Recent Developments in the Definition of Abusive Pricing in European Competition Policy

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Abstract

The Akzo and Tetra Pak II judgements specify precise upper and lower bound threshold tests for predatory pricing but the European Commission and the guidelines to the 1998 Competition Act have recently explicitly sought to change the Akzo ruling. This paper provides an overview of the major change that has occurred in economic thinking on predatory pricing in the last twenty years and, in the light of this, assesses the proposals and suggests an alternative. It is argued that there are significant contradictions between the new positions of the Commission and the UK, that the approaches leave important questions unanswered and, crucially, they are moving competition law in the opposite direction to modern economic thinking. The paper also considers the price squeeze test. It outlines problems that arise as a soon as one jumps out of the simple single product world identified by the European Commission's notice. Three of the most important problems are considered and solutions suggested. These are the interpretation of discriminatory pricing in this context, the problem with unmetered access to products and the impact of common costs at the retail level.

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1. Introduction

Predatory pricing, the adoption of price cuts that are ultimately beneficial because they induce exit of a competitor, has received considerable attention from economists in recent years. The main focus has been to elucidate why predation can be a successful and sensible strategy in the presence of imperfect information. In contrast to the growing economic literature on predatory pricing, there is limited case law in Europe. In European competition law the core case that defines predation is the AKZO Chemie BV versus the Commission case contested in the 1980s and reaffirmed in Tetra Pak II. More recently the Commission has explicitly sought to change the test for predation and this has been echoed and extended in the guidelines to the UK's 1998 Competition Act. The changes have arisen in the context of a telecommunications but both the Commission and the UK guidelines are clear that they view these changes as relevant in a far broader context.

The Akzo judgement identified upper and lower cost thresholds for tests of predation. The Commission identify incremental cost as the relevant lower threshold in the presence of common costs, which is a natural extension of the Akzo judgement, but explicitly adopt a longer time period to define the incremental cost than that implicit in the 'average variable cost' rule. The guidelines in the UK Competition Act identify an even longer time frame than the Commission's. Neither party explicitly considers the implications for the upper threshold.

In the last ten to twenty years a big change has take place in economic thinking on predatory pricing. The strategic basis and logical feasibility has undergone a rigorous rethink arising from developments of game theory and a deeper understanding of the role of imperfect information. This paper summarises this change (Section I.1), then assesses the Commission's and the UK position (Sections I.2 –I.4) and provides an alternative (I.5). It is argued that there are significant contradictions between the new positions of the Commission and the UK, that the approaches leave important questions unanswered and, crucially, the Commission and the UK are moving in the opposite direction to modern economic thinking.

In the same notice that outlines the new stance on predation, the Commission also outline in some detail how a price squeeze should be treated as a form of abusive pricing. This is discussed in some detail here and in particular how it interrelates to the question of what should be the appropriate test of discrimination to apply in conjunction with a price squeeze test. In addition, how to deal with unmetered provision and common costs at the retail level are considered.

I. Predatory pricing

I 1 The economics of predatory pricing

I 1.1 Background

Economists typically define predatory pricing as the adoption of price cuts that are ultimately beneficial because it induces exit of a competitor.[1] The traditional Chicago view, which was popular amongst economists for many years, has suggested that it is unlikely to be rational to engage in predatory pricing because of the high cost involved. If a company can be removed from the market either by a price war or by take-over, economists (see for example, McGee's influential paper[2]) have argued that the victorious firm will be far worse off engaging in a price war than purchase. One argument is that the initiation of a price war will be accompanied by a shift in sales away from the entrant to the predator's product. Of course, this is the intention but, providing the rival makes an 'economic' response in its price, the company initiating the predatory behaviour will be accumulating greater losses that the competitor that it seeks to drive out. The incumbent not only needs to have deeper pockets than its rivals do but sufficiently deeper to absorb the greater loss. Another line of argument is that if the predator chooses to merge with or acquire a rival then the beneficial profit flow will begin at once. In contrast, with predatory pricing the incumbent must first incur losses before gaining no greater flow of profit than under the alternative scenario. Clearly, merging appears to be a more profitable option and the 'old' argument runs that is likely to be observed only where more sensible options are unavailable.

Even when merger is not available, doubts were cast on the deep pockets approach as a solution. The line of reasoning is that if the competitor's product is as good as the predator then why should the competitor be the one to exit? Capital markets and long run investors should be willing to fund an otherwise sound firm against a predator who is likely to be losing at least as much money through the process. The general

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[1] See, for example, Martin, Stephen, *Advanced Industrial Economics*,1993 and Tirole, Jean, *The Theory of Industrial Organization*, 1988

[2] See, for example, McGee, J., Predatory Price Cutting: The Standard Oil (NJ) Case, *Journal of Law and Economics*, 1958 and McGee, J., Predatory Pricing Revisited, *Journal of Law and Economics,* 1980 for a statement of the traditional Chicago view

conclusion was that predation is difficult to justify as a sensible strategy and one would not expect to observe it often in practice.

In the last ten to twenty years, however, a big change has take place in economic thinking. The strategic basis and logical feasibility of predatory pricing has undergone a rigorous rethink arising from developments of game theory and a deeper understanding of the role of imperfect information. As a result, economists have been able to resolve the theoretical inconsistencies in predatory pricing behaviour and have developed a coherent framework that identifies predation as a plausible strategy. The analysis mostly falls into two categories; I term these financial distress-incentive approaches and signalling-type approaches.

I 1.2 Financial distress-incentive models
The financial distress-incentive models are the modern equivalent of 'deep pockets' arguments but are subtler and provide clearer insight into how predatory pricing might work.[3] The central notion that separates the modern framework from the traditional deep pockets approach concerns the emphasis on the way that financial distress distorts incentives and affects behaviour. For example, debtors have superior information about their strategy than their funders and this absence of symmetric information makes lenders quite wary of the potential latitude available to borrowers. In particular, once debt levels become high, a debtor has an incentive to adopt a more risky strategy than otherwise since with limited liability it is the bank that picks up the loss in 'bad' outcomes whereas the shareholders capture the profit (after debt repayments) in the good outcomes. A lender with limited information relative to owners and management has bounded ability to monitor changes in the business and will find it hard to know when a firm shifts to a more risky strategy. In the extreme the situation can be completely destructive. For example, there are many real world examples of owners and managers of high debt companies adopting very risky, sometimes illegal, strategies as a last ditch attempt to swing the situation around.

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[3] See Bolton and Scharfstein, *A Theory of Predation Based on Agency Problems in Financial Contracting*, American Economic Review, March 1990, for a thorough analysis of this problem.

This is an example of a problem which economists call 'moral hazard' or 'hidden action'. It is a major problem in insurance markets where the insuree's incentives to avoid theft of or damage to the insured item becomes dulled once full insurance is in place. The industry deals with the problem by generally avoiding full insurance solutions (e.g., the extensive use of no claims discounts). That is, and inefficiency has to arise because of the hidden action since it is no longer sensible to offer the same contract that could be offered in the absence of hidden actions. The same problem arises in the context here. The lender cannot fully observe the actions of owners and management but knows that the greater the distress the more attractive risky strategies appear. In the absence of complete monitoring the natural way for lenders to protect themselves is by writing incentive contracts to borrowers that recognise and seek to minimise the problem. The ultimate sanction that the lender has is to foreclose on the loan if debt levels become too high and it is often in the interests of the lender to impose and execute these rules. That is, the lender may foreclose on an apparently 'sound' firm not because the product becomes less good, nor because too much money is at stake but because there is no other way of avoiding the incentives that may distort the behaviour of the borrower.

A central insight of this research is that the 'normal' approach of dealing with greater risk, that of raising interest rates to offset the riskiness of debt, does not work in these situations. It merely exacerbates the underlying financial distress and increases the distortionary incentives on owners and managers. In similar vein as the inability to offer the best contract in the insurance examples, it is not efficient for the debt market to offer the same contract that could be offered in the absence of hidden actions. This inefficiency falls on firms that for reasons that are independent of the quality of their product end up with high debt levels.

The financial incentive-distress approach provides insight into when the incumbent faced with a rival may be able to create a situation where the rival's debtors withdraw funds. The approach shows that it is not the depth of the incumbent's pockets that matter but the impact that debt has on the entrant's incentives. Where monitoring of the entrant's strategies is easy there will be limited scope for predation. Where it is difficult for the debt holder to assess the behaviour of the entrant the problem becomes

severe. If the incumbent is large, the target is small and its lenders have limited information then the incumbent is likely to be able to fund a predatory pricing strategy.

