Chapter 2

Market Definition and Assignment of Market Shares

Market definition is usually the first, and often the most important, task in competition analysis. All calculations, assessments, and judgments about the competitive implications of any given conduct depend on the size and shape of the relevant market. In a case involving possible abuse of dominance, for example, if the defined market is small and the enterprise under investigation has a large share of that market, the enterprise could be considered dominant. If, on the other hand, the defined market is larger and the enterprise’s share is small, it might not be considered dominant. Where a merger is involved, the relevant market might include both the merging firms, in which case competition is more likely to be hurt. If only one firm is involved, there is less cause for concern.

This chapter presents a theoretical approach to market definition that, although difficult to apply rigorously, provides a framework for investigations. To define a relevant market is to describe the context for the exercise of market power—the ability of an enterprise to profitably raise price above competitive levels for a significant period of time. (Price in this context includes all attributes of a product as well as ancillary services that are provided with it.)

Thus, the process of defining a market proceeds backward because it begins by provisionally assuming that a firm (or firms) is exercising market power. It then proceeds to define, through a series of questions, the boundaries of the smallest market in which such conduct could be sustained. After that market is defined, the actual conduct in question is examined to determine whether it has or would have an anticompetitive effect.

A market has two components: its product and its geographic reach. The product market describes the good or service that is bought and sold; the geographic market describes the locations of the producers or sellers of the product. The process for defining the market is very similar in both cases. The task is to include all close substitutes for the products or sources of supply offered by the parties that are under inquiry. An accepted method for doing so is to approach the analysis from the demand side—to determine the extent to which purchasers would readily switch between alternate products or sources of supply. In this discussion, seller preferences and actions are not strictly considered to be part of market definition, but rather part of a distinct process that follows after market definition, namely the assessment of competition. Some competition authorities consider both buyer preferences and seller preferences to be part of market definition. This difference is largely one of approach, not of substance, as discussed further below.

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PRODUCT MARKETS

One definition of a product market is:

A product or group of products and a geographic area in which it is sold such that a hypothetical, profit-maximizing firm that was the only seller of those products in that area could raise prices by a small but, significant and non-transitory amount above prevailing levels. (OECD 1993)

Under this definition the inquiry begins by assuming that there is a monopolist in a provisional market for one of the party’s products (taking each of several products separately, if appropriate). Then, the investigator asks whether, if the hypothetical monopolist raises the price of the product by a “small but significant amount” for a “nontransitory” continuous period, a sufficient number of buyers would switch to other products so as to make the price increase unprofitable for the hypothetical monopolist. If such substitutes exist, they are included in a new provisional product market, and the original question is repeated for the new market. The process continues until no more close substitutes can be identified. Three elements of this process bear additional discussion: the price increase, the reaction of buyers, and the “smallest market” principle.

Price increase

The hypothetical price increase must affect only the product in the provisional market. Its price must rise while the prices of substitutes remain stable. Thus, as a corollary, the price increase must not be inflationary. Also, the increase must be assumed to be nontransitory, that is, expected to continue in the foreseeable future. Buyers are less likely to adjust their purchasing practices in response to a price change that is perceived to be short term, especially if costs may be incurred. A transitory price increase does not harm consumers significantly—the primary concern of competition enforcement.

The hypothetical price increase must be small, yet significant. A small increase is specified because buyers will react to such a change by switching only to close substitutes. A large price increase would point to more distant substitutes, possibly supporting an erroneous conclusion that those substitutes exert strong competitive pressures on the product in question. A market so defined would be too large for accurate competition analysis. Still, the price increase must be significant enough to generate some buyer reaction. Because it is costly to learn about alternative inputs, a very small price increase may cause no buyer reaction. How large is “small but significant”? Some countries (such as the United States and Canada) use a 5 percent increase in most cases. One might use a larger percentage, for example, if the value added at the relevant stage of production were small relative to the value of the product, or if high inflation were to make real prices difficult to measure.

Reaction of buyers

Not all buyers need be willing to switch to close substitutes; only enough of them need to force the hypothetical monopolist to rescind the price increase. How many is that? Answering that question is theoretically possible, given enough information about demand elasticities (percentage change in quantity demanded divided by percentage change in the product price) and the profit margins of sellers in the market. But such information is almost never sufficiently available. Usually, the decision must be made on the basis of more general and accessible evidence on the substitutability of products.

