Competition Policy[1]

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Abstract: This article discusses competition policy in the United States and the European Union. A brief overview of the historical and institutional background is provided, followed by a review of the scholarly research on competition policy that has accumulated in the field of industrial organization. The emphasis is placed on the role that economic and strategic analyses have played in the development of competition policy in its modern form.

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Competition policy

Competition policy, also known as antitrust policy in the United States, is a body of legislated law designed to promote and maintain competition in markets. While competition policies have historically been limited to controlling the behavior of firms in markets within a country's own border, the growth of multi-national corporations and international trade has necessitated taking a global perspective on their implementation. This article offers a brief description of competition policies in two major economies, the United States and the European Union (EU), followed by an overview of the scholarly research on such policies.

Theoretical basis

The free market ideal is perfect competition, which satisfies four conditions: 1) there exists a large number of small buyers and sellers; 2) the product is homogeneous; 3) all buyers and sellers have full information about the available prices and the nature of the product; 4) there is freedom of entry and exit for the producers. Under these conditions, a market transaction takes place at a quantity where the price of a unit of the good is equal to its marginal cost of production, and available resources are allocated to the uses generating the highest value for society; hence, allocative efficiency is achieved.

Violation of one or more of these conditions could lead to misallocation of resources and, thus, a loss of potential value for society (often called "deadweight loss"). Competition policy is motivated by the recognition of this potential market failure and the resulting deadweight loss. The failure that has received most attention is an "insufficient" number of sellers. The extreme version is the case of a monopoly. A monopolist, by restricting the quantity below the competitive level, causes the price of the good to rise above its marginal cost of production and an inefficient allocation of resources.

Most markets lie between perfect competition and monopoly. In general, firms in a market with fewer firms tend to find it easier to collude, where explicit or implicit coordination of firms' production decisions leads to high prices for consumers and inefficient allocation of resources. Competition policy aims to reduce or eliminate such inefficiency by altering the structural features of the market or restricting the anticompetitive conduct of the firms.

Historical and institutional overview

In the United States, the prosecution of antitrust law violations is carried out under the auspices of three major antitrust statutes: Sherman Act of 1890, Clayton Act of 1914, and Federal Trade Commission (FTC) Act of 1914. The introduction of the Sherman Act was facilitated by the growing populist sentiment against big business, which can be traced back to the severe recessions during the 1870s and the 1880s that resulted in fewer surviving firms with greater market power.

Section 1 of the Sherman Act prohibits firms from conspiring to engage in practices against public interest, while Section 2 addresses the problem of market monopolization. Because the Sherman Act emphasizes punishment rather than prevention, the Clayton Act and the FTC Act were introduced in 1914 to check monopoly in its incipiency. Sections 2 and 3 of the Clayton Act address price discrimination and tying practices (including bundling, exclusive dealing, and other vertical restraints), while Section 7 focuses on restricting merger activity. These practices are deemed illegal only if they *substantially* lessen competition or create a monopoly. The FTC Act established the Federal Trade Commission in order to evaluate and enforce antitrust policies before going to court.

Antitrust law in the European Union (EU) addresses the issues of cartels and monopoly in Articles 101-109 of the Treaty on the Functioning of the European Union (TFEU).[2] Article 101 of TFEU prohibits collusion and anticompetitive practices and is comparable to Section 1 of the Sherman Act. Article 102 of TFEU is the counterpart to Section 2 of the Sherman Act. Article 102 of TFEU is also used in testing merger cases by asking whether the combined firms will create or reinforce a dominant firm in a given market. The control of merger activities that significantly impede competition in a market within a member state is addressed in Article 2 and 3 of the European Commission's (EC's) Merger Regulation.

In the United States, antitrust laws are enforced by the Antitrust Division within the Department of Justice (DOJ) and the Federal Trade Commission (FTC). The equivalent position in the EU is the Directorate General for competition (DG Comp) of EC. The federal enforcement in the U.S. is supplemented by state-level antitrust statutes as well as private antitrust law suits. Similarly, the competition laws of the EU's member states supplement the articles in TFEU. However, private enforcement actions are rare in the EU.

Enforcement of competition law

Three broad types of anticompetitive conduct are subject to antitrust enforcement: 1) price-fixing, bid-rigging, or cartel formation; 2) attempt to gain a monopoly for the purpose of exercising market power; 3) mergers that create excessive market power.

In cases of cartels and monopolization, the DOJ, the FTC, or private parties can bring lawsuits. While the Sherman Act allows the DOJ to pursue criminal charges, DOJ more often brings civil suits that seek injunctions. Private treble damage lawsuits can also be brought. The prevention of potentially anticompetitive mergers is enforced through lawsuits brought by the DOJ or the FTC; the objective of such a suit is an injunction to prevent the merger from proceeding. The FTC does not have the authority to pursue criminal charges.