The focus on incentives shows that the greater the asymmetry of information between the company and the lender the stronger are the lender's incentives to pull the plug rather than run with the risk. So small firms with little past track record and those that have adopted unproven, difficult to monitor technologies appear most vulnerable to this type of predation. The implication is that predatory pricing is far more likely to be successful if the target's product is new or innovative in some way (since this increases the problems of the lender monitoring the behaviour of the borrower); particularly if the company has no track record and little reputation to protect. Thus an unfortunate conclusion is that this type of predatory pricing may be particularly successful against the small firms that have the most competitive and threatening products.

I 1.3 Signalling-type models
The other important group of 'new' approaches concerns signalling; an incumbent may use price below cost to signal its strength, manipulate competitors into thinking that its costs are lower than they really are or to signal a reputation for predation. However, it may also be possible that the incumbent is pricing below cost to make it harder for new entrants to understand their own ability to survive in the market and hence to encourage premature exit. In this case the incumbent is not signalling but acting to damage the entrant's signals (so-called signal jamming).

If incumbents have better information about their costs than entrants then the incumbent can attempt to signal to new and potential entrant's that its costs are low. A signal must by its nature be costly or otherwise there is nothing to prevent a firm with higher costs also trying to show that its costs are low. So the firm with the lowest costs signals its position by adopting a strategy that is so costly that it would not be able to do so unless its costs really are lower than other firms are. Entrants or potential entrants will recognise that given their own costs the gains from the low price (i.e. higher profits later) would not be sufficient to justify the incumbent's price so they infer that the incumbent must indeed have lower costs. If entrants are unsure about the strategy of the incumbent then the incumbent can signal to create a reputation. Indeed,

potential entrants may choose not to enter in the face of a small amount of uncertainty about the incumbent's intentions and potential behaviour. These can be thought of as modern versions of the traditional limit pricing approach but the difference is that economists now have better understanding of how lower prices can be chosen to signal misleading-information about costs.[4] Clearly, the strategy may be better at preventing entry than inducing exit since once a firm is in the industry it has its own technology to help informs it about what the costs may be like elsewhere in the industry.

Once there is entry then there is an incentive for the incumbent to prevent the entrant from obtaining a good estimate of its own position in the industry. Entrants will use their initial profitability in a market as input into their estimate of their long run viability in the sector. The incumbent has an incentive to 'jam' the signal and ensure that the entrant's initial profit is lower than would otherwise be the case.[5] The entrant may well be aware that the incumbent has an incentive to do this and can take this into account. But, without full knowledge of the market and the incumbent's costs, the entrant's decision to stay rather than exit when faced with initial losses is still more risky with signal jamming than without, making the certain return associated with exit more attractive than would otherwise be the case. These models suggest that new entrants are most vulnerable to signalling disruptions since those that have been present in a market for many years will have better ideas of their position in the market and their competitors costs.

I 1.4 Conclusion

These 'new' economic approaches to predatory pricing provide insights into where and why predatory pricing is likely to be successful. Taken together the signalling and financial distress-incentive approaches suggest that predation is more likely to be successful when a firm newly enters a market and when the entrant has limited information about costs. Small, newly arrived, innovative firms also appear particularly vulnerable. Firms that are larger, have been in the industry for some time, have simple product ranges and limited opportunities are less exposed. In the light of

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[4] See Milgrom and Roberts, *Limit Pricing and Entry under Incomplete Information*, Econometrica, Vol. 50, March 1982

these developments in the last twenty years economists are now far more receptive to the notion that predation is a plausible strategy to eliminate small firms in a market.

There is also a strong message for competition law in this 'new' approach. It suggests that a strategy of simply reducing price and hoping to eliminate a competitor is not sensible. Exit comes about because of the subtle interaction and messages between the parties. Assuming rationality on behalf of the predator, it implies one may learn as much about the intention or lack of intention of predation by considering the interrelations and strategic behaviour. It suggests that the answer to the question whether a predatory plan is plausible or not may be at least as well informed by a consideration of the form of companies, interrelationships between parties and strategic behaviour as by a cost comparison.

I 2 Current EC and UK law and guidelines

I 2.1 Areeda-Turner

It is useful to briefly summarise the Areeda-Turner test that has had such a significant impact particularly in US courts.[6] They argue that prices below short run marginal cost are a sign of predatory pricing since, starting from this position, any reduction in sales caused by raising price will increase the profit of the company. Marginal cost, however, is notoriously hard to calculate so they suggested the use of average variable cost as a good approximation. Thus the Areeda-Turner rule is that price below average variable cost is unlawful and price above average variable cost is generally considered safe ground. Of course, average variable cost can deviate significantly from marginal cost therefore it may not always be a good proxy for marginal cost. It is possible, however, to argue that average variable cost is a sensible cost test in its own right. If price is below average variable cost then a firm will raise profitability by removing the product from its product line.

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[5] For example, Fudenberg and Tirole, *A "signal-jamming" theory of predation*, Rand Journal of Economics, Vol. 17, No. 3, Autumn 1986.

[6] See Areeda and Turner 'Predatory Pricing and Related Practices under Section 2 of the Sherman Act: A Comment' 88 Harv L Rev 697 (1975). Note, however, that recently the Brooke decision (Brooke Group v. Brown & Williamson Tobacco, 509 U.S. 209 (1993)), which emphasises recoupment as well as short run cost tests, has also been quite influential in recent years. In contrast, recoupment is not central to the 1998 Competition Act (See Office of Fair Trading 'The Competition Act 1998: The Chapter II Prohibition', paragraph 4.30, OFT 402).

I 2.2 AKZO Chemie BV versus the Commission

Despite the large economic literature on predatory pricing and the considerable case law in the US, there is limited case law in Europe. In European competition law the core case that defines predation is AKZO Chemie BV versus the Commission.[7] ECS, a small UK firm supplying benzoyl peroxide in the UK for the purpose of bleaching flour, decided to enter other markets supplied AKZO, a large Dutch chemical company. Akzo flagged to ECS its intention to reduce its prices if ECS did not restrict its presence to its traditional market. In the absence of the required response by ECS AKZO reduced price. They were ultimately found guilty and fined 10m ECUs. In this case the Court of Justice conclude:

> "Prices below average variable costs (that is to say, those which vary depending on the quantities produced) by means of which a dominant undertaking seeks to eliminate a competitor must be regarded as abusive. A dominant undertaking has no interest in applying such prices except that of eliminating competitors so as to enable it subsequently to raise its prices by taking advantage of its monopolistic position, since each sale generates a loss, namely the total amount of the fixed costs (that is to say, those which remain constant regardless of the quantities produced) and, at least, part of the variable costs relating to the unit produced.
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> Moreover, prices below average total costs, that is to say, fixed costs plus variable costs, but above average variable costs, must be regarded as abusive if they are determined as part of a plan for eliminating a competitor. Such prices can drive from the market undertakings which are perhaps as efficient as the dominant undertaking but which, because of their smaller financial resources, are incapable of withstanding the competition waged against them."[8]

That is, the Akzo 'test' provides a lower and upper threshold and identifies three ranges:

(i) price below average variable cost: almost certainly indicative of predatory pricing.

(ii) price above average variable cost but below average total cost: not indicative of predation unless the price is part of a plan for eliminating competition.

(iii) price above average total cost: generally assumed to be non-predatory.

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[7] Case C-62/86, AKZO Chemie BV v. Commission [1991] ECR I-3359

[8] As the ruling in *Tetra Pak II* (Case T-83/91 Tetra Pak International SA v. Commission [1994] I C.E.C. 34) shows, a case of predatory pricing may be found even when the undertaking has no reasonable prospect of recouping losses made through predatory pricing in the future.

The Court's ruling is very clear on (i) and (ii) but is less clear on whether prices above average total cost can ever be predatory. Martinez[9] has suggested that prices above average variable cost should not be deemed predatory, pointing out that where there is selective pricing above cost aimed at eliminating or punishing a competitor then this could be condemned under Article 82 (86) as discriminatory. Sharpe[10] suggests that a price above average (total) cost may still be predatory, for example, when short run marginal cost is above average total cost. More recently this main thrust of Akzo has been confirmed in Tetra Pak II.

Despite the absence of a formal specification by the Court, the Akzo case indicates that the time frame for the definition of average variable cost is short. This short time frame is consistent with the short run marginal cost basis of the Areeda-Turner test. Indeed, Akzo claimed that the relevant variable costs exclude labour, maintenance, warehousing and dispatching.