“Smallest market” principle

The process begins with a hypothetical “smallest market”—a single product manufactured by one of the parties, for example—and that mar-
ket is widened only as long as close substitutes can be identified. This practice avoids creating markets that are too diverse and unwieldy and whose structure possibly obscures the recognition of anticompetitive conduct.

Example of market definition process
A simple example might help to illustrate how the market definition process works. Assume that a merger is proposed between two manufacturers of traditional razors and blade cartridges. Their razors and cartridges are of a similar design, employing a handle, or razor, and a disposable blade cartridge. Each enterprise has developed a recognized brand name for its products, which are sold at retail establishments throughout the country. A few other branded products also exist. Other manufacturers, however, make razors and cartridges that look like those of the merging parties and are sold at the same retail outlets. But these carry the private brand of the retailer and are sold at lower prices than those of the merging parties.

Still other manufacturers make disposable razors—a one-piece razor and blade that is thrown away after the blades become dull. One manufacturer makes a proprietary razor and cartridge system employing a unique design, which the manufacturer claims is superior to other shaving systems and which is priced higher than the merging parties’ products. Finally, electric razors are widely sold throughout the country. What is the relevant market?

One could begin by assuming that the market consists solely of branded traditional razor and cartridge systems like those sold by the merging parties. (In other merger cases one might begin with the product made or sold by just one of the parties if their products differ in any significant way.) Assume that a monopolist in this provisional market raised its price by 5 percent for a nontransitory period. Would a sufficient number of consumers switch from these products to others so that the monopolist could not profitably sustain this price increase? Assume the investigators determine that many buyers would switch to private-label brands. The same hypothetical question is then asked for the new provisional market of branded and private-label traditional razors and blades. The process may or may not result in the inclusion of disposables, the higher-priced proprietary product, and electric razors.

The above example illustrates some counterintuitive aspects of market definition:
- Products need not be perfect substitutes to be in the same market.
- Products need not have identical qualities to be in the same market.
- Products need not have identical prices to be in the same market.
- Different parts of a relevant market can be subject to different consumer tastes or preferences.

Note that the relevant question is not whether two given products are close substitutes for all buyers, but whether there are a sufficient number of buyers at the margin so that the hypothetical anticompetitive price increase cannot be profitably sustained. This point can be illustrated in the blade versus electric-razor example. It is probably true that most men strongly prefer either blades or electric razors and would not switch back and forth in response even to moderate changes in relative prices. On the other hand, young men are constantly entering the market. These buyers have not yet established any shaving habits and are likely to be much more sensitive to relative prices, (which include not only the initial price of the razor but also the perceived costs of operation and blade replacement over time). An important question then is what proportion of the total demand for razors is accounted for by beginning shavers? If the number is significant, and if the manufacturers cannot discriminate between new and established shavers, blade and electric razors could be in a single market.¹
**Practical aspects**

It is difficult to apply this market definition model directly. Merely asking market participants for their views on what would happen in the event of such a hypothetical price increase seldom yields answers in which one can have confidence—for at least two reasons. First, business people are not used to thinking in hypothetical terms; their reaction to the question may not be grounded in their actual experiences. Second, business people working in the relevant market may respond strategically to such a question. Their answers may be colored by their perceptions of how the outcome of the investigation could affect them. Thus the investigator must usually acquire a great deal of practical information about the product in question and its possible substitutes—and about the willingness and ability of buyers to switch.

In some cases the correct market definition may be obvious and there may be no serious dispute between the competition agency and the parties to the investigation. Often, however, the answer will not be clear, and then a careful inquiry is necessary.

A first step is to acquire a good understanding of the product's attributes and its possible substitutes—their properties and uses, their prices, and how they are made and sold. Then the investigator should become familiar with how buyers make decisions about substitutes, particularly about the costs of switching. The best evidence that products are close substitutes shows that buyers have shifted between products in response to relative price changes, and that sellers base their business decisions on the prospect of such substitutions. Sources of relevant evidence include:

- Internal documents of the parties under investigation.
- Internal documents of third parties.
- Interviews with the parties under investigation and with third parties.
- Trade associations or statistical bureaus that assemble information on the relevant product.
- Wholesalers or retailers of the same or similar products.

