

Unclassified

English - Or. English

29 August 2024

**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE**

Cancels & replaces the same document of 21 August 2024

Latin American and Caribbean Competition Forum

Session III: Ex officio Investigations

- Contribution from Brazil -

9-10 October 2024

The attached document from Brazil is circulated to the Latin American and Caribbean Competition Forum FOR DISCUSSION under Session III at its forthcoming meeting to be held on 9-10 October 2024 in Santo Domingo, Dominican Republic.

Mr. Marcelo Guimarães, Competition Expert - Marcelo.Guimaraes@oecd.org

JT03548686

Session III: Ex officio Investigations

- Contribution from Brazil¹ -

1. Introduction

1. In Brazil, public procurements represent approximately 12% of the GDP². Given the economic relevance of the public procurement market, it is necessary that the government agencies pay special attention to this sector in order to avoid and fight antitrust violations.

2. According to the provisions of the Brazilian competition law, Law 12529/2011³, the Administrative Council for Economic Defense (CADE) has the legal authority to prevent and repress violations of the economic order, including bid rigging. According to the law, the companies participating in a cartel are subject to administrative fines imposed by the Tribunal of CADE. The fines can range from 0.1% to 20% of the gross turnover of the company in the field of activity in which the violation happened. In addition, other sanctions can be applied, such as prohibiting the wrongdoers from participating in public procurements for a minimum of five years, in the case of bid rigging⁴.

3. According to a study published by the Department of Economic Studies of CADE (DEE), the actions of the Brazilian antitrust authority in cartel, unilateral conduct, and merger cases had a beneficial economic impact of approximately BRL 16.3 billion in 2023. In addition, the department estimates that the moving average of the benefits accrued from its activities over the past three years (2021–2023) has been BRL 12.2 billion, which are strong indicatives of the success of these actions in the period mentioned⁵.

4. In 2023, CADE adjudicated 17 anticompetitive conduct cases. From those, 13 are cartel cases, three are unilateral conduct cases, and one is a concerted practice. The Brazilian antitrust authority opted for a guilty verdict in nine of the cartel cases, eight of

¹ The document was written by Carlos Eduardo Veras Neves, Tanise Brandão Bussman, Guilherme D’Alessandro Silva, and Rubem Accioly Pires from the Intelligence Unit of the Office of the Superintendent General of CADE. The English version of the present work was prepared by the in-house translators of the International Unit of CADE; it was translated into English and proofread by Izabel Cristina Medina Brum and Nathália Oliveira Silva.

² <https://www.gov.br/economia/pt-br/assuntos/noticias/2022/janeiro/economia-assina-acordo-em-contratacoes-publicas-com-agencia-americana-de-comercio-e-desenvolvimento> Retrieved on: 10/07/2024.

³ Brazil (2011). Law no. 12529 of 30 November 2011. Available in Portuguese at [L12529 \(planalto.gov.br\)](http://planalto.gov.br). Retrieved on: 12/07/2024.

⁴ Guide for Fighting Cartels in Procurements, p. 15: https://cdn.cade.gov.br/Portal/centrais-de-conteudo/publicacoes/guias-do-cade/guide-for-fighting-cartels-in-procurements_version_01-10.pdf. Retrieved on: 10/07/2024.

⁵ Mensuração dos benefícios esperados da atuação do Cade em 2023, p. 8. Available in Portuguese at: [DT_001-Beneficios-de-atuacao-do-Cade-em-2023.pdf](http://dt.001-Beneficios-de-atuacao-do-Cade-em-2023.pdf). Retrieved on: 11/07/2024.

them concerned companies cases with national scope, and four of them were bid rigging cases, totalling approximately BRL 30 million in fines⁶.

5. According to the DEE⁷, in addition to the fines, the expected benefits of CADE's actions in cartel cases were approximately BRL 562.9 million. This amount takes into consideration the benefits to consumers resulted from a specific ruling and includes four variables: the turnover of the companies in the affected market; the price increase removed or avoided; the turnover of the companies involved; the expected duration of the price effect. Thus, the repression of bid rigging also impacts the efficacy of public policies, especially for the more vulnerable population.

6. Bid riggings occur in procurements that range from the implementation of environmental sanitation infrastructure, such as sewerage public works, to the acquisition of high-cost medicine to be distributed in the Brazilian public healthcare system.

7. In addition, according to Oliveira Júnior⁸, the Brazilian legal doctrine identifies a relevant synergy between bid rigging and corruption of private and public agents. It also directly affects the development of public works and services that go through procurements and indirectly affects the development of public policies.

8. In this context, CADE has been putting efforts to better equip itself to fight collusive practices increasingly more complex and, therefore, more difficult to detect.