The recent changes in UK competition policy 'bring' the Akzo and Tetra Pak II interpretations of predation to the UK. Section 60 of the UK's 1998 Competition Act states that UK competition law should be interpreted in the light of relevant European case law. This suggests that the Akzo judgement should also be the starting point for a definition of predation within the Competition Act. Indeed, at the time of introduction the Minister of State explicitly stated that Akzo and Tetra Pak II would be the relevant test.[11]

I 2.3 The EC's Access Notice and UK guidelines
Akzo was contested in the 1980s and more recently the Commission have explicitly sought to change the test for predation.[12] The change arose in the context of a telecommunications Access Notice but the Commission are clear that this applies to

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[9] Predatory Pricing Literature under European Competition Law: The Akzo Case in *Legal Issues of European Integration* 1993

[10] Predation in *European Competition Law Review* 1987

[11] House of Commons Hansard Debates 11 May 1998.

[12] Notice on the application of competition rules to access agreements in the telecommunications sector, Official Journal of the European Communities, 98/C 265/02

network industries generally. At the same time more dramatic changes to Akzo have been incorporated into the UK's 1998 Competition Act. To clarify these changes it is helpful to elaborate briefly on some specifics of cost structures.

The Akzo 'test' is couched in terms of average cost (total or variable) but this approach is difficult to apply in many industries because of the presence of common costs. Indeed, a point that is not explicitly brought out in discussions of predatory pricing is that the precise traditional approaches do not make sense in any industry with significant common or joint costs. This is because average cost is not defined in these cases. The reason being that the averaging exercise cannot be conducted because there is no unique number to apply in the division. If a firm produces both bicycles and cars and has common costs then, while it is possible to identify total cost or variable cost, it is not possible to add together bicycles and cars and divide to get an average cost.

The economists solution to this problem is to average only those costs that can be attributed specifically to services or products. The approach takes two forms. One is based on the costs that are attributable to a product when that product is added to a company's existing product line. This is incremental cost. The other is to average the total cost of producing a product as a stand-alone activity. This is the stand-alone cost.

The Commission addresses the problem of common costs in the Notice and indicates that they will use incremental cost as the lower threshold for predatory pricing. This is the natural economic approach and sits well with the original Areeda-Turner view. As indicated, Areeda-Turner advocated short run marginal cost as the correct cost test. The use of a short run marginal cost is unaffected by common costs since, as more of a specific product is produced, the common fixed costs are unaffected. If average variable cost is deemed a good proxy for short run marginal cost where there are no common costs then short run incremental cost should be considered a good proxy where there are common costs. In this respect the Commission had no choice but to abandon the average variable cost terminology in the presence of common costs and have shifted to the natural analogue.

At the same time, however, they proposed a far more significant change. The Commission suggests that the explicit introduction of incremental cost will provide a very low price floor for network industries if a short time frame is applied to the average incremental cost.

> 'Cost structures in network industries tend to be quite different from most other industries since the former have much larger common and joint costs. For example, in the case of the provision of telecommunications services, a price which equates to the average variable cost of a service may be substantially lower than the price the operator needs in order to cover the cost of providing the service.'[13]

Indeed, in the Draft of this notice the Commission went as far as to suggest:

> 'However, the average variable cost rule cannot be applied in the telecommunications sector, since the variable costs of providing access to an already existing network are almost zero.'[14].

Their solution is to explicitly reject the short-term approach implicit in Akzo although they also reject the very long run:

> 'in most cases neither the very short nor the very long run are appropriate' (114) and 'the Commission will often need to examine the incremental cost of a service, and may need to examine average incremental costs over a period of longer than one year.'

The Guidelines to the 1998 Competition Act express similar views but these are not related to network industries. The implication in the Competition Act is that the problem can be general but is a particular problem within regulated industries:

> 'Average variable costs may not always be relevant to an analysis of predation, particularly for regulated industries. Such industries may, for example, exhibit economies of scale and scope that can mean that their variable costs may be extremely low, or indeed zero. In such cases, average variable cost may have no relevance to the analysis of predation. Such a cost structure is common to a number of the regulated industries. The sector regulators have generally indicated that they consider that an alternative approach may be required when assessing allegations of predation (within the requirement for consistency with Community law imposed on the Director General

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[13] Notice 98/C 265/02
[14] Draft Notice Com(96) 649

and regulators by section 60 of the Act – see the Competition Act guideline The Major Provisions).[15]

In the context of the telecommunications sector the Oftel guidelines elaborate on this:

'The long run incremental cost measure takes into account the total long run costs (that is, both capital and operating costs) of supplying a specified additional unit of output ('the increment). The increment could be, for example, the provision of a new service. If the price of a service covers all its LRIC, including the costs of capital (and with any common costs being recovered through charges for the undertaking's other services), it will be profitable for the undertaking to offer the service. As the provision of telecommunications services is characterised by high levels of capital costs it will generally be appropriate to use LRIC as the cost base.

In contrast, short run marginal cost, which includes only the short run cost of producing an additional unit of output, excludes capital costs. The use of short run marginal cost as a cost base tends, therefore, to result in prices that are very low. Where the costs of production include a large proportion of costs that do not vary with output, as is the case in telecommunications, the short run marginal cost of an additional unit of output could even be as low as zero. Setting prices in relation to short run marginal cost would therefore tend to underestimate the costs of supplying telecommunications services, whereas prices that are derived from incremental costs reflect the actual costs of supply. Prices that are derived from LRIC should also enable potential new entrants to make informed pricing and investment decisions.'[16]

There is clear conflict between the European Commission's and the UK's position. One conflict is that the scope for application of the extended time frame is different between the UK and EC. It is not obvious that this is an important problem, however, since the set of industries that fall under the category of low short run incremental cost is far larger than either the EC or the UK guidelines suggest. In particular, many e-commerce and information markets appear to have this feature in abundance. Posner points out traditional industries tend to be characterised by multi-plant and multi-firm production implying that economies of scale and scope are limited whereas new economy firms tend to lack these features and are characterised by falling average costs.[17] A recent OFT report indicates that an important issue in e-commerce is not just the joint costs of e-commerce products but the growth of firms with significant joint costs across e commerce and their traditional equivalents.[18] The recent US

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[15] Assessment of Individual Agreements and Conduct, OFT Guidelines to the Competition Act 1998, OFT414

[16] The Application of the Competition Act in the Telecommunications Sector, Oftel, January 2000 Section 7.7 and 7.8

[17] See Posner and Easterbrook's *Antitrust Cases*. (Second Edition, 1981).

[18] Competition in E-commerce: A Joint Oft and Oftel study OFT327 (December 2000)

Microsoft case has also emphasised the low short run incremental cost of products in software markets. Indeed, it is strange that the Commission see the issue as one of telecommunications and network industries, much of which is new economy, while the UK authorities see the problem as one of traditional regulated industries.

The breadth of industries affected by this problem is such that the current lines drawn either by the Commission or the Competition Act guidelines will not be held. For example, it does not seem possible that competition authorities in the UK will be able to sustain a position that treats companies with very low short run marginal costs in regulated industries differently from others displaying this characteristic. In this respect the proposed changes have far greater significance than either the Commission or the OFT suggest. Note, the fact that this is an implication of the current guidelines is a classic example of the difficulties concurrent application of the 1998 Competition Act can cause (see I.4.2 below).

A second and far more significant conflict relates to the relevant time frame that is to replace the traditional average variable cost. LRIC, as applied by Oftel and the European Commission, is explicitly very long run and so its use in the Guidelines runs counter to the Commission's explicit statement that the time frame is not the very long run.[19] This causes immediate consistency problems. Section 60 of the Competition Act requires UK authorities to ensure no inconsistency with the European Court. This leads to one school of thought that the attempt within the UK Guidelines to change the time frame away from the Akzo position is a violation of Section 60. The conflict between the Access Notice and the Guidelines is less severe since the authorities have to follow the weaker approach of having regard to any relevant statement by the Commission; i.e. rather than ensure consistency. However, it is not clear what principle arises in the context of regulated companies that allows the UK authorities to override their regard to the Commission's views.

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[19] There are other problems with using LRIC in this context since the incremental cost is not the conventional increment and LRIC is also forward looking. The Commission tend to talk of LRAIC - see *Communication on Interconnection Pricing* (OJ No L 73, 12.3.1998, p.42) and *Commission Recommendation on Interconnection in a liberalised telecommunications market* (C(97) 3148, 15 October 1997). In this context it is not clear that LRAIC suffers to the same extent.

A more salient point than the purely legal one is whether the new EC approach is an improvement. This discussion will be postponed to Section I.5 since it is easier to assess once the impact on the rest of the 'Akzo test' has been considered.

