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Gathering in Cartel Investigations**

- Contribution from UNCTAD

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Session 1: Digital Evidence Gathering in Cartel Investigations

Digital screening cartel tools in developing countries: How regional cooperation can help for the use and implementation of such tools

- Contribution from UNCTAD -*

1. While the digital economy benefits businesses through expansion of their transactions in the global value-added chains and innovation, the intrinsic fairness of competition becomes distorted by the very positive developments which propel innovation. Algorithms may adapt prices to the company's own cost, capacity, or demand situation but also to competitors' prices, which can be monitored using yet another algorithms.¹ The new dynamic of algorithmic decision making (ADM) challenges traditional notions of excessive market power and calls for a redefinition of competition rules.² Competition authorities have capitalised on their already established screening techniques to detect cartels (Brazil, Germany, Mexico, Portugal, Russia, South Korea, Spain, Switzerland and the United Kingdom) to develop machine learning algorithms, of to detect algorithmic collusion with the use of digital screening cartel tools as an addition to complement the traditional cartel detection instruments by potentially raising the probability that a cartel is being unveiled.³ Such tools are paramount to rein in potential collusive behaviours in digital markets and counter act against the increasingly sophisticated ways, often with the support of algorithms, companies attempt to collude.

2. The increasing use of artificial intelligence (AI), big data, algorithms in the digital economy has shaken up the overreliance on amnesty and leniency programmes to detect collusive behaviours by calling for improved detection tools such as digital screening cartel tools. As noted by the Federal Antimonopoly Service of the Russian Federation (FAS), digital technologies are actively used not only in the positive dimension, but also for veiled

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¹ Bundeskartellamt/Autorite de la Concurrence Executive Summary of the joint Working Paper "Algorithms and Competition" (2019)
https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Berichte/Algorithms_and_Competition_summary.pdf?__blob=publicationFile&v=4

² European Consumer Consultative Group, 'Policy Recommendations for a Safe and Secure Use of Artificial Intelligence, Automated Decision-Making, Robotics and Connected Devices in a Modern Consumer World' (2018) P. 8 <https://ec.europa.eu/info/sites/info/files/eccg-recommendation-on-ai_may2018_en.pdf> accessed 8 October 2018.

³ See note 1.

monopolization of the market and cartel conspiracies.⁴ Amnesty and leniency programs tend to focus on a limited number of industries and fail to capture the economy as a whole.⁵

3. The COVID19 outbreak has demonstrated the importance of digitalisation in countries' ability to absorb the shocks linked to crisis situations.⁶ With the digitalisation of the economy, which has been considerably accelerated, notably in developing countries, due to the COVID19 pandemic that called for digital based solutions, new challenges emerge for competition authorities in detecting abusive and collusive behaviours that depart from the traditional human *meeting of the mind*, and move toward potential algorithmic collusions without human interactions. As a result, numerous jurisdictions have developed tools to assist in the detection of cartels, notably in bid rigging and procurement cases. As noted by the Competition and Markets Authority of the UK (CMA), having a cartel in the supply chain can raise prices 30% or more.⁷ Therefore screening cartel tools are essential. However, while screens can help in detecting market structures and market outcomes which could be consistent with collusion, screens present only red flags that complement a more thorough investigation and cannot give a determinant answer on whether the screen has detected an alleged cartel or "just" tacit collusion. Nevertheless, in the Mexican drug industry, courts concluded that the results of the screening exercise were sufficient to prove the illegal conduct.⁸ In essence, screens lead to an improvement of the effectiveness of the anticartel policy by optimizing the screening process of information resources in order to identify signs of anticompetitive agreement. The use of a robot, algorithm or monitoring system should not be considered a violation in the absence of other evidence of collusion or unacceptable agreement.⁹ Possible evidence includes communications aimed at changing the economic model of the counterparty or competitor and an absence of other economically sound reasons for changing the behaviour mode.

