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**Global Forum on Competition**

**Artificial Intelligence and Competitive Dynamics in Downstream Markets**

**- Session I -**

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This contribution is submitted by Brazil under Session I of the Global Forum on Competition to be held to be held on 1-2 December 2025.

More documentation related to this discussion can be found at: [oe.cd/aidm](https://oe.cd/aidm)

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## *Brazil*

### *Part 1. Administrative Council for Economic Defense (CADE)*

#### 1. Introduction<sup>1</sup>

1. AI applications' range of impact, as a tool that can strengthen market power, depends mostly on how the market reacts to the models underlying those applications.
2. Foundational models<sup>2</sup> (specialized in text, sound, image, video, or multimodal), AI reasoning and agents' models have been developed from 2 approaches: open source<sup>3</sup> and proprietary (or closed) models<sup>4</sup>.
3. Despite the several levels of openness to training and testing data, model architecture, parameter codes and weights, open source models provide both developers and users with the possibility to customize applications for multiple tasks without the payment of royalties to the companies that developed, trained, and tested the models<sup>5</sup>. The benefits to competition and innovation seem to be intuitive due to the fact that the open source architecture reduces entry barriers<sup>6</sup> and increases the number of economic agents that offer goods and services to consumers<sup>7</sup>.
4. The proprietary (or closed) models do not allow users of their applications to use them for the development of other tools with which they can possibly compete. Also, any business purposes must be previously authorized by the developers. Such models are based

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<sup>1</sup> This paper was written by Felipe Roquete, Assistant Superintendent of the Office of the Superintendent General at CADE. It was translated into English by Izabel Medina Brum and proofread by Nathália Oliveira Silva, in-house translators at the International Unit of CADE.

<sup>2</sup> For concepts of AI foundational models, see: Schneider, J., Meske, C. & Kuss, P.(2024), Foundation Models. *Bus Inf Syst Eng* 66, 221–231. Available at: <https://doi.org/10.1007/s12599-024-00851-0>. Retrieved on: 25 August 2025.

<sup>3</sup> Open Source Initiative. Open Source Artificial Intelligence Concept. Available at: <https://opensource.org/ai/open-source-ai-definition>. Retrieved on: 22 August 2025.

<sup>4</sup> Balka, K., Raasch, C. and Herstatt, C. (2010), How Open is Open Source? – Software and Beyond. *Creativity and Innovation Management*, 19: 248-256. <https://doi.org/10.1111/j.1467-8691.2010.00569.x>

<sup>5</sup> Most of the open source Large Language Models (LLM) use the Apache 2.0 license. By fulfilling simple requirements, developers can use it for business purposes, royalty-free. See: <https://opensource.org/license/apache-2-0>.

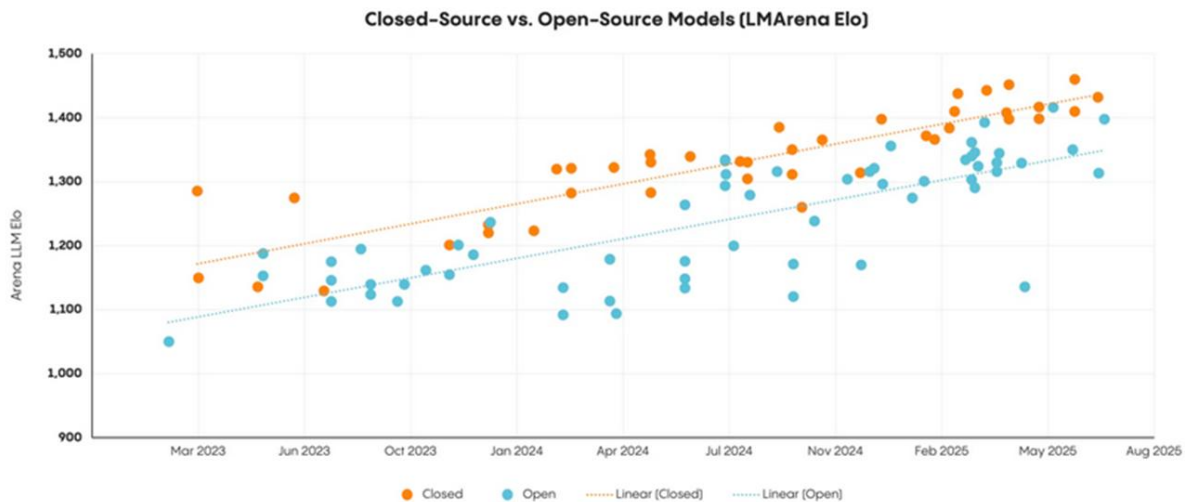
<sup>6</sup> Developers are free of development, training, and testing costs regarding infrastructure, human resources, and services.

<sup>7</sup> In this case, developers of open-source models would be compensated through non-financial benefits such as model developments and improvements from the contributions of users of the ecosystem.

on closed architectures where they control the access to their apps by charging subscriptions and access via Application Programming Interface (API).