I 3 An upper threshold with common costs

The comments by the European Commission and the UK Guidelines make it abundantly clear that it is the lower threshold in the 'Akzo test' that is being extended. Both see the problem as one of the average variable cost, or in this case its equivalent, being too low. But the introduction of incremental cost and the change in the time frame have implications for the upper bound. The EC Notice does not discuss this issue but clearly the inability to identify average total cost in the presence of common or joint costs indicates that a decision has to be made as to the equivalent upper cost threshold unless it is to be dropped. In the UK context it is less clear whether this problem has been addressed in the 1998 Competition Act. There are four potential alternatives that could be considered for the upper threshold.

I 3.1 Long run incremental cost

The first is long run incremental cost, i.e., incremental cost when everything is allowed to be variable. How consistent is long run incremental cost with the existing case law? One the one hand there is a clear logic. A price above long run incremental cost is a sustainable long run position since removing the product from the product line will reduce the profitability of the company. This is one of the features any upper bound should possess. Furthermore, this upper cost threshold is simply the very long run (i.e. all costs are variable) equivalent of the lower threshold.

However, there is one respect in which it appears to cut across part of the reasoning behind the Akzo ruling. The upper cost threshold is set at average total cost because prices below this level ought to ensure that an efficient competitor can cover cost and compete:

> 'Such prices (i.e. below average total cost) can drive from the market undertakings
> which are perhaps as efficient as the dominant undertaking but which, because of their

smaller resources, are incapable of withstanding the competition waged against them'
(Judgement, Akzo v. Commission (1991)).

If the upper cost threshold for each product is set at long run incremental cost then it would be possible for a dominant undertaking to set the prices of each product above the upper cost threshold yet an equally efficient competitor could fail to withstand the competition. That is, each price is above the upper threshold but prices in total do not cover all costs. This is a problem where many costs are common; the very cases that the authorities appear to be concerned with. Furthermore, if common costs are significant then the long run incremental cost as well as short run incremental cost may be low. For example, if duct is a major common cost in the delivery of cable television and telephony then this will be true both in the short run and long run.

I 3.2 Long run stand alone cost

In contrast, long run stand-alone cost avoids any difficulty of the upper threshold being too low and of the upper and lower thresholds being squashed together. However, there is a clear problem in that the average total stand-alone cost is likely to be very large, particularly where there are many services with common costs between them. Use of long run stand alone cost as the upper bound does not make much sense. Generally, pricing above stand-alone cost is thought to be a first cut test of excessive pricing and the 1998 Competition Act takes this view. 'The revenues of an undertaking significantly and consistently exceeding its stand-alone cost in a particular activity may indicate that excessive prices have been charged'[20]. It does not make any sense to use the boundary that defines excessive price as the upper cost threshold for predatory pricing since there is no scope for a safe haven above the upper bound for predatory pricing and below the definition for excessive pricing.

I 3.3 Average fully allocated total cost

Fully allocated cost is a compromise between incremental and stand-alone cost. The upper cost threshold could be set at a specified fully allocated level. Average total cost is then calculated as average of the incremental cost and a pre-determined proportion

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[20] See Office of Fair Trading, 'The 1998 Competition Act: Assessment of Individual Agreements and Conduct', paragraph 2.16, OFT 414

of the common costs. This approach satisfies one interpretation of the upper cost threshold given in the Akzo ruling in that if the dominant undertaking sets all prices at the upper cost threshold then an efficient competitor can just survive.   The major disadvantage is that on a product by product basis the upper threshold is arbitrary. There is no logical method for attributing the common costs so there is no economic justification for any specific upper cost threshold.

The obvious problem with a rule of thumb such as this is that different fully allocated costing rules will provide different thresholds for specific services.   The EC, however, has machinery to use in some contexts For example, in telecommunications there are formal cost allocation guidelines within the Open Network Provision (ONP) framework.   Use of the ONP guidelines has the advantage that it is consistent with the Access Notice (which states, 'when appropriate, legislation such as the ONP framework will be used as an aid in the interpretation of the competition rules') and removes the uncertainty concerning the allocation of costs for these purposes. Although the rules within the ONP framework may be arbitrary they can be applied consistently to all telecommunication cases.   However, such rules do not exist for all sectors and so there may be different treatment for activities according to whether that are defined as telecommunications or not.   This is particularly unsatisfactory as the boundaries become more blurred.   Even if consideration is limited to services within a particular sector such as telecommunications, the inevitably arbitrary nature of any allocation of common costs makes such an approach a crude and almost inevitably unacceptable compromise.[21]

I 3.4 Conclusion

Of the three suggestions the use of long run incremental cost appears most sensible. Furthermore, this accords with views expressed elsewhere, for example Joskow and Klevorick, (1979)[22].   There remains one alternative - combinatorial tests.   These tests are very different from those discussed above and provide dissimilar implications.   The combinatorial test route has been explicitly employed in the 1998 Competition Act for

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[21] Note, this may be less of a problem if such rules are used to ring fence regulated services (see I.4.2 below).

[22] A Framework for Analyzing Predatory Pricing Policy, 89 YALE L.J. 213

the telecommunications sector although how it relates to the lower and upper threshold is not perfectly clear.

I 4.   Combinatorial tests

I 4.1 Background

An alternative way to approach the upper cost threshold is to recast it as a "combinatorial test" across groups of services.   The combinatorial test usually takes the form of a sequence of tests where the revenue earned from each service or combination of services must cover the total incremental cost of adding that collection of services to the remaining services.   If there are two products the combinatorial test for the higher cost threshold has three elements - the price of each should cover its own long run incremental cost and the total revenues from both should cover the total cost of both (the latter includes the common cost between the two).   If there are three services then there are far more tests.[23]

The role of combinatorial tests in the Competition Act 1998 is outlined by Oftel in 'The Application of the Competition Act in the Telecommunications Sector':

> '…….However, the existence of economies of scope means that if the prices of each of an undertaking's services are all equal to each service's LRIC, the undertaking will not recover its common costs. To ensure that such a situation could not have an anti-competitive effect, the undertaking would need to be able to demonstrate two things, first, that its individual prices are set at or above LRIC and secondly, that the combined prices of services in groups that share common costs cover both LRIC and

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[23] If there are three services (A, B and C with costs that are common only between A and B, others that are common only between B and C, others that are common only between A and C and finally general common across all three) then the test is as follows.   At the first level the price of each service must cover its average long run incremental cost.   At the next level the price of A and B combined must cover the long run incremental costs of A and B and the costs that are only common between A and B.   The intuitive argument for this continues the basic long run incremental cost rule in that if products A and B are added to a firm producing C then the incremental cost is the sum of the long run incremental cost of A and B plus the costs that are only common to A and B (since these will not have been necessary for a firm only producing C).   Similar rules apply to the prices of A and C taken together and B and C taken together.   Finally the prices of all three must cover all the costs. Combinatorial tests can be alarmingly cumbersome since they require all combinations to be considered. With three services there are seven combinations (the three individual services + three ways of combining two services + the three services taken together).   If there are four services then there are forty-one combinations to consider.   In practice, however, the number of relevant combinations is less since if one wishes to consider whether the firm is charging a predatory price in market A then one need only consider combinations including A.

the common costs of supplying those services. OFTEL usually refers to this as a 'combinatorial' test.' [24]

It is far from clear how this relates to the upper or lower threshold at this point. Since the discussion is in terms of long run costs then the analogy with Akzo should imply this is the upper threshold and, for the present assessment, this is what we consider. The broader assessment in Section I.5 returns to this question.

There are some obvious problems with this approach. For example, the more revenue the firm can extract in one market the easier it will find it to employ 'predatory prices' in another. This is because the more revenue in a market the more likely the firm will pass the overall combination test. Any firm that is able to extract some extra rent in a market would, as a direct result of the combinatorial test, be placed in stronger position to extend its power in other markets where it is dominant. However, the biggest problem arises from the fact that competition law is concerned with preventing abusive behaviour in a particular market whereas combinatorial tests by their nature are broader.

I 4.2 Combinatorial tests over mixed markets
The introduction to Section 7 of the Telecommunications Guidelines of the 1998 Competition Act makes it clear that the section, 7, on abusive pricing and conduct, refers to dominance in the relevant market:

> 'If having defined the relevant market the Director General determines that the undertaking or undertakings in question have market power, he will then consider whether there is a breach of the Chapter I prohibition, which prohibits anti-competitive agreements, and/or the Chapter II prohibition, which prohibits abuses of a dominant position.'

