

# Key insights into assessing below cost pricing in South Africa

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## Introduction

1. As competition regulation and enforcement matures in South Africa, both competition authorities and practitioners are likely to be faced with detailed assessments on one of the more intricate and challenging areas of competition regulation, namely predatory pricing conduct. In terms of the modern economy driven by innovative service and technological offerings, there are a range of business models that will involve pricing falling foul of the strict parameters of section 8(d)(iv) of the Competition Act. For example, some businesses may set prices in order to stimulate demand without any strong consideration of underlying unit costs in the short term and any anti-competitive intent.
2. In this paper, we outline examples where the strict application of a rigid cost-based test would lead to over-enforcement by the competition authorities and may result in significant uncertainty for firms willing engage in aggressive price competition. This can arise in investigations involving products or revenue streams that make up a small segment of the relevant product or geographic market, or investigations involving nascent markets where pricing based on customer utility is likely to be below estimates of unit costs. We put forward recommendations on specific approaches to the assessment of predatory pricing allegations, which may go some way to reducing the stated risk of over-enforcement by local competition authorities.

## Predatory pricing assessment in practice

3. The logic underpinning predatory pricing conduct is that a dominant firm is able to derive higher profits in the long run by setting short run prices at some level below cost thereby eliminating its rival firms in a market. Such behaviour implies a sacrifice of profits as the dominant firm would be able to derive higher returns in the short term if it set prices at a level that accommodated rather than eliminated competition. This logic gives rise to the specific cost-based prohibition as provided in the Competition Act, which states that a dominant firm cannot sell goods or services below their marginal or average variable cost unless that firm can show technological, efficiency or any other pro-competitive gains that outweighs the anticompetitive effect<sup>2</sup>.
4. This cost-based approach has its roots in the Areeda-Turner test, which follows the logic that when a firm decides to produce an additional unit of output, it considers the additional revenue derived from the sale of that unit compared to the additional costs of producing that unit of output. More specifically, in the context of a traditional perfectly competitive model<sup>3</sup> the key result is that for profit maximization, price levels for firms must be set at the point where marginal revenue<sup>4</sup> equals marginal

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<sup>2</sup> Refer to Section 8 (d)(iv) of the Competition Act no. 89 of 1998 as amended ("the Act").

<sup>3</sup> Refer to Bishop, S. and Walker, M. "The Economics of EC Competition Law: Concepts, Application and Measurement", 2002, p.18.

<sup>4</sup> Marginal cost refers to the cost of producing an additional unit of output in terms of a product or service offered to consumers.

cost<sup>5</sup>. In addition, under this traditional model, firms are subject to the law of diminishing marginal utility, whereby consumers derive decreasing benefits with each additional unit of the good consumed.

5. Based on the foregoing market conditions and assumptions, Areeda and Turner<sup>6</sup> argue that a price lower than reasonably anticipated short run marginal cost is predatory, whereas a price that is equal to, or higher than, short run marginal cost (“MC”) should be considered not to be predatory. Since short run marginal cost is impractical because of its difficulty in computing, Areeda and Turner suggest a proxy of average variable cost (“AVC”). This test has been consistently applied by competition authorities in the United States and in Europe when assessing predation. (Refer to **Appendix I** for a broader discussion on the microeconomics underpinning the Areeda-Turner test).
6. The European Commission, in particular, will examine economic data relating to cost and sales prices, and in particular whether the dominant undertaking is engaging in below-cost pricing<sup>7</sup>. The Commission states that the cost benchmarks it will use include average avoidable cost and long run average incremental cost. The Office of Fair Trading (“OFT”) guidance<sup>8</sup> states that in any assessment of predation, a key question is whether the dominant undertaking is pricing below cost, and the relevant cost benchmarks used to presume predation are variable costs<sup>9</sup>, avoidable costs<sup>10</sup> and incremental costs<sup>11</sup>. Many other jurisdictions also apply cost-based tests, and generally would not consider prices to be predatory unless they are below some measure of a firm’s costs<sup>12</sup>.
7. The extent to which competition authorities and courts apply these cost-based tests can be found in the following recent judgments from international jurisdictions:
  - a. In *Aberdeen Journals*<sup>13</sup>, the OFT found that Aberdeen Journals abused its dominant position by engaging in predatory pricing, namely selling below average variable cost, during March 2000. It was found that, even on a

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<sup>5</sup> Marginal revenue is the revenue derived from producing an additional unit of output in terms of a product or service offered to consumers.

<sup>6</sup> Areeda, P. and Turner, D. “Predatory Pricing and Related Practices Under Section 2 of the Sherman Act” (1975) Vol 99, *Harvard Law Review* 697.

<sup>7</sup> European Commission, “Guidance on the Commission’s enforcement priorities in applying Article 82 (now Article 102) of the EC Treaty to abusive exclusionary conduct by dominant undertakings” *OJ C 45, 24.2.2009*, p. 7–20.

<sup>8</sup> Refer to Office of Fair Trading, *Assessment of Conduct Guideline*, 2004, p. 12-15, at pars 4.1 to 4.10.

<sup>9</sup> Variable costs are those costs that vary directly with output and hence are determined by the time period being reviewed (*Ibid*, p.13).

<sup>10</sup> Avoidable costs are those costs which could be avoided if the firm in question were to cease productive activity over the relevant time (*Ibid*, p.13).

<sup>11</sup> Incremental cost refers to the additional cost of increasing output beyond a benchmark level of output by some pre-specified amount (the ‘increment’). Incremental costs differ according to the time period over which they are measured. In certain sectors (for example telecommunications), long run incremental cost (LRIC) may be a preferable cost benchmark to variable cost. LRIC takes into account long run cost both capital and operating of producing an additional unit of output. (*Ibid*, p.14)

<sup>12</sup> Refer to Organisation for Economic Co-operation and Development (“OECD”), *Policy Roundtables – Competition Law and Policy, “Predatory Foreclosure”*, 2004, p. 8 at par. 3.