4. In the case of developing countries and small economies, incentives to apply for amnesty or leniency are weaker as the risk of commercial retaliation against the leniency applicant is significantly higher in markets with fewer competitors. The rapid digitalisation of economies in developing countries is essential to bridge the economic divide and enable those countries to be effectively plugged into the global supply chains. However, such expansion can also result in harm if no firewalls are put in place. Therefore, screening is paramount to conduct detections in combination with other tools. As noted in the case of Brazil, a mixed cartel detection policy with both reactive and proactive tools can contribute more strongly to an effective cartel enforcement programme.¹⁰ However digital screening cartel tools require a large amount of data, resources as well as high level manpower, know-how and expertise.

⁴ FAS Big Digital Cat: subtotals and prospects (2019)

⁵ OECD Ex officio cartel investigations and the use of screens to detect cartels (2013)

⁶ OECD (2020) COVID19 in Emerging Asia

<http://www.oecd.org/coronavirus/policy-responses/covid-19-in-emerging-asia-regional-socio-economic-implications-and-policy-priorities-da08f00f/>

⁷ CMA 'About the screening cartel screening tool' (Gov.Uk)

⁸ See note 5.

⁹ See note 4.

¹⁰ See note 5.

5. This contribution encourages regional cooperation in enforcement against digital players is essential, and also suggests the implementation of digital screening cartel tools in Russia, South Korea, the UK and Brazil can be leveraged at the regional level and capitalised upon to benefit other countries, notably through the use of regional incubators that less advanced countries piggy back on. For instance, the FAS Russia Big Digital Cat digital screening tool could be leveraged at the Eurasian level. This idea could be transposed to the Latin American continent by capitalising for example on the Brazilian tool *Cerebro*¹¹ at the regional level.¹² While most agencies, including well-established agencies, do not use economic tools or data to detect cartels, relying instead on other tools they consider more effective and a more efficient use of their resources, considering the overreliance on algorithms and data in the digital economy, it is paramount to raise awareness on tools that can be used to detect collusion through digital screening cartel tools.

1. Younger competition agencies in the face of algorithms and other harms resulting from the rise of the digital economy

6. The increasing use of algorithms in the collection and analysis of data shifts traditional approaches of competition enforcement. While all enforcement authorities around the world face the challenges of the digital economy, it is paramount to focus on younger enforcement authorities and developing countries because their interdependence with technology, dependence on mature economies and reliance on successful regional competition authorities put them at a greater risk. Younger competition authorities such as the ones in the Latin American region, face a lack of capability, resources and technical assistance when confronted with such challenges. However, mature economies alike grapple with the task of finding effective ways to ensure competition enforcement in such a constantly evolving fluid context. By rising their level of engagement, younger competition authorities will be able to protect themselves from the harmful effects of algorithmic based cross border cartels, and to address growing concerns regarding algorithmic collusion which results from digital cartelisation.

7. The rising issue of digital cartelisation which results in algorithmic collusion raises the alarm for both mature and young enforcement authorities. This is specifically essential for young enforcement authorities which do not benefit from the experience and capability of mature economies in setting up enforcement as well as policy tools to face the challenges thrown by the digitalisation of the economy. It is in the interest of young enforcement authorities to delve into the intricacies of algorithms to protect themselves from the harmful effects of cross border cartels shaped by such algorithms.¹³ For developing countries which represent 80% of competition agencies, cross-border cartels have caused tremendous damage to economies especially in emerging markets as they limit the benefits from

¹¹ In consultations with CADE of Brazil, it transpired that cooperation on the development of digital screening tools at a regional level, especially by sharing the expertise on the Project Cerebro is possible. As a matter of fact, By August 2020, it has been reported to the author that CADE has already talked to other competition authorities in South America about the possibility of sharing the methods and tools developed within the scope of the Project Cerebro.

¹² CADE Brics Report Digital Economy.

http://www.cade.gov.br/acesso-a-informacao/publicacoes-institucionais/brics_report.pdf.

