RCC OECD-GVH

Regional Centre for Competition in Budapest (Hungary)

OECD-GVH RCC Newsletter

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Contents

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Gazdasági Versenyhivatal
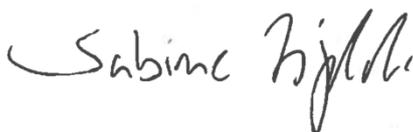The Hungarian Competition Authority

Foreword

Dear Readers,

In this Newsletter you will find the new seminar programme for 2017. Please have a close look and save the dates for the topics of interest to you. All beneficiary agencies will receive invitations for the seminars in due time. You will notice that the programme for 2017 is heavily focused on topics such as market definition, market studies or cartel procedures. The intention is to provide trainings in basic but extremely relevant topics that are applicable to more than one enforcement area. The Heads' Meeting in May will provide an opportunity for the discussion of possible topics for the coming years, and of course we will be very open to your suggestions.

The articles in this Newsletter mostly focus on another basic question: how can cartels and anticompetitive conduct be detected and where should enforcement priorities be set? We have asked a number of authorities from around the world that are using various tools for cartel detection such as market screening, systematic monitoring of public procurement and e-procurement or whistle-blower hotlines to explain what they are doing. Brazil, Germany, Hungary, the Netherlands, Romania and Russia were happy to share their experiences. This follows up on work of the OECD Competition Committee on screens and other pro-active detection methods. More than ever – please use this as inspiration and get in touch with the respective authorities if you would like to get their advice. Contact details are provided in every article. In addition, Ukraine has contributed an article on a very interesting information exchange case, which may possibly be of relevance for other enforcement agencies.
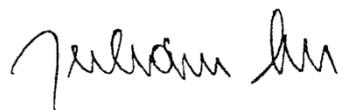
As always, you will also find summaries of the OECD Competition Committee meetings and the Global Forum on Competition that took place in November/December 2016, with links to all the documents you might find interesting. Use them to benefit from the work and experiences of peer competition authorities and from the work products of the OECD.

> As this is the eighth edition of the Newsletter, it is about time that you let us know what you think about it. Please take 10 minutes to answer our online questionnaire. We would highly appreciate your feedback in order to design a Newsletter that is truly relevant to you.

We are happy to receive your comments and contributions! Please contact Sabine Zigelski (OECD – sabine.zigelski@oecd.org) and Andrea Dalmay (RCC – dalmay.andrea@gvh.hu).

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Newsletter Evaluation

Dear Readers,

You have just received the 8th edition of the OECD-GVH RCC Newsletter and we hope that you are by now quite familiar with it. We are curious and would like to get your opinion on the Newsletter.

Please help us improve the Newsletter. We would be very grateful if you took 10 minutes to answer this online questionnaire. Please use this link to provide your answers online - http://survey.oecd.org/Survey.aspx?s=bcb788ffda2a40119504f3ed7e49cc82 - the sooner the better!

We would really appreciate your feedback.

Activities of the RCC in 2017

24 – 25 February	**Seminar on European Competition Law for National Judges: The Role of National Judges in Antitrust Litigation in the Light of the EU Damages Directive** The seminar will provide the participants with the necessary tools and information to better understand the Directive's provisions and ensure a coherent and consistent application of EU law in this field by national courts. It will cover the main features of the Damages Directive, such as the disclosure of evidence, the passing-on defence and the quantification of harm, as well as matters related to co-operation mechanisms and preliminary reference proceedings. In addition we will examine jurisdictional issues.
07 – 09 March	**Seminar on Market Definition** The definition of a relevant product and geographic market is a necessary step in most competition cases, particularly in merger cases. We look at basic investigatory and analytical steps and the economics of market definition. Practical case examples from OECD members will be presented in order to illustrate the theoretical concepts. The participants will be asked to join the experts in hypothetical case exercises.
26 – 27 April	**GVH Staff Training** **Day 1 - Review of 2016 and Selected Competition Problems** After a review of the developments in EU competition law in 2016 we will have a closer look at selected competition law topics. This will cover e-commerce, platform markets and big data, treatment of rebates in abuse of dominance cases and joint competition and consumer law enforcement. Experienced practitioners from competition authorities and from the Court of Justice of the EU will discuss the topics with the GVH staff. **Day 2 – Trainings for Special Groups of Staff** In separate sessions we will provide dedicated trainings and lectures for the merger section, the cartel section, the economics section, the consumer protection section and the Competition Council of the GVH.
16 May	**Heads' Meeting** Heads of the beneficiary authorities will discuss their enforcement and training priorities and needs with the GVH-OECD RCC staff. New features of RCC work will be presented and discussed.
30 May – 01 June	**RCC – FAS Joint Seminar in Russia – Market Studies** Market studies are research projects aimed at gaining an in-depth understanding of how sectors and markets work. A market study results in a

report that sets out the problems found and issues recommendations to policy makers or leads to follow-up enforcement action. We will introduce the general set-up and best practices relevant for market studies and look at available OECD, ICN and national guidance. Experts from national competition authorities will give insights into their practical experience. We will place a special emphasis on the internet economy and markets with buyer power problems.

12 – 14 September	**Outside Seminar in Bosnia and Herzegovina – Fines in Competition Cases** Competition law offenders are often subject to fines. Fines impose a cost on those companies or individuals undertaking illegal anticompetitive conduct. Breaking competition laws is profitable if it goes undetected. Fines play a role in deterrence by making unlawful conduct less profitable. We will discuss experiences and best practices for determining fines, including guidelines for calculation, the role of leniency and aggravating or mitigating factors and other topics of particular interest to the beneficiary countries. Experienced practitioners will give practical advice and deepen the participants' understanding in hypothetical exercises.
17 – 19 October	**Seminar on Best Practices in Cartel Procedures** Procedural laws that govern cartel cases vary from jurisdiction to jurisdiction. We can, however, identify best practices that experienced jurisdictions have developed when handling cartel cases and these will often fit different procedural frameworks. The seminar will provide insights and ideas on the preparation and execution of dawn raids, the handling of evidence, forensic IT techniques and team work in complex cartel case investigations. Experts will explore these topics together with the participants and we will illustrate the topics with hypothetical exercises.
12 – 14 December	**Sector Event: Competition Rules and the Pharmaceutical Sector** This event will analyse the role of competition law in the pharmaceutical sector by looking at cases that deal with merger control, distribution agreements and pay for delay agreements. We will also examine the role of intellectual property rights and regulation and discuss relationships with the government and other regulators.