5. However, it is worth highlighting that, the difference between the generative AI proprietary and open source models<sup>8</sup> has recently decreased<sup>9</sup>. It regards both quality and accuracy, mainly after the availability of models developed by companies based in China that increases the procompetitive potential of the distribution of open-source models:

**Figure 1. Evaluation of foundational open-source and proprietary models**



Source: LMArena<sup>10</sup>

6. Thus, it is possible to affirm that the impact of the AI in the downstream market may vary depending on the existence of a winner in the race between proprietary and open-source models<sup>11</sup>.

<sup>8</sup> Access a comprehensive list of the open-source LLMs at: <https://github.com/eugeneyan/open-llms>.

<sup>9</sup> Joshi, S. (2025), A Comprehensive Review of Qwen and DeepSeek LLMs: Architecture, Performance and Applications (May 15, 2025). Available at: <https://ssrn.com/abstract=5267655>. Retrieved on: 25 August 2025.

<sup>10</sup> The LMArena is a public platform which tests Large Language Models through comparative anonymous evaluation. The methodology can be find at <https://lmarena.ai/>. Retrieved on: 25 August 2025.

<sup>11</sup> Literature shows that, upon beliefs about the so-called race for development of AI tools resulting in competitive advantages granted to a potential winner, the structure of incentives of the market would have specific characteristics that could influence the competitive level, among other variables: Armstrong, S., Bostrom, N., Shulman, C. (2016), Racing to the precipice: a model of artificial intelligence development. *AI & Society*, v. 31, n. 2, p. 201–206, 2016, p. 01 (state that the first company to provide a general artificial intelligence model would reach a position of near-monopoly in the market); Naudé, W., Dimitri, N. (2020), The race for an artificial general intelligence: implications for public policy. *AI & Society*, v. 35, n. 2, p. 367–379, jun. 2020, p. 367 (state that there would not be enough elements to make a cost-benefit analysis nor to estimate risks in the AI development); Cave, S.; Óhéigeartaigh, S. S (2023), An AI Race for Strategic Advantage: Rhetoric and Risks. *Proceedings of the 2018 AAAI/ACM Conference on AI, Ethics, and Society*. In.: *AIES'18: AAAI/ACM Conference on AI, Ethics, and Society*. New Orleans: ACM, 27 December 2018. Available at: <https://dl.acm.org/doi/10.1145/3278721.3278780>. Retrieved on: 25

7. In a scenario where open-source models prevail, the risks of anticompetitive conducts such as tying, bundling, foreclosure, etc.,<sup>12</sup> could be mitigated due to the dynamic of downstream markets that would benefit from the absence of economic agents in dominant positions in the upstream market.

8. Otherwise, in a scenario where proprietary models are dominant, the risks of anticompetitive conducts in downstream markets are increased as companies that develop those models have new opportunities for abusive or exploratory exercise of dominant position<sup>13</sup>.

9. Given such caveats regarding the alternatives of structural design of the market of AI foundational models, it is worth highlighting that the dissemination of foundational models will depend on the developers' capacities to come up with solutions to increase the final users' base, either in the short or medium term.

10. In a simple way, with respect to the current market's design: (1) the open-source models are used by developers for the creation of applications that will afterwards be commercialized (or not) and (2) the proprietary models are made available to companies and consumers through subscriptions, requiring the access to cloud service providers, APIs or online applications.

11. However, the fact that proprietary models depend on this access to fixed or mobile data services for the use of the applications by users and consumers creates a barrier to that dissemination.

12. The development of models and applications that can be used offline, especially in mobile devices<sup>14</sup>, can represent a relevant competitive advantage<sup>15</sup>. In this regard, recent efforts by the developers of foundational models to adapt and/or create models whose characteristics are compatible with the mobiles, tablets and personal computers' limitations, show that such technological solution deserves attention by competition

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August 2025 (the narrative on the existence of the race for the AI development, which would consolidate the perception that leadership in AI could grant scientific advantages, presents risks itself. In case it becomes the effective way to the contextualization of the phenomenon, it could change the existing incentives, thus, the strategies of the players involved); Han, T. A., Pereira, L. M., Santos, F.C., Lenaerts, T (2020), To Regulate or Not: A Social Dynamics Analysis of an Idealised AI Race. *Journal of Artificial Intelligence Research*, v. 69, p. 881–921, 22, Nov. 2020, p. 881 (which defends that theoretical models are useful for the understanding of the potential dynamic, allowing the identification of possible procedures to change the structure of incentives of the market).

<sup>12</sup> OECD (2023), Theories of Harm for Digital Mergers, OECD Roundtables on Competition Policy Papers, No. 293, OECD Publishing, Paris, Available at: <https://doi.org/10.1787/0099737e-en>. Retrieved on: 24 August 2025.

<sup>13</sup> Finally, one should not neglect the possibility of a scenario of balanced interaction between proprietary and open-source models: in this case, the effective competition depends mostly on whether those models would be used in the same or distinct markets.

