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## Are there biases in the market definition procedure?

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## Keskusteluaiheita – Discussion papers

No. 903

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### **ARE THERE BIASES IN THE MARKET DEFINITION PROCEDURE? \*\***

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**ABSTRACT:** Indirect analysis of market power requires market delineation. Procedures in competition case law can be biased, as sample of market participants is typically biased or wrong one for analysis of market boundaries. Market delineation can then be biased to too narrow markets, thus finding too much market power. As a remedy, analysis should concentrate on marginal, not infra-marginal customers, and use and understand economic tools such as demand elasticity and direct estimation of market power, if possible.

**JEL: L40, K21**

**Keywords:** market delineation, competition policy, SSNIP-test, demand elasticity



## Introduction

A firm with strong market power might have the ability to adversely affect conditions of competition, whereas a firm possessing only an insignificant amount of market power is usually unable to unilaterally affect conditions of competition at all. In merger review, the most important substantive issue is the change in market power due to the concentration. In European competition policy jargon, a firm with very strong market power is said to possess a dominant position.<sup>1</sup> According to EU competition rules, this status brings about some special obligations. Also the question whether some vertical restrictions have adverse competitive effects hinges on market power. Market power is then at the heart of the assessment in competition case law. How does then one know whether a firm, or several firms, have strong market power?

In principle, market power could be measured directly with the empirical economics tools, e.g., using Lerner-index and demand elasticities.<sup>2</sup> In the US merger review, it has almost become a standard practice to estimate expected changes in market power with these types of tools.<sup>3</sup> However, often this direct approach is not practical. The direct measurement of market power often requires large amounts of good data, sophisticated empirical economic analysis, effort and time. Further, these direct methods are useful mainly in the analysis of the changes in market power, i.e., in merger review, rather than in cases of abuse of market power.<sup>4</sup> Hence, in competi-

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<sup>1</sup> According to the European Court of Justice, "The dominant position thus referred to relates to a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it power to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers." (Case 27/76 *United Brands Co. and United Brands Continental BV v European Commission* [1978] 1. C.M.L.R. 429.) This has become the standard wording for dominance used by courts and authorities.

<sup>2</sup> Lerner-index  $L$  measures the relative difference between price  $P$  and (long-run) marginal cost  $C$  of the good,  $L = (P-C)/P$ . For instance, for a profit maximizing monopoly, Lerner-index is the inverse of the demand elasticity of  $E$ ,  $L = 1/E$ , and for a perfectly competitive firm, it is zero,  $L = 0$ . Hence, the value of  $L$  lies in the range of  $[0, 1/E]$ . The closer the value of  $L$  is to zero, the less the firm has market power, and the closer it is to  $1/E$ , the more the firm has market power.

<sup>3</sup> For the economics of market power measurement and merger simulation, see, e.g., Baker and Breshanan (1988), Baker and Rubinfeld (1999), Nevo (2001), Pinkse and Slade (2002), Slade (2002) and Werden (1997). Ivaldi and Verboven (2002) applied these ideas for market definition and market power analysis in *Volvo/Scania*, Case No COMP/M.1672. See also Hosken et al. (2002) for the discussion of use of these methods at the FTC.

<sup>4</sup> However, there is a simple method called Proportionality Calibrated Almost Ideal Demand System for which the only data requirements are market shares and two price elasticities: the elasticity for a single brand in the market and the industry price elasticity; see Epstein (2002) and Epstein and Rubinfeld (2001). As this method uses market shares, it requires market definition, unlike some other methods.

tion case law, market power is often measured rather indirectly with the structural market analysis. In the structural analysis, one measures market shares, entry and exit conditions, the competitive advantages the firms have, etc. The structural analysis is based on the idea that market structure determines or provides information on market power and the conditions of competition. As economists well understand, there need be no link whatsoever between market share and market power,<sup>5</sup> and fortunately, often analysis in case law also looks at evidence other than purely structural issues. This paper does not discuss these broader questions, but concentrates on the issue of finding the borders of the market the structural analysis concentrates on, i.e., on the market definition practices as used by authorities.