OECD Competition Committee Meetings, 28 – 30 November 2016

Roundtable on Innovations and Competition in Land Transport[1]

Competition agencies are likely to face a number of challenges brought about by recent technological developments in land transport, in both passenger and freight markets. However, these developments also provide an opportunity for competition agencies to intervene through their enforcement and advocacy powers in order to promote greater competition and maximise consumer welfare. The roundtable discussion provided an overview of developments in these sectors, of the ways in which regulatory frameworks will have to adapt, and of the antitrust issues that competition authorities may have to face, and the role they may be able to play, in this environment.

Competition Assessment: Using Empirical Evidence[2]

This session discussed the use of empirical data in competition advocacy to improve the regulatory environment. The discussion benefitted from a presentation about a recent initiative by the Canadian Competition Bureau to provide guidance to regulators to ensure that legitimate policy objectives are met, while at the same time providing maximum scope for market forces to allow the benefits of competition to be achieved.

Roundtable on Geographic Market Definition[3]

The Roundtable on Geographic Market Definition focused on the definition of geographic markets that are national, or broader, in scope. Defining the geographic scope of a market that may have national or broader borders can be challenging for competition agencies, especially in merger reviews and abuse of dominance cases. This topic is relevant in light of several long-term market trends, including globalisation, trade liberalisation and digitalisation. In addition, improvements in international shipping and door-to-door delivery networks for consumers are increasing the reach of suppliers at the retail and wholesale levels. These trends can be expected to increase the complexity of geographic market definition. The aim of the roundtable was to identify challenges faced by agencies with respect to delineating markets that may have national or broader borders, and discuss how those challenges are being overcome. The discussion also touched on current approaches in terms of evidence and analysis (e.g. pricing patterns and import data) as well as some areas of controversy, such as supply substitution.

Roundtable on Agency Decision Making in Merger Cases[4]

The Roundtable discussed issues that arise when agencies are deciding whether to prohibit a merger which risks generating anti-

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[1] http://www.oecd.org/daf/competition/competition-and-innovation-in-land-transport.htm
[2] http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04141.html

[3] http://www.oecd.org/daf/competition/geographic-market-definition.htm
[4] http://www.oecd.org/daf/competition/agency-decision-making-in-merger-cases.htm

competitive effects. In their decision making, competition agencies consider whether the extent of harm justifies prohibiting the transaction or whether a conditional clearance of the merger with remedies is sufficient to prevent the harm. Delegates explored when sufficient harm is established and a prohibition decision or the imposition of remedies is justified. The discussion aimed to provide insights into the factors that competition authorities consider when making their decision.

Hearing on Big Data[5]

The use of "Big Data" by firms for the development of products, processes and forms of organisation has the potential to generate substantial efficiency and productivity gains, for instance by improving decision-making, forecasting and allowing for better consumer segmentation and targeting. However, acquiring the necessary size to benefit from economies of scale and scope and network effects related to Big Data may potentially lead to monopoly positions, further enhanced through acquisitions of new entrants with their own data sets, or providers of new services that do not at first glance appear to be in the same market. These issues bring up the question of the role for antitrust enforcers in these markets. This session discussed the implications on competition authorities' work and whether competition law is the appropriate tool for dealing with issues arising from the use Big Data.

Roundtable on Price Discrimination[6]

Price discrimination is common in many different types of markets, whether online or offline, and even among firms with no market power; it usually reflects the competitive behaviour that competition policy seeks to promote (either by incentivising firms to serve more consumers, or by increasing the incentive to compete) and hence has no anti-competitive purpose or effect. However, price discrimination can sometimes be a concern, for example if it has exploitative, distortionary or exclusionary effects. In recent years, the scope for near perfect price discrimination in the digital economy appears to have grown, and there has been debate as to whether the rules and case law that apply to distortionary effects of price discrimination have an economic basis. This roundtable offered an opportunity to look at the practice of agencies and discuss how jurisdictions in which exploitative or distortionary price discrimination is an offence should respond to these developments.

Review of Policy Recommendations to Ukraine by OECD and other International Organisations

Delegates discussed the status of implementation of previous OECD, UNCTAD and EC recommendations on competition law and policy in Ukraine in the light of recent political, economic and social changes. Peer reviewers debated the progress in the implementation of such recommendations and the remaining open issues as well as discussed further implementation strategies and reform priorities with representatives of the Anti-Monopoly Committee of Ukraine.

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[5] http://www.oecd.org/daf/competition/big-data-bringing-competition-policy-to-the-digital-era.htm

[6] http://www.oecd.org/daf/competition/price-discrimination.htm

OECD Global Forum on Competition, 01 – 02 December 2016

Promoting Competition; Promoting Human Rights[7]

Competition law enforcement depends on an effective system of human rights, most obviously the right to property, the right to contract and rights to due legal process. Policies promoting competition between providers can also be effective in supporting human rights more broadly, for example through providing checks on the power of corporations, as well through helping fight corruption in government. However, economic competition itself is occasionally portrayed as harming human rights along with social values, for example through social dumping, or environmental damage. Furthermore, some policies intended to safeguard human rights depend on agreements between suppliers - agreements that might be in conflict with competition law (or which might at the least raise the risk or suspicion of being in such conflict). The growing importance of responsible business conduct further brings into question how business can act together to promote RBC principles while also respecting fundamental competition law and policies.

The session therefore brought together a cross-section of experts concerned with either different aspects of economic development, law or human rights into dialogue, to understand better the varying perspectives and to explore the ways in which any apparent conflicts between their objectives can be resolved.

The Role of Market Studies as a Tool to Promote Competition[8]

Market studies provide competition authorities with an in-depth understanding of how sectors or markets work, and are usually conducted whenever there are concerns about the functioning of markets. This tool is often used to identify problematic markets and to recommend areas of improvement. The use of market studies varies widely across jurisdictions and is characterised by significant conceptual and procedural differences. This session discussed the results of a recent survey by the OECD on market studies, summarising similarities across jurisdictions, significant differences as well as their pros and cons. It aimed to identify practices that competition authorities can consider for use in future market studies.