But combinatorial tests, by their very nature, concern many services and these may not be in the same market. It is not obvious that the desire to use combinatorial tests as an upper threshold and the desire to focus on markets where a company is dominant

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[24] See 7.11

can be reconciled.[25]   The problem arises if the company is non-dominant in some markets but is regulated or deemed dominant in others. If a common cost covers some products that are dominant and others that are not, then imposing a combinatorial test of abuse on the dominant market also applies the same restriction on prices where the company is not dominant.[26]   Take a company that is deemed dominant on one market but not in another.   If the individual prices in these markets are above their respective incremental cost floors and the two prices together just cover the combined cost then a combinatorial test applied to these two markets will prevent the company from reducing its price in the non-dominant market unless it also simultaneously raises its price in the dominant market.   This restriction on the price of product in the non-dominant market is exactly the one that would apply if the company were deemed dominant in both markets.   That is, application of a combinatorial test in this context spills the restrictions in the Competition Act on dominant companies over into non-dominant markets. Furthermore, a company may have prices that may initially meet the combinatorial test but fail to do so when conditions change in a market where the firm is not dominant and it has to reduce price. Exactly the same price in the dominant market would now be considered predatory even though the competitors and the conditions in that market have not changed.

This core problem arises because conventional combinatorial tests are not suited to this situation.   They were developed through the desire to improve regulatory price setting rather than for competition law per se.   The regulatory problem is that efficient pricing should reflect demand as well as cost conditions.   Demand conditions change over time and the company is far closer to the market changes than the regulator who will neither be able to set fully efficient prices on a regular basis nor will wish to prevent the company responding to market changes.   Combinatorial tests were devised to provide boundaries for regulated prices to prevent prices from being raised too much in some markets while falling below incremental cost floors in others.   That is, combinatorial tests are attempts to provide restrictions on the price flexibility of monopoly firms.

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[25] Unless the definition of market is to be broadened to a situation where any two services with common costs are deemed automatically to be in the same market.

Combinatorial tests are not suited to the mix of regulated and competitive markets. The problem is how to deal with combinatorial tests when this situation arises. Several possibilities spring to mind. For example, continue to apply combinatorial rules to non-dominant activities, drop combinatorial tests whenever the markets that are spanned by the common cost extend beyond those where a company is dominant, jump from one to the other at some point, adopt some crude rule of thumb or drop combinatorial tests altogether.

Continuing to apply combinatorial rules to non-dominant activities will be particularly onerous where many of the activities covered by a common cost are non-dominant and only a small percentage are dominant. Indeed, in theory it could be feasible for a company with dominance in a small, relatively insignificant market to be so restricted by combinatorial tests that it may exit a market where it is dominant even though it has no intention of abusing that position. Dropping combinatorial tests whenever the markets extend beyond those where a company is dominant is not appropriate either. This could herald a dramatic shift in approved price floors simply as a result of a shift in a small market

There are various ways forward. One could take the view that combinatorial tests are inappropriate in competition policy and should be left as a tool for regulation through licences. This can be achieved either by dropping the whole idea of combinatorial tests whenever the services covered spill beyond those explicitly regulated, alternatively leaving their precise role for regulated services to regulatory discretion or adopting a compromise benchmark for regulated services. Regulatory discretion generates uncertainty and may result in inconsistencies but it is not clear that compromise benchmarks are easy to devise since, as indicated in the previous section, any allocation of common cost is arbitrary.

However, compromise benchmarks are not impossible. The following is a simple example of the type of benchmarks that could be considered. If a company is

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[26] This problem may arise in the application of combinatorial tests to satellite and cable television; for

regulated in all its markets then it is common for the regulatory authorities to have a preferred model of cost allocation when cost allocation is a relevant issue. In the context of telecommunications the European Commission have suggested the equi-proportional mark up at various times. These are the cost allocation rules contained in the ONP (see I.3.3 above). Roughly, these rules state that common costs should be allocated in the same proportions as the costs that can be allocated directly to services. If a company has three products which are initially in separate but regulated markets then the application of the combinatorial test will be quite clear. The prices of all three must cover the incremental and common costs. If the company then becomes non-dominant in one market then a combinatorial test could still apply to the regulated markets once the appropriate share of the total common cost has been decided. The equi-proportionate mark-up rule could be used to split the common costs between the non-dominant product and others. The price of the regulated products would then be expected individually to cover their respective incremental cost floors and jointly to cover their incremental costs and their share of the common costs allocated to them. If the non-dominant market is of little significance relative to the others to then the implications for the regulated products will be close to those that would arise when applying the combinatorial test to all three. If the non-dominant market is very large relative to the others then the implications for the regulated products will be closer to those that would arise if the combinatorial test for all three products is scrapped. This is an extremely simple approach but it does indicate that there may be plausible compromise solutions. The argument for the approach is that it ring-fences combinatorial tests to regulated activities.

The problem of employing combinatorial tests in the Competition Act is an example of a general problem that has arisen with abusive pricing in the context of the concurrent application of the Act. We have indicated the conflict between the EC notice and the Competition Act guidelines in the use of long run incremental cost as another. Concurrent application of the Act provides regulators with the temptation to engage in regulatory over-spill. The sector specific guidelines are then not only a tool to deal with sector specific problems but a mechanism to rewrite the Competition Act so that it can take on board regulatory practice. The use of the combinatorial test is a good

example, in the current OFT review of BSkyB's undertakings.

example since it can bring intervention in markets, e.g. where a company is not dominant, that goes well beyond anything in the Competition Act.

I 5 Summary and Assessment

Section I.4 argues that combinatorial tests are not particularly well suited to competition policy. They fit into a regulatory regime but appear ill equipped to deal with a company that is operating in competitive markets and is not dominant in some of these. Section I 3 has suggested that if there is to be a cost based bright line upper threshold test then long run incremental cost is the best of the possibilities although it is not ideal. Turning to the lower threshold, the EC take the view that the change in time frame is appropriate for network industries and in the UK the problem is thought to be relevant to regulated industries. Even if the EC and the UK authorities could agree on which activities suffer from this problem, it remains inappropriate to apply the rule to specific sectors regardless of the cost position of the company under consideration. The problem is far more common than just network or regulated industries and if low short run incremental cost is a concern then consistency requires that the change in time frame should apply to all these cases. On the other hand if the extension of the time frame is to deal with low incremental cost then it should not be applied to all companies in the specified sectors regardless of cost structure. Indeed, in many cases it is not clear that perceived low short run incremental cost is a genuine feature or simply mis-measurement. Within a network the cost of additional short run supply may not be close to zero but simply appear so because the cost of the extra delivery is felt in an infinitesimal reduction in quality across the whole customer base. If a different time frame is to be applied then it is essential that an investigation of the cost structure is performed to show that short run incremental cost is indeed exceedingly low before adjustments are made.

The Akzo time frame is extremely short and one can sympathise with a desire to restrict the lower threshold a little; say to a three-month period that will usually include some labour costs. But if this is pushed very far then the scope between the upper and lower threshold is reduced significantly. The position in the UK is particularly problematic. The time frame for the lower threshold for regulated industries is taken to be the very long run. That is, the lower threshold is also the upper threshold. In the

context of the combinatorial test this applies to all products. Section I 4 discussed combinatorial tests as a potential upper bound - one that imposes further limitations on prices other than the restriction that each price has to be above its long run incremental cost. But it is just as likely if not more so that these are seen within the UK guidelines as a lower threshold. But such an interpretation implies that each individual price must be above long run incremental cost and that all prices taken together must cover long run total cost.[27] As a cost floor for predation this would be a variance with conventional cost based approaches but appears consistent with the view of predation in the telecommunication guidelines:

> 'For the Director General to examine whether an undertaking is covering its LRIC is consistent with the approach set out in the EC Access Notice, which recognises that cost structures in network industries tend to be different from most other industries and that a straightforward application of the test established by the European Court of Justice in the Akzo case (using average variable cost as the cost floor) is inappropriate…If a dominant undertaking is pricing below LRIC the Director General will therefore presume that it is intending to engage in predatory pricing. It will be for the undertaking in question to rebut this presumption, which, the Director General recognises, will be possible in certain circumstances. It may, for example, be rational to price below LRIC where an operator has excess capacity and this has not been reflected in existing prices.'

A presumption that a company is engaged in predatory pricing if prices are not covering total long run costs is a fundamental change in policy, a rewrite of the Akzo case law and at variance with almost all economist's views. In this sense the new UK and EC approach is a fundamental change rather a simple extension for certain sectors of the time frame associated with the lower threshold.

The new EC and UK approach does not seem to hang together well but there is a more worrying implication. It suggests that the Commission and the UK authorities are moving in the opposite direction to modern economic thinking. Section I.1 has shown that modern economics puts emphasis on the interactions between parties, the information background and the strategic behaviour, rather than the cost based approach. In the traditional EC framework it is the cases that fall between the lower and upper threshold that provide room for this economic approach to come into play.