The use of structural tools requires an answer to question, What are the boundaries of the market one should concentrate the analysis on? For instance, the structure of Finnish wholesale market for bananas is quite different from that of wholesale market for all fresh fruit. Whether the market is the wholesale market for bananas or all the fresh fruits in Finland is likely to affect the stance the authorities and the courts are going to take vis-à-vis some of the firms and the market conduct. Hence, the first step in market power analysis could make all the difference.

In competition policy, the established principle to delineate markets is the SSNIP-test<sup>6</sup> discussed below. In this paper, I ignore most of the problems with the SSNIP-test and take the view that, at minimum, it is a proper tool to organize the material to be studied. Here, I shall concentrate on some of the problems of the typical market definition procedure as used by practitioners in competition policy.

The rest of this paper is organized as follows. First I introduce the topic with a brief discussion of market definition in competition law and on the principles that should be followed when establishing the boundaries of markets. This is followed by a discussion of some of the economic tools and principles that should guide market definition. Then I analyze the standard practices in case law and discuss some of the typical errors and dangers in the application of market delineation principles. In the last section, I present some brief concluding comments.

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<sup>5</sup> For instance, a monopolist on a contestable market (a market with very low entry and exit costs) or a duopolist competing in Bertrand markets (firms produce undifferentiated goods and compete with prices) might have no market power whatsoever, and in Cournot-type of oligopolistic competition (capacity constrains sales), market shares reflect the differences in cost efficiency.

<sup>6</sup> Small but Significant Non-transitory Increase in Price.

## Market Definition in Competition Law

Analysis in competition cases, other than pure cartels, proceeds usually such that first, markets are delineated to so-called relevant antitrust markets, and, second, conditions of competition, market power, firm conduct, etc., is assessed on these relevant markets, e.g., by looking at the market shares on each relevant market. The Court of Justice has emphasized the need for market delineation as “[...] the possibilities of competition only can be judged in relation to those characteristics of the products in question by virtue of which those products are particularly apt to satisfy an inelastic need, and are only to a limited extent interchangeable with other products”.<sup>7</sup> The Court of First Instance has explained the role of market definition under Article 81 and 82 cases as follows:

The approach to defining the relevant market differs according to whether Article 85 or Article 86 of the Treaty is to be applied. For the purposes of Article 86, the proper definition of the relevant market is a necessary precondition for any judgement as to allegedly anti-competitive behavior since, before an abuse of a dominant position is ascertained, it is necessary to establish the existence of a dominant position in a given market, which presupposes that such a market has already been defined. For the purposes of applying Article 85, the reason for defining the relevant market is to determine whether the agreement, the decision by an association of undertakings or the concerted practice at issue is liable to affect trade between Member States and has as its object or effect the prevention, restriction or distortion of competition within the Common Market.<sup>8</sup>

A major problem with this ideology is that market definition might not help us to understand the competitive pressures but could obstruct the analysis instead.<sup>9</sup> This is especially true in markets characterized by product differentiation. Then any delineation of markets means that the analysis tends to overestimate the competitive pressure of the brands close to the market boundary but “in” the market and underestimate the competitive pressure of the brands close to the market boundary but “out” of the market. Second, market share need not tell us anything about market power nor the competitive pressures between the products.<sup>10</sup>

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<sup>7</sup> Case 6/72 *Europemballage and Continental Can v Commission* [1973] ECR 215.

<sup>8</sup> Case T-29/92 *Dutch Building Companies v Commission* [1995] ECR II-289, para. 74.

<sup>9</sup> This is one reason for the popularity of the modern more direct approach in the US anti-trust analysis mentioned above, mentioned in Notes 2 through 4 above.

<sup>10</sup> See note 5, *supra*. Two other problems worth mentioning here are “competition for markets” and switching costs. On some markets, the major source of competitive constraint comes from threat of new products and innovations, not from price competition between current suppliers. Competition is then similar as to when firms compete for the privilege to serve the market, such as in government procurement. See, e.g., Geroski (2003) for some discussion and references. Sometimes customers have high switching costs between suppliers. This does not mean that each supplier operates on a separate market.

Whether one agrees or disagrees with the opinions of Courts above, the fact of the matter in competition case law is that markets are defined and that certain practices have become the standard tools of the trade. Market definition can be a useful first step to begin organizing the material that must be studied. The problem is that these tools can misguide the appraisal, unless used with caution. To understand the problems, it is useful to first discuss the SSNIP-test and some economics on which the idea of the test is based upon.