**Geographic markets**

The geographic market is defined by buyers' views of the substitutability of products made or sold at various locations. If buyers of a product sold at one location were to switch to buying the product from a source at another location in response to a small but significant and non-transitory price increase, then those two locations are in the same geographic market. Otherwise, these two locations are in different geographic markets.

In practice, the limits of geographic markets are often determined by transportation costs, transportation time, tariffs, and regulations. For example, the markets for sand, gravel, cardboard boxes, refuse hauling, and other "heavy but low-value" products are often quite small because the cost of transportation over long distances is large relative to the cost of the product itself. Transportation costs can also indirectly affect the limits of geographic markets. For example, the manufacturer of a sophisticated and expensive machine that could be easily shipped long distances may still not be able to sell to distant customers because the cost of providing technical service—transporting technicians or maintaining inventories of spare parts at distant locations—may be too high. The time required to transport a perishable product over long distances may also limit the size of the geographic market.

Tariffs and other trade barriers can do the same. If foreign producers must pay a tariff, the resulting increase in the cost of their product may dissuade domestic consumers from buying it. Then the geographic market from the perspective of domestic consumers would not extend beyond the domestic market. In considering the effect of tariffs, however, it is impor-
tant to consider the dynamic, forward-looking aspect of market definition. For example, a tariff that effectively limits the participation of foreign firms might cease to do so if domestic producers raised their prices a small but significant amount.

Regulations, such as those protecting health and safety, or licensing requirements can serve as barriers. For example, a dairy might be licensed to sell milk in one administrative region but not in another. Or, a professional, such as a health care worker, may be licensed to practice in one region but not in another. It is important to recognize, however, that except in situations where tariffs, regulations, or other external barriers are determinative, relevant geographic markets do not necessarily correspond to convenient political or administrative boundaries.

Evidence relevant to determining geographic markets is similar to that relevant to product markets, though some differences include transportation costs and tariff and non-tariff barriers. Evidence of buyers switching locations in response to relative price changes and of sellers making decisions on the basis of the possibility of such switching is most persuasive. The sources of relevant evidence on geographic market definition are similar to those relating to product market definition.

**PRICE DISCRIMINATION**

There may be some diversity among buyers of a given product. The product may have more than one use, with some buyers using the product for one purpose, and others using it for a different purpose. The range of possible substitutes may differ substantially according to use. For example, a particular chemical may be used as an input in two or more different manufacturing processes. The buyers who use it for one process may be able to switch relatively easily to another product, although buyers who use it for a second purpose may not.

Our hypothetical monopolist would maximize profits by charging the two groups different prices, the group with no close substitutes having to pay the higher price. If the monopolist can profitably sustain such price discrimination, then the use for which a higher price can be sustained constitutes a separate product market. The same analysis holds for geographic markets. If a monopolist at one location can profitably discriminate against a group of buyers in one area by charging a higher price (net of transportation costs), that area would be considered a separate market.

Two conditions are necessary for successful price discrimination. The seller must be able to identify the buyers who would pay a higher price, and arbitrage among the different buyer groups must be difficult. Impediments to successful arbitrage include additional costs associated with resale and measures taken by the primary seller to identify and prevent or punish such activity.

The razor example illustrates a situation with potential for price discrimination. Long-time shavers are less likely than beginning shavers to switch between blades and electric razors. A monopolist of blade systems would charge higher prices to established shavers if it could, creating a market of blade razors for older shavers and a market of all razors for new shavers. But because it is difficult for the manufacturer to sell its products separately to these two groups, price discrimination would be unlikely.

**MARKET DEFINITION IN ABUSE OF DOMINANCE CASES**

The hypothetical monopolist paradigm for market definition may not be fully applicable in abuse of dominance cases because the monopolist may be real, not hypothetical. Prices may already be above competitive levels. Therefore, asking whether an additional price increase could be sustained may be irrelevant. Indeed, the
same issue could arise in any type of case, including mergers.

