

A Probe into Pricing Algorithms and the Issues of Competition Law

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Abstract

The ability of pricing algorithms to monitor market prices as well as respond to price changes quickly has led to a market with a high degree of transparency. It also helps firms make better decisions in that firms can quickly identify and set optimal prices and can also respond to market conditions and competitors' strategies. However, the pricing algorithm is also used to implement strategies that violate competition laws, and this has indeed become relatively easier. Actual cases have emerged in recent years for violating competition laws by way of strategies like retail price maintenance price, fare parity provision, predatory pricing, attempted monopolization, and the abuse of dominance. On the other hand, the pricing algorithm can not only frequently interact with competitors, but may also eliminate many irrational elements or uncertain factors, which causes firms in the market to be more likely to have consistent decision-making behavior. Therefore, parallel conduct occurs more often, which then provides favorable conditions for firms to collude. In actual collusion cases, the human agent is still the initiator, but, after that, the price algorithm takes over the work of carrying it out. It then becomes more difficult to search for direct evidence of possible communication between agents. Accordingly, the law enforcers need to catch up in terms of acquiring the capability for testing, screening and detecting a program, either statically by tracing out the illegal part or dynamically by using input-output simulation. In the testing, finding evidence of the existence of a reward-punishment mechanism is the core job. However, the court still prefers not to accept testimony based on economic analysis alone, and it still needs to find additional factors that prove that this mechanism has been written, interviewed, communicated or leaked in various forms. To help law enforcers to perform a quick primary review of cases, this article provides five categories of possible violations. Finally, this article suggests

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“two approaches plus one article” -- the results-based approach, the compliance-by-design approach, and Article 25 of the Fair Trade Law. The former approach gives the authorities the right to intervene in firms’ algorithmic programming whenever they see in the market a supra-competitive price. The latter approach clearly announces to all firms that they are responsible for all legalities once they adopt or design a pricing algorithm. Furthermore, any measures or actions in relation to a new business model causing significant harm to consumers, even though antitrust is not involved, can still be reviewed on the basis of an “unfair method of competition” according to Article 25.

Keywords: Pricing Algorithm, Resale Maintenance Price, Predatory Pricing, Tacit Collusion, Compliance by Design.