Independence of Competition Authorities[9]

Agency independence is often taken to be a key element of effective enforcement of competition rules. However, given that national competition agencies (NCAs) face different sets of political, legal, administrative, economic and cultural conditions, there is no "one size fits all" model that can guarantee formal or informal independence and insulate all NCAs against political pressures. Nevertheless, it is widely recognised that some general principles exist which could provide NCAs with a certain level of protection

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[7] http://www.oecd.org/competition/globalforum/promoting-competition-protecting-human-rights.htm

[8] http://www.oecd.org/competition/globalforum/the-role-of-market-studies-as-a-tool-to-promote-competition.htm

[9] http://www.oecd.org/competition/globalforum/independence-of-competition-authorities.htm

and freedom of manoeuvre. In addition to legal and structural safeguards, the session also highlighted the importance of effective enforcement and advocacy of an NCA to enhance independence. The session also examined more specific issues such as appointment and dismissal of top management, the status of the agency, resources, priority-setting and supervision, and objectives of competition law.

Sanctions in Antitrust Cases[10]

Competition law offenders are often subject to fines (civil, administrative or criminal). Fines impose a cost on those companies or individuals undertaking illegal anticompetitive conduct. Breaking competition laws is profitable if it goes undetected. This full-day session looked at antitrust fines and other sanctions imposed in different jurisdictions. Antitrust fines play a role in deterrence by making anticompetitive conduct less profitable. The amount of fines has dramatically increased in recent years and competition authorities have adopted or revised their legislation or guidelines on fines. However, competition authorities often face problems when attempting to collect the fines they have imposed as a result of undertakings' avoidance efforts or an actual or alleged inability to pay. In order to increase deterrence, some argue that higher fines are necessary while others maintain that there is a need to impose other forms of sanctions. Led by a panel of experts, this session provided an overview of how competition authorities impose antitrust fines and alternatives in order to achieve deterrence, punishment, compensation and other objectives, addressing the problems that can arise at different stages of imposing antitrust fines.

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[10]http://www.oecd.org/competition/globalforum/ competition-and-sanctions-in-antitrust-cases.htm

Germany – Whistle-blower Hotline (BKMS system)

Bundeskartellamt

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On 1 June 2012 the German Bundeskartellamt launched an electronic system which allows it to receive anonymous tip-offs of cartel law infringements.

As cartels are usually conducted in secret, insider knowledge is of utmost importance in uncovering and breaking them up. The whistle-blowing system also gives those informants who have not yet contacted the Bundeskartellamt e.g. for fear of reprisal, a chance to support the authority in its cartel prosecution work.

The system guarantees the anonymity of informers while still allowing for continuous **reciprocal communication with investigative staff** at the Bundeskartellamt. This can be done via a secure electronic mailbox, which can optionally be installed by the informant himself or herself. An informant can send freely formulated information in writing to the Bundeskartellamt. Further documents of all types can be added to this information, such as file attachments.

The BKMS (Business Keeper Monitoring System) is an internet-based communications platform for informants which is also used by the law enforcement and prosecution authorities of several federal states and large companies to combat internal corruption and economic offences.

The informant's anonymity is guaranteed in that the IP address of the PC/notebook/tablet used for communication with the BKMS whistle-blowing system is not recorded. The informant naturally has the possibility to lift his or her anonymity at any time.

The whistle-blowing system can be accessed on the Bundeskartellamt's website. It is available to informants around the clock and is operated via a navigation menu (type of infringement, text modules, filter terms and a standard set of questions).

The administrative management of incoming information about cartel law infringements is carried out in-house by the Special Unit for Combating Cartels, SKK. The information is firstly classified according to subject area. It is then forwarded to the divisions specialised in cartel fine proceedings and thereafter to the other specialist divisions in the authority for further processing. The SKK also coordinates further communication between informants and the specialist divisions via the electronic mailbox.

It operates an excel database which houses all incoming tip-offs and which can be searched by keyword (e.g. according to sector). The database can be used to find out whether there are further indications on the same offence.

The SKK spends approximately **200 to 250 man-hours per year** on managing the BKMS. A separate assessment of the time required by the respective specialist divisions to process the information has not been carried out because the examination and follow-up of information relating to cartels (also provided by telephone or mail) is the core activity of these divisions.

Between **1.6.2012 and 30.09.2016** and at 51.604 clicks, a total of **1299 tip-offs with a certain relevance** were posted on the whistle blowing system's homepage. In 804 cases the informant installed a mailbox on the website. In 235 cases further communication was actually conducted with the informant via the mailbox.

Since 2012 investigations have been conducted in a large number of cases based on tip-offs fed into the whistle-blowing system and **in several cases dawn raids** were carried out. Before it initiates a proceeding following an anonymous tip-off the Bundeskartellamt makes sure first of all that the content of the information meets certain quality criteria, is sufficiently detailed, accompanied by conclusive factual evidence of the infringement or has been confirmed by further research by the authority.

In June 2015 the Bundeskartellamt imposed **fines** totalling approximately 75 million euros on five manufacturers of acoustically effective components for cars for having concluded **illegal agreements for the supply of such components to the automotive industry**. This was the first case triggered by an anonymous tip-off to the Bundeskartellamt's electronic whistle-blowing system which was concluded with fines.

Of the information received so far from tip-offs, only a small amount can be considered as "qualitatively valuable". However, the fact should not be overlooked that a more intensive prosecution of cartels using the whistle-blowing system along with a higher quota of uncovered infringements and additional revenue from fines ultimately also produce a stronger deterrent effect. The possibility to pass on anonymous information also helps to destabilise cartels as, in addition to leniency applications, it raises the risk of cartels being discovered.

Cartel detection and the smart use of procurement data for this purpose in Hungary*

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In the activity of the GVH aimed at fighting hard-core cartels, intelligence about typically clandestine cartels proved to be of uttermost importance also in 2016. In order to acquire this intelligence the GVH operates its Cartel Detection Section, the basic task of which is to gather market information, i.e. to explore and analyse economic data and market information related to the cartel activity of undertakings. The tools provided for by law at the Section's disposal serve one definite purpose: to enable as much market information as possible to be acquired so that competition proceedings can be initiated by the investigators of the GVH.