9. Therefore, the use of technological tools based on data have an essential role in the improvement of the detection of cartels and development of intelligence to create more robust investigations, increasing the probability of guilty verdicts in the Tribunal of CADE.

1.1. Applications of data analysis in administrative procedures⁹ at CADE

10. Generally, there is a greater need of data analysis in cases for which the existing evidence is not enough to understand the alleged conduct or that present incomplete information in the market at issue.

11. Therefore, a preliminary analysis enables the observation of the markets in which the company operates, its partners, main competitors, etc. When necessary, this type of analysis can also be used in later phases of the investigation, after the launch of an administrative procedure, aiming at rearranging the stages when this is necessary.

⁶ Mensuração dos benefícios esperados da atuação do Cade em 2023, pg.16. Available in Portuguese at: [DT_001-Beneficios-de-atuacao-do-Cade-em-2023.pdf](#). Retrieved on: 11/07/2024.

⁷ Mensuração dos benefícios esperados da atuação do Cade em 2023, pg.26. Available in Portuguese at: [DT_001-Beneficios-de-atuacao-do-Cade-em-2023.pdf](#). Retrieved on: 15/07/2024.

⁸ Oliveira Júnior, Fernando A.A.A. (2023). A necessária e complexa relação entre concorrência e corrupção: uma (re)análise dos cartéis em licitação condenados pelo CADE. PhD thesis - University of Brasília - UnB, Law School, Postgraduate Program in Law. Available in Portuguese at [Tese de doutorado \(unb.br\)](#). Retrieved on: 11/07/2024.

⁹ There are three possibilities to launch an investigation to analyse alleged anticompetitive conducts: the preliminary enquiry, the administrative enquiry, and the administrative proceeding. The first two can be confidential and the final decision is issued by the Office of the Superintendent General of CADE (SG). In the administrative proceeding, the defendant is mandatorily notified and the decision on the case is issued by the Tribunal of CADE after the SG ends the investigation.

12. However, even if the economic analysis suggests a high probability of collusion, the evidence based on isolated structural and behavioural analysis is not usually enough for a guilty verdict¹⁰.

13. CADE usually requires direct evidence for guilty verdicts, specially in cartel cases, but it does not mean that indirect evidence is not accepted. The Tribunal of the authority understands that the evidence presented, direct and indirect evidence alike, must establish an indisputable link between the defendants and the illegal practices¹¹.

14. By definition, direct evidence is enough to demonstrate the existence of the violation with no need of deductions or interferences. In cartel cases, reports and testimonies, digital evidence such as emails and spreadsheets, telephone tapping, etc constitute direct evidence. The evidence should indicate not only the contact between competitors, but also the agreement to coordinate actions in the market, aiming at avoiding or reducing competition¹².

15. On the other hand, indirect or circumstantial evidence are necessary to understand the practice and to infer the results. The economic evidence, such as similar commercial practices between competitors in the definition of prices, is considered indirect/circumstantial evidence. This is the same in situations when it is possible to deduce the existence of collusion without more detail, such as through monitoring mechanisms.

2. CADE's improvement in the development of tools for the detection of bid rigging cartels

2.1. Context

16. In the last ten years, international organisations, especially the OECD, have often expressed concerns about the great dependence of the antitrust authorities on leniency agreements for the effective repression of cartels.

17. It is important that the antitrust authorities have tools to analyse markets and launch investigations as an alternative to leniency agreements. However, in order to develop such tools, it is necessary to have access to databases.

18. In Brazil, there is a strong and internationally recognised culture of public government data¹³, which is one of the incentives for the creation and definition of the scope of the Cérebro Project.

¹⁰ “According to recent precedents, without other evidence elements of anticompetitive collusion, the economic evidence itself is not enough for CADE to issue a guilty verdict,” vote of the Commissioner Bandeira Maia in the Administrative Proceeding no. 08012.007866/2007-07. Despite this, the possibility of a guilty verdict based solely on an economic study cannot be completely dismissed as long as the observed behaviour can be proved impossible without an anticompetitive collusion.

¹¹ <https://www.conjur.com.br/2024-fev-27/standard-de-prova-adotado-pelo-cade-em-casos-de-cartel/>. Retrieved on: 11/07/2024.

¹² Parameters for submitting evidence in leniency applications, p.19 Available at: <https://cdn.cade.gov.br/Portal/centrais-de-conteudo/publicacoes/guias-do-cade/Guide-Parameters-for-submitting-evidence-in-leniency-applications-Atualizado.pdf>. Retrieved on: 12/07/2024.