### **Principles of Market Definition**

In competition case law, the standard market delineation tool is the SSNIP-test. The test operates as follows. Define a narrow group of products and a geographic area, e.g., the wholesale market for fresh bananas in Finland, called a "candidate market", and suppose that all of the products on the candidate market are sold by a hypothetical monopolist. Suppose the hypothetical monopolist increases the prices of these goods permanently by 5-10 %, while all other prices are assumed to remain constant. The SSNIP-test asks, What happens to the profits of the hypothetical monopolist?

Consider the case where the hypothetical price increase is not profitable. Concentrating at the demand side substitution, this means that the price increase leads the customers to substitute away from these goods, and to increase their demand for goods outside the candidate market, to the extent that the price increase leads to decrease in profits.<sup>11</sup> The candidate market is then too narrow to be a relevant market, as some goods (or suppliers) outside the candidate market are direct-enough substitutes and provide an immediate competitive pressure on the candidate market. Then one must enlarge the candidate market by including some goods, potential suppliers or geographic area that were first thought to be outside of it, and repeat the hypothetical price test. In the banana example, one could include, e.g., other fresh fruits on the candidate market. The test is repeated until one finds the smallest set of goods and a geographic area such that the 5-10 % price increase is profitable.

For the hypothetical price increase to be profitable, the price increase should not lead the customers to substitute away from these goods to a large degree, nor should it

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Instead, one needs to analyze both the ex ante and ex post competition. See, e.g., NERA (2003) for more discussion and references.

<sup>11</sup> Price increase might also be unprofitable due to supply substitution, i.e., producers outside of the candidate market enter after the price increase and take away enough market share from the hypothetical monopolist.



lead to an immediate entry by producers currently outside of the candidate market, so that extra revenue from the remaining customers is not offset with less customer purchase volume from the hypothetical monopolist. Once one has found the smallest set of goods and a geographic area for which the small but significant non-transitory increase in price is profitable, the candidate market is the relevant antitrust market, as all the major sources of immediate competition are present on that market.

The basic idea behind the SSNIP-test is to find all the sources of immediate competitive pressures the suppliers and buyers of certain goods face. If one has left out significant constraints on market power, the market is too small. If one have kept in firms and products that are not significant constraints to each other, the market is too large. This is rather sensible as a first step in antitrust analysis.

### Some Economics of Market Definition

If there exists good enough data on sales and prices, one can use various economics and statistics methods to argue for some market delineation and criticize others. The case law has emphasized demand elasticities, and especially cross-price elasticity as a tool for market delineation.<sup>12</sup>

#### Cross-Price Elasticity

Cross-price elasticity between goods *A* and *B* is the percentage change in the quantity demanded of good *B* as the price of good *A* is changed by 1 %.<sup>13</sup> It measures how the sales volume of an other good *B* reacts to the changes in the price of the good *A* in question. High value for cross-price elasticity indicates that a lot of demand is transferred from *A* to *B* as the relative price of *A* is increased. Similarly, a value

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<sup>12</sup> See, e.g., *Kimberly-Clark / Scott*, Case No IV/M.623; *Danish Crown / Vestjyske Slagterier*, Case No IV/M.1313; and *ADM / Acatos & Hutcheson – Soya Mainz*, Case No IV/M.941. For authorities' guidelines, see, e.g., *Commission Notice on the Definition of the Relevant Market for the Purposes of Community Competition Law* [1997], OJ C 372/5, *Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services*, OJ C 165, 11.07.2002, especially Note 28, and the *Guidelines for Merger Cases* (in Finnish) by the Finnish Competition Authority, at page 36.

There are some other economic tools that can be used in market definition, such as price correlations. The elasticities discussed here help us understand some of the problems in the typical application of market definition principles in case law.