<sup>14</sup> According to statistics of July 2025, devices such as mobiles and tablets hold around 60% of the market shares relating to the 40% of the shares held by personal computers. Available at: <https://gs.statcounter.com/platform-market-share/desktop-mobile-tablet>. Retrieved on: 25 August 2025.

<sup>15</sup> The greater the advantage, the higher the costs of data services in relation to the average income of the population of a country.

authorities<sup>16</sup>. Those characteristics regard the devices' needs of memory and processing capacities<sup>17</sup>.

13. Foundational models that can keep functionalities – in terms of quality, accuracy, and performance – in their offline versions may bring issues on potential anticompetitive risks<sup>18</sup>.

14. Firstly, offline foundational models that are embedded in mobile devices as a default option may create significant entry barriers for other models<sup>19</sup>.

15. Secondly, should these foundational models be part of a wider ecosystem in which there is a market player operating as the orchestrator of the several applications within, it is likely that feedback effects (reinforcing this very same ecosystem power) and anticompetitive conducts such as tying, bundling, foreclosure, among others, may occur.

16. Finally, one should not neglect that in case the two scenarios aforementioned are confirmed – offline foundational models embedded in mobile devices combined with the orchestration of the ecosystem – there is an additional risk: the developers of foundational models would be able to access relevant data<sup>20</sup> on the offline models' use (and users') patterns, that could enhance the competitive advantage of the incumbent.

17. In case the performance of open source and proprietary foundational models truly converge, data regarding users of the applications can, therefore, become the new moat of the AI market, which protects the incumbents from an effective competition<sup>21</sup>.

18. Another possible source of antitrust concern relates to the recent initiative by the major foundational model developers – notably OpenAI<sup>22</sup>, Alphabet, Meta, and Anthropic

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<sup>16</sup> An indicative list of foundational models that may be used offline: DeepSeek R1 and DeepSeek Coder (DeepSeek: open source); Gemma 3n (Google: open source); Llama 3.3 70B, Lllam 3.2 and Code Llama (Meta: open source); Qwen 2.5 and Qwen 2.5 Coder (Alibaba: open source); Mistral 7B (Mistral: open source); Phi-4 14B (Microsoft: open source); Nous-Hermes (Teknium, Karan4D, Nous Research, Huemin Art and Redmond AI: open source); WizardCoder (open source).

<sup>17</sup> Such strategy may be implemented either through the development of “small” models (with a smaller number of parameters, for example) or the use of different architectures in terms of processing and inference.

<sup>18</sup> It must be stressed that, when mobile data services are provided to consumers at no cost in certain apps, the potential of anticompetitive risks is similar in countries with zero-rating policies.

<sup>19</sup> Also, allegations of anticompetitive effects of foundational models that only work online already emerge among developers and manufacturers of mobile devices (See: <https://www.nytimes.com/2025/08/25/technology/elon-musk-xai-sues-apple.html>).

<sup>20</sup> In this regard, observe the patterns of use as an input of essential infrastructure for the development of AI and of digital markets: Bietti, E. (2025), Data is Infrastructure. Theoretical Inquiries in Law 55 (2025), Northeastern University School of Law Research Paper n.486, Available at: <https://ssrn.com/abstract=5041965>. Retrieved on: 25 August 2025.

<sup>21</sup> The proposals of open protocols, such as the Model Context Protocol (MCP) developed by Anthropic, that create patterns in the AI applications' interactions with both external data and services can grant limits to the access of data about the users of the AI applications. It avoids the concentration of data by the incumbents. See: Hou, X., Zhao, Y., Wang, S., & Wang, H. (2025). Model context protocol (MCP): Landscape, security threats, and future research directions, *arXiv preprint*. Available at: <https://arxiv.org/abs/2503.23278>. Retrieved on: 25 August 2025.

<sup>22</sup> On October 13, 2025, OpenAI announced that it would make available, at its DevDay—an event for developers who create applications based on OpenAI models—several new tools that would

– to create ecosystems for AI applications, integrating various functionalities into a single development environment.

19. Still in their early stages, such ecosystems may create incentives for developers in the downstream market to favour a particular ecosystem over others by bringing together tools for application development, toolkits for creating AI agents, and solutions to facilitate code creation – that is, almost the entire development stack. In such a scenario, possible transitions to another ecosystem may hinder competition and reduce the supply of products and services for the end consumer.

20. Despite the potential efficiencies brought about by the new architecture in scope for implementation, such solutions raise concerns about potential exclusionary and/or abusive conducts, especially when dealing with ecosystems based on proprietary foundational models whose quality is clearly superior to their competitors.

21. If this phenomenon becomes established – attracting both developers in downstream markets and end consumers – it could represent a real process of “platform migration”, whereby established digital platforms are gradually challenged (or replaced) by new AI-based ecosystems.

22. Even though competition for the development of AI models is still ongoing, the competitive impact in downstream markets requires building new scenarios and calculating the risks involved in them. To a greater extent, such task is a challenge shared by all the competition authorities. The ability to face it will be more effective the better it is the coordination among the agencies in charge of the analysis of digital markets.