¹³ https://www.oecd.org/en/publications/2023-oecd-open-useful-and-re-usable-data-ourdata-index_a37f51c3-en.html. Retrieved on: 10/07/2024.

2.2. Cérebro Project

19. The Cérebro Project is an initiative of the Office of the Superintendent General of CADE to research and develop technical and technological solutions for the investigation of cartels, especially those in public procurements.

20. The project was created in 2013 and focuses on the research of methods and techniques available in the literature to develop tools to detect and investigate suspicious practices. The use of screening methods (economic filters) derives from the assumption that there are measurable effects of collusive behaviour (suspicious patterns in the data) which are not usual in competitive markets.

21. However, screening methods for cartel detection are complementary and are not necessarily substitutes for traditional investigation methods. In addition, these methods can significantly save the antitrust authorities' resources when implemented correctly¹⁴.

22. Considering that government procurements involve a considerable number of public resources, and since access to databases is one of the requirements for economic analysis and screening, it is only natural that the project focuses on bid rigging. To access the data, Cérebro used cooperation agreements between CADE and federal, state, and local government organisations, in addition to the usage of a wide availability of public government data.

23. As an example, there is the DWSIASG at the federal level, which is a computerised system that uses Data Warehouse technology to integrate, consolidate, organise, and provide information on the federal government's procurements through data extracted from the Integrated General Services Management System (SIASG) and the Federal Government procurement portal.

24. Another aspect that favours the project's focus on public procurements and the usage of their data is their structural characteristics: predictability, product and service homogeneity, lack of substitutes and minor technological change, market conditions, stability of demand, recurrence of public procurements, maintenance of notice provisions in different procurements, transparency, restrict number of competitors, existence of entry barriers, necessity of successful procurements, frequent interactions between bidders, etc.

25. In addition, the Cérebro Project initially counted with the support of external consultancy (hired in 2014) which was composed by economics and data analysis specialists. They developed several proofs of concept regarding the application of statistical tools for the detection of cartels elaborated as Python and R. scripts.

26. Later on, there were implementations of the tools in the form of web apps to allow the several unities of the SG to access and share them.

27. In 2015, CADE used data retrieved from Cérebro to investigate a complaint. It checked information from tenders to employ firefighters.

28. The Cérebro Project tools detected collusive behaviour of 14 companies in more than 500 procurement processes, providing CADE with evidence to execute search and seizure warrants at 13 companies. The search and seizure operations occurred in 2018 and the launching of the administrative proceeding, which is still in progress, in 2021.

¹⁴ PORTER, Robert H. Detection of Collusion. Paris: Organisation for Economic Co-operation and Development (OCDE), 2018. Presentation at the Workshop on cartel screening in the digital era. Available at: <https://tinyurl.com/22jy8ldo>. Retrieved on: 10/07/2024.

29. Between 2018 and 2022, the focus of the project changed from the development and application of statistical modelling tools (screening) to data dashboard production (dashboards), which would enable exploratory data analysis. Meanwhile, the web platform was provided with improvements, and with focus on infrastructure modernization.

30. As a result of the institutional structure changes occurred in 2022, the Cérebro Project became part of the intelligence unit of the Office of the Superintendent General (SG/CADE) which is in charge of receiving complaints, intelligence analysis, the relationship between the agency and other institutions of the public sector, planning and execution of measures, and support to other antitrust analysis units.

31. The SG recently changed the guidelines of the project resulting in increased synergy between research, development, and investigative performance which was improved due to the active participation of the Cérebro team members in the investigations. Thus, there was a better understanding of the needs of the antitrust analysis units effectively responsible for the cases.

32. Therefore, the Cérebro Project is directly involved in the knowledge production process to support the preliminary analysis of complaints and provide ongoing investigations with indirect evidence.

2.3. Cartel investigation and synergy between reactive and proactive methods

33. There are proactive and reactive methods for identifying anticompetitive conducts. The proactive, in general, are related to external circumstances. On the other hand, the reactive method is closely related to initiatives by the Office of the Superintendent General of CADE.

34. For instance, a leniency agreement is proposed by a company, which intends to report on anticompetitive conduct it is involved with, aiming at the dismissal of the conviction. A complaint aims to draw attention to issues related to a market, circumstance, or company. The anonymous or identified complaints are received by the intelligence unit of CADE¹⁵.

35. The intelligence unit receives a large number of complaints, which vary in quality, and are mostly incomplete. The employment of economic analysis, screening tools (involving data mining and machine learning techniques) allow the development of intelligence for report analysis. It results in better distinctions about complaints with more or less potential to be investigated, sorting them as the ones to be further analysed, and the ones to be dismissed for not bearing a minimum degree of intelligibility in their narrative and reasoning concerning the facts.