There is no easy way out of this dilemma. It would be a mistake to assume that current prices are not at the competitive level, even in abuse of dominance cases. Where suspected, however, anticompetitive conduct is relevant to market definition. Market definition and analysis of competitive effects can proceed simultaneously. In any case a careful inquiry into substitutability and sources of supply at different price levels is also necessary.

**Aggregated and linked markets**

A given product may take several forms, sizes, or capacities. Shoes are a common example. A consumer with size 9 feet would not consider sizes 8 or 10 as substitutes. Viewed strictly from the demand side, the relevant product market would be size 9 shoes. But such a market makes no sense because all shoe manufacturers make shoes in all common sizes. This is a form of "production substitution" (discussed below in connection with identifying firms in the market). When production substitution is nearly universal among firms supplying a group of products, the products may be aggregated into a single market, for example men's work shoes in sizes 7-13.

Linked markets are a related phenomenon. Many different types of a given product may be produced, among which there is no universal production substitution. Consider passenger automobiles, which come in many different sizes and shapes and with widely varying features. The prices of new cars may differ by as much as a factor of five. It is not likely that all automobiles are acceptable substitutes for any given buyer, but many buyers would consider a subset of products within the continuum as reasonable substitutes.

The provisional product market would begin with only one or a few products in the continuum, for example, of economy cars, but would expand successively to include more products according to the methodology discussed above. This methodology could produce a product market consisting of products along a major portion of the continuum, even though no single buyer would consider all such products close substitutes. In the same way several regions could be linked into a single geographic market. If there are enough buyers at the margin of any two regions in which there are alternative sources of supply, a series of such regions could constitute a single market, even though buyers at one end of the market would not consider sources of supply at the opposite end as practical alternatives.

The theoretical may have to give way to the practical when linked markets are an issue. Drawing sharp delineations in the product or geographic continuum may not be possible. One should look for obvious breaks or gaps, where there are relatively few buyers at the margin.

**Monopsony markets**

Market power can also be exerted on the buying side of a market—monopsony power. When this is the concern, the same methodology for defining markets is employed, but the questions are posed differently, as mirror images of those asked when investigating monopoly power.

The exercise of monopsony power results in prices that are below competitive levels. Thus when defining product markets, one assumes that a hypothetical monopsonist lowers its prices a small but significant amount for a nontransitory period and then asks whether a significant number of sellers would in turn produce alternative products so that the price decrease would become unprofitable for the monopsonist. If the answer is yes, the market must be expanded to include those substitute products. In defining a geographic market, one asks whether, after a price decrease by a hypothetical monopsonist, a significant number of sellers would switch to selling their products in other locations. If the
answer is yes, the geographic market is expanded to include those substitute locations.

A fairly common example of monopsony power in transition and developing economies is in the processing of agricultural products. Assume that there is a single processor of beef in an area with many cattle farmers. If the beef processor lowered the price it paid for cattle by a small but significant amount for a nontransitory period of time, would cattle farmers switch to producing hogs in numbers sufficient to make the price decrease unprofitable for the processor (presumably by causing an unacceptable reduction in the processor’s sales of beef)? If so, hogs must be included in the relevant product market. A similar question should be asked about the geographic market: would a significant number of farmers sell their livestock to processors at other locations?

IDENTIFICATION OF FIRMS IN A MARKET

An analysis of a market cannot proceed until its structure is fully described. In addition to characterizing the demand side, the sellers or producers must be identified and their market shares assigned. This exercise is forward looking. Firms that currently supply the market are of course included. Additionally, firms that may quickly and easily switch in and out of the market, usually by converting existing productive assets to alternative uses, should also be considered as currently in the market. Current sellers take such firms into account when making their own decisions about output and prices. Thus these firms have an effect on the market.

Consider the case of two chicken processors. One produces whole and cut-up chickens for sale at retail; the other processes chicken meat for use as an ingredient in other foods, such as soups. The two processors use similar equipment and could convert their plants to either use quickly and inexpensively. Although the two types of processed chicken are probably not close substitutes for most buyers, and thus are in separate product markets, the two processors should be considered as participating in both markets, given these facts. Indeed, if such production substitution were universal among chicken processors, the product market could be conveniently defined as “chicken processing.” But other characteristics of the market may make production substitution difficult. The processors of whole and cut-up chickens may have developed brand identities, for example, which would be expensive and time consuming for other types of processors to develop.

