, but has several restrictions of use:

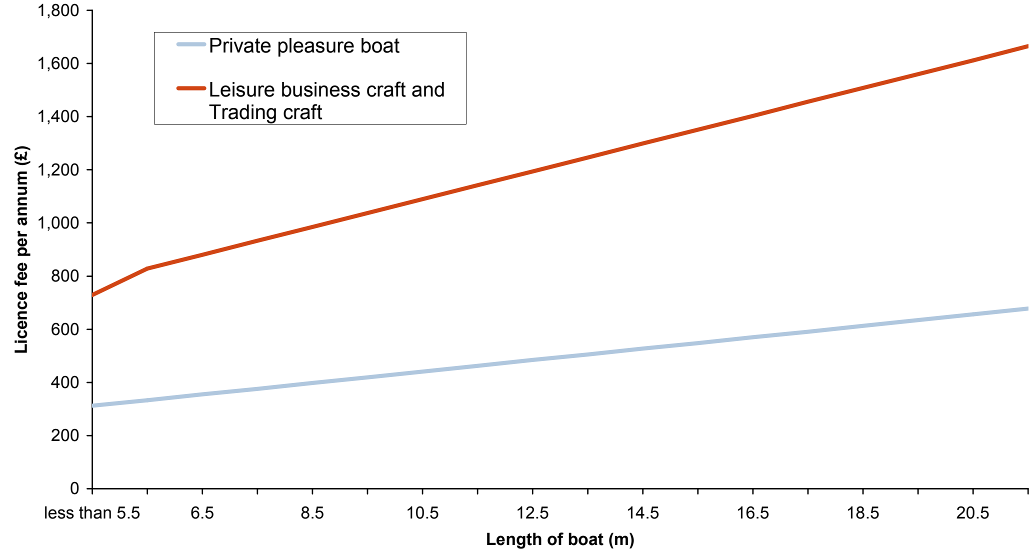
> The [private pleasure] Licences in this booklet allow you to keep and use a Boat on our Waterway for pleasure or personal residential use for periods of three, six or twelve months.
>
> The Private Pleasure Boat Licence does not permit you to operate the Boat for hire, for carrying goods or passengers for payment, or for any other commercial purpose. These activities require a British Waterways Business Licence.
>
> If the Boat is operated by a local authority, social club, charity, time-share, commercially managed shared ownership scheme or other similar group, it must have a Business Licence (there is a discount for charities).[18]

[17] BW (2003), 'Reviews of Craft Licensing: Final Report and Conclusions'.

[18] BW (2004), 'Private Pleasure Boat Long Term Licences: Fees and Conditions', para 2.

Figure 4.1 shows graphically how the licence fee varies by the length of boat for the different types of licence.

**Figure 4.1 Licence fees by boat length**




Source: BW (2004), 'Private Pleasure Boat Long Term Licences: Fees and Conditions', BW (2004), 'Business Licences: Fees and Conditions'.

A range of discounts on the various licence types are offered. These are set out and described in the table below.

## Table 4.1 Discounts on the licence fees

| Discount name | Applicable to private licence? | Applicable to leisure business licence? | Applicable to trading licence? | Description |
|---|---|---|---|---|
| Prompt payment | Yes | Yes | Yes | A 10% discount applies if payment is made promptly. Oxera understands that a large majority of users qualify for this discount |
| Disconnected waterway | Yes | Yes | Yes | A 25% discount applies to boats that are to be used solely on the small number of canals that are disconnected from the main network |
| Powered portable craft | Yes | No | No | A 50% discount applies if the boat is less than 5m long and has a small engine (no larger than 4bhp on canals, and 10bhp on rivers) |
| Electric motor | Yes | Yes | Yes | A 25% discount applies if the boat has an electric motor |
| Historic boat | Yes | Yes | Yes | A 10% discount is offered if the Waterway services Manager considers the boat to be in good condition, built before 1948 and have inland waterway heritage relevance |
| Unpowered butty | Yes | Yes | Yes | A 50% discount is offered if the boat is over 50 feet long, is unpowered and never travels separately from a motor boat |
| Scottish licence holder | Yes | No | No | A 10% discount applies if the boat already has a licence for using Scottish waterways |
| River only usage | Yes | Yes | No | A 40% discount is offered if the boat is only to be used on rivers and not canals. This discount is required by statute. |
| Day hire | n/a | Yes | No | A 50% discount is offered if the boat has no overnight accommodation on board |
| Day hire without use of locks | n/a | Yes | No | The previous discount may be increased to 75% if no locks are to be used, subject to the discretion of the Waterways Services Manager |
| Unpowered craft for hire by the day or hour | n/a | Yes | No | A 90% discount applies if the boat is not powered and has no overnight accommodation |
| Craft operated for charitable purposes | n/a | Yes | No | A 60% discount is offered if the boat is used for charitable purposes. This requires that any charges levied are only to cover the costs of the trips taken |
| Shop, store or workshop small turnover discount | n/a | Yes | Yes | A 56% discount applies if the business has a turnover of less than £45,000 per annum |
| Calculation of total discount | Yes | Yes | Yes | If more than one discount applies, multiple discounts are applied on a declining balance basis |

Sources: BW (2004), 'Private Pleasure Boat Long Term Licences: Fees and Conditions'; BW (2004), 'Business Licences: Fees and Conditions', discussions with Sally Ash, BW, and Oxera analysis.

