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SESSION III - The use of economic tools to detect and assess collusive behavior

First of all, I would like to thank the Hellenic Competition Commission for the kind invitation to participate in this panel with such distinguished speakers.

In my presentation, I will focus on the way competition agencies may combine reactive and proactive tools for cartel detection, taking into account their main advantages and limitations.

It is well known that hard core cartels are considered to be the most serious competition law offence. They usually cause important inefficiencies in the market, severe damages to consumers' welfare and, in general, a significant economic and social harm. That is why detecting, investigating and prosecuting cartels is a top priority for competition authorities, which are increasingly dedicated to fighting them.

Detection is an essential part of cartel enforcement but a very difficult task for competition authorities. In fact, the secret nature of cartels makes it very difficult for competition authorities to detect and prove them.

As cartel members are increasingly aware of the risks incurred with their illegal behavior and the necessity of hiding it and adapting to enforcement, competition authorities need to develop and apply increasingly more sophisticated and efficient detection methods.

Authorities may act ex-ante to prevent or make more difficult the creation of collusive outcomes in the market. However, it is impossible to prevent all cartels or at least the majority of them. Ex-post tools are therefore essential.

The success of those tools in stopping and punishing existing cartels may have an important role in deterring future offences. For that reason it can be said that successful detection and punishment of cartels also acts as an important ex-ante tool through dissuasion. Competition authorities aim at ensuring the "right" mix of ex-ante and ex-post tools of cartel enforcement.

Competition authorities can use both reactive and proactive cartel detection tools. Reactive cartel detection tools consist in gathering information from external sources. Proactive cartel detection tools consist in undertaking *ex-officio* investigations based on internal information sources.

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Most of the detection tools used by competition authorities are reactive. They still play the dominant role in their fight against cartels.

Among reactive tools, competition authorities have relied heavily on complaints and leniency. Even if complaints still seem to play the predominant role in uncovering cartels, the reputation of leniency programs has been steadily increasing with competition authorities bestowing a growing importance to this detection method.

One of the current challenges of the PCA is to reinforce its cartel enforcement.

We feel that there are many cartels which are going under our radar. In order to achieve this, we will of course encourage the use of the leniency program, which is only now picking up. However, we also need to have a proactive strategy to increase the ex-officio detection of cartels, by using different tools, including economic tools. By increasing our ability to detect cartels, we will surely also be encouraging cartelists to come forward with leniency applications.

Leniency programs are a very effective investigation tool, as they usually ensure "hard" evidence on the cartel activities, and have been used successfully by many competition authorities around the world.

However, there are certain types of cartels that are more likely to be detected through leniency than others. Cartels which have already become unstable, which are breaking down or are in a 'late stage' are more likely to lead to a leniency application. On the other hand, cartels whose members are successful in maintaining stable collusion rules for several years and display a weak communication among them are more difficult to be detected through leniency programs.

The truth is that, despite the success of leniency programs, a high number of cartels certainly remain uncovered.

Hence, some relevant questions seem to remain open:

a) Is there an over-reliance on reactive methods, namely on leniency programs?

b) Should competition authorities give more use to proactive methods, namely through the use of economic tools?

Searching for alternative or complementary detection methods seems to be a reasonable approach.

There are several economic tools available in order to identify possible cartelized markets, such as economic studies, analysis of previous cases, industry studies and market screening tests.

Market screening tests may play an important role in increasing the probability of cartel detection, as the recent discussion at the OECD Competition Committee, in October 2013, on *ex officio* cartel investigations and the use of screens to detect cartels illustrate.

In a simple way, screens are statistical methodologies that may be applied by competition agencies in the detection of the markets or industries that have been affected by collusion or where collusive behavior is more likely.

There are specific circumstances or factors that facilitate the existence of collusive behavior in a market: e.g. a small number of competitors; market transparency; high barriers to entry; stable demand conditions; low elasticity of demand; high product homogeneity; symmetry of costs and capacities; low pace of innovation; and so on.

Structural screens mainly look at these specific features of markets and industries and verify if collusion is probable. As a result, a list of markets where collusive behavior is more likely to happen may be obtained through this type of screens. This list of "suspect" markets or industries may be used by competition agencies in different instances. Examples are case prioritization or when deciding where and how to develop additional efforts in a proactive detection of cartels.

This type of screens has the advantage of not involving difficult detection methodologies and time consuming data collection. One of the main drawbacks of structural screens is the fact that they only allow the evaluation of the propensity to collude and they are generally unable to point out specific cartel occurrences or to provide relevant evidence of collusive behavior.

Another type of screens are **behavioral screens**.

Behavioral screens imply economic and statistical analyses of detailed data on costs, prices, market shares and other relevant variables for a specific market so as to determine if their evolution is consistent with competitive or collusive practices. The main goal of behavioral screens is to flag the possibility of collusive behavior in a specific market.

Behavioral screens require more specific and detailed data when compared with what is performed in structural screens. They may be used to detect whether a specific collusive behavior is taking place in that specific market and not only the probability of its occurrence. This type of screens can also be used to identify who may be involved in the cartel and for how long the collusive behavior has being going on.

Behavioral screens should be able to flag collusive or competitive behavior with minimal errors, should be easy to implement, should be designed taking into account the ability of firms to adapt to the screens, should have empirical and theoretical support, and competition authorities should have a good understanding of the functioning of the market when implementing the screen.

When designing a behavioral screen it is important to define 'collusive markers' that will enable agencies to distinguish between collusive and competitive behavior. These (statistic)

markers are compared against appropriate benchmarks or references (different timeframes, different product markets, different geographic markets) and special attention is given to any particular events and changes occurring in the market during the timeframe of the analysis.