## 2. CADE’s experience in the investigation of pricing algorithms

23. CADE has aimed to adapt its technological tools to analyse changes encouraged by AI in the competitive dynamics of downstream markets. Thus, it is evident that there is space and demand for the development of initiatives of enforcement and advocacy strategies in sectors that use pricing algorithms.

24. As aforementioned<sup>23</sup>, the case law of the Brazilian competition authority has approached the use of pricing algorithms regarding both the theories of harm and merger reviews, in increasing degrees of complexity, as a potential facilitator and/or perpetrator of antitrust violations<sup>24</sup>.

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facilitate integration between new applications and the company's main products. Available at: <https://openai.com/devday/>.

<sup>23</sup> See: (1) OECD (2023), Algorithmic Competition – Note by Brazil. Available at: [https://one.oecd.org/document/DAF/COMP/WD\(2023\)18/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2023)18/en/pdf). Retrieved on: 25 August 2025 and (2) Buaiz Neto, J. A., Porto, G. V., Ferreira, Carolina A. F. (2024), The Brazilian Competition Authority investigates the alleged use of pricing algorithms in the fuel and airline sectors, 21 November 2024, e-Competitions November 2024, Art. N° 128258.

<sup>24</sup> In the US there are several investigations on algorithmic pricing, among which we highlight: In re RealPage Rental Software Antitrust Litigation (rental price recommendation algorithm); United States v. RealPage (rental price recommendation algorithm); RealPage State Attorney General Actions (rental price recommendation algorithm); Duffy v. Yardi (rental price recommendation algorithm); Cornish-Adebisi v. Caesar’s Entertainment, Inc. (hotel daily rate recommendation algorithm); Gibson v. MGM Resorts International (hotel daily rate recommendation algorithm); In re Multiplan Health Insurance Provider Litigation (healthcare service reimbursement

**Table 1. Investigations on the use of pricing algorithms in Brazil**


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<p>Access Case no. 08700.006280/2024-60  Market: fuel retail  Theory of harm: collusion via pricing algorithm and algorithm as a facilitator of the exchange of competitively sensitive information.  Result: case under investigation.</p>
<p>Administrative Enquiry no. 08700.007894/2023-88  Market: air passenger transport  Theory of harm: collusion via pricing algorithm  Result: case under investigation.</p>
<p>Administrative Enquiry no. 08700.006085/2022-78  Market: air passenger transport  Theory of harm: collusion via pricing algorithm  Result: dismissed due to the findings that each airline company set the pricing independently. Also, the violation was disregarded for the lack of evidence of sensitive information exchange and/or intentional use of the same algorithm.</p>
<p>Access Case no. 08700.008318/2016-2  Market: intermediation of services of app-based private hire drivers  Theory of harm: hub-and-spoke algorithmic collusion  Result: dismissed, considering that the algorithm would not have worked as intermediary for the exchange of competitively sensitive information among the spokes, or allowed the alignment of prices.</p>
<p>Access Case no. 08012.011791/2010-56  Market: driving schools  Theory of harm: algorithm as mediator for collusive agreement  Result: conviction for hardcore cartel</p>
<p>Access Case no. 08012.000677/1999-70  Market: air passenger transport  Theory of harm: algorithm as mediator for collusive agreement  Result: conviction for softcore cartel</p>

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Source: CADE

25. Pricing algorithms has increasingly become a topic of relevance to competition authorities. Since the development of seminal conceptual studies that established the conceptual parameters and possible theories of harm derived from the use of technologies

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recommendation algorithm). As of the current date, 25 August 2025, a final decision has not yet been issued for any of the cases (some were dismissed, but there are appeals still to be heard).

for collusion<sup>25</sup>, literature has advanced to design experiments<sup>26</sup> and empirical studies<sup>27</sup> that aimed to identify risks arising from the implementation of pricing algorithms.

26. In this regard, the dissemination of foundational models can raise new or further increase old concerns of the competition authorities. This is because such models facilitate the access to algorithm pricing tools, which differ from other strategies that demonstrate results only in experimental and controlled environments<sup>28</sup>. The efficiency is mainly due to the requirements for programming expertise and the time needed for training and implementation.

27. Conceptually, it is worth noting that foundational models – generative, reasoning, or AI agents – have developed “emergent capabilities” triggered by their dissemination. In other words, besides enhancing their performance while trained and tested with more and higher-quality data, such models also demonstrate unexpected behaviour (that was not trained and/or defined as an objective) originating emergent capabilities that were not anticipated<sup>29</sup> and not identified in simpler models<sup>30</sup>.

28. Thus, in light of the possibility of use of foundational models to facilitate and/or implement algorithm pricing strategies, it is necessary that the competition authorities observe the particular characteristics of such models that can result in unforeseen risks, beyond the ones already documented in the literature.

29. Such particularities of foundational models may lead to tacit collusions via pricing algorithms through which companies reach supra competitive results using independent profit maximization strategies. Thus, the use of such instruments raises a fundamental concern. The algorithm collusion would happen when the algorithms lead to those results autonomously, without intentional programming. There are additional competition risks<sup>31</sup> in markets where AI-based pricing tools are disseminated, in which agents developed from foundational models can interpret public data and use implicit communication channels.