Given that cartel detection is an extremely resource-intensive activity, it is the established practice of the Gazdasági Versenyhivatal (GVH – Hungarian Competition Authority) to only seek information about a potential cartel for which there has already been an initial preliminary suspicion. The first major role of any detection activity is to identify such suspicious behaviours, practices

of undertakings and branches of the economy that may be worthy of further investigation.

While the European Commission and the majority of the European competition authorities may rely on the successful application of their leniency policies, in Hungary leniency contributes to the successful detection of cartels to a substantially lesser degree[12]. Consequently, the GVH must rely on the methods of business intelligence in order to identify undertakings active in cartel activity and to explore their practices in concrete cases.

Active market monitoring is one of the means of cartel detection and this method has been used from the outset. This consists of methods such as the extensive monitoring of the news published in the economic press and on electronic media, targeted and / or general control of other on-line news sources, and the studying of cases initiated by other EU Member States' competition authorities. Complaints and indications sent by individuals and / or by undertakings who presume cartel activity or whose interests may be affected as a result of an alleged cartel have also been available to the GVH as a source of information from the very beginning. In the practical experience of the GVH, the above-mentioned sources only help to reveal real cartel activities and undertakings to a minimal extent, and tend to rather express feelings or point to the violation of other rules or laws.

As the above-mentioned means have not proven sufficient to facilitate the detection of cartels, the GVH has turned to so-called anonymous sources to obtain information.

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*The views and opinions expressed in this article may not in any circumstances be regarded as stating an official position of the Hungarian Competition Authority.

[12] Hungarian undertakings apply for leniency typically after the GVH has initiated cartel proceeding against them.

During its detection activity the GVH strives to identify, find and contact persons who are willing to contact the GVH and provide it with information (due to a number of motives, for example, revenge, jealously, etc.) about alleged cartels, either on the prompting of the GVH or on their own initiative. In most of these cases the individuals providing information request that their identities be kept confidential. In order to encourage individuals to contact the GVH and to cooperate with it, the informant reward was introduced. Under this scheme the GVH is able to pay a reward to an individual (i.e. to an informant) who supplies the GVH with information about a suspected hard-core cartel, provided that in the particular cartel case the GVH imposes a fine on the undertaking(s) concerned. However, obtaining information is only one of the goals of the reward payment. The other goal of the system is to increase the threat faced by the undertakings, since this threat would either induce firms violating the competition law to submit leniency applications to the GVH or at least make the circumstances of the organisation and operation of the cartel more difficult.

However, experience has shown that a substantial proportion of the potential informants consider maintaining their anonymity much more important than receiving a reward for their information. It is for this reason that the GVH introduced the so-called anonymous online contact system, 'the Cartel Chat'. Since the development of this online platform in December 2015, it has been possible for individuals to contact the GVH anonymously and upload information, with the result that bilateral cooperation is initiated and continued in order to clarify any questions that the client may have. Since its introduction at the beginning of 2016, out of

22 contacts there are two potential contacts which may result in actual case initiations.

Bid rigging in public procurement is an area in which there is significant cartel activity in Hungary. That is why – in addition to informing, training and educating the contracting authorities and monitoring the available sources of information about public procurement, the GVH tries to cooperate closely with the Procurement Authority. This resulted in a successful broadening of the public procurement database. Suggested by the GVH, a new provision of the Act on Public Procurement now requires the obligatory publication of executive summaries [13] of tenders in the database. This substantially broadens the sphere of information about the given public procurement procedures. Another provision introduced in the Act on Public Procurement on the suggestion of the GVH again, facilitates the collection of information about public procurement cartels. It stipulates the obligation of the contracting authority, and in procurement cases that use resources of the European Union, the controlling authority, to notify the GVH, where it finds that there has been a clear-cut violation of the cartel provisions of the Hungarian Competition Act, or Article 101 TFEU, or if it finds that these provisions are very likely to have been violated.

The Hungarian Criminal Code (Act C of 2012) provides that any cartel activity pursued in a public procurement or in a concession procedure should be sanctioned (irrespective of whether the violator is a perpetrator, accomplice or instigator). It is for this reason that in such cartel cases the experts of the GVH responsible for detection cooperate very

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[13] Executive summary (here): the document summarising the results of the particular public procurement procedures, the activity of the decision-making body and suggestion for the outcome.

closely and continuously with the experts of the Police. Typically, this cooperation takes the form of exchanges of information and the sharing of evidence; however, if it is necessary the manner and timing of any possible investigative steps may also be coordinated.

Finally, there is a data mining tool among the planned development projects of the GVH which would be suitable for the parallel, gradual monitoring of internet contents, public procurement databases and business registers. Developed by the detectives of the GVH, this tool will use a pre-defined and gradually adapted taxonomy for filtering the information and for highlighting the relevant elements of the bulk information. This may foster the recognition of indicators for public procurement cartels.

Traditional and innovative methods for the detection of cartels in public procurement and tenders as practiced in Russia

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Cartels and other anticompetitive agreements cause great harm to the wellbeing of society and the interests of the state. They undermine the foundations of a market economy, undermining in the long-term the competitiveness of the goods and services produced in different countries and are often found in socially and strategically important areas of the economy.

Russian legislation defines five types of cartels that are all agreements between competitors: on prices, market-sharing, creating a scarcity, boycott and procurement bid-rigging. Participation in a cartel leads to administrative liability of legal entities[14] and criminal liability for individuals[15]. The Russian competition authority - the Federal Antimonopoly Service (FAS Russia) is responsible for detecting cartels and initiating measures for the administrative sanctioning of their participants. Criminal investigations against cartels fall under the competence of the Ministry of Internal Affairs of the Russian Federation and the Investigative Committee of Russia[16].

An analysis of Russian law enforcement and statistics from the last few years show that the majority of detected cartels relate to those organised in the framework of participation in procurement tenders (bid rigging). For example, in 2015 the total number of cases initiated by the antimonopoly authorities of the Russian Federation was 409, of which bid rigging accounted for about 80% of cases. Furthermore, the total number of initiated cases increased in 2015 by 68% as compared with 2014.