<sup>13</sup> More formally, cross-price elasticity is  $E_{AB} = (\Delta Q_B / Q_B) / (\Delta P_A / P_A)$ , where  $Q_B$  is the quantity of *B* sold,  $\Delta Q_B$  is the change in the quantity of *B* sold,  $P_A$  is the price of good *A* and  $\Delta P_A$  is change in the price of good *A*. Note that  $E_{AB} \neq E_B$ , the percentage change in the quantity demanded of good *A* as the price of good *B* is changed by one per cent.

close to zero indicates that the demand for *B* does not depend on the price of *A*. Then a high value for cross-price elasticity is supposed to indicate that *A* and *B* belong to the same market and a low value that they belong to separate markets. For example, if a cross-price elasticity has value of 2, it means that a one percent increase in the price of product *A* will result in a 2 % increase in demand of product *B*. There is no absolute figure which indicates that two products are effective substitutes; the only rule is that the figure must be positive and of a value of one or greater. There is some sense in this measure, as high value for cross-price elasticity indicates that *B* could be a good substitute for *A*, and hence provide immediate constraint on the market power of suppliers of *A*.

But observe, first, that the cross-price elasticity in itself does not answer the question in SSNIP-test. In general, cross-price elasticity does not tell us whether a price increase for a set of goods is profitable or not, as it only tells how much demand is transferred to *B* only as the relative price of *A* is increased. If the price increase results in demand being transferred to many different goods, all cross-price elasticities are necessarily low. Thus, even if a cross-price elasticity is low, or even if all the cross-price elasticities are low, a hypothetical monopolist need not have any power to profitable increase the price of that set of goods, and hence the relevant markets must be wider. Second, cross-price elasticities need not be, and usually are not, symmetrical.<sup>14</sup> If one cross-price elasticity indicates that *A* and *B* belong to the same market while the other indicates that they belong to separate markets, what should we conclude? The root of these problems is that the cross-price elasticity only measures one direction the demand can flow to as a price of a good is increased, whereas the SSNIP-test requires a measure for all the demand transferred. Therefore cross-price elasticity is often not a good tool to delineate markets.

Note that the “cellophane fallacy” can also occur in cross-price elasticity. A high value for cross-price elasticity may mean that a firm has exercised its market power to the degree that products outside of the relevant market start to become substitutes. Thus, even if the value of cross-price elasticity is high, we cannot safely conclude that these two goods belong to the same market. Last, if we actually do have good estimates of cross-price elasticities, there is really not much need to delineate markets

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<sup>14</sup> Consider, e.g., the cross price elasticities between a popular good with high demand and a niche good with low demand. Even if all the demand from the niche good is transferred to the popular good, it represents only an insignificant increase in the demand for the popular good, whereas if a tiny fraction of demand is transferred from the popular to the niche good, the demand for the latter might more than double.

at all, as we can directly measure market power.<sup>15</sup> This is especially true in merger cases, as the expected changes in market power due to a concentration are easier to measure with these tools than the market power itself.

### Own Price Elasticity

A much better tool for market delineation is the price or own elasticity of demand. Price elasticity measures the percentage change in quantity demanded as the price of *A* is changed by one percent.<sup>16</sup> If the absolute value of the elasticity is less than one, quantity demanded decreases less in percentage than the price. As revenue equals sales volume multiplied by price, revenue is then increased with a price increase. Similarly, for absolute value of elasticity above one the sales revenue is decreased with a price increase. For example, if elasticity has the value of  $-0.5$ , a two percent price increase reduces sales volume by one per cent, leading to a one per cent increase in revenue. The elasticity of demand almost answers the SSNIP-question, as it describes how the revenue reacts to price changes.

Note that to be able to conclude that profits, and not only revenue, are increased with a price increase, we still need information on (marginal or incremental) costs or price-cost margins. Only if all costs are fixed, it is sufficient to analyze demand only. The higher the price-cost margin, the less elastic the demand must be for that set of goods to comprise a relevant market, and similarly, the lower the price cost margin, the more elastic the demand can be without the altering the conclusion that the set of goods comprise a relevant market. If costs are not reduced enough with the drop of output following a price increase, an increase in revenue does not mean that profits are increased.<sup>17</sup> This is made somewhat more precise at the Note 17. But for the

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<sup>15</sup> See, e.g., the papers mentioned in Notes 3 and 4 above.

<sup>16</sup> More formally, demand elasticity is  $E_A = (\Delta Q_A / Q_A) / (\Delta P_A / P_A) = (\Delta Q_A / \Delta P_A) * (P_A / Q_A)$ , where  $Q_A$  is the quantity of *A* sold,  $\Delta Q_A$  is the change in the quantity sold,  $P_A$  its price and  $\Delta P_A$  the change in the price.