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<sup>25</sup> Harrington Jr., J. E. (2018), Developing competition law for collusion by autonomous artificial agents. *Journal of Competition Law & Economics*, 14(3): 331–363; Ezrachi, A., Stucke, M. E. (2020), Sustainable and unchallenged algorithmic tacit collusion. *Northwestern Journal of Technology and Intellectual Property*, 17(2): 217–260; Calvano, E., Calzolari, G., Denicolò, V., Harrington, J. E., Jr, & Pastorello, S. (2020). Protecting consumers from collusive prices due to AI. *Science* (New York, N.Y.), 370(6520), 1040–1042. Available at: <https://doi.org/10.1126/science.abe3796>. Retrieved on: 25 August 2025.

<sup>26</sup> Such as Calvano, E., Calzolari, G., Denicolò, V., Pastorello, S. (2020), Artificial intelligence, algorithmic pricing, and collusion. *American Economic Review*, 110(10): 3267–3297; Klein, T (2021), Autonomous algorithmic collusion: Q-learning under sequential pricing. *RAND Journal of Economics*, 52(3): 538–558.

<sup>27</sup> Fish, S., Gonczarowski, Y.A., & Shorrer, R.I. (2024). Algorithmic Collusion by Large Language Models. Available at: <https://arxiv.org/abs/2404.00806>. Retrieved on: 25 August 2025.

<sup>28</sup> With reference to the studies of Calvano et al. (2020) and Klein (2021).

<sup>29</sup> For example, the capacity of subliminal learning, Cloud, A., M. Le, J. Chua, J. Betley, A. Szyber-Betley, J. Hilton, and S. Marks (2025), Subliminal Learning: Language models transmit behavioral traits via hidden signals in data, preprint arXiv: 2507.14805. Available at: <https://arxiv.org/abs/2507.14805>. Retrieved on: 25 August 2025.

<sup>30</sup> Berti, L., Giorgi, F., Kasneci, G.(2025), Emergent Abilities in Large Language Models: A Survey. Available at: <https://arxiv.org/pdf/2503.05788>. Retrieved on: 26 August 2025.

<sup>31</sup> Veras Neves, C. E., Bussmann, T. B. (2025) Smart Agent-Based Modeling with LLMs: Leveraging Large Language Models for a Better Understanding of Algorithmic Collusion (preprint).

30. In the Brazilian case, the competitive sensitivity of the applications that provide pricing algorithmic services is reinforced by the increase in the number of companies that operate in this market. They indicate that there is a demand for solutions and technologies that automate the goods and services' pricing process. Recent data shows that there are about 150 technology companies that provide pricing algorithmic applications to the market in the country<sup>32</sup>.

31. In this context, it is essential that companies seeking to implement lawful solutions that increase the efficiency and effectivity of their pricing systems develop institutionalized compliance strategies.

32. Therefore, making sure that the solutions developed in-house, mainly those contracted with third parties, respect the competition parameters – avoiding the use of non-public data<sup>33</sup>, the exchange of competitively sensitive information, the sharing of pricing tools with competitors, and the automatic adherence to pricing recommendation – mitigating the risks regarding the adoption of pricing algorithms usually presents.<sup>34</sup>

33. Also, companies need to analyse particular features of the market in which they intend to apply the algorithm pricing solutions, since the risks may be more relevant in markets which structural attributes facilitate coordinated actions among economic agents.

34. The most effective strategy to fight the potential effects of the spreading of pricing algorithms based on foundational models seems to require actions that involve not only enforcement initiatives, but also advocacy and incentives to algorithmic compliance programmes.

35. Finally, it is worth noting that, in the Brazilian context, competition concerns have been tackled in the scope of initiatives of the legislative branches, which aim to create regulatory frameworks to AI and digital platforms' systems<sup>35</sup>.

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<sup>32</sup> According to data collected by the repository Crunchbase (<https://www.crunchbase.com>), that consolidates data about technology companies across the globe. Retrieved on: 26 August 2025.

<sup>33</sup> Besides not being public, there are other important facts such as providing granular information about transactions, including prices practiced and capacity, and discounts in real time, for example.

<sup>34</sup>In this regard, there could be initiatives to assess risks, to train the hiring and pricing teams, to adopt measures and particular safeguards in the compliance programmes, procedures to mitigate risks of dissemination of competitively sensitive information, and parameter settings to manage the relationship with companies hired to do the pricing tasks.

<sup>35</sup> See CADE' s contributions to the proposals of regulation of the AI systems, under analysis by the Brazilian Congress ([https://cdn.cade.gov.br/Portal/assuntos/noticias/2024/Contribui%c3%a7%c3%a3o%20CADE%20PL%202338\\_final.pdf](https://cdn.cade.gov.br/Portal/assuntos/noticias/2024/Contribui%c3%a7%c3%a3o%20CADE%20PL%202338_final.pdf) - Document in Portuguese) and of ex ante regulation of digital platforms (<https://cdn.cade.gov.br/Portal/centrais-de-conteudo/publicacoes/contribuicoes-do-cade/contribuicoes-cade-ministerio%20fazenda-ingl%c3%aas.pdf> – document in English).