Two different hypotheses can explain such statistics: 1) a significant increase of the level of cartelisation in the economy, especially as regards procurement through tenders, or 2) an increase in the detection of cartels. The author of this article believes that both assumptions are noteworthy and may well coexist in practice.

First of all, under unstable economic conditions and the impact of the global economic crisis more and more companies are trying to gain access to the budget resources and assets that are distributed through the procedure of public procurement or bidding by unfair means. However, given the nature of cartels the level of cartelisation of the economy remains a very controversial issue. These are highly secret, well-organised groups, sometimes acting with support from officials. It is safe to assume that only a small proportion of the anti-competitive agreements in operation in the world are actually uncovered. At present there are still

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[14] Fines for cartel participants range from 1% to 15% of the annual income of a company on the particular product market. The procurement bid-rigging cartel participants pay fines of 10% to 50% of the maximum initial price of the contract.

[15] Punishment for individuals can be up to 7 years imprisonment.

[16] In a case when there are grounds to suspect participation of corrupt officials.

no scientifically based methodologies to determine the objective level of cartelisation. Let's leave this hypothesis for discussions among experts and academics.

The second hypothesis relating to an increased level of detection of cartels in the Russian Federation, and in particular bid rigging, can be *checked and confirmed*.

Public procurement is subject to the requirements set out in the Federal Law № 44-FZ "On the system for contracting" (The Law "On the Contract System") (hereinafter - FCL) [17]. The law is designed to increase efficiency and transparency, to ensure competition, and to prevent corruption and other abuses in the area of procurement. FCL covers the whole process: determination of needs and the design of the state order – placement of the state order - execution of public contracts. Multi-level control is carried out at all stages of public procurement:

- The Federal Antimonopoly Service (FAS Russia and its territorial bodies), regional and municipal authorities exercise control with regard to compliance with prescribed competitive procedures (each at their proper level);
- Federal Treasury monitors budget expenditures;
- The FCL also provides for other forms of control: public oversight, institutional control, public procurement audits (by the Accounts Chamber of the Russian Federation), customer control.

A single unified electronic information system (EIS) has been established and is being operated to provide information support of the procurement contract system, which integrates all customers and suppliers

in the Russian Federation.** All purchases are carried out on the basis of five duly accredited electronic trading platforms, which are in turn integrated into the EIS. Purchasers can choose any one of the five platforms to carry out their acquisition. All purchases for state and municipal needs are public and accessible to an unrestricted number of entities[18].

For the implementation of the FCL, FAS Russia has been granted broad supervisory powers and performs a key role in the promotion of competition and in minimising the risk of collusion. FAS Russia monitors the activities of all participants of procurement tenders from the moment of publication of notifications by customers on the EIS until the conclusion of a state contract.

Monitoring is carried out through the use of two basic mechanisms: 1) **control of the procedure of placing** the state (municipal) order and 2) **monitoring compliance with antitrust requirements** in the course of procurement and bidding.

Control of the procedure

Control over the procedure of placing the state (municipal) order includes two forms of control: **scheduled inspections** and **unscheduled inspections**. Annually FAS Russia considers on average about 35,000 complaints regarding compliance with FCL requirements, and in 40% of cases the antimonopoly body follows up complaints. The decisions of the competition authority are provided to the disputing parties within 8 days. Thus, if there is a formal violation of the procedure, the antimonopoly body will immediately react to it.

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[17] Federal Law of 05.04.2013 N 44-FZ "On system of contracting in the area of purchasing goods, works, services for the fulfilment of state and municipal needs"

[18] With the exemption of particular cases that are predefined and restricted by legislation. Can be exemplified by purchases of military equipment for national defence purposes.

In the course of overseeing procurement procedures, FAS Russia can order the amendment of the procurement documentation, broaden the terms of the purchase procedure in order to eliminate violations, cancel the results of bidding, as well as apply to the court for a ruling that the results of the procurement and contracts concluded are invalid.

Monitoring compliance with antitrust requirements in procurement and bidding[19]

FAS Russia carries out continuous monitoring of compliance with antitrust requirements in procurement and tendering and takes measures to combat all types of collusion. Control measures are triggered by conditions that indicate a restriction, elimination or prevention of competition in the tendering process: unilateral actions on the part of the purchasing state (municipal) authorities; customer collusion with bidders; collusion of bidders (competitors) indicating cartel actions.

In order to detect collusion in the procurement and bidding processes **FAS Russia currently uses a number of traditional methods** of obtaining information about the possibility of a conspiracy that have proven their value and are used worldwide, **and certain innovative methods tailored to the digitalisation of the procurement tenders in the Russian Federation**.

Traditional methods include: unscheduled inspections (dawn raids); active use of a leniency programme; follow up on complaints/requests (citizens, organisations, law enforcement and other agencies); investigations on the basis of information from public sources (mass media, internet); information from customers, etc.

Innovative methods are based on the digitalisation of all procedures. A single all-Russian portal for the publication of information concerning the placement of state and municipal purchase orders (procurements) has been set up - www.zakupki.gov.ru. Also a unified procedure for tenders in respect of state and municipal property has been introduced and a single site dedicated to posting information about such tenders has been set up - www.torgi.gov.ru.

The innovative methods are based on operational analysis and screening of the results of the competition related procedures and is an ongoing exercise based on the use of EIS electronic resources.

The use of a single information system enables large amounts of information to be processed in the shortest possible time. Using certain indicators or combinations of indicators provides an overview of the general state of competition in the government procurement sector, and in particular markets for the supply of certain goods and services. Risks and possible collusion can be observed. In the case of emergence of several red flags, an investigation can be initiated by the competition authority.

Typical screening filters can include the following: companies that often win tenders; groups of companies (competitors) that win in turn; tenders that have concluded with a minimal reduction of the initial price; tenders with a minimal number of participants; participation of companies that never submit their bids; substantial divergence of the tender price from the market price; bidding history of single companies or groups of companies during a certain period of time; the location of the bidders (sometimes cartel participants use one office); IP addresses of bidders (sometimes cartel participants use the same IP address); other identification data of tender participants.

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[19] Federal Law of 26.07.2006 N 135-FZ "On protection of Competition"

Such resources and capacities have led to the development of a practice of working with new types of evidence that have not been used previously in competition cases in the Russian Federation.

methodological support to law enforcement authorities.

