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Data Screening Tools for Competition Investigations – Note by Canada

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More documents related to this discussion can be found at
www.oecd.org/daf/competition/data-screening-tools-for-competition-investigations.htm

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1. Introduction

1. The Bureau uses a wide range of tools to detect and fight cartels. This includes using novel techniques and technologies to detect, assess and address cartels, such as bid-rigging. For detecting bid-rigging, data screening algorithms (i.e. “screens”) can sift through bidding data for possible signs of collusion. These screens are designed to find industries where competition problems could exist and firms that may be involved in possible illegal conduct. In this sense, screens can complement existing law enforcement techniques, such as the Bureau’s Immunity and Leniency Program, to detect and fight bid-rigging.

2. In this paper, we will discuss:

- the background and development of screens at the Bureau,
- tools designed in-house to help procurement agents create pro-competitive tenders, as well as
- the benefits and challenges of using screens in competition investigations in Canada.

2. Background and Development of Screens

3. The Bureau began experimenting with bid rigging screens in 2018. We used screens on a small number of datasets from detected (alleged) cartel members to better understand the strengths and weaknesses of the screening tools. We also worked with an external expert who has experience pioneering empirical screens to detect cartel-like conduct using bidding data. The expert produced a report that identified issues with the bidding data collected and difficulties in conducting some empirical analyses. The report offered a summary of the analyses conducted as well as recommendations for future data collection.

4. In addition to the screens work, we have undertaken a number of proactive initiatives to identify potential bid rigging or the risk of bid rigging. For instance, we worked with Canada’s national police service (the Royal Canadian Mounted Police) and the federal department responsible for procurement (Public Services and Procurement Canada) to launch a dedicated tip line to report possible fraud, corruption and bid-rigging related to federal government contracts in Canada. The information provided through the tip line is shared and used to help conduct investigations.

5. In June 2022, we also launched the [Collusion Risk Assessment Tool](#) (“Tool”). The Tool is a free, interactive web-based resource available to both the public and private sector. It is designed to help procurement agencies evaluate and mitigate the risk of collusion when organizing and administering a tender. The Tool empowers procurement agents by serving as an early warning sign about potential bid-rigging risks.

6. The Tool provides procurement agents with a score of “low”, “medium” or “high” in terms of the risk for collusion. It also offers tailored best practices and mitigation strategies that agencies can take to decrease those risks and to help promote pro-competitive procurement. Procurement agents can apply the best practices given by the

Tool before soliciting invitations for bids. This proactive step can lessen the conditions for collusion before bidding begins.

7. While people using the Tool have the option to provide their contact details, the Tool can be used anonymously. The Bureau does not share the information provided. The information we collect from the Tool offers other benefits. For example, we can use it to help us make future improvements to the Tool. We can also use the information to identify regions of focus for bid-rigging outreach presentations conducted by the Bureau.

8. We have given a number of demonstrations of the Tool to domestic procurement agencies and international counterparts. Domestic demonstrations are an opportunity to teach agencies how to use the Tool and how it can benefit them. International demonstrations provide an opportunity to share our experience creating a proactive bid-rigging risk detection tool.

9. The Tool complements the Bureau's screens work. Screens are designed to detect collusive conduct that has occurred or is occurring. On one hand, the Tool helps procurement agencies proactively identify risk for bid-rigging in their tender processes. On the other hand, screens leverage data from completed processes and identify conduct that has occurred. Screens can be used retroactively and proactively depending on a number of factors, such as the availability, structure and access to data. By using a multipronged approach, the Bureau is using innovative means to address criminal conduct in the Canadian marketplace through outreach, education and its enforcement work.

3. Statistical Screens

10. A statistical screen alone cannot prove whether a cartel exists. If a screen indicates cartel-like conduct, it can be used as a starting point for further investigation. Results of a screen can help us assess targets for cartel investigation and shed light on bidding conduct. Results of screens may also inform further investigative steps. However, screens in isolation cannot prove the existence of bid-rigging.

11. Equally, if screens do not show cartel-like conduct, this does not guarantee that a cartel is not present. Screens are used to identify specific conduct that may indicate a cartel. However, they may miss other bid-rigging markers not captured by screens. Also, cartel members may alter their conduct to avoid detection by screens, particularly if they know what specific screens are being used. It is important that antitrust authorities consider this when sharing information about screens publicly.

12. The implementation of screens requires collaboration between teams across the Bureau. Third-parties may be involved in cases where bidding data is provided to the Bureau. For instance, third parties may scan and send paper or deliver digital information or data to the Bureau. Depending on the document format, a team at the Bureau may process documents to make them searchable in a digital format.

13. The Bureau may also collect data from public sources for screening and analysis purposes through downloading, text mining, and web scraping. Once information is obtained by the Bureau, and it is in a searchable digital format, the Bureau uses text mining to extract data needed for screening. Once the data has been prepared, the screening analysis is done by trained staff. The results of the screening analysis will be given to investigators, who may investigate further.

4. Benefits of Screens

14. Historically, for cartel or bid-rigging investigations, the Bureau relied on information offered by outside sources. For example, this may be information from a complainant or an Immunity Applicant. However, reporting to the Bureau depends on the willingness of outside sources to contact the Bureau. Screens and the Tool are proactive. They can allow us to detect problematic behaviour, and begin the first steps of an investigation, without waiting for information from outside sources.

15. Screens can also allow the Bureau to analyze trends in bidding patterns over time. This can be done by using data analysis techniques on large datasets to gain data-driven insight into bidding data. There is also the potential to apply machine learning models to bidding data, such as tenders from procurement authorities, to draw insights from detected and known past cartel cases. Unlike manual human analysis, screens and machine learning can be applied to analyze multiple sources at once. Lastly, there is the ability to improve story-telling by visualizing data. This can lend itself well at the litigation stage when cases are brought to Court.

5. Challenges of Screens

16. One of the biggest challenges for using screens is access to bidding data. This challenge is not unique to Canada. In Canada, government procurement is fragmented. This means that access to bidding data is decentralized. This is in contrast to jurisdictions like South Korea. In South Korea, all tenders administered have public announcements, along with e-bidding and e-payment services. KONEPS – the South Korean Government e-Procurement System – provides a single platform for public procurement which digitises the entire procurement process.

17. A second challenge that we have faced is that in Canada, procurement data is largely paper-based. This means paper records must be made into searchable digital formats before screens can be used. However, since the onset of the COVID-19 pandemic, some procurement authorities in Canada have moved to e-bidding by default. This will open up new potentials for screening analysis in the future.

6. Conclusion

18. The Bureau's work on screens is ongoing and will continuously improve with advances in data access, portability, and technology. The Bureau continues to conduct research and invest in tools, technologies, and statistical techniques used for bid-rigging detection. Procurement agencies in Canada have begun to shift from paper to electronic bidding. This trend is likely to accelerate in the future. Given this shift to electronic bidding, and the Bureau's continued advancement of tools and capabilities, the benefits, and solutions for challenges of screens will improve over time.