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## *Part 2. Brazil's Secretariat for Economic Reforms (SRE)*

### **The Proposal for the Regulation of Artificial Intelligence in Brazil: Bill No. 2338/2023 and its Impacts on Competition**

#### **Brazil**

1. This contribution provides an overview of Bill No. 2,338/2023, Brazil's most advanced legislative initiative to establish a comprehensive legal framework for Artificial Intelligence (AI). The proposal seeks to balance the protection of fundamental rights with the promotion of innovation, entrepreneurship, and economic competitiveness, in line with international best practices and OECD principles for trustworthy AI governance. It outlines the main provisions of Bill No. 2,338/2023 (Section 2) and examines the interaction between AI regulation and competition policy (Section 3).

#### **1. Introduction<sup>36</sup>**

2. The advent and rapid adoption of Artificial Intelligence (AI) in Brazil pose complex regulatory challenges, demanding a legal framework that harmonizes the protection of fundamental rights with the promotion of innovation and economic competitiveness. The policy challenges are further amplified by an essentially global, interconnected environment in which AI systems and models are being developed and deployed, and which requires cooperation among different jurisdictions for balanced regulatory solutions.

3. Bill No. 2338/2023, introduced in 2023 by the Senate and now under discussion in the House of Representatives, represents the most advanced legislative initiative in this regard, seeking to establish principles and rules for the ethical development and use of AI, based on the centrality of the human person and sound economic development. The AI Bill is one of the key elements in the Federal Government's digital legislative agenda.

4. The Bill adopts a risk-based approach, considers the recent experience with the regulatory architecture of the European AI Act, while also focusing on the digital environment and specific institutional conditions in Brazil. The proposed legislation aims to institute the National System for the Regulation and Governance of Artificial Intelligence (SIA), defining obligations proportional to the risks that AI systems may pose to society. The Bill also aims to create a specific regulatory approach for Generative AI models and General-Purpose AI applications, considering its growing importance for the digital economy. The main objective is to create an environment of legal certainty and trust, essential for the development of responsible innovations and for attracting investments, while simultaneously addressing potential illegal and unfair discriminatory biases and market power concentration.

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5. The Ministry of Finance, through the Secretariat for Economic Reforms (SRE/MF)<sup>37</sup> and other technical bodies, has actively participated in discussions to ensure that the new legislation comes to a balanced approach: dealing effectively with excessive risks for business and society, while does not imposing an excessive regulatory burden, but rather promoting innovation, entrepreneurship, and the competitiveness of national industry.<sup>38</sup>

6. This contribution proposes to analyze the regulatory structure of Bill No. 2338/2023, critically examining its potential to address the market failures inherent in the digital economy and its crucial interface with the Brazilian competition defense system. Section 2 outlines the main provisions of Bill No. 2,338/2023, and Section 3 examines the interaction between AI regulation and competition policy.

## 2. Bill 2338/2023: Key Points

### 2.1. Risk Classification System

7. The core of Bill No. 2338/2023 lies in classifying AI systems into risk categories: unacceptable risk (prohibited) and high-risk. High-risk systems are the focus of most compliance obligations. Bill No. 2338/2023 expressly lists high-risk areas, including the use of AI in: safety components of critical infrastructures (such as traffic control and supply networks), employment and worker management processes (such as decision-making regarding contract terminations), and individual risk assessments by competent authorities (such as the risk of criminal recidivism). These systems require compliance with rigorous requirements for transparency, human oversight, and documentation.

8. The current version of Bill 2338/2203 considers the different roles played by economic agents (model developers, AI deployers and business users) throughout the AI value chain, proposing proportional regulatory obligations and compliance mechanisms for each case. Proposed legislation mandates that both the National System for the Regulation and Governance of Artificial Intelligence (SIA) and specialized sectorial regulators might introduce simplified regulatory regimes associated with the goals of promoting scientific and technological research and coping with sectorial specifications. A central competent authority will have the role of coordinating SIA to facilitate compliance and harmonize such parameters.

9. The AI Bill also paves the way for asymmetric, proportional regulation. The regulatory authorities will have powers to regulate simplified regimes for complying with the duty to inform, for instance, under certain conditions (e.g. considering the level of complexity of the AI application, size of AI deployer).

10. Considering the natural developments of AI deployment across the economy and society, the Bill also gives room for a certain level of flexibility considering the classification of high-risk AI systems. There is a list of criteria and cases that fall under

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<sup>37</sup> Within the Brazilian System for Economic Defense (SBDC), the SRE, specifically through its Secretariat for Economic Monitoring (SEAE), executes a consolidated advisory role in competition advocacy, in accordance to Law No. 12,529/2011. It issues opinions on normative acts and legislative proposals that may impact competition, as well as preparing sectorial studies to assess situations in various sectors of the economy, proposing a review of laws and regulations that may be seen as anticompetitive.