An important contribution to this progressive approach was made by the Russian courts,

TRADITIONAL evidence of collusion:	NEW evidence of collusion:
Identical applications (text, fonts, handwriting, mistakes in the text, etc.).	Electronic properties of the file (time and location of creation, author), unique electronic fonts, number of electronic characters, etc.
Same post office, same mail envelopes.	Same IP address, one access point to Internet; single point of connection, etc.
Results of analysis of paper auctions, etc.	Results of analysis based on the use of the electronic purchasing and tendering platform, etc.

The classification of evidence that is presented above is added to each case considered. FAS Russia actively cooperates with operators of electronic trading platforms, the banking sector, telecom operators and other authorities that may contribute to the anti-monopoly investigations. In addition, FAS Russia actively participates in the development and improvement of existing electronic systems and procedures.

Special agreements with the Ministry of Internal Affairs of the Russian Federation and the Russian Investigative Committee were concluded to improve communication and to ensure a more systematic approach to the detection and prevention of collusion. Within the framework of these agreements, interagency working groups were set up to provide strict control and to enable the effective joint investigation of cartels and abuses by officials. Cooperation also takes place in joint or parallel inspections, through the involvement of FAS Russia personnel as experts in the framework of criminal investigations and through the provision of

which almost immediately accepted the new types of evidence proving collusion (e.g. properties of the electronic file, unique electronic fonts, IP addresses). Currently the vast majority of FAS Russia's decisions concerning bid rigging find support in arbitration courts.

In recent years around 4-5 million procurement procedures have been carried out annually in the state (municipal) sector of the Russian Federation. The total value of such procurement procedures exceeds 20 trillion rubles a year. In such a situation the fight against bid rigging has special importance. **It is obvious that it would not be possible to successfully fight bid rigging without solutions that integrate the use of legal and technological tools. One of the technological mechanisms that help to minimise the creation of cartels and increase the risk that they will be detected, is the digitalisation of procurement and tenders, a mechanism that has been successfully introduced and implemented in the Russian Federation and in certain OECD countries.**

Proactive screening by ACM

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The Netherlands Authority for Consumers and Markets (ACM) is a multifunctional authority, established in 2013, with responsibility for competition enforcement, sector-specific regulation and consumer protection. One of the core activities of ACM is detecting cartels. Traditional methods for cartel detection include leniency programmes, and the encouragement of whistle-blowers, tips and complaints, from involved parties such as suppliers or customers. Based on this 'reactive' information, authorities decide to further scrutinise industries or firms. Without these reactive sources, it remains challenging to detect cartels, particularly as firms are becoming increasingly experienced in concealing their behaviour. In addition, we have observed a shift towards more advanced cartels such as hub-and-spoke cartels and more sophisticated forms of information-exchange. Against this background, in the past years, ACM has invested in proactive screening tools to detect anticompetitive behaviour. ACM has developed instruments, based on economic and criminological insights, to screen data for alleged anticompetitive behaviour. In the remainder of this contribution we will elaborate on the necessity, design and use of these instruments at ACM.

NECESSITY

Using proactive instruments serves multiple purposes, and when combined with reactive information is especially of added value. First of all, proactive screening may assist an authority to manage its resources by prioritising signals. Another advantage of proactive screening, compared to reactive types of input, is that it may be able to detect unnoticed anticompetitive behaviour. First of all, sophisticated cartels may successfully conceal their behaviour from customers or suppliers, and hence may remain unnoticed. Secondly, a screen may reveal anticompetitive behaviour where the sector, and indeed the cartelists themselves, are unaware of the illegality of their conduct. Furthermore, if it is publicly known that the authority employs (effective) screening instruments, that knowledge can influence potential cartelists' perception of getting caught. Hence, cartelisation becomes less attractive, and so this is known as the 'deterrence effect'. As a result, leniency may also become more opportune, given a higher perceived probability of getting caught. Yet, sometimes it may be advisable for the authority to continually innovate and conceal the precise content of the instruments in order to prevent firms from anticipating them, and adapting their behaviour accordingly.

SCREENING

Literature makes a distinction between bottom-up screening, i.e. verifying a modus operandi of an alleged conspiracy, and top-down screening, i.e. screening multiple industries in order to select industries with a higher risk of developing anticompetitive behaviour. These two types of screening also interact with each other, because verified patterns can also be implemented as indicators to enrich top-down instruments and top-down screening might result in further bottom-up analyses.

Bottom-up investigations often study prices, see for instance the work of: Abrantes-Metz et al. (2006)[20], Connor (2005)[21], Bolotova et al. (2008)[22], Blanckenburg & Geist (2009)[23] and Abrantes-Metz et al. (2012)[24]. Studies focusing on more behavioural aspects such as the importance of trust in a cartel, interlocking directorships and recidivism are: Geis (1996)[25], Leslie (2004)[26], Levenstein & Suslow (2006)[27], Connor (2010)[28], Werden, Hammand & Barnett (2011)[29], Buch-Hansen (2014)[30]. As regards top-down screening, most examples concentrate on the structure of markets, for instance: NERA (2004)[31], Lorenz (2005)[32], Grout & Sonderegger (2005)[33], Eyckmans et al. (2011)[34], Mariniello & Antonielli (2014)[35] and FOD Economie (2015)[36]. A top-down screening example with a focus on firms' behaviour is Harrington (2006)[37].

An OECD publication from 2013 elaborates on *ex officio* cartel investigations and the use of screens to detect cartels with expert contributions from, amongst others, Abrantes-Metz, Kovacic and Schinkel. Both academics and practitioners stress the urgency of proactive screening, and more and more authorities are investing in the development of such screening tools. ACM invests in top-down and bottom-up screening tools. In the following we concentrate on two different top-down screening tools: an economic screening tool and a criminological screening tool. We will briefly mention other screening activities of ACM.

ECONOMIC

ACM's economic screening tool consists of nine indicators. We assess the number of

[20] Abrantes-Metz, R. M., L.M. Froeb, J. Geweke, C.T. Taylor (2006), A Variance Screen for Collusion, *International Journal of Industrial Organization*, 24, 467-486.