36. Consequently, data analysis increased efficiency in the sorting and processing of complaints, which can save and help manage CADE's scarce resources effectively.

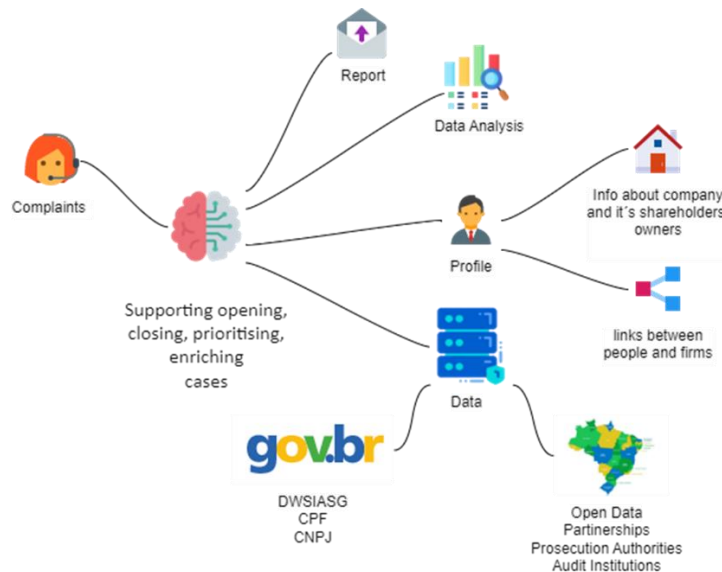
37. In general, there is an extensive work of intelligence, to which the Cérebro Project has greatly contributed, before the launching of an administrative procedure. After all, the reactive tools (complaints) and the proactive tools (developed by the Cérebro Project) are complementary.

¹⁵ CADE's performance also comprises other activities. When there is the need of market power assessment, CADE can start an investigation on its own motion. This type of investigation is considered a proactive method, because it is not conducted upon request.

38. When the complaint is related to bid rigging, there is usually the indication of specific companies or public procurements. The project developed these tools with the purpose of observing behavioural patterns in an attempt to find evidence that corroborate the complaints.

39. In Figure 1 there is a synthesis of the activities conducted in data analysis.

Figure 2.1. Simplified view of the role played by the Cérebro Project on supporting reactive methods.



40. Although several analyses are initiated with complaints, they should not be restricted to them because whistleblowers can either conceal or ignore some facts.

41. Thus, the intelligence unit shows a proactive attitude searching for other suspicious collusive behaviour that would demand investigation, for example. This method is not exclusive for complaints. Similar analysis can be conducted when there is media disclosure referred to anticompetitive practices.

42. This initial analysis can provide evidence suggesting there was an antitrust violation in the market in question. At this point, in case there is only indirect evidence, the analysis can help in the construction of a review that may shows the judge the need of measures to obtain direct evidence. It can be, for instance, by using investigative methods which need judicial authorisations to a search and seizure¹⁶.

43. Many of the violations investigated by CADE are also illegal in other spheres and this is why the investigation can be conducted alongside other government bodies specially the police, Prosecution Services, and Brazilian audit organisations. The relationship with other organisations allows these partners to demand CADE's participation in investigations or even launch joint operations.

¹⁶ Sometimes, although an investigation collects relevant indirect evidence of communication, it is minimal, not enough to substantiate a search and seizure request to the Brazilian Judicial System. Thus, it is possible to provide the judge with details, even early information, like the identity of participants and the time and space in which the collusive behaviour probably took place.

44. CADE also counts with technical cooperation agreements in force with the Brazilian Court of Accounts (TCU), the Office of the Comptroller General of Brazil (CGU), and some of the 27 Brazilian Prosecution Services, for example. They can share experience, technology, intelligence, and execute joint search and seizure operations.

45. These partnerships also occur beyond the Brazilian territory. CADE actively participates in international groups and events specially those hosted by the ICN and the OECD. The most recent experience of knowledge exchange on screening counted with the Brazilian participation in the I International Competition Network's Technologist Forum, in March 2024.

2.4. Techniques and technologies

46. Data obtained directly from open databases or through agreements is then cleaned and eventually provided in a relational database.

