Stockholm Network Experts' Series on Intellectual Property and Competition

The Economics of Competition Policy and Dominant Market Position

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I. Introduction

The economics of competition policy is a fascinating field where the link between economic theory and policy implications is extremely direct and crucial. This holds in particular for the issue of the abuse of dominant market position, which is widely debated in both the economic literature and in the practice of antitrust policy in the United States and Europe.

While dominance refers to a privileged position of a firm, able to take actions independently from its rivals and hence to gain from such leadership, the interpretation of abuse of dominance is somewhat different in US and the EU. In the US, the main federal antitrust statute is the Sherman Act of 1890, which was developed in reaction to the widespread growth of large scale business trusts.[1] The current interpretation of US antitrust law associates abusive conduct with predatory or anticompetitive actions, having the specific intent to acquire, preserve or enhance monopoly power, as distinguished from acquisition through a superior product, business acumen or historical accident (hence a dominant market position *per se* is not illegal). It is generally accepted that an action is anticompetitive when it harms consumers.

In Europe, competition policy has a more recent history which is mostly associated with the creation of the EU and its coordination of policies for the promotion of free competition in the internal market.[2] The application of EU competition law on abuse of dominance involves finding a dominant market position and abusive behaviour on the part of the dominant firm, usually associated with excessive pricing or with predatory strategies aimed at excluding the entry of rivals. However, the analysis of both dominance and abusive behaviours entail complex economic considerations and is the subject of an ongoing revision.

This article will review some recent developments in the economics of competition policy with particular reference to dominant market positions and then briefly discuss the related aspects of EU policy and the debate on its reform.

II. The theoretical background and schools of thought

Two main approaches to the economics of competition policy have been dominant in the last few decades. The Chicago approach of the 1960s and 1970s emphasised the importance of competition and entry in limiting the market power of leading firms, while the post-Chicago approach of the 1980s and 1990s has emphasised the strategic interaction between market leaders and competitors.[3] While the former has ignored strategic interactions and the asymmetric role of market leaders, the latter has ignored the role of endogenous entry, focusing only on the relation between an incumbent and a competitor. The recent theory of market leaders, on which we will focus here, tries to

[1] Section 1 prohibits restraints of trade in general, while Section 2 deals with monopolization stating that "*Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony*".

[2] The main provisions of European Competition Law concerning abuse of dominance are contained in the Article 82 of the Treaty of the European Communities which states that "*Any abuse by one or more undertakings of a dominant position within the common market or in a substantial part of it shall be prohibited as incompatible with the common market in so far as it may affect trade between Member States. Such abuse may, in particular, consist in: (a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions; (b) limiting production, markets or technical development to the prejudice of consumers; (c) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at competitive disadvantage; (d) making the conclusion of contracts subject to acceptance by other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.*"

[3] See Williamson, O. E., *The Economic Institutions of Capitalism* (New York, Free Press, 1985) for an early evaluation of this approach.

integrate the Chicago and the post-Chicago approaches.[4] The results, however, are conflicting: under price competition: while the post-Chicago approach associates any aggressive pricing with predatory purpose, the new theory of market leaders shows that aggressive pricing can have a pro-competitive and welfare-enhancing role without exclusionary purposes.

The general theory of market leaders clarifies the role of leading firms by studying their incentives to undertake preliminary investments and other market strategies to gain advantage over their competitors. For instance, consider investment in research and development (R&D): the post-Chicago approach taught us that when competition in quantities takes place between two firms, one of them would usually gain by over-investing in R&D to reduce costs, which allows it to be aggressive in the market (expanding production and inducing its rivals to produce less). But under competition in prices, the same firm would prefer to under-invest in R&D to reduce costs so as to be accommodating (increasing its price so as to induce its rivals to raise prices). The theory of market leadership, however, shows that things change when entry is open to outsiders, or 'endogenous' actors in economic jargon (that is when firms endogenously decide to enter or not in the market according to their opportunities). In this case, the pressure of entry induces a firm to undertake investments in order to be aggressive in the market; that is, to expand production under competition in quantities and decrease prices under competition in prices. For instance, a leader will always find it optimal to over-invest in R&D to reduce costs and be able to sell more at a price below the price of its competitors. This outcome emerges in many other contexts and under any form of competition as long as entry is open to outsiders. When this condition applies, the competitors' fear induces a market leader to be aggressive: its best strategy requires reducing costs, improving product quality, engaging in a lot of advertising, producing complementary products, bundling complementary goods and so on. This allows the leader to lower its price, gain market share and gain from a reduction in the average costs of production, but it also disciplines competitors and keeps prices at a low level, with unambiguous benefits to consumers.