[21] Connor, J. M. (2005): Collusion and Price Dispersion, *Applied Economics Letters*, 12, 335-338.

[22] Bolotova, Y., Connor, J. M. and Miller D. J. (2008): The Impact of Collusion on Price Behavior: Empirical Results from Two Recent Cases, *International Journal of Industrial Organization*, 26, 1290-1307.

[23] Blanckenburg, K.v. and A. Geist (2009), How Can a Cartel be Detected? *International Advances in Economic Research*, 15(4), 421-436.

[24] Abrantes-Metz, R. M., L.M. Froeb, J. Geweke, C.T. Taylor (2006), A Variance Screen for Collusion, *International Journal of Industrial Organization*, 24, 467-486.

[25] Geis, G. (1996). The Heavy Electrical Equipment Antitrust Cases. Price-Fixing Techniques and Rationalizations. In: M.D. Ermann & R.J. Lundman (red.). *Corporate and Governmental Deviance: Problems of Organizational Behavior in Contemporary Society* (98 – 117). New York: Oxford University Press.

[26] Leslie, C.R. (2004). Trust, Distrust, and Antitrust. *Texas Law Review,* 82 (3), 515 – 680.

[27] Levenstein, M.C. and V.Y. Suslow (2006), What Determines Cartel Success? *Journal of Economic Literature*, 44 (1).

[28] Connor, J.M. (2010) Recidivism revealed: private international cartels 1990 – 2009. *Competition Policy International,* 6 (2), 101 – 128.

[29] Werden, G.J., Hammond, S.D. & Barnett, B.A. (2011). *Recidivism eliminated: cartel enforcement in the United States since 1999*. Washington D.C.: Department of Justice.

[30] Buch-Hansen, H. (2014), Interlocking directorates and collusion: an empirical analysis, *International Sociology,* 29 (3), 249 – 267.

[31] National Economic Research Associates (2004), Empirical indicators for market investigations, Economic discussion paper 749, OFT.

[32] Lorenz, Ch. (2005), Screening markets for cartel detection- collusive marker in the CFD cartel audit, *Industrial Organization* 0511003, EconWPA.

[33] Grout, P.A. and S. Sonderegger (2005), Predicting Cartels, Economic discussion paper 773, OFT.

[34] Kelchtermans, S., Cheung, C., Coucke, K., Eyckmans, J., Neicu, D., Schaumans, C., Sels, A., Vanormelingen, S., and Verboven, F. (2011), *Monitoring of Markets and Sectors Report.* AGORA-MMS project, Katholieke Universiteit Leuven.

[35] Mariniello, M., and M. Antonielli (2014), *Antitrust risk in EU manufacturing: A sector-level ranking.* Bruegel Working Paper 2014/07.

[36] FOD Economie, Instituut voor de Nationale rekeningen (2015), *Marktwerking in België. Horizontale screening van sectoren*. Brussel.

[37] Harrington, J.E. (2006). *Behavioral Screening and the Detection of Cartels*. Baltimore, USA: Johns Hopkins University.

firms and the HHI as measures for the concentration in an industry. It is easier to monitor agreements with only a few firms. The level of imports is used as an indicator for the international competitive pressure, and may also signal (artificial) trade barriers which might facilitate collusion. We depart from the assumption that stability facilitates collusion. The number of firms that have entered and exited an industry is a proxy for the dynamics in an industry and, again, possible barriers to entry. A related indicator is the survival rate, which measures how many of the current firms were active in the former four years. The indicator measures stability but also indicates to what extent firms might be aware of each other's strategic decisions. A typical indicator for stable markets is market growth measured as the volatility of the turnover. Stable markets facilitate monitoring and possible defections are easier detected. Active trade associations may serve as platforms for the communication and exchange of information. Many trade associations deter their members from engaging in anticompetitive behaviour. However, there are some examples of trade associations that were established with the prime purpose of a cartel, and others which grew into collusive practices. A high number of innovations may point at a dynamic market and hence may hinder collusion. Where a highly innovative industry shows a rather low degree of innovation in the subsequent years, it is worth scrutinising the causes. Finally, we include a rough index of the price development within an industry.

CRIMINOLOGICAL

The criminological screening tool consists of six indicators. The indicators relate to (i) opportunities to commit a crime and (ii) why some individuals use these opportunities. Each type of white-collar crime (also collusion) has its own specific opportunity. Assuming that industries in Europe are comparable,

other cartels in Europe can signal industries where opportunities might arise for the establishment of agreements. The degree of homogeneity of the products also serves as a proxy for opportunities for collusion, because it is easier to establish agreements in markets where the products or services are standardised. Furthermore, former cartels in similar markets in the Netherlands can indicate that there existed a fruitful opportunity to collude. Whether an individual actually exploits the opportunity depends on a couple of factors. The expected profit of collusion is not the only motive for individuals, with the fear of failure being at least as important. The prospect for an individual of losing an achieved status can trigger delinquent behaviour. Public sources such as the Forbes or Fortune 500, which list the revenues of firms, can highlight those firms that might have a lot to maintain and lose, thereby revealing where there may exist a higher risk to engage in cartelisation. Also neutralisation techniques can contribute to delinquent behaviour. A well-known technique for white-collar criminals is 'denying the victim'. White-collar criminals are in general not (physically) confronted with the actual victims of their behaviour. Therefore, we assume that the further the distance to the final consumers, the easier it is for cartelists to neutralise their behaviour by denying the victim. Those markets that are farther from the final consumer are seen as having a higher risk of cartelisation. Finally, research shows that antitrust offenders are generally wealthy middle-aged males in stable employment, and are more likely to be college graduates. Therefore an overrepresentation of men in an industry may also imply a higher risk for cartelisation and we measure it. For more information about criminological insights see for instance the work of: Benson

& Simpson (2015) [38], Weisburd, Waring & Chayet (2001)[39] and Sykes & Matza (1957)[40].

IMPLEMENTATION

ACM collects historical data for the indicators described above. Data is collected based on the ISIC industry classification. The level of aggregation varies between three or four digits. It remains challenging to cover each industry with sufficient data. It is preferable to approach relevant markets, but given the scope of a top-down approach it is impossible to identify and define all the relevant product and geographical markets. So we do not take into account sector-specific characteristics. ACM is continuously in a process of gathering more and better data for the indicators and industries.