<sup>38</sup> Brazil is currently implementing the National AI Plan (PBIA), coordinated by th Ministry of Science, Technology and Innovation (MCTI) and aimed at fostering the development and use of AI across a variety of cases, ranging from government to business and society

high risk. This list might be updated by SIA under certain circumstances, allowing for public participation and following regulatory impact analysis. The authority responsible for coordinating SIA will issue guidelines regarding high-risk systems, while sectorial regulators are intended to have a final say when it comes to defining high-risk cases within their respective mandates (e.g. financial, health).

## 2.2. Conceptual Differences between the Regulation of General-Purpose AI and Generative AI

11. The legislative debate in Brazil recognized rapid technological evolution, especially the rise of Foundational Models and Generative AI (GenAI). The most recent versions of the amendments to Bill No. 2338/2023 tend to consolidate these definitions under the term General-Purpose AI System (GPAI). The ongoing legislative debate aims to create a "future-proof" regulation, preventing the law from becoming obsolete. However, the text provides specific governance measures for general-purpose systems that may generate systemic risks, recognizing the diffuse nature and transformative impact these technologies have on the economy and society. The introduction of articles regarding specifically the development of GenAI and General-Purpose systems recognizes the last wave of innovations and their extraordinary potentials for increasing productivity, while also addressing asymmetries between GenAI developers, business users and end-users.

## 2.3. The Algorithmic Impact Assessment (AIA)

12. AIA constitutes a mandatory governance measure for AI systems classified as high-risk. The AIA transcends mere preliminary risk analysis, requiring suppliers to identify, evaluate, and document potential risks to fundamental rights and the mitigation measures adopted throughout the system's entire life cycle<sup>39</sup>. This mechanism is fundamental for transparency and accountability, enabling auditability, and ensuring that social impacts, especially discriminatory biases, are proactively addressed before the system is placed on the market.<sup>40</sup>

## 2.4. Development Regimes and Regulatory Sandboxes: Bill's provisions to foster innovation

13. In recognition of the need to balance regulation with the promotion of sound AI use, Bill No. 2338/2023 incorporates development regimes and Regulatory Sandboxes. Such instruments, mentioned in the legislative debates, seek to reduce regulatory barriers and encourage the controlled experimentation of new AI technologies<sup>41</sup>. The objective is for the Competent Authority to establish more flexible and temporary regimes for startups

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<sup>39</sup> Brasil. (2024). GOVERNANÇA DIGITAL DOS SISTEMAS DE INTELIGÊNCIA ARTIFICIAL E A AVALIAÇÃO DE IMPACTO ALGORÍTMICO DO PROJETO DE LEI (PL) N.º 2338/2023 COMO FUNDAMENTOS ESTRUTURANTES DA ECONOMIA DIGITAL. *Revista de Direito, Economia e Desenvolvimento Sustentável*, 10(1)

<sup>40</sup> Mulholland, C. et al. (2023). Avaliação de impacto algorítmico: o que é e como está regulada no PL 2.338/23 do Brasil. *Migalhas*. [<https://www.migalhas.com.br/coluna/migalhas-de-responsabilidade-civil/395547/avaliacao-de-impacto-algoritmico>]. Acesso em 30 de outubro de 2025.

<sup>41</sup> YouTube. (2025a). *Ecosistema e competitividade nacionais - Inteligência Artificial (PL 2338/23) - 12/08/2025*. [<https://www.youtube.com/watch?v=nMadK4cKiAY>].

and researchers, promoting the national AI ecosystem, ensuring that compliance does not become an excessive hindrance to innovation and economic development.

## 2.5. Governance and Supervision: towards regulatory coordination

14. The Bill proposes the creation of a Competent Authority to coordinate the National System for the Regulation and Governance of Artificial Intelligence (SIA). The central debate lies in defining the institutional profile of this authority: whether it will be a centralized body with exclusive inspection power or whether it will adopt a sectoral coordination model, integrating existing bodies such as the National Data Protection Authority (ANPD) and the Administrative Council for Economic Defense (CADE). The creation of the SIA and the clear definition of the Competent Authority are essential to avoid regulatory overlap, ensure legal certainty, and exercise human and technical oversight of high-risk systems.<sup>42</sup>

15. The Bill proposes that a centralized body (the competent authority, which can be designated by the federal government among existing agencies) should have the role of coordinating SIA, regulating and enforcing the legislation when it comes to GenAI, General-Purpose AI and high-risk AI systems that do not fall under sectorial regulations. In that regard, it is intended to act as the facilitator of cross-sectorial enforcement of the new legislation, while also overseeing non-regulated activities, as a residual regulator. The Bill defines parameters for coordination among agencies and sets out a division of competencies which is to be later specified by the federal government.