¹³ Horna "Fighting Cross-Border Cartels: The Perspective of the Young and Small Competition Authorities" (March 2020 by Hart Publishers).

international trade and access to global supply chains.¹⁴ The effects on developing countries are particularly salient since they rely heavily on imports of goods from industries involved in international price fixing conspiracies. With the rise of digitalisation and the risk of algorithmic collusion, it is essential for young and smaller agencies to need to acquire more experience in dealing with cross border cartels and technical assistance from larger authorities, for instance in Latin America from Mexico and Brazil. This can be achieved for example by strengthening informal cooperation through coordination games as exemplified by the Latin American regional wide liquid oxygen case.¹⁵

8. It is vital to address specific concerns of young enforcement authorities in the face of the algorithm economy. Indeed, digitalisation can play to the advantage of developing countries in terms of bridging gaps with mature economies or bypassing obstacles through the reliance on the digital economy. Nevertheless, while ecosystem bear more relevance in the digital economy than actual product, concentration of economic power and the nature of such a power is shifting to create a new battleground between digital platforms and national governments. This shift leads companies to attempt changing the institutional environment to their advantage at the expense of regulation, other markets players and consumers. These concerns deserve special emphasis and elucidation as they may differ significantly from those in more advanced or mature jurisdictions or be similar in some instances. Digitalisation is advancing at a considerable rate in the emerging economies of the BRICS and some countries in ASEAN. In Latin America, the development of technology companies combined with developing telecommunication infrastructures have spurred across the region and are concentrated in Brazil, Argentina, and Mexico.¹⁶ ASEAN's digital economy is only 7% of its GDP compared to 16% of China, 27% of EU-5 and 35% of the US¹⁷. The ASEAN Digital Integration Framework Action Plan (DIFAP) 2019-2025 is promoting the participation of MSMEs through digital integration because less than 20% of MSMEs use digital tools to their potential as part of the core business model.¹⁸ COVID19 pandemic has led to maximising the use of digitalisation and further strengthening regional co-operation.¹⁹ However, the developments in these countries are far from indicative from the rest of the world. The vast heterogeneity when it comes to digitalisation around the world poses a crucial obstacle to collaborative measures across different jurisdictions.

¹⁴ See note 11.

¹⁵ See note 11.

¹⁶ UNCTAD Digital Economy Report (2019).

¹⁷ ASEAN Going Digital Factsheet (19 June 2020).

¹⁸ Ibid.

¹⁹ See note 6.

2. Comparative analysis of the FAS Russia, South Korea BRIAS, Brazil CADE and the UK CMA digital screening cartel detection tools

9. While certain countries are in the process of developing their own tool (Spain and Canada)²⁰, others have already done so. FAS Russia, Korea, Brazil CADE and UK CMA have each developed tools to facilitate cartel detection through digital screening cartel tools that enable through a vast collection an analysis of datasets to flag suspicious behaviours. For instance, CADE (Brazil) relies upon a data warehouse (which is similar to CMA's folder structure), data mining and statistical tests.²¹ Russia's FAS Big Digital Cat software allows to receive a volume of data automatically via closed channels and analyse it with specified criteria to investigate patterns and similarities in competitor's behaviour, suspicious facts, and signs of simulation of competition.²² The Korean bid-rigging indicator analysis system (BRIAS) relied on its past enforcement experience and used pre-determined red flags for collusion as a benchmark, and has in several occasions succeeded in detecting bid rigging conspiracies by screening procurement bidding data.²³

10. In spite of different approaches between UK CMA providing an open source screening tool for public and private procurers and, in contrast, South Korea BRIAS, FAS Russia and Brazil CADE aiming their tools for cartel detection aim at competition authorities, digital screening cartel tools have proved successful. As one of the first countries to develop a digital screening cartel tools in 2006, South Korea successfully detected collusion in metro construction worth 5USD billion through BRIAS.²⁴ It noted that the secrecy over the software, in comparison to UK CMA, has resulted in an increase of voluntary surrenders.²⁵ FAS Russia's Digital Cat set up in 2017 has detected 80 cartels in e-procurement. Implemented in 2018²⁶, Brazil CADE effectively detected bid rigging in supply of cardiac pacemakers.²⁷