The standard of proof can differ among the types of anticompetitive conduct. For mergers and monopolization the *rule-of-reason* standard is typically used. Successful prosecution requires extensive evidence based on a social cost-benefit analysis. Under this standard, there is a high resource cost imposed on both the plaintiff and the defendant due to the uncertainty as to what activities are violations. The other standard applied by the court is the *per se* standard which judges certain activities

[2] The constitutional basis of the European Union consists of two treaties: the Treaty on European Union (TEU; "Maastricht Treaty") and the Treaty establishing the European Community (TEC; "Treaty of Rome"). The Treaty of Lisbon (signed, 2007; in force, 2009) amended these two treaties, in the course which TEC was renamed as the Treaty on the Functioning of the European Union (TFEU). As such, articles 101-109 of TFEU correspond to articles 81-89 of TEC with all the relevant modifications.

illegal regardless of economic effect. One only needs to show that the act has been committed. An example is cartel behavior involving price-fixing, bid-rigging, market division, or restriction of output.

The enforcement mechanism can be either public or private. Public enforcement entails fines, imprisonment, or structural change as in the cases of Standard Oil (1911) and AT&T (1982). In the United States, private enforcement entails treble damage, which is three times the damage measured as the excess payments made by customers over what the prices would have been in the absence of the conspiracy. In the EU, the recovered amount tends to approximate the actual loss incurred, and this limits the incentive for private litigation. In addition, the burden of proof often rests with the plaintiff, thus significantly raising the cost of discovery.

Economic analysis of competition policy

Modern research has made substantial contribution to the development of competition policy in three areas: Understanding the behavior of cartels; identifying the market conditions under which predatory or exclusionary practices can be a rational strategy; and providing an analytic framework for evaluating mergers. This section summarizes the basic issues in these categories.

Cartels Explicit cartels are *per se* illegal in many countries. As such, most existing cartels are tacit: the agreement must be self-enforcing in that each firm must have an economic incentive to abide by it. According to the economic theory of tacit collusion, this requires that, for each firm, the present value of discounted profits from adhering to the cartel agreement must exceed that from deviating (and, hence, destroying the cartel arrangement):

$$\frac{1}{1-\delta}\pi^C \geq \pi^D + \frac{\delta}{1-\delta}\pi^N,$$

where π^C is the per-period profit to a firm under the cartel agreement, π^D is the one-time profit to optimally deviating from the agreement, π^N is the per-period profit earned by a firm when the industry reverts to oligopolistic competition (following dissolution of the cartel), and δ is the discount factor.

Note that the various profit levels are functions of the structural features of the market such as the number of firms, demand conditions, and technological conditions. The past theoretical literature has focused on establishing the relationships between the various structural parameters and the degree of cartel stability. [Levenstein and Suslow (2006)] This line of research informs the antitrust authorities of which types of industries are more or less conducive to formation and maintenance of cartels.

A more recent line of research asks what observable patterns in firm behavior may signal current or past cartel activity, hence, turning the focus on *detecting* existing cartels. Based on detailed case studies, Harrington (2006) proposes a variety of collusive markers which can be used as a signal of collusive behavior. A related issue, arising from the "tacit" nature of cartels, is that we only get to observe cartels that are discovered; we do not observe cartels that are formed and stay undetected. Given that the detection activities affect the incentives of firms to form cartels, how do we evaluate the effectiveness of the policy if we only observe those cartels that are discovered? Harrington and Chang (2009) addresses this issue by modeling a population of heterogeneous industries in which cartels can be created and dissolved on the basis of stochastic market conditions as well as the detection activities of the antitrust authority. The enforcement is explicitly modeled and influences the stability of cartels. The time-series behavior of cartels in this model provides markers of discovered cartels that can be used to *infer* the impact of competition policy on the population of all cartels. Chang and Harrington (2010) use this approach to evaluate the effectiveness of the Corporate Leniency Program.

Prior to the early 1990s, most cartels involved firms from a single country. The recent globalization of industries and the increasing number of multi-national corporations, however, have resulted in many cartels involving participants from multiple nations. Connor (2008) reports that the number of foreign defendants in U.S. criminal cartel cases rose from less than 1% before 1995 to 40-70% after 1995. The magnitude of punishment has also increased dramatically during this period, reflecting a major shift in antitrust enforcement. The largest price-fixing fine prior to 1994 was $2 million (and imposed on purely domestic cartels). Between 1994 and 1999, the record fine kept increasing each year, ultimately reaching $500 million in 1999 (imposed on Hoffman-La Roche as part of their global vitamins cartel).