<sup>13</sup> Refer to Decision of the Director General of Fair Trading *Predation by Aberdeen Journals Limited Case No. CA98/14/2002*, 16 September 2002.

period as short as one month and in the absence of any objective justification, Aberdeen Journals was pricing below AVC.

- b. In *Wanadoo*<sup>14</sup>, the European Commission examined Wanadoo Interactive's strategy of below-cost pricing between January 2001 and October 2002 in the high speed internet access market. The Commission outlined two methods of analysis for determining whether an undertaking had engaged in predation, namely the non-recovery of average variable costs per unit and the non-recovery of average full costs where this is accompanied by a plan indicative of an intention to eliminate competitors.
  - c. In *Cardiff Bus*<sup>15</sup>, the OFT examined Cardiff Bus' introduction of a no frills bus service, which was in response to entry of a rival firm's equivalent service, and found that Cardiff Bus' revenue failed to cover avoidable costs over the period over which the relevant bus services were run.
8. The calculation of unit costs for a particular product under investigation is never an easy exercise, regardless of the cost measure used. Firstly, the existence of multiple products within a firm makes the allocation of common costs a highly arbitrary exercise. Secondly, determining a robust estimate of the variability of costs (including those that are common across products) requires a detailed analysis of each cost category and how they are affected by changes in the volumes of products sold. Costs are also unlikely to increase in a linear manner as product volumes rise. These challenges have not prevented competition authorities from undertaking the unit-cost estimation exercise when necessary, some with a greater degree of robustness than others, and making conclusions on the predatory conduct as shown in the judgments above.
  9. Some economists have argued that strict adherence to the cost-based tests can lead to both over-enforcement (false positives) and under-enforcement (false negatives). De le Mano and Durand for example, argue that below-cost pricing is a poor proxy for predatory conduct as there exists many pro-competitive reasons for a firm to price below even average variable cost<sup>16</sup>. In addition, they argue that strict cost-based tests are difficult to implement given the difficulty of measuring, allocating and comparing costs and prices, and are therefore likely to frustrate committed competition authorities and regulators. In response to these shortcomings, the authors propose a more effects-based approach with less reliance on cost-based tests. In other words, competition authorities should also focus on the features of the market in order to determine the likelihood of exclusion of competitors and the recoupment of sacrificed profits. The stronger the evidence with regards to likely exclusion and recoupment, the less need there is for assessing the actual profits sacrificed.

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<sup>14</sup> European Commission Decision, *Wanadoo Interactive* Case No. COMP/38.233, 16 July 2003.

<sup>15</sup> Decision of Office of Fair Trading, *Abuse of Dominant Position by Cardiff bus*, Case no: CA98/01/2008, 18 November 2008.

<sup>16</sup> Director General Competition, European Commission. Office of the Chief Economist, Discussion paper. "A Three-step structured Rule of Reason to assess predation under Article 82". Miguel de la Mano and Benoit Durand. 12<sup>th</sup> December 2005, at p. 12-14.

10. Such an approach has practical appeal, particularly as economists who are usually involved in assessing predatory conduct are more likely to be familiar with observing market structures in a comprehensive effects based evaluation rather than scrutinising a firm's management accounts in a price-cost comparison. However, as stated above, the Act does prescribe a cost-based test and therefore the scrutiny of a firm's cost structure cannot be avoided. In addition, the requirement of a robust profit sacrifice assessment provides some legal certainty, and offers an objective criterion for assessing alleged predatory conduct despite its practical difficulties. Therefore, it is important that the South African competition authorities focus on making profit sacrifice assessments as robust as possible, with the complimentary use of the effects based approaches in cases where respondents put forward rational justifications for below cost prices and/or where results of the profit sacrifice calculation are subject to some uncertainty.
11. Given the specific wording of the Act<sup>17</sup>, it is important that South African competition authorities are aware of the various pro-competitive reasons for firms pricing below AVC. Some key examples are outlined in the next section. In addition, we outline some suggested refinements to the traditional cost-based tests, which along with the complimentary use of effects based analysis, should go some way in ensuring that competition authorities have a reduced risk of over-enforcing section 8(d)(iv) of the Act.

## Circumstances where below cost prices are appropriate

12. In examining circumstances where below cost pricing is appropriate, the obvious instances would be where market conditions and outcomes differ strikingly from the perfectly competitive model described above. We now focus on the main instances where these deviations will apply in modern business structures and pricing practices.

### Network Industries

13. The microeconomic framework for network industries presents many significant deviations from that of perfect competition including: (1) Increasing returns to scale in consumption commonly called "network effects" and (2) high fixed but low incremental or marginal and variable costs.
14. For network industries like telecommunications, the larger the customer base the greater the benefit or utility of the product or service to each consumer. More specifically, these industries are subject to positive network externalities that can be direct in the case of a stock exchange, with users benefitting as the number of other

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<sup>17</sup> According to Section 8(d), "It is prohibited for a dominant firm to – engage in any of the following *exclusionary acts*, unless the firm concerned can show technological, efficiency or other pro-competitive gains which outweigh the anti-competitive effect of its act..."

users increases (Refer to **Appendix II** for a discussion of the microeconomic model of network industries).

15. There can also be indirect effects due to the greater number of complementary and related products can be supplied when the network grows<sup>18</sup>. For example most software programs are Microsoft Windows compatible meaning that users of Microsoft Windows benefit from the wide variety of Windows compatible software applications. This in effect means that pricing in network industries are value rather than cost-based<sup>19</sup>. It is clear that price levels will be low or close to zero for a sustained period as the consumer base increases. During this period, there are increasing returns in consumption and pricing will increase as the consumer value of the product or service increases. From a supply perspective, network industries usually exhibit increasing returns to scale in production with unit and average costs declining as the scale of production increases. This occurs because the fixed costs of establishing a network are very high in comparison to the marginal and variable costs associated with adding with an additional output in terms of a product or service.
16. Therefore, we find that strictly applying the Areeda-Turner test where pricing below AVC (or MC) is deemed to predatory is inappropriate for network industries for the following reasons:
  - a. Pricing below AVC (or MC) is likely to reflect the value based on consumer's expectations and utility particularly during the initial stages of the development for a network industry;
  - b. In the context of increasing returns in consumption, pricing below AVC (or MC) has the benefit of increasing the number of network participants thereby increasing the value of the product to the whole user base and hence overall consumer welfare<sup>20</sup>; and
  - c. Due to the large proportion of fixed costs the larger consumer base brought about by pricing below AVC (or MC) reduces average total costs (ATC) in the future. This reduction in costs is further enhanced by increasing returns in production thereby resulting in lower competitive equilibrium prices than would prevail absent below cost pricing.