<sup>17</sup> We can construct the so-called critical value of elasticity such that if the absolute value of the elasticity for a set of goods is higher than the critical value, the price increase is not profitable, and that set of goods is too narrow to consist a relevant market, and if the absolute value of elasticity is below the critical value, the price increase is profitable, and the set of goods is (or includes) the relevant market. The critical value depends on the price-cost margin. Suppose the market delineation criterion is that 100 *T* % price increase is not profitable for the hypothetical monopolist (e.g.,  $T = 0.05$  or  $0.1$  for 5 % and 10 % price increase, respectively). The critical value of elasticity is  $E = 1/(L+T)$ , where  $L$  is the Lerner-index  $L = (P-C)/P$ ; see Note 2 above. For instance, if the difference between price and marginal cost is 50 %, the critical value of elasticity is 1.82, and if the price cost margin is 10 %, the critical value is 6.67 (with the 5 % price test). This formula only applies in exact form under certain conditions. For other cases, we can derive similar formulae. This formula serves as an adequate approximation for the pur-

purposes of this paper, from the reasoning above, we can derive a simple and sensible rule for market delineation. If demand for a set of goods is "elastic enough" (absolute value of price elasticity is high enough or demand curve is flat enough), the candidate market is too narrow, and more goods or a larger geographic area must be included. If demand for a set of goods is "inelastic enough" (absolute value of price elasticity is low enough or demand curve is steep enough), the candidate market is the relevant antitrust market.<sup>18</sup>

#### Marginal vs Infra-Marginal Customers

Often, in case law, we do not have good estimates for demand elasticities, so that this tool cannot be directly used to actually delineate markets. But we can still use the concept of demand elasticity to tie down some ideas regarding market definition. Further, we can use the concept and these ideas to evaluate the market definition procedure as often used in case law, and to guide the appraisal from committing the mistakes practitioners sometimes seem to be trapped into.

As noted above, the central question in market definition process is whether the hypothetical monopolist has the opportunity to profitably raise the price. A price increase always leads some customers to adjust their demand behavior and switch to other goods, while some other customers are satisfied with the goods even with higher price. Let us call these groups "elastic customers" and "inelastic customers", respectively. Market definition then becomes a question of looking at what is the share of elastic customers or the fraction of the demand from the elastic customers. If the share of demand from the elastic customers is large, the hypothetical price increase is likely to be unprofitable, and the relevant market is likely to larger than the candidate market. Similarly, if all or very large fraction of the customers are inelastic, the price increase is surely profitable, and the candidate market is the relevant market.

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poses of this paper. For some more discussion, see, e.g., Baumann and Godek (1995), Danger and Frech (2002) and Werden (1998).

Further, we need information on supply substitution, i.e., on supply elasticity for firms currently outside of relevant markets. If the price increase lures new firms to enter the candidate market, price increase might be unprofitable even if demand is very inelastic. For the purposes of this paper we can ignore this issue.

<sup>18</sup> But recall the "cellophane fallacy". A high value for elasticity may mean that a firm with high market power has exercised its market power to the degree that products outside of the relevant market start to become substitutes. Then one should analyze the elasticity at the competitive, not at the prevailing price level.

Also, it is fruitful to think about demand in terms of customers' willingness to pay. The more a customer is willing to pay for a good, the less likely she is to adjust her demand after a price increase. We can then use a thought experiment to construct a demand curve for the goods on the candidate market by ordering the customers according to their willingness to pay: find the customer with the highest willingness to pay and place her first, then the second highest, etc., until all actual and potential customers have been ordered. Now, only those customers whose willingness to pay exceeds the price will purchase the good. Similarly, after the hypothetical price increase, only those customers whose willingness to pay the new higher price will purchase the good. If a price increase for a that set of goods results in enough of the volume of customers adjusting their demand, the price increase is not profitable. Then the relevant market is wider than the candidate market.

Observe then that, for market definition purposes, the behavior of "inframarginal" customers – customers with inelastic demand or high willingness to pay – is totally irrelevant. They pay the higher price rather than switch to goods outside of the candidate market in any case. Analyzing their market behavior will not help us to delineate markets at all.