## 4.2 The Waterways' Ombudsman decision

In 2004, the Waterways' Ombudsman investigated a complaint by a user about the structure of BW's boat licence fees. The Waterways' Ombudsman found against BW in December 2004 as he considered that it was inequitable that a particular co-owned boat (Copperkins II) was required to have a business licence because it was managed by a commercial boat share company (Ownerships) when other similar co-owned craft, which are managed by private individuals rather than companies, are only required to have a private-user licence.[19] The Ombudsman stated that:

> It is hard to see how it can be fair to charge co-owners in Mrs Street's position the rate for a business licence, but make no attempt to make the same charge to people who are essentially in the same position as she is except that the management of the boat is presumably carried out by one or more of the co-owners and not contracted out.(para 5.2.7)

The Ombudsman went on to state that:

> It appears to me that all co-owners of boats should in principle be in the same position. (para 5.2.8)

This second statement suggests that the Ombudsman sees an equality between similar user types. However, other statements by the Ombudsman indicate that he accepts that charging different prices to different types of user is acceptable:

> BW's 'Review of Craft Licensing—Final Report and Conclusions' said in paragraph 2.1(b) 'Higher fees will continue to be payable for craft *used* [my italics] for business purposes.' I see nothing unfair about that. (para 5.2.2)

Finally, the Ombudsman also makes one, somewhat confusing statement:

> [Copperkins II] is not used for business purposes. The boat is used for private purposes of the co-owners. (para 5.2.5)

It is not clear from this statement if a range of other boats are *used* for private purposes; for example, hire boats are *used* by private individuals, but are owned, maintained and managed by a private company.

## 4.3 Defensibility of current policy

As was noted at the end of section 2, there are two elements to assessing the defensibility of BW's price discrimination. The first stage is to identify which charges are varied as a result of differences in the costs of serving particular customer groups, and therefore which charges require a cost-reflective justification rather than price-discrimination justification. The second stage is to examine those areas where price discrimination is occurring, and assess whether they are defensible in terms of their positive impact on consumer welfare. In other words this means assessing whether price discrimination allows selling licences to consumers with a relatively lower willingness, or ability, to pay for the licence.

### 4.3.1 Cost-based differences

The costs of serving different customer groups are likely to be highly correlated with the intensity of use of the network; more use equates with more wear and tear on the banks, and

[19] Waterways Ombudsman (2004), 'Complaint by Mrs Ann Street against British Waterways ('BW'): Decision', December 15th, para 5.2.7.

more water running through locks. However, it is worth noting that while this is likely to be the case at an aggregate level, the marginal impact of individual user actions are likely to be relatively small.

Business licence holders, such as residential hire boats, are likely to use the waterway network quite intensively, since a new group of customers uses the boat each week. In contrast, private users are likely to use the waterway less intensively, since it is used by only one group of people. Some of BW's discounts may also be justifiable under this approach. For example, a discount of 50% is offered for day-hire boats, which is increased to 75% if locks are not going to be used, thus reducing the wear on the lock gates, and reducing the amount of water supply required for the canal.

#### 4.3.2 Willingness-to-pay justification

Once the cost-based differences in charges have been identified, the remainder of the differences can be treated as pure price discrimination. From an economic efficiency standpoint, the key justification for price discrimination is to recover fixed costs with the minimum level of distortion. This is clearly relevant to BW since the company has a high proportion of fixed costs, as it must meet its statutory obligations to maintain the canal network in a safe and usable condition. This implies that prices (and hence a price-discrimination policy) should be based on the elasticities/willingness to pay of the individuals being charged; those with an inelastic demand/high willingness to pay should pay more. Basing prices on the elasticity may also have a positive impact on welfare, as consumers with lower willingness to pay have access to the licence, which would not be the case if a single price were charged. Each of BW's current price-discrimination elements can be considered in this way.

For example, there is likely to be a substantially greater willingness to pay on the part of businesses than leisure users, and hence charging business users a greater licence fee seems appropriate. A similar argument can be made for the approach of using length of boat as a mechanism for partially determining the charge, since this may be a proxy for the value of the boat, which in turn may be a proxy for the willingness to pay of the user. However, the scale of the difference in price charged for these different licence types is less easily justified; to assess this, one would need some measure of the difference between the elasticity of demand for boating by business versus leisure users, and so on.