It is also easy to derive simpler and even more radical results in a more basic context where the leader does not undertake a preliminary strategic investment but rather decides on a strategy before the other firms. In general, a leader in a market where fixed costs of production limit entry, will produce more and will set lower prices than its competitors. Actually, in a market of homogeneous products where production requires a fixed cost, variable costs of production are constant and firms choose their production levels (a simple structure typical of energy and telecommunication industries and some high-tech sectors), the competitive equilibrium implies that only the leader produces in the market. Paradoxically, such apparently monopolistic markets completely dominated by a single firm are perfectly competitive and extremely efficient since they save in costs of entry, making the productive process much cheaper, and consequently keep prices at a low level. For instance, the market for operating systems is largely dominated by a leader (Microsoft), but a dynamic competitive fringe of effective and potential entrants forces the leader to keep a low price on its operating system (Windows).[5] A proper competition policy in these situations should limit intervention to promote entry.

[4] See Etro, F., "Aggressive Leaders", *The Rand Journal of Economics*, 37, Spring (2006), pp. 146-154; "Competition Policy: Toward a New Approach", *European Competition Journal*, 2, 1, March (2006), pp. 29-55.

[5] As is well known, the software market is also characterised by strong network effects and a dynamic component where competition happens mainly through investments for better technologies. These elements create additional motivation for a large market share by the leader.

To extend the analysis to other contexts, imagine that goods are not homogeneous but they differ in quality. This happens when consumer needs or tastes are quite differentiated, as is the case in many sectors where the design and the inner quality of products play an important role. Under these circumstances, firms often compete on prices by choosing different mark-ups for different products. When quality differs, it is important to have a number of firms producing different varieties of goods. A competitive market typically satisfies this requirement, but it tends to induce excessive proliferation of products. The presence of market leaders is again beneficial: they will not conquer the entire market as before, but they will expand production and consequently reduce their prices below the prices of their competitors, some of which will be driven out of the market. Consumers will then face a lower variety of alternative products but pay less for some of them. Again market leadership with endogenous entry creates a net gain for society. An analogous situation appears when we relax the other assumption adopted in the basic example, which was that of constant average variable costs.

This discussion implies two main conclusions. First, a leading market position associated with aggressive strategic investments can be the consequence of a competitive market environment and not the result of market power. Second, whenever firms engage in price competition, the post-Chicago approach associates aggressive pricing or other aggressive strategies (including bundling) with a predatory purpose, while the theory of market leaders provides arguments for which an aggressive strategy is generally pro-competitive and without exclusionary purposes. Moreover, the new theory of market leaders provides insights into what constitutes a dominant position in a market and what an abuse of that position should consist of. First of all, it would be better to differentiate market leaders from dominant firms: market leaders have some strategic competitive advantage over their competitors, but only when they can use it to prevent effective competition and harm consumers should they be considered to be dominant and their behaviour potentially abusive. Second, there should be no presumption that a certain market share amounts necessarily to dominance. As a matter of fact, the theory of market leaders shows that, paradoxically, the correlation between market share and effective market power can be negative. Consider a market where a leader and its rivals compete on price. According to the post-Chicago approach, the leader could try to deter entry with a predatory strategy, or just be accommodating, sharing the market with competitors, in which case its market share may be even smaller than that of its competitors. However, when entry into the market is endogenous and constrained just by technological conditions, the leader has to adopt a strategy of aggressive pricing, and, by undercutting its competitors, it acquires a larger share of the market. In conclusion, considering a large market share as dominance *per se* is potentially highly misleading.