One cause of the increased likelihood of detection and prosecution of cartels is the Corporate Leniency Program, where the cartel participant that cooperates with the enforcement agency receives an amnesty. The U.S. DOJ instituted the program in 1978 (revised in 1993 and 1994). The success of this program has led to the adoption of similar program in the EC in 1996, soon followed by others, including Canada, U.K., Japan, South Africa, and Brazil. Connor (2008) reports, “At least 300 international cartels have been discovered by authorities since 1990 and almost half of them since 2000.” While the positive impact this program has had on the rate of discovery is clear, its impact on the rate of *cartel formation* is not and remains a subject of on-going research. [Chang and Harrington (2010)]

Monopolization Anticompetitive conduct includes an array of strategies to drive out rivals or to deter possible entrants. To the extent that these actions are successful, they have efficiency implications and are subject to antitrust enforcement. Two types of anticompetitive practices in this category have been identified: 1) predatory pricing and 2) exclusionary practices.

Traditionally, predatory pricing involves a predator firm increasing its output with the intention of driving down the market price to impose losses on its rivals. A sustained period of losses eventually forces the rivals to exit the market. With the newly acquired monopoly position the predator firm reduces its output and raises the price to the monopoly level. As long as the present value of the extra profits enjoyed as the monopolist exceeds that of the extra losses incurred during the period of predatory pricing, it is rational for the firm to engage in the predatory strategy.

However, two considerations pose a significant challenge to the original theory: 1) the predator firm is typically of a larger size than its intended victims, and has more to lose during the period of predation than the rivals; 2) the monopoly profits expected after the rivals’ exits are not secure as the price increase is likely to invite new entries. McGee (1958) concluded that predatory pricing is rarely a rational strategy and the observed pricing simply reflects efficiency differences between these firms. But recent game-theoretic analyses have shown that, under certain conditions, predatory pricing can be an equilibrium strategy.[3] For instance, firms operating in multiple markets may have an incentive to create the reputation of being "aggressive" in one market, if the reputation thus created can be carried over to other markets. Another case is when the predator firm has better access to financial resources than its victims. Yet another possibility is that the leading firm may strategically use its price as a signal of its lower cost, when the rival firms are uncertain about the cost level of the predator. This may convince rivals to alter their competitive behavior or simply move to another market.

Exclusionary practices are used by a dominant firm or a monopolist incumbent to exclude firms from entering its market. Tactics include tie-in sales or bundling, exclusive dealings, long-term contracts with buyers, and ownership of essential inputs. Many of these exclusionary tactics are used in the context of vertically related markets – i.e., output markets and input markets – where market power in one market can be leveraged to obtain market power in another. Although there is a large volume of recent literature supporting the rationality of such behavior, the debate on this issue remains inconclusive.

Enforcement against predatory and exclusionary practices has been difficult for the court because of the lack of success in developing general operational rules for distinguishing predation from competition. Instead, the court has relied more on the quantitative rule based simply on prices and costs, as suggested by Areeda and Turner (1975). The impact of economic theory has, thus far, been limited.

Mergers In the United States, proposed mergers, acquisitions, and joint ventures are reviewed by the DOJ and FTC. Under the Hart-Scott-Rodino Act of 1976, parties to a merger or acquisition, meeting certain dollar thresholds, are required to file premerger notification reports with both of the agencies. These filings are followed by a prescribed waiting period before the transaction is consummated. The review process allows DOJ/FTC to evaluate the merits of the proposed deals and challenge them if necessary.

The analytical framework and the specific standards used to review the merger proposals are described in *Horizontal Merger Guidelines*[4] issued jointly by DOJ and FTC. The main purpose of the review process is to examine whether a proposed transaction will confer market power upon the newly merged entity. This requires properly defining the product/geographic market for the merger participants and any relevant competitors. The competitiveness of the market, both pre- and post-merger, is measured by a concentration index. Agencies use the Herfindahl-Hirschmann Index (H-index) as the concentration measure, where it is defined as the sum of the squared market shares of all firms in the given market. Whether a proposed merger is challenged or not depends on both the pre-merger concentration as well as the "increase" in the concentration that the proposed merger will induce. Weighed against the potential inefficiency from increased market power is the economic gain attained through economies of scale and scope (which may ultimately benefit consumers). Finally, the Guidelines recognize the possibility that relatively easy entry may quickly erode any market power that the merged firm may have captured.

[3] See Ordover and Saloner (1989) for a survey.
[4] Available at http://www.justice.gov/atr/public/guidelines/hmg-2010.html.

Due to the complexity in the jurisdictional division between the EC and the Member States, merger control in the EU starts with a pre-notification consultation in which the EC's jurisdiction over the proposed merger is examined. Upon the confirmation of its authority, EC commences the merger review process. The legal and analytical framework surrounding the review process is provided in the EC Merger Regulation No 139.2004 of 2004. The economic analysis driving the review is similar to that described in the U.S. Merger Guidelines.

Conclusion

Over the last 30-40 years, the traditional politically-motivated antitrust policy has been replaced by a competition policy motivated by rigorous economic and strategic analyses of firm behavior. The advances made in game-theoretic modeling have contributed to understanding the strategic behavior of firms and have led to the reformulation of competition policy. The impact of these advances on the decisions of the court has been limited because of the difficulty in transforming theoretical insights into a set of quantifiable rules that can guide the court's decisions.

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