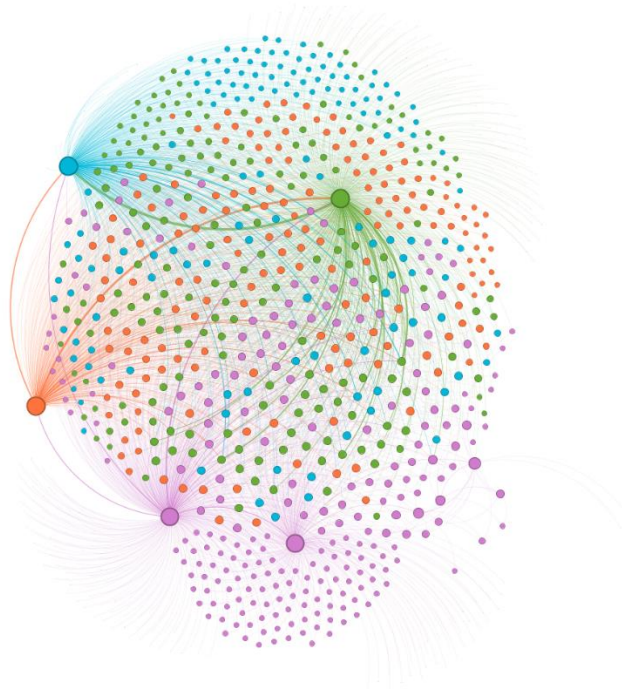
47. Then, the development of solutions is undertaken. Currently, the available information is based on cross referencing databases displayed on BI dashboards.

48. It is necessary to understand the investigation to define the analyses to be undertaken. For that reason, the Cérebro Project has actively participated in the investigations. Collaboration between experienced investigators allows for consideration of a technological solution to create tools that effectively respond to investigation issues. Thus, research and development are focused on the problem to be solved.

49. The BI dashboards have been used in exploratory data analysis to identify suspicious patterns in public documents presented in public procurements.

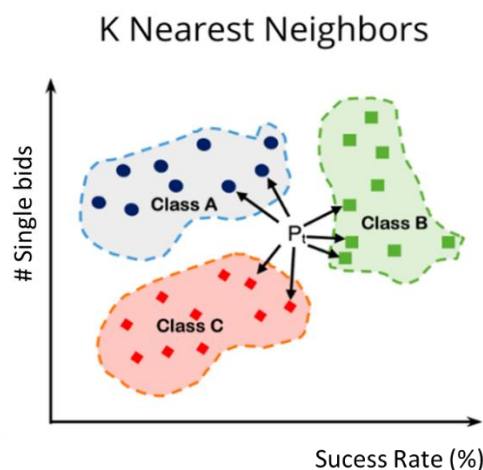
50. Also, some tests on graph application have been done in order to understand the interaction between companies that often participate in the same public procurements (Figure 2). Based on graph centrality measures, from Graph Theory, some patterns can be interpreted as possible indicatives of information exchange between companies, which probably participate in procurements to simulate competition¹⁷ through cover biddings, for example.

Figure 2.2. Example of co-bidding network that can be analysed using metrics and techniques from Graph Theory.



51. Unsupervised-learning techniques (such as KNN in Figure 3) have also been applied to identify suspicious company groups in specific markets. For that purpose, qualitative criteria and simple interpretation screens have been tested (such as those of variance).

Figure 2.3. Unsupervised-Learning can be used to identify suspect behaviour in the scenario where there are no (or few) labelled data.



52. Considering all the experience in the use of markers when screening complaints, the next step consists of its application in the active search of cases based on the SG/CADE's risk assessment. Once databases inform, among others, companies that win or

lose the most tenders, bid values, payments made, and the number of competitors, it is possible to define metrics based on such data.

53. Besides, the assessment of indirect evidence must be conducted through a holistic approach, that is, it must consider all the pieces of information collected along the investigation. At this point, more AI techniques may be applicable in antitrust investigations, such as machine learning and large language models (LLMs). They can potentially help the authority understand the available set of information, serving as facilitators in the massive search for information in structured and unstructured data of CADE, but also as supportive tools for interpreting the obtained data.

3. Final considerations

54. CADE has an essential role in the fight against bid rigging in Brazil through the use of proactive and reactive methods in the investigations of anticompetitive conducts.

55. The Cérebro Project's work focuses on repressing bid rigging by the research and development of techniques and technological tools for identifying and investigating cartels. The activities directly impact public policies and benefit specially the vulnerable population.

56. Moreover, there is the synergy between research and investigative practices increasing efficiency in analysing complaints and in building solid cases. Screening, data analysis, and machine learning are used to detect behavioural patterns in public procurements. CADE also envisages aggregating other recent technologies such as LLMs to help investigators understand evidence.

57. Thus, through the Cérebro Project, CADE shows its commitment to the development and application of advanced technology alongside the traditional investigation methods for fighting bid rigging in public procurements, and to accomplish its mission of protecting free competition.