## **Nascent markets**

17. In a nascent market, the rational and socially optimal pricing approach is commonly referred to as "promotional" or "penetration pricing." Penetration pricing is the strategy of setting a low initial entry price, lower than the eventual market price and possibly below the cost of production in order to induce patronage. Penetration pricing is also employed by new firms trying to enter a market or established firms

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<sup>18</sup> Refer to Tirole, J. "Theory of Industrial Organisation" 1992, p. 405.

<sup>19</sup> For full discussion refer to McGee, J. and Sammut Bonnici, T.A. (2002) "Network Industries in the New Economy", European Business Journal, p.116-132.

<sup>20</sup> Consumer welfare simply refers to the individual benefits derived from the consumption of goods and services.

trying to add a new product or service<sup>21</sup>. The strategy facilitates new entry and expansion of small rival firms and if it succeeds, it increases the promoter's sales to the point that output is efficient and profitable. Penetration pricing also assumes special importance in industries characterised by network effects or high switching costs.

18. A critical point to note is that when new products or services are launched consumers are unlikely to recognise the value of these products or services unless they linked to an established brand or trademark. Hence, penetration or promotional pricing is necessary at least for some period of time as consumer value or utility at the inception stage is likely to be below most estimates of unit costs, including AVC (or MC). In addition, the launch of new products or services together with the successful establishment of new entrants (if they are providing these new products or services) are generally considered to enhanced competition and consumer benefits resulting in a lower competitive equilibrium prices.
19. Therefore, in applying a cost-based approach to predation, particularly where prices are set below AVC (or MC), competition authorities should exercise caution not to prevent (i) successful entry by non-dominant firms and (ii) dominant firms in one market from successful entry into other markets characterised network effects and/or high switching costs.
20. In the United States, the use of promotional prices by new firms trying to enter a market or established (non-dominant) firms trying to introduce a new product is always deemed to be lawful, no matter what the price-cost relationship<sup>22</sup>. For instance, in *Airweld v. Airco*<sup>23</sup>, the court ruled that promotional pricing below average total cost, but not below AVC is lawful when the defendant lacks monopoly power or potential. In *Buffalo Courier-Express v. Buffalo Evening News*<sup>24</sup>, the court reversed a previous finding of predation on the grounds that the defendant's five-week giveaway of Sunday newspapers (a market in which it was a new entrant) was not unreasonable. The court noted that free sampling when a new paper is introduced is a common business practice and that the giveaway was 'sufficiently temporary' to dismiss predation. In both its *General Foods* (1984) and *ITT* (1984) decisions, the Federal Trade Commission found that sales at prices below AVC would not be predatory unless they covered a 'significant' enough period to imply that they were not merely promotional<sup>25</sup>. We will focus on the timing element in the latter part of this paper when we examine profitability

### **Industries characterised by learning-by-doing effects**

21. Learning-by-doing effects generally stem from increased worker productivity through technical change or innovation resulting from repeated processing of a product or

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<sup>21</sup> Refer to Areeda, P.E. and Hovenkamp, H. "Antitrust Law" (2002), Vol III, p. 491-492.

<sup>22</sup> *Ibid*, p.492.

<sup>23</sup> *Airweld v. Airco*, 742 F.2d 1184, 1194 (9<sup>th</sup> Cir. 1984), cert. denied, 469 U.S, 1213 (1985).

<sup>24</sup> *Buffalo Courier-Express v. Buffalo Evening News*, 601 F.2d 48 (2d Cir. 1979).

<sup>25</sup> *General Foods*, 103 FTC 204 (1984). *ITT*, 104 FTC 280 (1984).

service<sup>26</sup>. This economic concept applies to most modern industries, particularly the software and information technology industries, which are categorised by additional product or services offerings or 'add-ons'. In this regard, Bolton et al (1999, p.52) explain that a profit-maximising firm through the learning curve<sup>27</sup>, can rationally choose prices below-cost.

22. The implications of learning-by-doing effects are that whilst pricing may be below cost, in particular AVC (or MC) in the short term, increasing returns to scale in production through learning-by-doing effects may result in dynamic efficiencies which in turn reduce cost levels in the long run. These increasing returns to scale in production are unlikely to be achieved unless firms are permitted to price at levels below cost in the short run. It should be noted that unlike in the case of network effects and promotional or penetration pricing, which are generally considered to be reasonable justifications for non-dominant firms, learning-by-doing effects are possible for both dominant incumbent firms and non-dominant firms in an industry.

### **Product or service obsolescence**

23. In terms of product life cycle theory, there are periods when demand for a product will decline due to new and/or improved products being available to consumers. From an economic perspective it is clear that consumer's value or utility of the given product will decline during this period and hence a firm's pricing will decline and may even be below cost in order to meet consumer demand. Theoretically, it is possible that if a product is obsolete consumers may not attach any value or utility to it and hence despite a firm incurring the cost of producing the given product there is limited demand for it. In these circumstances, pricing at low levels, including those below AVC or MC may not be predatory. In fact, these prices levels may well be market related in terms of consumer demand.