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[27] The Application of the Competition Act in the Telecommunications Sector, Oftel, January 2000 Section 7.7 to 7.10

The interactions between parties, the information background and the strategic behaviour can be informative as to the existence of a predatory plan or to put in another way help inform in future cases what the courts decide to define as such a plan. But the suggested EC and UK approach either squeezes or completely removes the range where the assessment of a predatory plan is central. This leaves little room for the economic factors to be the primary or even contributory factors.[28]

There is a general tension between economists and lawyers when dealing with predatory pricing and related issues. Economists tend to favour rule of reason rather than cost based approaches whereas lawyers frequently favour bright line tests which, in this context, tend to imply cost based rules. A policy that removes or restricts the cases where analysis of the interactions between parties, the information background and the strategic behaviour can have a primary role seems a poor one to adopt at a time when economists are more convinced than ever of their significance. I suggest that a more sensible route for the Commission and the UK to adopt is to promote the minimal changes to the Akzo case law that are necessary and wait to see how the new economics is used by the courts to flesh out the meaning of a predatory plan. In contrast, they appear to be moving in exactly the opposite direction to the new economic thinking on the subject.

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[28] Of course, it is possible to argue that the use of a single cost threshold in the 1998 Competition Act guidelines could allow for this analysis to come to the fore. However, while this is possible it is unlikely to happen since it represents a fundamental change in policy and there is no suggestion in the guidelines that this is the intention. Furthermore, the example given at the end of quote in this section taken from the guidelines suggest that they are looking to cost based approaches to justify pricing below long run incremental cost.

II. Price squeeze

A feature of the Commission's Access Notice is the attention given to the price squeeze. This section considers the background to the test and how it should be interpreted in network, information and related markets.

II.1 Background of price squeeze in the US

The initial application of the notion of a price squeeze in antitrust law arose in the United States v Alcoa case in the 1930s and 1940s. Judge Hand found against Alcoa in the Court of Appeals in 1945 suggesting that, amongst other things, they were guilty of raising the price of competitors essential inputs - ingot - so that they could not compete with Alcoa in sheet rolling, i.e., the downstream market. Judge Hand stated:

> 'The plaintiff describes as the 'Price Squeeze' a practice by which, it says, Alcoa intended to put out of business the manufacturers of aluminium sheet who were its competitors'. ...... 'To establish this the plaintiff asks us to take Alcoa's costs of rolling as a fair measure of its competitors' costs, and to assume that they had to meet Alcoa's price for all grades of sheet and could not buy ingot elsewhere.' ...... 'That it was unlawful to set the price of sheet so low and hold the price of ingot so high seems to us unquestionable, providing as we have held, that on this record the price of ingot must be regarded as higher than a "fair price".'

This case has received considerable attention over the years. The Hand decision has been cited and discussed approvingly in many subsequent cases before the Supreme Court.[29] However, within the economic literature the reception has been mixed.[30]

Although the notion of a price squeeze has received considerable attention in the economics literature, and there have been a series of failed cases in electricity, it has only recently started to appear frequently in specific antitrust reports and cases in the context of telecommunications.[31] Although, there is no mention of price squeeze in the

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[29] See Posner and Easterbrook's *Antitrust Cases*. (Second Edition, 1981).

[30] Lopatka and Godek claim 'For many years now, Judge Hand's standard of antitrust liability has stood condemned. The consensus has been that Alcoa committed no wrong doing', in 'Another Look at Alcoa: Raising Rivals Costs Does Not Improve the View' *Journal of Law and Economics* (1992).

[31] The history of price squeeze cases in electricity has not been one of success in proving violation of Section 2 of the Sherman Act. Joskow (Mixing Regulatory and Antitrust Policies in the Electricity Power Industry: The Price Squeeze and Retail Market Competition, 1985) suggests that this is in part due to the need to establish intent to monopolise these markets.

Telecommunications Act of 1996, there is discussion in the FCC's First Report and Order on Implementation of the Local Competition Provisions.[32] The debate relates to the role of imputation rules.   An imputation rule 'requires that the sum of prices charged for a basket of unbundled network elements not exceed the retail price for a service offered using the same basket elements'.   In paragraphs 848 to 850 the FCC recognise that an imputation rule could help to detect and prevent price squeezes but they decline to impose an imputation requirement.   FCC:

> 848. Although we recognize, as several commenters observe, that an imputation rule could help detect and prevent price squeezes, we decline to impose an imputation requirement. Adoption of an imputation rule could force states to engage in a major rate rebalancing effort at this time, because it would impose substantial additional burdens on states at a time when they will need to devote significant resources to implementing the 1996 Act.

> 849. In addition to our practical concerns regarding implementation of an imputation rule, we find that an imputation rule may not be necessary to achieve the pro-competitive goals of the 1996 Act. As some commenters, including several state commissions, suggest, competing providers may be able to provide basic service, at less than the cost of facilities and associated management, just as incumbent LECs do currently, by selling customers higher profit vertical or intrastate toll services, or through receipt of access revenues and subsidies. Further, the Ohio Consumers' Counsel suggest that below-cost rates may not be sufficiently prevalent to justify a national imputation rule.(532) The Joint Consumer Advocates and the Ohio Consumers' Counsel question whether local service is, in fact, underpriced.(533)

> 850. We give special weight to the comments of several state commissions that currently employ imputation rules.(534) These state commissions endorse imputation as a tool to prevent price squeezes, but urge us only to provide states with the flexibility to adopt imputation rules. We agree with those state commission commenters that argue that nothing in the 1996 Act prohibits individual states from adopting imputation rules. While an imputation rule may be pro-competitive, we will leave the implementation of such rules to individual states for the time being.

However, despite the decision not to employ imputation rules, price squeeze considerations are significant in FCC analysis.   For example, in the investigation of new access offerings filed by several ILECs (incumbent local exchange companies) the FCC found 'that the ADSL service offerings at issue here are interstate services, are properly tariffed at the federal level, and need not be transferred to the states in order

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[32] First Report and Order on the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act (FCC 96-325, Adopted August 1st 1996)

to ensure proper consideration of price squeeze issues.'[33] Similarly, in US v Sprint and Joint Venture Co., the US Competitive Impact Statement suggested :

> ..... DT and FT will have an increased incentive and ability to cross subsidize Joint Venture Co. and Sprint by providing revenues from the monopoly services or by shifting costs of Joint Venture Co. and Sprint to the monopoly services.   In both France and Germany, over three quarters of the revenues of FT and DT are derived from services and facilities that are legally protected against competition.   These monopoly activities can be used to cross-subsidize competitive services.   Such cross-subsidization would facilitate a strategy of placing competitors of Joint Venture Co. and Sprint in a "price squeeze" by keeping prices for the monopoly inputs they need well above true economic costs, while simultaneously undercutting them on price in the competitive markets through Joint Venture Co. and Sprint, whose costs will have been artificially reduced.   The result could be a substantial lessening of competition in both international telecommunications services and seamless international telecommunications services in the U.S. [34]

II.2 Price squeeze in Europe

The notion of a price squeeze in European Community competition policy has very limited history.   It arose briefly in National Carbonising Company and Napier Brown/British Sugar but recently has received considerable emphasis in a series of speeches.[35] For example, John Temple Lang states:

> It is contrary to Article 86 if a dominant company sells both a raw material and an end product at prices that are so close to one another that a reasonably efficient competitor buying the raw material cannot make a profit and would be forced out of business. This can be regarded as a price squeeze or as raising competitors costs or providing an essential facility at an un-economic price.   A defence that the dominant company downstream operations are exceptionally competitive is admissible, but exceptionally clear cost accounts would be essential to prove it.

> Not every cross subsidy by a dominant company is unlawful.   It is unlawful only if it has a substantial exclusionary effect and if it cannot be justified by e.g. start up costs. But since cross subsidising of a downstream operation by a vertically integrated dominant company is unlawful, (the price squeeze cases) it is natural that cross subsidising by a horizontally integrated dominant company can also be unlawful if it has substantial effects. [36]

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[33] Bell Atlantic Telephone Cos, BellSouth Telecommunications Inc, GTE System Telephone Cos and Pacific Bell Telephone Co. Memorandum and Order November 30 1998.
[34] US v Sprint and Joint Venture Co (Civil Action No 95 CV 1304)
[35] See Commission Decision 76/185/ECSC of 29 October 1975, National Carbonising Company and Commission Decision 88/518/EEC of 18 July 1988, Napier Brown/British
[36] John Temple Lang *European Community Antitrust Law- Innovation Markets and High Technology Industries* (Fordham Corporate Law Institute (1996)).