Two additional points should be made on this subject. First, the supply-side substitution response must be distinguished from what is usually referred to as the entry response. The supply-side substitution response customarily involves the use of existing assets to begin producing another product, while the entry response usually involves a commitment of time and new resources, a significant portion of which can be considered as sunk. (See annex 1 on barriers to entry for a complete discussion of this important topic.) Of course, both responses are forms of entry, and the distinction may not be clear in a given case. But as long as both responses are fully considered, the result of the analysis will be the same.

Second, although the method of analysis set forth in this chapter treats market definition and identification of sellers as separate steps, with the focus only on the demand side as the basis for market definition, competition agencies in some countries consider both demand and supply-side aspects in defining markets. These different approaches should not generate different outcomes, however.

MARKET SHARES

Firms that are included in the market must be assigned market shares, which are considered to be indicators of a firm’s importance in a market.
Since competition analysis is usually forward looking, market shares should also reflect the likely future significance of firms in the market. Market shares can be measured in several ways—in money value, units of sales, units of production, production capacity, or size of reserves.

If products within a market are sufficiently homogeneous, such as refined metals or agricultural products, then unit sales can be used to measure market shares. Market shares of heterogeneous products, including many types of consumer goods, may be better measured by value of sales. Market shares can be measured in terms of capacity, particularly in manufacturing industries, but capacity can be misleading if quality is variable. For example, a given capacity may not be economically suitable for producing the relevant product at the required level of quality. Such capacity should be discounted or eliminated from market share calculations.

A measurement problem arises if firms are vertically integrated, that is, if firms produce an intermediate product that is used internally in producing a final product. To what extent should such firms be considered sellers in the market for the intermediate product? A vertically integrated firm may sell some of its intermediate product in the merchant market, and those sales should be included in that market. Vertically integrated firms that use all of their intermediate goods internally are more problematic. They would probably not be considered currently in the market. Still, the question must be asked: to what extent and how quickly would they begin selling in the intermediate market in the event of a small but significant and nontransitory increase in price? In answering this question, attention should be given to the extent to which the firm must make additional investments in sales or distribution capacity to begin selling the intermediate product in the market and the extent to which the diversion of capacity to the merchant market would lower profits from sales of its final product.

A few additional special cases may be of interest:

- Some markets are characterized by large, infrequent transactions—for example, orders for the construction of large electric power generation stations. Sales made within a given year may not adequately characterize the significance of the firms in the market, because there are so few transactions within that period. In such cases shares of sales over a longer period would present a more accurate picture.
- In some markets sales are made through a competitive bidding process. Several firms may bid regularly for contracts. If these firms are essentially equivalent as bidders, they could be considered to have equal market shares. The share of each firm is \( \frac{1}{N} \), where \( N \) is the number of bidders.
- If a foreign firm exports the product to the relevant market, the firm should be included in the list of market participants. Its current sales in the relevant market might be the best measure of its significance (much of its capacity located abroad might not be available to produce exports for the relevant market). But, if sales from that firm's country are subject to an import quota, then its future competitive significance might be less than its current share would indicate. It would be advisable to discount that share in some way.

In all cases market shares, however calculated, should be critically examined for their efficacy in describing the significance of firms in the market. When appropriate, these calculations should be discounted or augmented with other relevant information. For example, the market share of a firm currently selling a large quantity of a raw material but with sharply declining reserves should be discounted (or market shares should be calculated on the basis of reserves). Similarly, a firm with deteriorating or obsolete capital stock should be considered less significant than a firm with the same level of sales but with a technologically advanced capi-
tal stock. Likewise, a new firm possessing advanced technology or state-of-the-art equipment but with relatively few current sales should be accorded greater significance in the competitive analysis than its current sales warrant.

NOTE

1. In fact, however, when the Gillette Company and Wilkinson Sword proposed to merge in 1989, the transaction was investigated by competition agencies in several countries, all of whom defined the relevant market as including "wet" shaving products only, not electric razors (OECD 1994, 69).

REFERENCES