III. The case of the high-tech markets

Competition in high-tech markets is dynamic in the Schumpeterian sense that it takes place as competition *for* the market in a so called *winner-takes-all-race*, and such an element requires an even deeper rethinking of competition policy than suggested in the analysis of the previous section, which was mostly focused on a static concept of competition *in* the market. Even if most economists are used to thinking about market leaders as firms with weaker incentives to invest in R&D, recent theoretical and empirical research has noticed that market leaders play a crucial role in the innovation sector for competitive markets. The fact that market leaders often remain at the top of the technological frontier in their respective industries may not be the sign of a monopolistic position in the traditional

sense, but the fruit of their investments and of the competitive threat deriving from other firms and potential entrants.

The recent theories of market leadership[6] have clarified the mechanics of these results. Leaders have more incentives to invest in innovation than the outsiders when the market for innovation, or what sometimes is called the patent race, is characterised by endogenous entry (as long as there is leadership, which in economic jargon means simply that there is the possibility to commit to an investment choice before the other firms). The crucial thing is that market leaders often remain on top thanks to their investments, but this should not be seen as evidence of inefficiency or of dominance, but rather as a proof of the opposite: the competitive environment spurs investment by leaders and consequently induces a chance that their leadership persists.

Clearly, this has strong implications for competition policy. What the above theory suggests in this case is that market leaders in high-tech sectors investing in innovation may create an efficient situation. Antitrust authorities should be especially careful when trying to stamp out monopoly power in markets that are marked by technical innovation. Moreover, they should be careful not to erode the intellectual property rights (IPRs) of the market leaders because these property rights and the expected protection of future property rights are what provide the strong incentives to invest in R&D: both for the leaders and patent holders and for the outsiders trying to catch up. This is a possible way to approach the well-known tension between antitrust policy and IPRs policy.

IV. The current debate in the EU

The main provisions of European Competition Law concerning abuse of dominance are contained in Art. 82 of the EC Treaty and punish abusive behaviour of firms in a dominant market position. Such an abusive behaviour is usually associated with excessive pricing or with exclusionary practices such as predatory pricing, rebates (particular forms of quantity discounts), bundling (multiple products in a single one), exclusive dealing or refusals to supply an essential input to another firm. In December 2005 the European Commission published a Discussion Paper on exclusionary abuses under Art. 82, which is the subject of an open debate and gives an important indication as to how the Commission may approach exclusionary abuses in the future. The Discussion Paper states that the purpose of Art. 82 is "the protection of competition on the market as a means of enhancing consumer welfare and of ensuring an efficient allocation of resources". This implies that antitrust should protect competition and not competitors. It also means that it should be based on an economic approach aiming at the maximisation of consumer welfare and allocative efficiency rather than on a legalistic approach. In the current proposal there are some positive aspects, mainly in the focus on enhancing consumer welfare and to protect competition and not competitors, but this welfare-based approach is still not well enough supported in the overall design of these guidelines.

According to European Competition Law, abuse of a dominant market position is subject to antitrust screening. Hence, the preliminary phase of any antitrust case applying Art. 82 must define the relevant market and verify the existence of a dominant market position. The Discussion Paper briefly refers to the definition of a proper market,

[6] See Etro, F., "Innovation by Leaders", *The Economic Journal*, April, 101, 495 (2004), pp. 281-303.

which in principle should involve only goods with high substitutability between themselves. Hence, the definition of the relevant market generally depends on an empirical analysis of the way demand of substitute products changes with changes in the price of the hypothetical dominant firm. Such an analysis can be quite complex because the market price could be above its competitive level. This creates problems with the usual methods of market definition. For instance, a widely used method is the *SSNIP-test*, which defines the relevant market as the smallest market where a Small but Significant Non-transitory Increase in Prices, say of 5-10%, increases the profits of a hypothetical monopolist. This test is ideal when prices are close to a competitive level, but it is biased when the market is characterised by higher than competitive prices, a situation which is more likely exactly in cases of abuse of dominance. The consequence is that such a bias leads to a too-wide market definition, which in turn may lead to a finding of no dominance in a wide market: a problem known as the 'cellophane fallacy', from the subject of a classic American antitrust case. However, it should be noted that the cellophane fallacy applies in presence of a single monopolist in the market and when entry is impossible, while the SSNIP-test at the prevailing prices remains a valid test whenever the market leader is constrained by effective competition and/or potential entry.