Similar ideas can be found elsewhere.[37] The Commission has used the possibility of a price squeeze, along with other potential 'abuses' to intervene against Deutsche Telekom.

> 'In a provisional assessment of the proposed tariff scheme the Commission concluded that the new tariffs were incompatible with the competition rules of the Treaty. It was clear in particular that they would discriminate in favour of business customers vis a vis residential customers, that they would have price squeezing effects on competitors and that they represented bundling i.e. the undue linking of the provision of the monopoly and competitive services.   The Commission required a number of conditions to be fulfilled including the granting of infrastructure licences before the tariff scheme came into operation and the prevention of the tariff scheme being applied retroactively.   This is an excellent example of how the competition rules can be used to encourage competition to lower interconnection rates.[38]

In the recent notice on application of competition rules to access agreements in the telecommunications sector the Commission has taken a significant step beyond the existing US and EC position by raising the price squeeze as an explicit abuse and formulating precisely what may constitute a price squeeze.[39]   In the Notice the Commission provides two ways that a price squeeze <u>could</u> be demonstrated.   'Could' in this context can have two potential interpretations.   It could imply that the descriptions provided by the Commission do not necessarily define a price squeeze as such but only provide indications, i.e., these descriptions do not automatically imply a squeeze exists.   Alternatively, it could mean that there are several events that can constitute a price squeeze but that a price squeeze certainly arises if either of these occur, i.e., these are sufficient but not necessary for a price squeeze to exist.   The Commission indicate that it is the latter that they have in mind. :

> 'if either of these scenarios were to arise, competitors on the downstream market would be faced with a price squeeze which could force them out of the market'.

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[37] See for example, 'Competition Policy in the Telecoms Sector' by Alexander Schaub (DGIV) *Competition Policy Newsletter Number 1 Volume 2 (Spring 1996),   Telecommunications Competition and Strategic Partnerships* by Herbert Ungerer(at the 1996 European Communications Summit) and *New Technologies - Information Society Current Position and Outlook*, (Scadplus).

[38] *'The application of competition and anti-trust policy in media and telecommunications in the European Union'*, Jean Francois Pons, Deputy Director General, DGIV, at the International Bar Association, September 1998.

[39] 'Notice on the application of competition rules to access agreements in the telecommunications sector: Framework, Relevant Markets and Principles (98/C 265/02)'

This implies that either of these is sufficient to define a price squeeze but not necessary. A concern is that it indicates that there may be a broader definitive notion of price squeeze of which these two are examples.

The two ways that the Commission suggests could demonstrate a price squeeze are:

> 'a price squeeze could be demonstrated by showing that the dominant company's own downstream operations could not trade profitably on the basis of the upstream price charged to its competitors by the operating arm of the dominant company'

and

> 'the margin between price charged to competitors on the downstream market for access and the price which the network operator charges in the downstream market is sufficient to allow a reasonably efficient service provider .. to obtain a normal profit'.

II.3 The price squeeze and raising rivals costs

There are two related concepts in the economics literature that are relevant. One is the 'price squeeze' and the other is 'raising rivals costs'. The former is usually taken to refer to instances where the vertically integrated company sells inputs to competitors. 'Raising rivals costs' usually refers to any situation where the vertically integrated firm acts to raise upstream prices with the purpose, implicitly if not explicitly, to eliminate or chill downstream competition. Actions to limit competitors access to the 'independent' supply of upstream inputs, hence raising the competitor's cost and reducing downstream competition, fall into this category. Indeed, a significant proportion of the Alcoa case concerns Alcoa's attempts to restrict the supply of competitors' essential inputs, notably electricity and bauxite, in the upstream market by entering long contracts and commitments over that supply.

The 'price squeeze' is often presented as a special case of 'raising rivals costs'. For example, the Deputy Assistant Attorney General of the Antitrust Division of the US Department of Justice states:

> The 1984 Guidelines recognise that integrated firms may also engage in price or supply '"squeezes" against their non-integrated rivals (1984 Merger Guidelines S4.211, n.31). This is of course a form of raising rivals costs.[40]

Comments from within the US Department of Justice and the European Commission have indicated that they see the price squeeze as a form of raising rivals cost (e.g. John Temple Lang and Steven C. Sunshine above). This helps to understand why the presence of a price squeeze is seen to be incompatible with the Treaty of Amsterdam. There is an important distinction, however, between a price squeeze and raising rivals costs.

The price squeeze is based on absolute levels. It is a test that compares the difference between two prices, input and output prices, and costs. It tells one something about the ease with which potential competitors may be able to enter a downstream market but in its literal form it is no more than a static technical comparison of levels. It is a somewhat passive notion. It does not carry a presumption that the dominant firm's prices are different from what they would otherwise have been. In contrast, the notion of raising rivals costs is based on a change in costs and in this sense is more suggestive of intent. It is comparing the outcome with some benchmark that must bear some relation to where prices would be if the vertically integrated firm had pursued a policy other than one of raising rivals costs. Raising rivals costs carries with it an indication that intent may have been present since it is defined by a change which almost inevitably achieves a chilling of downstream competition even if this is not the prime motivation.

The comments by Temple Lang do not note this distinction. In his paper the selling of both a raw material and an end product at prices that are so close to one another that a reasonably efficient competitor buying the raw material cannot make a profit and would be forced out of business is deemed contrary to Article 82 (86) regardless of intent. This statement is purely about levels. The comments by Steven Sunshine are

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[40] Steven C. Sunshine, Deputy Assistant Attorney General, Antitrust Division, US Department of Justice, *Vertical Merger Enforcement Policy,* delivered before the American Bar Association (remarks made April 11, 1995, text published May 11, 1995).

clearer.   They relate to companies that <u>engage</u> in price or supply "squeezes" <u>against</u> their non-integrated rivals.   It is the engagement of the price squeeze against competitors that is seen as the problem.   It allows for the possibility that a price squeeze that is not engaged against competitors but is the natural consequence of other events may be deemed acceptable.

Intent is important.   It appears that raising rivals costs would be a better form of test for potential abuse than a price squeeze test which, at best, carries an implication of intent only in special cases such as when there are no economies of scale or scope, special efficiencies or similar economic connections between upstream and downstream activities.   This is consistent with the FCC view that an imputation rule may not be necessary to achieve pro-competitive goals.

One of the difficulties, however, of trying to use 'raising rivals costs' as a test rather than a technical price squeeze is that the former is harder to implement since it is not sufficient to assess existing prices.   Raising rivals costs must be tested against a benchmark.   In contrast, the pure question - is there a price squeeze or not - side steps this issue.   In one of the definitions provided in the Commission's Access Notice all the information can be found within the vertically integrated company and most of this is in the form of published prices.   Competitor costs, their position in the market and any effect of prices on their ability to compete in the downstream market are irrelevant. However, there is a danger in accepting the price squeeze, as opposed to raising rivals costs, as the primary abuse.   The fact that the price squeeze test can be so mechanistic and straightforward compared with a general test of raising rivals costs indicates that the straightforward application of a price squeeze may miss as much as it gains.

II.4 How clear is the definition of a price squeeze?

Despite the apparent clarity of the Commission's definition, real problems begin to emerge as soon as one thinks of practical application.   Some of the difficulties associated with deriving more careful definitions of a price squeeze can be easily resolved but this is not always the case. Here we discuss two that are capable of clear resolution – the definition of a price squeeze when there are many products and when

there is free access – but also consider the problem of retail common costs where the situation is not absolutely clear. These are considered in turn.

II.4.1 The interaction of price squeeze, predatory thresholds and discrimination

The interpretation of the price squeeze and the interaction between the predatory threshold, the price squeeze 'test' and the interpretation of discrimination will affect the pricing flexibility of a vertically integrated company.   The issue is reasonably straightforward where there is a single upstream activity and a single retail product. Typically discussion of the price squeeze is implicitly, rather than explicitly, in this context.   The problem is more problematical where the upstream input and retail product is not unique and there are common costs between the upstream inputs and common costs across the retail activities.

In a world with several inputs and retail products the price squeeze test will dictate where common costs have to be recouped.   For example, suppose a particular retail product only uses two upstream inputs of a vertically integrated company but the market for the product will only sustain a price marginally above incremental cost. The price squeeze test will indicate that the prices in the upstream market for these two inputs must be set virtually at their incremental cost.   That is, sales of these inputs to third parties who wish to compete in this downstream market cannot recover any of the upstream common costs, i.e., costs that are common between inputs.   If the vertically integrated company is to cover its full upstream costs then the upstream common costs will need to be covered in prices of other inputs. The application of a price squeeze test on products using these other higher priced inputs implies that the retail prices for these products must cover all the upstream common costs.