Similarly, in the Waterways Ombudsman case, using the willingness-to-pay approach may also raise some problems as it is difficult to establish the differences between commercially managed and non-commercially managed timeshare boat users. Both 'types' of consumer are using the boat for the same purpose (ie, leisure) and it is likely that they are using boats of similar length. The main difference is that some users prefer to outsource the management of the boat and this might not necessarily mean that they have a higher willingness to pay. Indeed, some time-share boat users could prefer to have their boats managed commercially because they have compared the costs and realised that using this method is cheaper than managing the boats themselves. For example, a firm specialising in providing these services might be able to offer cheaper repairs if it knows in advance that it will be servicing many boats. In addition, if there is not a general, discernible type of behaviour, it would be difficult to reach any conclusions in relation to willingness to pay. Under these circumstances, charging higher fees to commercially managed time-share users could be considered an exploitative practice.

Table 4.2 examines each of the aspects of BW's pricing policy and assigns them to either the cost-based approach or the price-discrimination approach. The table also includes suggestions for evidence that could be used to justify the existing policy, and highlights areas that are likely to be problematic.

### Table 4.2 Review of pricing policies

| | Description | Problematic? | Potential justification | Comment/suggestions for useful evidence |
|---|---|---|---|---|
| **Main pricing brackets** | | | | |
| Low price for leisure, higher price for business | The business licence costs around 2.4 times the standard leisure licence | Unlikely | Ramsey pricing and cost-based | Willingness to pay/price elasticity of demand data on business versus leisure users<br><br>Evidence on the relative intensity of use of each user type—eg, do hire boats use the network more intensively than private users? |
| Discount for freight | Cargo-carrying craft qualify for a discount of more than 50% on the standard business licence | Unlikely | Ramsey pricing and externalities | Willingness-to-pay information for freight users relative to other business users. This could be based on the relative costs of using waterway transport relative to alternatives, such as road and rail<br><br>Evidence that the policy is based on a desire to encourage modal shift from road to waterways—there is also precedent for this freight-charging approach on the GB rail network to encourage model switching |
| Longer boats costs more | Under all licence types, longer boats pay more than shorter ones | Unlikely | Ramsey pricing | Information on the relationship between the length of the boat and its price—if there is a substantially positive relationship, likely to be indicative of a higher willingness to pay |
| **Discounts** | | | | |
| Prompt payment | A 10% discount applies if payment is made promptly. Oxera understands that a large majority of users qualify for this discount | Unlikely | Cost-based | Evidence on the costs of late payment to BW, including its inability to levy fines against non-payers |
| Disconnected waterway | A 25% discount applies to boats that are to be used solely on the small number of canals that are disconnected from the main network | Unlikely | Cost-based and Ramsey pricing | Since users derive no benefit, and impose no costs on the core network, there is an argument that they should not be required to pay for it. Instead, they should only be required to pay for the upkeep of the section of waterway they use. therefore data on the costs of maintaining and operating these disconnected waterways could help justify this discount<br><br>Willingness to pay/price elasticity of demand data on connected versus unconnected canal users<br><br>This is a recently introduced discount, so evidence on the growth in licences issued since the implementation of the discount relative to other areas |

| | Description | Problematic? | Potential justification | Comment/suggestions for useful evidence |
|---|---|---|---|---|
| Powered portable craft | A 50% discount applies if the boat is less than 5m long and has a small engine (no larger than 4bhp on canals, and 10bhp on rivers) | Unlikely | Ramsey pricing | Evidence on the way in which these craft are used—eg, are they usually used in tandem with an unpowered butty? If so, it suggests a similar willingness to pay as an equivalently sized powered-boat user |
| Electric motor | A 25% discount applies if the boat has an electric motor | Unlikely | Externalities | Evidence on whole-life environmental externalities from electric traction—ie, is it lower than equivalent fossil fuel traction |
| Historic boat | A 10% discount is offered if the Waterway services Manager considers the boat to be in good condition, built before 1948 and have inland waterway heritage relevance | Unlikely | Externalities | Evidence on the positive externality that heritage boats create for the waterways environment. Potential precedent exists for a heritage discount—the UK's road fund licence fee is not required for cars built before 1973 |
| Unpowered butty | A 50% discount is offered if the boat is over 50 feet long, is unpowered and never travels separately from a motor boat | Unlikely | Ramsey pricing | Evidence on the use of these boats with powered portable craft, or with other powered craft (see comment on powered portable craft above). Also, evidence on the willingness to pay of these users relative to equivalent powered craft |
| Scottish licence holder | A 10% discount applies if the boat already has a licence for using Scottish waterways | Unlikely | Ramsey pricing | Users who already hold a Scottish licence are likely to have a lower willingness to pay to also use the England and Wales canal network with the same boat; any evidence on the numbers of such users would be useful |
| River-only usage | A 40% discount is offered is the boat is only to be used on rivers and not canals. This discount is required by statute | No | Government fiat | Required to offer this discount because of government legislation |
| Day hire | A 50% discount is offered if the boat has no overnight accommodation on board | Unlikely | Ramsey pricing | Evidence that the willingness to pay of day-hire users is substantially less per day than of overnight hire users–for example, lower daily hire rates and/or less frequent usage<br><br>Initial review of offers available via the Internet suggests day-hire boats cost in the region of £100 per day, while overnight hire boats cost in the region of £100–£200 per day depending on the number of berths on a weekly hire basis.[1] |