### **Using spare capacity during an economic downturn**

24. During periods of economic downturn, firms may find themselves in a situation where they have excess capacity in terms of offering a product or service as consumers are only looking to reduce discretionary spend. De la Mano and Durand<sup>28</sup> note that in these circumstances of varying macroeconomic cycles firms may be forced to price at lower levels and even below cost in order to maintain customer relationships, avoid shutdown and restart costs and storage costs. They hold the view that these low prices will offer consumers benefits in the short run and are likely to provide consumer and social benefits in the long run by allowing these firms to remain as effective competitors in the industry.

25. In terms of a cost-based predation assessment, macroeconomic cycles represent periods during which price levels may fall below AVC or MC in the short term, as

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<sup>26</sup> For a full discussion refer to Arrow, K.J. (1962) "The Economic implications of learning by doing" *Review of Economic Studies* (The Review of Economic Studies, Vol. 29, No. 3, p. 155 - 173.

<sup>27</sup> A learning curve simply shows that unit costs decline with increasing production experience.

<sup>28</sup> Director General Competition, European Commission. Office of the Chief Economist, Discussion paper. "A Three-step structured Rule of Reason to assess predation under Article 82". Miguel de la Mano and Benoit Durand. 12<sup>th</sup> December 2005, at p. 35.

firms may be forced to ensure their financial viability in the longer term. The consequences of a firm not being able to price below costs during these periods may be detrimental to their long term viability in an industry.

## Assessment of profitability

26. As we have seen above, there are number of scenarios where the traditional price-cost analysis would result in an over-enforcement of section 8(d)(iv) and may even lead to anti-competitive outcomes for industries in the long run. The primary shortcoming of a short-term price-cost comparison is that it does not take account of the inter-temporal nature of firms' operating cash flows. For example, a market categorised by network effects would incur significant upfront costs to generate the critical mass of users before deriving sufficient revenues to cover those costs in future periods. In this scenario, even variable costs would exceed prices in the early years of operation, and therefore a strict price-cost test would lead to an adverse finding.

27. In line with our view of a more robust approach extending beyond a simple cost-based assessment, we examine profitability assessment in greater detail below. In particular, we identify three considerations for competition authorities in any profitability assessment namely, (1) calculating the level of profits over a number of years; (2) observing the profit sacrifice across the whole relevant market; and (3) incorporating all potential gains in the profit sacrifice calculation.

## Multi-year assessment

28. Predatory pricing complaints often arise from a dominant operator of a particular market entering or developing a new market. As previously argued, compelling firms to charge prices that cover variable costs in the early stages of a developing market runs the risk of artificially constraining demand and undermining a legitimate business practice. It is therefore appropriate in certain circumstances for competition authorities to consider the effects on profitability of a particular pricing strategy over a period of time, rather than for the specific period of the alleged abuse. A conceptually sound measure of profitability for this purpose is the Internal Rate of Return ("IRR") and Net Present Value ("NPV"), and finds support in the OFT discussion paper on profitability assessment in competition investigations<sup>29</sup>, which argues:

*"The IRR and the NPV are the conceptually correct methods for measuring this profitability. They take into account the inflows and outflows of an activity over time, and reflect the economic principle of (the) time preference of money"<sup>30</sup>(emphasis added)*

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<sup>29</sup> OFT "Assessing profitability in competition policy analysis" Economic Discussion Paper 6, a report prepared for the Office of Fair Trading by OXERA, July 2003, OFT 657.

<sup>30</sup> *Ibid* at par. 1.13.

29. Some competition authorities have embraced a multi-year approach when assessing pricing complaints, particularly with regards to margin squeeze allegations<sup>31</sup>. More specifically, the Office of Communications<sup>32</sup> (“Ofcom”) has, for several margin squeeze complaints, used the discounted cash flow approach for considering the profitability of a firm’s product or service over a period of time that exceeds one year. For example, Ofcom’s investigation into British Telecom’s (“BT”) broadband services<sup>33</sup> looked at (1) historical accounting data on a year-by-year basis and (2) discounted cash flow forecasts using the NPV profit measure, in order to determine whether BT’s prices had resulted in a margin squeeze. Ofcom found that there was insufficient evidence to support a margin squeeze finding, and stated:

*“[An] analysis based on historical data alone is not sufficient to warrant a finding of infringement. It is not unusual for losses to be incurred by all operators in the early period of a dynamic market in the expectation of recovering such losses later. Accordingly, Ofcom has also examined BT’s financial performance by means of NPV calculations, to arrive at an estimate of the future profitability of BT’s downstream operations. Such calculations serve to test whether historical losses incurred by BT during the period of the current investigation may be recoverable from causally related future profits within reasonable timescales under competitive conditions”*<sup>34</sup> (emphasis added).

30. Although the multi-year profit assessment approach has been applied primarily in margin squeeze cases, there is no reason why the same approach cannot be applied in assessing predatory pricing complaints. In margin squeeze cases, the multi-year approach using the NPV measure seeks to determine whether the cumulative value of net cash flows (retail revenue less wholesale and variable retail costs), discounted to a point in time is positive, taking into account upfront investments in market development. The only difference in the application for an assessment of predatory pricing is that the net cash flow will equate to retail revenues less all variable costs, as the focus for predatory pricing is the pricing of a firm at a single level of the market rather than along vertically related markets as is case for the assessment of margin squeeze.
31. This multi-period approach is particularly relevant for assessing the profit sacrifice of firms operating in nascent markets, and can help local competition authorities to determine the validity of the firm’s pricing practices in the early stage of the market development. Even for mature markets, competition authorities would benefit from a multi-year profit approach as it would help ensure that short term price reductions resulting from weak macroeconomic conditions, or product obsolescence, are not misinterpreted as a predatory pricing abuse.

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<sup>31</sup> Economic Regulation Group (“ERG”) “Report on the Discussion on the application of margin squeeze tests to bundles” March 2009, ERG(09)07.

<sup>32</sup> Ofcom is the Independent regulator and competition authority for the communications industries including broadcasting and telecommunications in the United Kingdom.

<sup>33</sup> Refer to Decision of the Office of Communications, “Investigation into BT’s residential broadband pricing” CW/00613/04/03, 2 November 2010.