What matters in market delineation is the behavior of marginal customers – customers with elastic demand or willingness to pay close to the market price. They are the ones that determine whether a price increase is profitable or not and thus what are the borders of the relevant markets. If their proportion is large, the hypothetical monopolist is unable to profitably increase her price, and markets must be wide. If their proportion is small, the hypothetical monopolist is able to profitably increase her price, and markets must be narrow. The analysis in case law should then concentrate on finding these marginal customers and on analyzing their incentives and expected behavior.

### **Market Definition Procedure in Case Law**

As even the SSNIP-test can rarely be directly implemented, usually the relevant markets are delineated with the help of some more or less indirect indicators. There is an "old-fashioned approach" the practitioners have adopted that is still widely used. Rather than trying to measure the relevant elasticities or to analyze the marginal customers, the focus is on the question which products may be regarded as substitutes by a sufficiently large group of buyers. In the old-fashioned approach, products which are interchangeable due to their characteristics, intended use and price are seen as belonging to the same relevant product market. The use of these indicators

is a popular, though incorrect, way of trying to find the borders of relevant markets. The problem is that the ultimate goal of market definition – the evaluation of the degree of market power – is not the central concern of this exercise. In 1997, the European Commission published a Notice on market definition.<sup>19</sup> The approach in this document is more sensible than the old one.<sup>20</sup> The crucial insight brought about the SSNIP-test is that the degree of competition between products and locations determines the boundaries of the relevant market. Hence, the SSNIP-test and the old-fashioned definition do not fit together.

There are great dangers in the use of the old-fashioned approach. Even in the best case product characteristics, price differences and intended uses are misleading. A relevant market is something where market power can be exercised, and the ability of firms to have an impact on market prices and quantities is not generally dependent on the product characteristics, price differences and intended use. The concept of interchangeability then does not allow one to draw any conclusion with respect to market definition. Again, the root of the problem is that interchangeability does not answer the “SSNIP-question”. A few examples illustrate the differences between the old and the modern approach that is better based in the underlying economic logic.

In the *United Brands*,<sup>21</sup> the European Court of Justice decided that bananas formed a separate relevant market, distinct from the wider market of fresh fruit:

The banana has certain characteristics, appearance, taste, softness, seedlessness, easy handling, a constant level of production which enable it to satisfy the constant needs of an important section of the population consisting of the very young, the old and the sick.

Note that the relevant question under the SSNIP-test is not whether a group of consumers perceive differences in product characteristics when comparing bananas to other fresh fruit, but whether a sufficient proportion of consumers would switch a sufficiently large share of their purchases from bananas to other fruit in response to

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<sup>19</sup> *Commission Notice on the Definition of the Relevant Market for the Purposes of Community Competition Law* [1997], OJ C 372/5.

<sup>20</sup> Although, in par. 7, the Commission still repeats the traditional legalistic definition: “A relevant product market comprises all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products’ characteristics, their prices and their intended use.” See also the more recent *Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services*, OJ C 165, 11.07.2002, par. 44-8, where the interchangeability is again emphasized.

<sup>21</sup> *Case 27/76 United Brands Co. and United Brands Continental BV v European Commission* [1978] 1. C.M.L.R. 429.

an increase in price. Similarly, the issue is not whether some groups (e.g., the very young, the old and the sick) have strong preferences for the product in question but whether, for a five to ten percent price increase, significant substitution would take place. Here, analyzing product characteristics lead to totally misleading conclusion on market boundaries.

In *Orkla/Volvo*,<sup>22</sup> the Commission argued that there is a separate market for beer, since beer is 40% more expensive per liter as carbonated soft drinks and 75 % cheaper than wine. Again, the relevant exercise here would have been whether a substantial number of consumers will switch to other products in cases of a five to ten percent price increase. If enough consumers switch so that the price increase becomes unprofitable, products for which there are significant price differences (such as beer and wine) belong to the same relevant product market.