We have to keep in mind that structural and behavioral screens can and should be used in a complementary way: structural screens may identify the markets and industries where it is more likely to have collusion, allowing to identify markets where behavioral screens, which involve more data, resources and complexity, could be firstly applied.

It should also be stressed that the main goal of screening is to flag the markets and industries where collusive practices are occurring or are more likely to occur. It is a first step and will not substitute the need to gather hard evidence of a cartel.

There are some limitations that are often pointed out when considering screening tests:

1. **Screens do not provide sufficient proof of cartelization.** But, as I mentioned before, the main goal of screening is not to gather "hard" evidence for the cases.
2. **Screens may lead to false positive and false negative results.** Errors can occur in all type of investigation methods and sources and the ability of screens to detect collusive behavior has already been proven in some situations[1].
3. **Difficulties in distinguish between explicit and tacit collusion.** Again, the main goal of screening is to flag the need to further investigate a specific situation and not to prove explicit collusion by itself.
4. **As an econometric tool, behavioral screens are subject to statistical uncertainty.** That is why it is so important how the screen is designed to also take into account the specificities of the market analyzed.
5. **Screens may be avoided by cartel members.** However, all investigation methods developed by agencies may be avoided by cartel members. There is a need for continuous improvement of these methods.

[1] *Examples already exist in which the power of screens is tested. One of such examples was performed by the Italian Competition Authority, as documented in Esposito and Ferrero (2006). In this paper, the authors tested the power of the variance screen for prices to detect previously known illegal conspiracies. In particular, they pose the question of whether a price variance screen (as initially proposed in Abrantes-Metz, Froeb, Geweke and Taylor (2006)) could have identified collusion in two well-known Italian cartel cases involving gasoline and diesel on the one hand and in baby milk on the other. They also ask whether such a screen could have correctly identified who was involved and during which time period. And the answer to both questions is "yes:" the screen would have correctly identified these two cartels before the Italian Competition Authority did. Another application in which the power of screens was demonstrated involved the German cement market, as discussed in Hüschelrath and Veith (2011). The authors show that buyers could have detected this cartel ahead of the launch of investigations, through the use of screens for structural breaks.*

6. **Screens have already been tried by competition agencies[2] and the result was not always satisfactory.** However, its usefulness has already been shown by other agencies. Additionally, it should be considered that the screening methods and activity have improved significantly in the last years, and, as such, the past may no longer be a good example for the present/future.

There are also some obstacles in the implementation of screens by competition authorities:

The necessary data to implement a screen may not be publicly available (e.g. price series). In this case, competition authorities must consider the need to ask companies for the necessary data. This represents an incremental cost for the market (and for the competition authority) and may also put the investigation at risk.

Competition authorities must also consider the possible existence of errors in the data. The control of the data used and the need to correct it represent an additional obstacle for the implementation of screens.

Additionally, obtaining a simple but effective screen implies using specialized resources, especially human resources.

As for human resources, they need a robust and specialized knowledge about the markets for which screens will be developed. They should also master econometrics, statistics, microeconomic theory and modelling.

Besides human resources, screens additionally involve other type of important resources: computer and information systems, software licenses for econometric and statistical programs and database systems. All these resources may imply significant investments and costs incurred by the authorities that may constitute an obstacle in the implementation of screens.

In a scarce resource scenario (the real world!), it may be expected that a first priority for competition authorities will be to effectively deal with reactive detection and only if sufficient resources and know-how are available to implement proactive detection mechanisms (e.g. screens).

The use of proactive detection methods complements reactive detection methods and may even enhance their efficiency.

[2] See OECD Roundtable on ex officio cartel investigations and the use of screens to detect cartels - Paper by William E. Kovacic (2013).

If proactive detection methods are used, the perception held by companies about the possibility of its conduct being detected may change, reducing cartel formation and creating greater instability within existing cartels. It may allow for cartels to be detected sooner and even for a greater number of the so-called "stable cartels" to be detected.

The use of effective proactive detection methods, including economic methods, may change the stability conditions of some cartels and lead to more leniency applications.

I would also like to briefly point out that economic methods may be useful not only for cartel detection but also for cartel assessment[3]. For instance, the use of economic methods may be relevant to confirm ex-post the existence of a conduct and also to evaluate its effect in the market and end users.

The Portuguese Competition Authority has, for example, used economic methods to assess the economic benefit obtained by the parties to a cartel in the salt industry. Needless to say, economic methods and findings should be presented in a simple and intuitive way, if they are to be useful in Court.

Economics may also be important to provide a more concrete explanation of the context in which a specific conduct occurred and to provide a better understanding of the underlying economic rationale for the behavior, whenever needed.

Additionally, it is essential to bear in mind that the economic assessment of a closed cartel investigation may provide relevant elements that can be applied in the improvement of the screens in use or in the development of new screens. By enhancing the efficiency of the existing screens, competition authorities may improve their cartel enforcement policy.

To sum up, I believe that reactive tools will remain the predominant instrument in cartel detection. However, competition authorities have been engaged finding different ways of detecting cartels that go beyond the use of reactive methods. In fact, competition agencies should not rely exclusively on reactive tools, namely on leniency applications. Diversification seems to be instead a very reasonable strategy to follow.

Pro-active detection tools, including economic methods, may have an important role in supporting and complementing reactive tools, thus enhancing the overall effectiveness of cartel detection and deterrence.

Competition agencies should be ambitious over the continuous improvement of the methods and screens used (considering their limitations). They should also be aware that the

[3] We understand cartel assessment to signify the study and evaluation of the cartel's practices and effects.

main goal of screens is to flag the markets and industries where collusive practices seem to be happening or where they are more likely to happen and not to provide isolated hard evidence on cartels.

More and better cartel enforcement may require more sophisticated ex-officio investigations, which will in turn contribute to more leniency applications and to further cartel deterrence.

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