<sup>34</sup> *Ibid*, at p. 3-4, pars.1.19 and 1.20.

32. Critics may argue that a multi-period approach understates the exclusionary effect that early year losses would have on rival firms. For example, the promotional price justification is only likely to hold when the strategy is implemented for a relatively short period of time. Pricing below cost over a prolonged period is unlikely to be construed as promotional. However, there is no general consensus on the reasonable length of time of below cost selling since it inevitably depends on the industry in question. According to the OFT, ‘

*‘A dominant undertaking which adopts a one-off short term promotion is unlikely to be found to have engaged in predation. However, a series of short term promotions could, taken together, amount to a predatory strategy. The time period which may be regarded as short term will inevitably vary from case to case, and it is not possible to provide general guidance as to what may and may not be abusive.’<sup>35</sup>*

33. The fact that the time period in question is industry specific is borne out in case precedent. For instance, in *General Foods*, the Federal Trade Commission concluded that three years of below cost pricing by a firm with 24 per cent market share qualified as promotional<sup>36</sup>. At the same time, in *Buffalo Courier Express*, a Second Circuit decision concluded that a five-week giveaway of Sunday newspapers by the defendant was sufficiently temporary, although the court suggested that a ten-week giveaway might have been predatory<sup>37</sup>.

34. Nevertheless, Areeda and Hovenkamp quote from the Federal Trade Commission decisions in *General Foods and ITT* in providing a working definition of a ‘significant period’ for promotional pricing:

- a. *‘A significant period should be sufficiently long to make it likely that sales at prices below average variable cost could in fact force equally efficient firms to exit; and*
- b. *Discontinuous or episodic instances of sales at such prices are unlikely to satisfy this standard...’<sup>38</sup>*

35. Another aspect of the multi-year approach that is subject to criticism is that the revenues derived in the latter years may reflect the recoupment of lost profits from the exit of rival firms and would therefore result in a false negative finding. Possible ways to overcome this potential drawback is to incorporate a revenue stream in the NPV calculation that assumes a pre-exclusion market share and/or modest increases in prices, which would be somewhat contrary to a scenario of rival firms exiting the market. A positive NPV under these assumptions should provide sufficient evidence that the success of the pricing strategy did not depend on exclusionary outcomes.

36. It is important to note that any multi-year assessment involving forward looking (*ex ante*) examination of revenues should be supported by evidence of robust business plans or budget documents that have been scrutinised and approved by senior management prior to the pricing practice under review. This point was noted

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<sup>35</sup> Refer to Office of Fair Trading, Assessment of Conduct Guideline, Draft Competition Guidelines, April 2004, OFT414a, p. 15, at Par. 4.12.

<sup>36</sup> Refer to Areeda, P.E. and Hovenkamp, H. “Antitrust Law” (2002), Vol III, p.492, footnote 2.

<sup>37</sup> *Ibid*, p. 492-493.

<sup>38</sup> *Ibid*, p. 493.

by the OFT in *Cardiff buses*<sup>39</sup> in response to the firm's argument that a profit sacrifice assessment should focus on *ex ante* expected profitability rather than the *ex post* actual profitability:

*"[In] the absence of any business plan or other contemporaneous pre-launch evidence of anticipated costs and revenues on which to base the analysis, such ex ante analysis is not possible on a reliable basis".*

## Aggregated approach

37. Another example of an analytical approach used in margin squeeze investigations that could also be applied for predatory pricing investigations is the aggregated approach to profit measurement. In margin squeeze investigations, regulators determine whether there is a sufficient margin between retail and wholesale prices to cover avoidable retail costs. Judgments made in European cases<sup>40</sup> indicate that margin squeeze investigations should determine whether there are sufficient margins between the relevant wholesale price and the average price of all the retail products that would be supplied by an equally efficient competitor in the retail market. The average retail price is calculated with reference to the volume weighting that each product has in the defined retail market. This aggregated approach contrasts with the product by product approach, which appears to be the norm in predatory pricing cases.

38. In *Deutsche Telekom*, the Commission investigated the supply of a single wholesale service (local loop access) to the Deutsche Telekom's retail competitors. The competitors retailed a number of services such as narrowband and broadband internet access. The Commission describes its approach in comparing the margin between retail and wholesale price as follows:

*"In order to compare wholesale and retail services, this decision uses a weighted average approach to prices and costs. All forms of retail access are aggregated on the basis of the number of each variant that the established operator had marketed to its own end-users...If the average retail prices are below the level of the wholesale charges, it can be concluded that there is a margin squeeze."<sup>41</sup> (emphasis added)*

39. In *Telefonica*, a similar approach was taken when the Commission compared the price for two wholesale broadband products against the prices of several retail broadband products offered in the retail market. In describing its approach, the Commission the following:

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<sup>39</sup> Refer to Decision of Office of Fair Trading, Abuse of Dominant Position by Cardiff bus, Case no: CA98/01/2008, 18 November 2008, p.214, at par. 7151.

<sup>40</sup> See *Deutsche Telekom AG*, Commission Decision of 21 May 2003, OJ [2003] L 263/9 and *Wanadoo Espana v. Telefonica*, Commission Decision of 4 July 2007 COMP/38.784.

<sup>41</sup> *Ibid* at par. 111.