Or consider the market definition in *Renault/Volvo* and *Volvo/Scania*.<sup>23</sup> The Commission identified three markets according to the truck's gross vehicle weight: the light-duty (below 5 tons), the medium-duty (5-16 tons), and the heavy-duty market (above 16 tons). There may exist significant price differences between trucks of different sizes, but this in itself does not imply that there are separate markets. Consider customers that have the need to carry loads up to 18 tons. This can be satisfied with one 18 ton truck or with two 9 ton trucks. Again, what matters is the behavior of marginal customers, i.e., those considering between a purchase of a number of 18 ton trucks and twice the number of 9 ton trucks (or a combination thereof). If the price of 18 ton truck is high enough as compared to two 9 ton trucks, the buyer is better off with the latter choice. If there are enough marginal customers, who would react to price changes, the hypothetical monopolist of heavy-duty trucks is not able to profitable increase the price, as enough buyers would switch to medium-duty trucks. The inframarginal customers who would not switch between truck sizes at all or would do so only in extreme conditions are irrelevant for the determination of market boundaries.

#### Information for Market Definition

Usually, authorities and courts do not operate in vacuum, but will base their assessment also on opinions and data provided by third parties: customers, competitors, suppliers of materials, etc. Typically, the authorities ask the third parties questions

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<sup>22</sup> *Orkla/Volvo*, Case No. IV/M.582

<sup>23</sup> *Renault/Volvo*, Case No IV/M.004; *Volvo/Scania*, Case No COMP/M.1672.

such as "How would your firm alter its purchasing behavior should there be a small price increase within such-and-such product group?"; "What factors there are that make substitution costly or inconvenient between these-and-these products?"; "What factors hinder the use of suppliers outside of such-and-such area?"; etc.

Often many of these third parties are not be uninterested experts, as they might have a stake at the outcome of the antitrust investigation. The competitors or customers might benefit from the antitrust problems faced by the firm(s) under scrutiny. If the transaction leads the concentration to compete less aggressively than the pre-merger companies, the competitors might favor the merger over the current market structure. All of this could lead to strategic behavior, in which the third parties tell the authorities a selected or a tinted story.

Second, typically the interviews concentrate on the largest customers, competitors, and suppliers. So even in the best case where authorities in fact try to conduct market delineation with the SSNIP-test ideologue (without actually analyzing demand elasticities), and even if the third parties do not have strong agendas and do not behave too strategically, if many of the customers interviewed by the authorities happen to be infra-marginal, the authorities will be biased to conclude that the markets are narrow. This might be an erroneous conclusion, as the sample of the customers is not only biased but a totally wrong one. The authorities should instead concentrate on finding marginal customers and analyzing their incentives.

There is then a built-in bias in the authorities' procedure toward narrowly defined markets. The questionnaires are often targeted only to a handful of largest customers. There is usually no screening whether these customers are price-insensitive infra-marginal or price-sensitive marginal customers. What should matter in market definition is the behavior the marginal customers – those who would react to small price changes. At least in some industries, large customers tend to be more price-insensitive, as their operations are more aligned with Just-In-Time philosophy, as a price of a single input might have an insignificant impact on their operations, and as other things such as quality, reliability of the supplier and speedy delivery are much more important than price. Information from only these types of customers tend indicate that customers are not price sensitive, supporting a conclusion that markets are narrow. As discussed above, this conclusion can be erroneous. Markets can be wide even if significant customers are insensitive to price changes.



## **Conclusions**

Many a problem lures to confuse the competition practitioner in market delineation. The SSNIP-test is hard to implement. The cellophane fallacy awaits to steer the analyst to wrongly conclude that markets are wide. Many of the product characteristics or uses are irrelevant or misleading for market definition purposes. The information gathering procedure used by authorities might be biased, as the industry experts might have their own agenda and as the sample of market participants is typically at least biased or totally wrong one for the analysis of market boundaries.

What can one then do to avoid making these mistakes? The practitioner should take the SSNIP-idea seriously. Even if the test cannot be implemented, the basic idea is sound and applicable. Demand elasticities can guide the decisions, if obtained correctly and used with due care. Direct analysis on market power, especially in merger review, can shed light on the effects the concentration has on market power. The analysis should concentrate on finding marginal customers, i.e., those that make or break the extra profit from a price increase, and the expected behavior of the marginal customers. If product characteristics and use are used in market definition, one should establish the connection between these and market boundaries. This can be established by analyzing the incentives of marginal customers. Conclusion from market definition exercise should be checked against competitive pressures from outside of the relevant market. Last, competitive pressures from outside of the relevant market should be taken into account in analysis of market power, to guarantee that possible mistakes during the market delination do not affect the conclusions too much.

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