11. The main challenges linked to the use of digital screening cartel tools are the fact that such tools are data and resource intensive as well as time consuming (to carry out tests). As noted by CADE, the access, comprehensiveness, quality of the data is crucial for the effectiveness of the tool, and this requires specific expertise.²⁸ This has a cost and involves human resources, as well as the difficulties relating to the recruitment and training of specialist staff in data science, which play an important role from database infrastructure up to specialized algorithms. Indeed, this required, as stressed by the CMA, both internal

²⁰ Burnier da Silveira & Kovacic 'Global Competition Enforcement: New Players, New Challenges' (2019)

²¹ OECD <https://www.slideshare.net/OECD-DAF/cartel-screening-in-the-digital-era-uk-competition-markets-authority-january-2018-oecd-workshop>

²² See note 14.

²³ OECD (2017) Algorithms and Collusion: Competition Policy in the Digital Age www.oecd.org/competition/algorithms-collusion-competition-policy-in-the-digital-age.htm

²⁴ See note 10.

²⁵ Ibid.

²⁶ Ibid.

²⁷ OECD (2018) CADE presentation <https://www.slideshare.net/OECD-DAF/cartel-screening-in-the-digital-era-cade-brazil-january-2018-oecd-workshop>

²⁸ Ibid.

and external expertise to identify evidence of collusive and to test and improve these mechanisms.²⁹

3. Bringing the experiences of Russia, South Korea, Brazil and the UK to developing countries

12. To thwart the harmful effects of algorithmic economy, young enforcement authorities should reinforce their technical capabilities by building the capacity of emerging economies for collecting better data on relevant aspects of the digital economy. Such a move would benefit young enforcement authorities to closely monitor pricing algorithms, and subsequently detect algorithmic tacit collusion through the so-called “auditing” of the algorithm³⁰, whereby it could be determined if market dynamics were artificially created by algorithms or not. Ezrachi and Stucke in their recent paper also argue that in addition to increasing capacity of enforcement authorities, competition agencies should lower the threshold of intention to investigate coordinated efforts in a more effective way when conducting a merger review.³¹

13. In order to better assess the impact of cross-border conduct in the digital market, and implications for the enforcement of competition policies, young enforcement authorities should either commission or internally conduct experiments with pricing algorithms and create their own algorithms (so-called ‘agency algorithms’) using an algorithm collusion incubator (ACI).³² An ACI allows for the competition authority to examine the available data and pricing algorithms in the market. However, such a tool would be estimated to cover already 12.5 % of the annual budget of a young competition agency in the Asia Pacific.³³ This might be a small amount for mature competition authorities, but not for those that are located in small or developing countries. While ‘regional algorithm incubators’ would help reduce the cost and increase the effectiveness at the regional level, nonetheless such mechanism requires recruiting experts to investigate the nature of price algorithm and their functions. Also, the rate of engagement and cooperation amongst BRICS is unequal. Except for Russia and CIS countries, the other BRICS are not really developing regional cooperation schemes in their own sub-regional groupings. This jeopardizes regional development, cooperation and raising standards for young and small enforcement authorities, which often rely on capitalizing on the success of regional power such as BRICS and attempting to “piggy-bag” on their success as well as developments.

²⁹OECD (2018) CMA presentation <https://www.slideshare.net/OECD-DAF/cartel-screening-in-the-digital-era-uk-competition-markets-authority-january-2018-oecd-workshop>

³⁰ Ariel Ezrachi and Maurice E Stucke, ‘Artificial Intelligence & Collusion: When Computers Inhibit Competition’ (2015) SSRN Electronic Journal <<http://www.ssrn.com/abstract=2591874>> accessed 31 May 2018.

³⁰ Ezrachi and Stucke, ‘Algorithmic Collusion: Problems and Counter-Measures’ (n 28) P. 23.

³¹ See note 31.

³² See note 29.