*“In the case at hand, the margin squeeze test has been conducted on the basis of an aggregated approach, i.e. on the basis of the mix of services marketed by Telefonica on the relevant retail market.”<sup>42</sup> (emphasis added)*

40. The rationale of the aggregated approach is that equally efficient competitors should be able to profitably replicate the dominant firm’s product pattern, even if for one of the products, it derives a loss. The likelihood of an entrant being foreclosed from pricing below costs on one product is low if there is a range of related products in the same market where it can earn adequate returns overall.
41. Given the economic rationale above, there are valid reasons why the aggregated approach should be applied in predatory pricing complaints. In many cases, competitors might be in a position to compete for all products and services within that market even though they choose to focus on one particular segment. In these circumstances, it would be appropriate for the complainant to show that it is unable to make an adequate return based on all prices across the relevant product market. This is consistent with the rule of reason approach advocated by de la Mano and Durand, where they argue that when assessing the likely exclusion of an entrant, consideration should be given to the “victim’s expected profitability of staying in the market”<sup>43</sup>. In other words, if the claimant is likely to generate sufficient profits from the sales of other related products in the market, then the effect of the alleged pricing practice would be limited.
42. Another practical benefit of the aggregated approach is that it reduces the need to make arbitrary allocations of shared costs to individual products for the purposes of calculating average avoidable costs. If all related products or services offered by the respondent are incorporated in the profit assessment, all the shared costs would be taken into account in the avoidable cost calculation.
43. The wording of the Competition Act under Section 8(d)(iv) appears to allow for the collective consideration of prices and costs across the relevant product market, as the prohibition relates to the selling of “Goods and Services” (below marginal or average variable costs), which is defined as:

*“includes any other goods or services that are reasonably capable of being substituted for them, taking into account ordinary commercial practice and geographical, technical and temporal constraints;”<sup>44</sup> (emphasis added)*

44. A caveat to the aggregated approach is provided in *Telefonica*<sup>45</sup>, where the judgment states that in some circumstances it is appropriate to conduct the profit assessment at the level of each individual offer. This would be the case of a new product which is incurring losses (i.e. below average avoidable costs) and whose volumes could increase substantially in the future and make up a substantial part of the market. This

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<sup>42</sup> *Ibid.*

<sup>43</sup> Refer to de la Mano and Durand, “A Three-step structured Rule of Reason to assess predation under Article 82”, 2005, p. 23-24.

<sup>44</sup> Refer to Section 1(1)(xii) of the Competition Act.

<sup>45</sup> Refer to *Wanadoo Espana v. Telefonica*, Commission Decision of 4 July 2007 COMP/38.784, at par. 387.

would be evident if there was exponential growth in volumes from launch to the time of the investigation and the volumes of other related products had declined accordingly. Under this scenario, there would be a real risk that competitors would not derive sufficient returns in the future even if all existing products in the defined market were taken into account.

45. Although the aggregated approach may not be appropriate for all predatory pricing cases, the economic rationale supporting its use, mainly the promotion of equally efficient rivals, should persuade local competition authorities to avoid the application of the profitability assessment to a single product or a major customer when investigating predatory pricing complaints.

### **Consider all gains**

46. As explained above, a profitability assessment undertaken in a predatory pricing investigation will include a comparison of revenues derived from products or services under investigation and the costs incurred. It is plausible that a firm would derive gains from a below cost pricing strategy in addition to the direct revenue earned from the product or service. For example, a low-cost airline could, in addition to airfare revenues, derive revenues from in flight meals, car hire and internet fees and charges<sup>46</sup>. Obviously, these additional revenues should be included in any profitability assessment.
47. There are less obvious examples of ancillary financial gains from below cost pricing strategy that should nonetheless be considered by competition authorities in a profitability assessment. A bus operator, for instance, could rationally operate certain routes at a loss if it increases the patronage of other routes in its network, given that many passengers take multiple bus rides to complete a journey from their origin to their final destination. A profitability assessment that only considers the revenues of the loss making routes would undermine the overall efficiency enhancing benefits of the pricing strategy. This view appears to have been acknowledged by the OFT in *Cardiff Bus* when determining the profitability of the Cardiff Bus's loss making bus routes (white services):

*“While the OFT recognises that there is a theoretical possibility that the incremental service frequency due to the introduction of white services may have fed normal services and thus generated additional revenues that would have not otherwise existed, the observation of patronage levels for normal services both on an annual and on a monthly basis does not show any discernible such effect”.*<sup>47</sup>

48. A firm also derives ancillary benefits from the protection of its brand value or other intangible assets (i.e. customer relationships) which is often undertaken with the use

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<sup>46</sup> As a case in point, 22 per cent of Ryanair's revenues were derived from “ancillary” services according to their Annual Report of 31 March 2010.

<sup>47</sup> Refer to Decision of Office of Fair Trading, Abuse of Dominant Position by Cardiff bus, Case no: CA98/01/2008, 18 November 2008, p.214, at par. 7.204. While the OFT did not observe an additional revenue from Cardiff Bus' normal services, this statement nonetheless indicates that it considered the potential ancillary revenues in its profitability analysis.

of below cost pricing. The demand for some consumer products are significantly affected by economic downturns and firms are often required to sell below variable cost in order to sustain the brand value of the business. For example, a newspaper title's main asset is likely to be its masthead, which for many titles, have been in existence for many decades. When advertising yields are weak to the point that they do not cover variable costs, it does make sense to close down a title if there is strong prospect of economic recovery in the future. Doing so would mean a loss of viable intangible asset, and therefore, the avoidance of this loss would play a key part in the decision to continue with the title at whatever price levels necessary. Under these circumstances, any profitability assessment of these prices should take account of the preservation of all applicable intangible assets.

## Suggested framework for the assessment of Section 8(d)(iv) complaints

49. We have outlined above the various reasons why firms would rationally price below average variable costs without any predatory intent. Section 8(d)(iv) of the Act, does make such pricing practices exclusionary and it is up to the respondent to argue for technological, efficiency or other pro-competitive gains that outweigh the assumed anti-competitive effects. Given the requirement for competition authorities to assess prices against cost, we believe that in certain circumstances, this analysis should be undertaken in a holistic manner covering the respondent's entire business operations over a period of time. For example, a profitability assessment should ensure that future pro-competitive gains are taken into account through a multi-year approach, that profits available for all products in a defined market be considered in terms of an aggregated approach and that all pro-competitive ancillary gains, both monetary and intangible, be included as revenues to be compared against variable costs.
50. These suggestions may appear to promote a rather conservative approach to profitability assessment (less likely to result in a finding of prohibition). However we believe that the adverse consequences of over-enforcement are greater than those of under-enforcement. As stated by *de la Mano and Durand*<sup>48</sup>, a strict application of a short-term price-cost test that results in a prohibition is likely to lead to false positives that would result in discouraging pro-competitive behaviour. Practically, firms are not able to regularly confirm whether prices for all individual products comply with the price-cost test. Accordingly, the table below outlines a list of the circumstances where a more robust profitability assessment is required and the profitability measurement approaches that would help competition authorities avoid over-enforcement. In all circumstances, a simple price-cost test would be a useful first step to filter out frivolous claims, even it were done using the relatively straightforward average total cost measure.

