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Competition and Generative AI:

A contribution to the European Commission's debate

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I. Introduction: the role of data for generative AI

With the purpose of contributing to the European Commission's (EC) call for papers, this essay aims to provide insights on the role and importance of data for generative AI. Moreover, this paper discusses how can competition policy address the potential anticompetitive concerns arising from generative AI, without harming innovation and consumer welfare.

The ongoing process of digitalization of the economy have already deeply affected the today's society. New business models are being constantly created and firms have been constantly innovating with respect to how they operate and how they interact with consumers. By using artificial intelligence (AI), companies are now able to gather, analyze and deploy large amount data to make commercial decisions with great speed. Against this backdrop, generative AI – a subset of AI – gains particular importance. This is because generative AI presents a singular, notably the ability to use algorithms to generate new, unique content, without direct human supervision. This content includes texts, images, videos, and sounds, and can be tailored for performing several tasks. Generative AI uses machine learning, deep learning techniques and neural networks to generate outputs that resemble those that humans can produce.

From an antitrust standpoint, the role of data in generative AI is twofold. On the one hand, the use of big data and algorithms enables firms to innovate, offering newer products and services to users more efficiently, benefitting consumers in a range of applications and industries, including healthcare and the financial sectors. For instance, generative AI is being used to generate new molecular structures with desired properties, enabling the discovery of new drugs and treatments in the pharmaceutical sector.² Furthermore, it can increase efficiency of financial markets by simulating and testing market scenarios using financial market data, enhancing product and service development.³

On the other hand, generative AI can give raise to competition concerns of both coordinated and unilateral nature. Firms can use algorithms to monitor market and rivals' data with the goal of changing prices according to the prices of its competitors, facilitating collusion. Moreover, algorithms can enable unilateral conducts that arguably harm competition by exploiting or excluding rivals, such as price

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² McKinsey, "Generative AI in the pharmaceutical industry: Moving from hype to reality", (January 9, 2024), <https://www.mckinsey.com/industries/life-sciences/our-insights/generative-ai-in-the-pharmaceutical-industry-moving-from-hype-to-reality>.

³ Organisation for Economic Co-operation and Development (OECD), "Generative Artificial Intelligence In Finance", *OECD Artificial Intelligence Papers*, (December, 2023), <https://www.oecd-ilibrary.org/docserver/ac7149cc-en.pdf?expires=1709927348&id=id&accname=guest&checksum=49B2AB5210A0147D0D53A193E2B6F5CD>.

discrimination. These contradicting effects pose significant challenges for antitrust authorities on how to deal with generative AI and its usage of data.

II. Insights to ensure markets remain competitive

Despite a challenging task, the experience from antitrust authorities and empirical studies indicate relevant factors that should be taken into account by enforcers with respect to the regulatory conundrum pertaining to the role of data in generative AI. As regard collusion, firms can use algorithms to materialize a price-fixing agreement. Such agreements can occur with – as it occurred in *US v. Airline Tariff Publishing Company (ATPCO) (1994)*⁴ or without direct communication – as the United States’ Department of Justice (DOJ) recently pondered on a statement of interest endorsing the claim of the State of Tennessee against the real-estate platform RealPage.⁵ Therefore, even though not all price-algorithms are necessarily harmful, the same rules prohibiting price-fixing through individuals apply to price-fixing using algorithms, in case evidence points in this direction.

With respect to potential abuse of dominance or monopolization situations, pricing algorithms are noteworthy of attention. Empirical literature has demonstrated that price discrimination – including dynamic pricing – instead of uniform pricing can increase total social welfare, benefiting both consumers and companies. Chen and Jeziorski (2023) found that in oligopolists markets in the aviation sector dynamic pricing produce better total welfare outcomes in comparison to uniform pricing.⁶ Faruqui and Sergici (2010) analyzed projects for implementing dynamic pricing on electricity in the United States, Canada, Australia and France and concluded that consumers in electricity markets were responsive to dynamic changes in prices when they became acquainted with information on prices and supply – such as times, dates, and length of the price change - with advance, enabling them to use resources more rationally.⁷ Corroborating this view, the OECD (2017) has released a study and concluded that the lack of transparency of algorithms limit consumer’s ability to make rational decisions, which could harm welfare.⁸

In this sense, one should emphasize that imposing *ex ante* rules on digital algorithms could be troublesome. Nor price regulation is encouraged, since both alternatives disregard the procompetitive aspects of algorithms. Thus, an effects-based approach needs to be adopted, as the OECD suggests.⁹ Authorities need to understand and differentiate how each algorithm uses data. Algorithms that deploy, confidential, non-public available data certainly are more concerning. Furthermore, platforms

⁴ U.S. v. Airline Tariff Publishing Co., 1994-2 Trade Cas. (CCH) 70,687 (D.D.C. Aug. 10, 1994).

⁵ *RealPage, Inc., Rental Software Antitrust Litigation*, No. 3:23-md-03071, Memorandum of Law in support of the State of Interest of the United States, filed on November 15, 2023.

⁶ Nan Chen and Przemyslaw Jeziorski, “Consequences of dynamic pricing in competitive airline markets”, *Essays on Quantitative Marketing and Economics*, UC Berkeley, (May 19, 2023).

⁷ Ahmad Faruqui and Sanem Sergici, “Household response to dynamic pricing of electricity: a survey of 15 experiments”, *Journal of Regulatory Economics*, 38(2), 193-225, (August 31, 2010).

⁸ OECD, “Algorithms and collusion: Competition policy in the digital age”, (September 14, 2017), <https://www.oecd.org/competition/algorithms-collusion-competition-policy-in-the-digital-age.htm>.

⁹ Id.

that gather data from rivals and encourage competitors to use such a data also demand a closer look. Fostering competition is essential, and regulators need to prioritize enhancing the transparency and accountability for the use of data in generative AI.