## 3. The interplay between AI Regulation and Competition

### 3.1. Can Bill No. 2338/2023 address market failures?

16. The AI sector is characterized by strong network effects and a high degree of data concentration, which can lead to an abuse of dominant position and lock-in effects, stifling competition<sup>43</sup>. Bill No. 2338/2023, by requiring transparency and auditability, provides regulatory mechanisms that can be used as competition remedies. Specifically, the debate on the PL included proposals to impose interoperability and data access requirements (especially non-personal data) for market power holders<sup>44</sup>. Such requirements aim to lower barriers to entry for new competitors, allowing startups and smaller companies to access the critical inputs needed to train and develop their own AI models.

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<sup>42</sup> ANPD - Autoridade Nacional de Proteção de Dados. (2024). *ANPD Apresenta Propostas de Alteração do Substitutivo ao PL 2338 sobre Inteligência Artificial*. Portal Gov.br. Disponível em: [[https://www.gov.br/anpd/pt-br/assuntos/noticias/anpd-apresenta-propostas-de-alteracao-do-substitutivo-ao-pl-2338-sobre-inteligencia-artificial/Versao\\_final\\_07.05.24\\_PL\\_2338\\_Substitutivo\\_Comissao\\_Especial\\_Propostas\\_ANPD1.pdf](https://www.gov.br/anpd/pt-br/assuntos/noticias/anpd-apresenta-propostas-de-alteracao-do-substitutivo-ao-pl-2338-sobre-inteligencia-artificial/Versao_final_07.05.24_PL_2338_Substitutivo_Comissao_Especial_Propostas_ANPD1.pdf)]. Acesso em 30 de outubro de 2025.

<sup>43</sup> JOTA. (2023). *Inteligência artificial: entre potencialidade e concretude*. [<https://www.jota.info/opiniao-e-analise/colunas/elas-no-jota/regulacao-da-ia-entre-potencialidade-e-concretude>]. Acesso em 30 de outubro de 2025.

<sup>44</sup> CADE - Conselho Administrativo de Defesa Econômica. (2024). *Contribuição do CADE, em Âmbito de Advocacia da Concorrência, sobre o Projeto de Lei 2.338/2023*. Disponível em: [[https://cdn.cade.gov.br/Portal/assuntos/noticias/2024/Contribui%C3%A7%C3%A3o%20CADE%20PL%202338\\_final.pdf](https://cdn.cade.gov.br/Portal/assuntos/noticias/2024/Contribui%C3%A7%C3%A3o%20CADE%20PL%202338_final.pdf)]. Acesso em 30 de outubro de 2025.

### 3.2. Coordination between the AI Competent Authority and the Administrative Council for Economic Defense (CADE)

17. AI regulation and Competition Law are complementary instruments to ensure fair digital markets. Institutional coordination between the AI Competent Authority and CADE is imperative. CADE, as the antitrust authority, has already demonstrated concern with the use of AI to facilitate cartels, restrict innovation, and foster excessive concentration<sup>45</sup>. Cooperation is crucial: CADE would act in the analysis of concentration acts and anticompetitive conduct under the perspective of Law No. 12529/2011, while the AI Authority would provide technical expertise and data derived from the AIA and other compliance mechanisms to support the assessment of competitive risks.<sup>46</sup>

### 3.3. Competition and Regulatory Remedies

18. To mitigate the risk of abuse of a dominant position, Bill No. 2338/2023 can be supplemented with pro-competitive regulatory remedies. Proposals include imposing algorithmic transparency (which allows competitors and regulators to understand the logic of systems that affect competition) and requiring fair access to critical inputs. CADE, for example, has suggested the sharing of information (while observing confidentiality) and remote access to the documentation and training datasets of high-risk AI systems<sup>47</sup>. These measures are essential to dismantle informational and infrastructural barriers that perpetuate the dominance of large platforms.

## 4. Conclusion

19. Bill No. 2338/2023 emerges as a part of the legislative effort to structure the Brazilian digital economy regulatory framework. The proposed risk-based regulation is an instrument that, if well-calibrated, can not only protect human rights against the improper use of AI but also function as a pro-competitive mechanism. By requiring the Algorithmic Impact Assessment and paving the way for remedies such as interoperability and data access, the PL offers tools to address market failures and prevent the perpetuation of AI oligopolies. The Federal government has been in constant dialogue not with Congress, business representatives and society to build a balanced approach and reach a positive outcome in the legislative process. The Ministry of Finance, including the Secretariat of Economic Reforms (SRE/MF) and other technical bodies, has been engaging in the discussions to underscore the government's concern with ensuring that the new legislation does not impose an excessive regulatory burden, but rather promotes innovation, entrepreneurship, and the competitiveness of national industry, while also effectively dealing with excessive risks for business and society. In short, the success of Brazilian AI regulation will depend on the SIA's capacity to coordinate rights protection with competition defense, while maintaining the proportionality of regulatory obligations.

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<sup>45</sup> JOTA. (2023). *Op. Cit.*

<sup>46</sup> CADE - Conselho Administrativo de Defesa Econômica. (2024). *Op. Cit.*

<sup>47</sup> CADE - Conselho Administrativo de Defesa Econômica. (2024). *Idem.*

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