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<sup>48</sup> Refer to de le Mano and Durand, "A Three-step structured Rule of Reason to assess predation under Article 82", 2005, p. 45-46.

**Table 1: Guidance on the assessment methodologies for predatory pricing in varying market conditions**

Market Condition	Short-term price cost comparison	Multi-year NPV/IRR	Aggregated prices and costs	Inclusion of ancillary gains	Inclusion of intangible assets
Product market characterised by high levels of innovation and significant volume growth	✓	✓			
Product market is characterised by network externalities - i.e. requires many users	✓	✓			
Price reductions appear to be the result of weak macroeconomic conditions	✓	✓			✓
Product market made up of similar products / reasonable scope for supply side substitution by equally efficient entrants	✓		✓		
Product usually sold in conjunction with other related products	✓			✓	
Mature product market with high barriers for most products and price reduction targeted at entrant	✓				

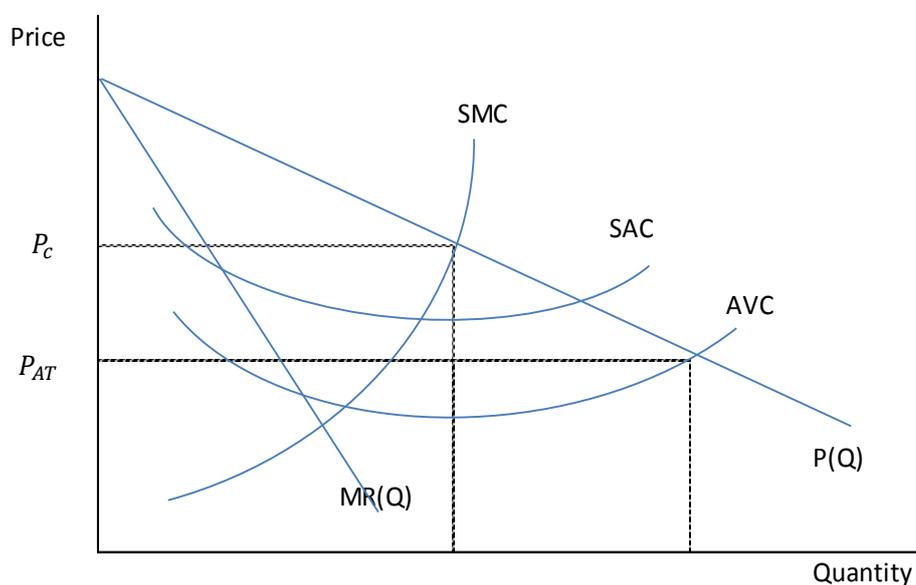
51. There are several conditions that justify the use of a multi-year approach to profit assessment, including markets containing products by high levels of innovation and volume growth (e.g. new consumer products), and markets that are characterised by network effects (e.g. equity exchanges). There is a risk that businesses operating in these markets would fail the short term price-cost test and therefore a longer term assessment is required to avoid an incorrect prohibition finding. The multi-year approach would also be appropriate in markets where macroeconomic conditions are putting downward pressure on prices (i.e. newspaper advertising). In these markets, consideration should be given to the preservation of intangible assets as a rational reason for pricing below variable costs.
52. The aggregated approach should be used in markets where there is little differentiation between products and entrants are able to alternate from producing one product to another (e.g. some commodities like wheat and maize and foodstuffs). If sufficient margins are available on all products in the market in aggregate, then exclusion of equally efficient rival firms is unlikely.
53. For markets where products are commonly sold with complementary goods or services (i.e. schedule air travel and car hire), all ancillary revenues should be incorporated in the profitability assessment.
54. There are circumstances where a short-term single product price-cost comparison would be appropriate. This approach would be more suitable for allegations involving mature markets, exhibiting high barriers to entry for most products and price reductions that are clearly targeting a recent entrant in a certain sub-segment of the market. However, this approach should be supplemented with the effects based rule of reason test, as advocated by *de la Mano and Durand*, to ensure that the market conditions exist that make exclusion and recoupment more likely than not.

55. The main implication for competition authorities in adopting more robust profitability assessments for Section 8(d)(iv) investigations is that further revenue and cost data, extending beyond the period of the alleged abuse, would be required, including budgets and business plans. This may add to the information gathering burden for firms under investigation, however, this burden would be minimal compared to the detrimental effects of over-enforcement.

## Appendix I: The Microeconomic framework underpinning the Areeda Turner cost-based test for predation

1. The traditional cost-based test has its roots well founded in microeconomic theory, more specifically the conditions for a perfectly competitive market. These key features are as follows:
  - 1.1. The market consists of many buyers and sellers;
  - 1.2. Each firm, which is equally efficient, is a price taker of a homogeneous<sup>49</sup> product;
  - 1.3. There is also free entry and exit of firms; and
  - 1.4. Consumers and producers have perfect information about each other's demand and supply levels based on their willingness to buy or sell the product or service respectively.
2. The key result<sup>50</sup> of firms operating in a perfectly competitive market is that for profit maximization, price levels must be set at the point where marginal cost<sup>51</sup> equals marginal revenue<sup>52</sup>. In addition, firms are subject to the law of diminishing marginal utility, whereby consumers derive decreasing benefits with each additional unit of the good consumed.
3. We provide a useful illustration<sup>53</sup> of the microeconomic principles underpinning the Areeda-Turner test below.