Following a traditional definition, the Discussion Paper associates dominance with "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 the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of the consumers". Such a definition requires "a leading position on that market" compared to the rivals and the lack of "effective competitive constraints" in the process in which "the undertaking and the other players act and inter-act on the market". Given the positive stress put on an economic-based approach to competition policy, it is important to notice that this definition of dominance is clearly associated with two situations: pure monopoly and market leadership. According to the theory of market leaders, it should be emphasised that a market leader can act truly independently of its rivals (so as to satisfy the above condition for dominance) only when the number of competitors is exogenously set and further entry is impossible, while a market leadership constrained by effective competition and potential entry cannot be associated with dominance: in this case leaders tend to be aggressive (pro-competitive) in their pricing and investment strategies, conquering larger market shares in a way that has nothing to do with dominance as defined above, and which is also beneficial to consumers.

The general stress on market shares in the evaluation of dominance appears in clear contrast with the conclusions of the theory of market leadership, which states that leaders have larger market shares when they are constrained by effective and potential competition since in this case they adopt more aggressive (pricing and investment) strategies which expand their market shares. In other words there is not necessarily a positive correlation between the presence of larger market shares and a dominant position and, especially in highly dynamic markets there is no unambiguous theoretical support for a statement saying that market share "is only a proxy for market power". The structural indicators which traditionally serve as proxies for 'dominance' can be accurate in some traditional markets, but not in others, as indeed in high-tech and New Economy industries (as computer hardware and software, online businesses, mobile telephony and biotechnology).[7]

[7] A clear contradiction emerges in the application of a new positive rule, the so-called efficiency defence, which would allow otherwise abusive strategies if they create a net efficiency gain which ends up increasing consumer welfare (for instance, an aggressive pricing which ultimately benefits consumers). The effectiveness of this rule in safeguarding consumer welfare is weakened when it is stated that some firms are virtually excluded from the possibility of an efficiency defence. In particular, a strange concept of market position "approaching that of a monopoly" is introduced and associated with market shares above 75%, something without any justification in economic theory: a firm is a monopoly or is not (in which case, its behaviour is constrained by competitors), but it cannot be an 'almost monopoly' or a 'near monopoly'.

Finally, and maybe even more importantly, the part on dominance clearly refers to competition *in* the market, meaning standard competition in prices or in quantities for a given product, while it is hardly useful to evaluate cases where competition *for* the market takes place, meaning dynamic competition through product innovations. In these cases, typical of the New Economy, competition is dynamic and innovators conquer large parts of a market, which means that any static analysis of market shares cannot say anything about dominance. In other words, a market can be currently dominated by a single firm, but if many other firms which are not even active in this market are investing in R&D to enter into it, as it happens in many high-tech sectors, this market is substantially competitive in a dynamic sense. Nevertheless, any leader in such a competitive winner-takes-all market would be always characterised as dominant by the static and market-share-based approach.

Moreover, the theory of market leaders tells us that, in these dynamic sectors, as long as they are constrained by effective competition in the market for innovations, market leaders will invest more than their competitors and hence are more likely to remain leaders. In this sense, statements saying that "high market shares, which have been held for some time, indicate a dominant position" can be true in some sectors, but not in some high-tech sectors with competition *for* the market. The general impression is therefore that the current version of the Discussion Paper, which suggests a reform of the approach to Art. 82, still places excessive stress on the importance of market shares to evaluate dominance, and that this can be highly misleading, especially for dynamic markets.

V. Conclusions

In conclusion, recent developments in the economics of competition policy and dominant market positions have emphasised the need for a more careful approach to antitrust and to the role of market leaders, especially in dynamic and innovative markets. Large market shares should not be automatically associated with market power or even with dominance *per se*, while entry conditions both in a static sense (in the market under consideration) and in a dynamic sense (in the competition to innovate and bring new products to the market) should play a major role in understanding whether a position of leadership can give rise to abusive behaviour or not.