³³ OECD Secretariat, ‘Consumer Protection Enforcement in a Global Digital Marketplace’ (2018) OECD Digital Economy Papers 266 P. 5 <https://www.oecd-ilibrary.org/science-and-technology/consumer-protection-enforcement-in-a-global-digital-marketplace_f041ead-en> accessed 19 October 2018.

14. The rate of penetration of the digital economy within developing economies is unequal and thus widens the gap of enforcement which can be addressed by capitalizing on regional champions and success stories. While younger non-BRICS countries may argue that there are other priorities more important to their smaller economies, they should be more engaged into algorithmic collusion because they can “piggy-bag” from the successful work of the BRICS economies such as Russia with the Big Digital Cat tool that are used to incubate algorithms. Indeed, non-BRICS countries need to work together to develop “regional ad-hoc” tools to be able to counteract the costs that these tools can borne to the singular or individual authorities. However, this is a real challenge since the pace of development aimed at regional cooperation amongst BRICS is unequal. In any case, it has been widely documented that cartels still represent an important priority of enforcement action for developing countries (smaller/younger non-BRICS authorities) and therefore its prosecution in the digital age should be even more important than the offline world.

4. COVID19 crisis calls for the development of digital screening cartels tools to monitor post crisis key sectors (digital and pharmaceutical)

15. The COVID19 pandemic has impact the global economy and imposed its digitalisation to maintain economies afloat. This global need for economic digitalisation resulted in a lot of pressure for developing countries which lack infrastructure, expertise and resources to implement the right means to engage in the digital economy at the international level. Concurrently, the increase reliance on digital tools and means so that businesses continue to operate led to an increase use of algorithms, big data and AI tools. In parallel, the fastest pace of acquisition and innovation by the four main global tech platforms (e.g. Apple, Facebook, Google, Amazon) has been observed since the start of the pandemic³⁴, calling for increased scrutiny and data protection rights. Digital screening cartel tools will be useful to maintain a level playing field of competition post crisis.

16. During economic crises, competition authorities must decide how much to prioritise cartel enforcement, and the use of screening cartel tools can be a good addition to flag potential risks of collusion. The current pandemic is said to have resulted in higher levels of concentration in various sectors due to disruptions and shortages of global supply chains, which could be conducive to cartelisation. Horizontal cooperation among competitors such as joint buying, joint stock management and distributions in the form of exchanges of information were made necessary during the outbreak of the current unprecedented pandemic caused by COVID19, followed by worldwide disruptions to supplies of essential goods and health products. In South Korea, a cartel probe in relation a suspected cartel for public and military immunization programs involving SANOFI was opened in January 2020.³⁵ As such, the flexibility in enforcement approaches adopted by most competition agencies around the world could potentially and inadvertently facilitate the formation of hard-core cartels. This will require post crisis for a thorough screening of key sectors, with a specific focus on digital and pharmaceutical as well as health sectors, to ensure that companies did not take advantage of the crisis to collude.

17. A final point that should concern the Latin American region is the potential cross-border cartelization that can result from the COVID19 crisis. Therefore, authorities should be careful to review and analyse the impact of collaborations in key sectors, such as tech and pharma, post crisis to detect potential collusion, notably through digital means such as

³⁴ <https://www.ft.com/content/04a62a26-42aa-4ad9-839e-05d762466fbc>.

³⁵ <https://www.fiercepharma.com/pharma/sanofi-exec-korea-arrested-vaccine-bribery-probe-report>.

algorithms. Digital screening cartel tools can be a great addition to screen and flag potential collusive behaviours. In the Latin American region, looking at CADE Brazil's experience with *Cerebro* is key to understand how best capabilities at the regional level can be unleashed to prepare young and small competition authorities to deal with the post crisis 'new normal' more efficiently. Numerous questions arise regarding developing countries' resources and knowledge to use those new tools and gain assertiveness to impose sanctions, and how regional actors will react to the idea of sharing their capabilities. Therefore, regional cooperation is paramount to assess how best to manage the challenges of the new normal post crisis and how regional actors can best learn from each other to face new harms emerging out or reinforced by the crisis.