**Figure 1: The Areeda-Turner cost-based test for Predation**



<sup>49</sup> These are products have the same characteristics across firms.

<sup>50</sup> Refer to Bishop, S. and Walker, M. "The Economics of EC Competition Law: Concepts, Application and Measurement", 2002, p.18.

<sup>51</sup> Marginal cost refers to the cost of producing an additional unit of output in terms of a product or service offered to consumers.

<sup>52</sup> Marginal revenue is the revenue derived from producing an additional unit of output in terms of a product or service offered to consumers.

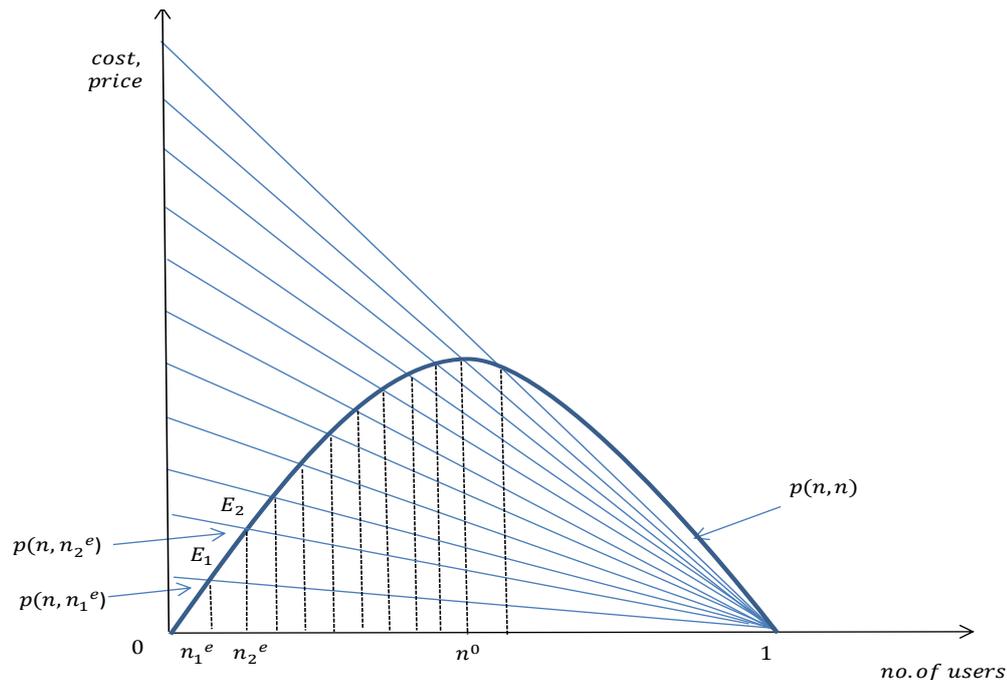
<sup>53</sup> Refer to Church, J.R. and Ware, R. "Industrial Organization: A Strategic Approach", 2000, p.659.

4. The short run marginal cost curve (“SMC”) is upward sloping as result of the law of diminishing marginal returns. The average variable cost curve (“AVC”) is U shaped due to increasing returns on average and productions increases and thereafter decreasing returns due to the law of diminishing margin returns. The demand curve  $P(Q)$  is downward sloping based on the law of demand, which provides that as price of a good increases the quantity demanded decreases, all else remaining unchanged.
5. From the figure above the Areeda-Turner test presents two acceptable price levels for perfectly competitive firms namely:
  - 5.1.  $P_C$  and  $P_{AT}$ , where the short run marginal cost and average variable cost curves intersect the downward sloping industry demand curve represented by  $P(Q)$ .
6. The price level  $P_C$  denotes a competitive profit maximising price (where  $P = MC = MR$ ) and is price level at which no new entrant equally efficient as the incumbent firm would be forced to exit the market. However, due to the estimation difficulties, Areeda and Turner accept that average variable cost would be the acceptable cost measure. This is based on the intuition that no equally efficient entrant would be forced to exit the market even at this price.

## Appendix II: The fulfilled expectations model of demand in a network industry

1. The following is an illustration of the fulfilled expectations demand curve which is considered by economists<sup>54</sup> as appropriate for analysing the microeconomic framework for network industries.

**Figure 2: Demand function and market equilibria where expectations are fulfilled for network industries**



2. The figure above shows the typical fulfilled expectations demand curve in a network industry. Each willingness to pay function  $p(n, n_i^e)$ ,  $i = 1, 2, \dots$  shows the willingness to pay for a varying quantity  $n$ , given the expectations of sales  $n^e = n_i^e$ . There are two further important considerations:
  - 2.1. Consumer's view the good or service has negligible value when its sales and (network effect) are zero<sup>55</sup>; and
  - 2.2. A condition<sup>56</sup> is imposed such that as more of the market is covered, consumers are willing to pay very little despite being able to attain very large network effects<sup>57</sup>. This is represented by the downward slope (beyond  $n^0$ ) of the fulfilled expectations demand curve.

<sup>54</sup> For a detailed discussion on the fulfilled expectation model of demand refer to Economides, 2006, p.102.

<sup>55</sup> This is represented by the figure above at point  $p(0, 0) = 0$  where the fulfilled expectations demand at quantity zero is zero.

<sup>56</sup> Mathematically, the condition is  $\lim_{n \rightarrow 1} p(n, n) = 0$ .

<sup>57</sup> It should be noted that this phenomenon may not apply to all stages of development for a network industry, in same way that the perfect competition model does not fit all markets however it is made for the purposes of presenting a complete economic model of demand.

3. From this model it is clear that price levels will be low or close to zero for as the consumer base increases from 0 to  $n_1$ . During this period, there are increasing returns in consumption and pricing will increase as the consumer values of the product or service increases to from  $n_1$  to  $n_2$ . This increase in demand will continue up to  $n^o$ . Thereafter, due to the simplifying assumption made earlier consumer demand will wane until the theoretical maximum number of users is reached.

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