It is easy to see the difficulties that can emerge by considering a simple situation where the vertically integrated company, has two other retail products in addition to the one that barely covers incremental costs of its inputs. If these two retail products use in the same proportion the inputs that are carrying the common cost then changing the method of recovery of common cost between these inputs does not help to provide any flexibility between the retail prices. That is, if one input is made more expensive and the other cheaper this will not change the relative price of the two services that are

covering the common costs. To move the price of one of these retail products relative to the other the price of inputs going into the barely profitable retail product need to be raised but the price squeeze test prevents any allocation of common costs to these inputs. That is, application of the price squeeze test to the markets has tied the prices of retail products together.

The vertically integrated company is then faced with a choice between either accepting limitations on its pricing flexibility or no longer offering the less profitable product. If the costs associated with losing pricing flexibility are large then the company may decide to stop providing the marginally profitable retail product. It is important to note that the reason that the company may no longer wish to offer it is not because the price squeeze limits how high the company can raise prices for the other retail products but merely that the cost to the vertically integrated company of the loss of flexibility is too great to justify continuing to supply the marginal retail product. The effect is that it may prove impossible to sustain certain products in the market even though the products are capable of covering their average incremental cost. This problem is more severe the more sophisticated the market.

Interpreting the price squeeze as a separate form of abuse in the way that it has been outlined above may restrict competition rather than promote it. This can be more harmful the more open the market is. However, this interpretation of the price squeeze makes a specific assumption about discrimination and this is the core problem. It has been implicitly assumed that, because the vertically integrated firm is forced to sell particular inputs to a retail product at prices close to their incremental cost, this price should carry over to price squeeze tests for other retail products. If this is not the case then the problem goes away. So the issue is one of the appropriate interpretation of discrimination in a price squeeze context. An alternative interpretation of discrimination in this context is one that ties the price of a retail product to the price of inputs used to compete in that market. That is, a price squeeze can be invoked as an abuse if a vertically integrated company refused to supply inputs to a competitor in market A at prices that allowed the competitor to make a reasonable margin in market A. A similar test could exist for market B but without the additional restriction that the prices for inputs into different market must always be the same. The decision as to

how the joint application of several price squeeze tests will work should be dictated by the specifics of the case.   A blanket rule that assumes that all input prices are tied together across price squeeze tests will be extremely restrictive.   Indeed, such a tight interpretation of discrimination runs into the same problem identified with the combinatorial test, i.e., it becomes impossible to treat dominant markets separately.

The Commission's notice can be read as favouring flexibility but is somewhat ambiguous on this point.   One of the Commission's definitions of a squeeze mentions a service provider in the downstream market (not service providers in markets) implying that the access price and service is a one by one comparison.   On the other hand, the second definition given in II.2 considers the dominant company's own downstream operations not trading profitably on the basis of the upstream price.   This could be taken as suggesting a single price for several downstream operations. However, the fact that the Commission talks of operations rather than services suggests that it did not explicitly have in mind one price for many services.   The main point is that if the Commission do wish to introduce the price squeeze as a significant element of the interpretation of abuse for the purposes of applying Article 82 to vertically integrated companies then there has to be appropriate interpretation of discrimination. Where possible the application of price squeeze tests for a company with several retail products and several upstream inputs should require a market by market application of discrimination.   However, the extent to which a market by market approach is feasible will depend on whether the downstream markets are genuinely separable.

II.4.2 Fixed charges

A particular problem arises if a service is sold downstream with a fixed charge or a price that does not fully reflect the differences in costs. This may take the form of a fixed payment and a price per unit but may also simply involve a simple fixed payment, i.e., provision is unmetered such as in unmetered access to the internet. Sometimes the failure to price directly according to customer specific cost may reflect increasing returns to scale, sometimes the desire of companies to avoid complex pricing strategies and other times because the natural consequence of a market is some degree of differentiation and specialisation between suppliers. For example, costs differ between

location and product type for most services yet it is uncommon for companies, e.g., supermarkets, retailers, utilities, to have complex pricing structures that exactly map these costs.

In all these cases costs per customer will generally differ since they have different usage - the higher the usage the higher the cost. The effect is that a typical company in a market will be more attractive to some customers than others. This raises problems for a price squeeze test since a retail competitor may be able to buy upstream and sell profitably to some customers and not to others. That is, it may have a comparative advantage over the vertically integrated firm for some customers (therefore more than passing the squeeze) and a disadvantage with others (not passing a squeeze test for these). Definitions of a price squeeze do not deal with this situation.

The second definition of the price squeeze given in section II.2 suggests that retail competitors when purchasing from a vertically integrated supplier need only earn a normal profit in the market. As long as it is possible for the competitor to supply sufficient customers to make a profit then it does not appear to matter what is happening with the others. The difficulty with this approach is that if the competitor has few common or fixed costs then this appears an easy test for the vertically integrated company to pass since the competitor only needs a small share of the retail market to cover its fixed costs. A solution to this problem would be to insist that the vertically integrated supplier should not set prices that enable the upstream firm to protect a part of the market which is so large that controlling it would normally be deemed sufficient to be dominant in the market. In Akzo the Court stated that market shares greater than 50% would suggest a rebuttable presumption of dominance on that market. This suggests that on a customer by customer basis a price squeeze test must be passed by at least 50% of customers. As a crude proxy this is equivalent to the view that the average figures should have to pass the test in the total market (since a price exactly equal to overall average cost would suggest that for 50% of customers costs may be above and for 50% below the price). This is a sensible reason for why, in the absence of specific countervailing evidence, an average market test is sensible. This also squares up with the first of the Commission's definitions given in section II.2 which suggests that the vertically integrated company's retail arm must be profitable

when buying at their upstream price. This latter approach tends to suggest that the price squeeze test needs to be passed across all customers in aggregate although it does not explicitly rule out the possibility of the profit arising from supply to only a subset of the market.

II.4.3 Common costs at the retail level

The price squeeze is normally defined for a single product. Once there are several services downstream with common costs across services then the definitions provided by the European Commission fail to apply. At one extreme it is feasible to focus purely on the downstream costs of the vertically integrated company. The company can trade profitably given the price it charges for its upstream inputs as long as the downstream retail price minus the upstream price is at least equal to the retail incremental cost. This seems a natural definition of a price squeeze test but does not automatically allow all downstream competitors to make a profit. However, turning to the definition that requires a competitor to make a profit there is a problem. If the downstream competitor has fewer retail products than the vertically integrated company then the company will not be able to take advantage of the economies of scope at the retail level. That is, at a given set of retail and upstream prices the vertically integrated company may be able to cover its own incremental cost but the competitor may not be able to make a profit when purchasing upstream input at the market price. A similar conflict can arise in reverse if the competitor at the retail level has more retail services than the vertically integrated company. There is no way that the two definitions given by the Commission can be reconciled in this context. A potential route appears to be to use the company with the maximum retail products to define the price squeeze. The intuition is that if one company finds it efficient to spread costs over several products then this should also be true of the other companies unless this is prevented by legal structure. Although not ideal, this is a coherent solution to the problem.

Conclusion

In the last ten to twenty years a big change has take place in economic thinking on predatory pricing. The strategic basis and logical feasibility has undergone a rigorous rethink arising from developments of game theory and a deeper understanding of the role of imperfect information. This paper summarises this change and assesses the Commission's and the UK current position with regard to predatory pricing. There are significant contradictions between the new positions of the Commission and the UK despite Section 60 of the 1998 Competition Act. The approach adopted by the Commission and the UK is to lengthen the time period over which incremental cost is calculated. In particular, the UK has shifted from traditional European case law. Furthermore, the approaches leave important questions unanswered; in particular hat should happen to the upper threshold in the Akzo approach. Finally, it is has been argued that the Commission and the UK are moving in the opposite direction to modern economic thinking.

The paper then considers the role of the price squeeze and emphasises the distinction between a price squeeze and the explicit policy of raising rivals costs. It is argued that the interpretation of discriminatory pricing in the context of a price squeeze is important and that a blanket rule that assumes that all input prices are tied together across price squeeze tests will be extremely restrictive. Application of price squeeze tests where a company has several retail products and several upstream inputs requires a market by market application of discrimination but the extent to which this is feasible will depend on whether the downstream markets are genuinely separable. The price squeeze test as conventionally defined and as outlined by the European Commission fails to address the situation that arises with many retail products and fixed charges. This paper suggests ways that the price squeeze can be adjusted to accommodate this problem. Where there are fixed payments, and hence a conflict about which parts of the market the price squeeze should affect, there is a natural solution of taking a market by market approach. Where there are common retails costs it is argued that the price squeeze could be defined by the party with the maximum ability to spread common retail costs.