| | Description | Problematic? | Potential justification | Comment/suggestions for useful evidence |
|---|---|---|---|---|
| Day hire without use of locks | The previous discount may be increased to 75% if no locks are to be used, subject to the discretion of the Waterways Services Manager | Unlikely | Ramsey pricing and cost-based | Information on the locations where this discount has generally been taken up to assess whether a willingness to pay or a cost-based argument is more plausible—if it is in locations where there are few/no locks, a cost-based argument may be stronger<br><br>Information on the costs avoided from reduced usage of locks, eg, long-run marginal cost (LRMC) of water resources. Ofwat estimates of the LRMC of water companies across the country suggest a resource price of around 20–50p/m$^3$[2]<br><br>Information on the willingness to pay of non-lock day-hire users versus lock day-hire users |
| Unpowered craft for hire by the day or hour | A 90% discount applies if the boat is not powered and has no overnight accommodation | Unlikely | Ramsey pricing | Evidence that the willingness to pay of non-powered day hire users is substantially less per day than other hire users—for example, lower daily hire rates and/or less frequent usage |
| Craft operated for charitable purposes | A 60% discount is offered if the boat is used for charitable purposes. This requires that any charges that are levied are only to cover the costs of the trips taken | Unlikely | Ramsey pricing | Evidence that the willingness to pay of charitable users is substantially less than equivalent non-charitable users |
| Shop, store or workshop small turnover discount | A 56% discount applies if the business has a turnover of less than £45,000 per annum | Unlikely | Ramsey pricing | Evidence on the willingness to pay of small businesses relative to that of equivalent larger businesses |

| | Description | Problematic? | Potential justification | Comment/suggestions for useful evidence |
|---|---|---|---|---|
| **Terms and conditions** | | | | |
| Commercially managed boat-share agreements | These pay the leisure business rate, while personally managed boat-share agreements pay the private-user rate | Possible | | Unclear why the willingness to pay, or costs imposed by users of commercially managed boat-share agreements are substantially different from those of privately managed boat-share agreements<br>However, there are two possible arguments that may be useful if data is available:<br>a) commercially managed boat shares might allow more frequent/intensive usage of the canal, and hence there may be a cost-based and willingness-to-pay argument that can be developed<br>b) if commercial providers of shared boats operate at a substantial scale, effective cost of managing the boat falls, and hence the willingness to pay for a licence may rise commensurately since demand is unchanged |
| Local authorities, social clubs, charities and time-share users must have a business licence | | Unlikely | Ramsey pricing and possibly cost-reflective | Evidence on willingness to pay of these groups; they all seem to fall into the multi-user bracket. Therefore, evidence on multi-user boats' willingness to pay may be sufficient. Currently offer a charity discount (see above) to take into account their possibly lower willingness to pay<br>If there is evidence of substantially varying intensities of use across these different categories, a cost-based argument could be developed |

Sources: [1] See, for example, www.boatingdays.co.uk and www.stokeontrentmarina.co.uk. [2] Ofwat (undated), 'Current estimates of LRMC', report part B, p. 27

# 5 Conclusions

This paper has examined the theory of price discrimination and how this theory is put into practice by competition authorities and sectoral regulators. In examining BW's existing boat-user licence pricing policy, it found that, provided evidence can be produced on issues such as the costs that certain user groups impose on the network and the willingness to pay/price elasticity of demand for different user groups, the majority of BW's pricing practices are likely to be defensible. However, BW's practice of differentiating between commercially managed boat-share agreements and those managed by private individuals does not seem defensible. Despite this, depending on the characteristics of boat-share users, there is likely to be a robust case for treating boat-share customers (irrespective of the way they are managed) differently from individual users and/or other business users—for example, by charging all boat-share agreement users for a business licence if they have similar characteristics to hire-boat users.

**Oxera**
Blue Boar Court
Alfred Street
Oxford OX1 4EH
United Kingdom

Tel: +44 (0) 1865 253 000
Fax: +44 (0) 1865 251 172

www.oxera.co.uk