These above-mentioned top-down approaches constitute screenings to broadly identify those industries of the Netherlands' economy that have a higher risk of anticompetitive behaviour. The screening does not provide evidence, however, as to whether or not there is a cartel. Industries with a higher risk can, (i) be explained by innocent and legitimate reasons, (ii) result in new insights or (iii) confirm tips and complaints. In any case, it is recommended to further analyse those industries and combine output with other sources of information, especially as regards industries which are unexplored by the authority. Moreover, it is important to realise the limits of top-down screening. It tends to produce static outcomes and the design of the instrument seems biased towards traditional industries.

Therefore, it is advisable to employ complementary activities.

COMPLEMENTARY ACTIVITIES

The OECD publication from 2013 stresses that the use of a single instrument for cartel screening is insufficient, and that one should rather follow a holistic approach using multiple instruments. As a multifunctional authority, with responsibility for sector-specific regulation, consumer protection and competition enforcement, ACM is ideally suited to adopt a holistic approach.

ACM is currently in the process of developing various bottom-up screening tools. In 2013 ACM started with the monitoring of public procurements. We developed a set of indicators that attempt to identify deviating bidding-patterns. Furthermore, ACM performs in-depth analysis of pricing with a focus on vertical agreements. A more general instrument is trend watching, which involves the monitoring of upcoming trends and their predicted effects on competition.

CONCLUDING REMARKS

Screening requires data and this at times presents an obstacle for authorities. For instance one has to be very cautious with regard to privacy aspects and to prevent the collection of irrelevant information that falls outside the scope of study. Sometimes institutions are not permitted to share data - such is the case in many countries with procurement data. Providing your screening instruments to other institutions might solve this problem but it also offers a considerable degree of transparency and publicity. Customers may also be a good source of information and collect the data and perform analyses themselves, given the tendency towards private enforcement. Overall, we should keep developing screening instruments and exchange best practices amongst regulators because they are useful, and

[38] Benson, M.L. & Simpson, S.S. (2015), *Understanding White-Collar Crime.* New York: Routledge Taylor & Francis Group.
[39] Weisburd, D., Waring, E. & Chayet, E.F. (2001), *White-Collar Crime and Criminal Careers.* New York: Cambridge University Press.
[40] Sykes, G.M. & Matza, D. (1957), Techniuques of Neutralization: A Theory of Delinquency, *American Sociological Review (22)*, 664 – 670.

moreover, necessary tools to supplement our reactive work.

The Aggregate Index of Competitive Pressure

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The Aggregate Index of Competitive Pressure (AICP) is an analytical instrument developed by the Romanian Competition Council (RCC) in an attempt to measure the propensity to competition of national industries. The AICP project was started in 2013 by the Research Department of the RCC and since then it has been included in all of our annual reports on competition development in key sectors.

The index has been presented at a number of conferences, both academic and professional, in Romania and abroad, and the feedback gained from such opportunities has been integrated into the later revisions of the index. The authors are fully aware that this project can be further refined and hence welcome any comments in this regard.

It should be clearly stated from the beginning that the AICP measures the propensity to competition of industries in the national economy, not the actual degree of competition really present in those industries. Therefore, the AIPC values of analysed industries indicate the extent to which each of them approaches an ideal situation, which facilitates full manifestation of free competition, but they do not (and are not intended to) pinpoint any anti-competitive behaviour which may occur in practice. The index thus provides a rather general picture of the competitive pressure at the national industry level, starting from supply-side substitutability, while the cases analysed by the competition authority are focused on narrower, relevant markets, driven by demand substitutability[41].

In our view, the AICP is not concerned with the precise measurement of competitive pressure (and most definitely not with that of actual competition), but is rather about coherence, dynamics and comparability. To make a relatively simple analogy, one can say whether it is cold or warm outside, and can say whether it is colder or warmer than last week, without measuring precisely the outside temperature. In the same manner, one can compare a structural oligopoly such as cement production or mobile telecommunications with a market with low barriers to entry such as IT consultancy and say which one is more exposed to competitive pressure. The index adds both a quantitative and a dynamic dimension to this commonsensical approach. However, for the reasons mentioned above, the AICP's relevance for competition authority's enforcement activities is rather limited.

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[41] One should note the different terminology we maintain throughout this article: competition cases focus on relevant markets, while the AICP is applied at the national industry level.

Given that competition is a complex and multidimensional phenomenon, there is no single, specific, competition index which can be used to measure directly the propensity to competition in national industries. Consequently, what the AICP proposes is to measure this propensity via a battery of 20 primary indicators, each of them reflecting a part of this complexity specific to competition. The 20 indicators are: barriers to entry, number of competitors, concentration, innovation, market transparency, price elasticity of demand, product homogeneity, existence and impact of business associations, market share symmetry, structural links, cost symmetry, intensity of marketing and communication, 'maverick' competitors, market growth rate, fluctuations of aggregate demand, buyer power, stability of market shares, multi-market contacts, profitability, and general price level. The same set of indicators (which are rather general, not industry-specific) is used for each analysed industry, which leads to a valuable feature of the AICP, namely the comparability of the index value across industries.

In the current methodology, the above indicators are grouped into four categories of importance, each category being given a different weight[42]. The AICP is then computed as a composite index, thus drawing its origins from the multi-criterial decision making theory developed in the social choice area of research[43]. Last but not least, the AICP is

normalised (it is computed as a percentage of the total maximum possible).

Each of the primary indicators listed above is measured through a 7-point Likert scale, with the lowest value of the scale representing the worst situation in terms of competition, and the highest value representing the most favourable situation for competition. The decision was made to rely on scales to collect information as only a few indicators can be measured precisely (i.e. number of competitors, concentration, market growth), some can only be estimated (i.e. price elasticity of demand), while qualitative indicators cannot have a value attached (i.e. buyer power, product homogeneity, structural links). Consequently, even though in some cases the use of scales implies partial use of the information available to the competition authority, we believe that implementing scales fits the different types of indicators we use, ensures a necessary degree of homogeneity to this analysis, and facilitates the aggregation of indicators.

It must be highlighted that the information used to construct the AICP comprises information that is internally available to the Romanian Competition Council. The fact that the authority is organised into economic sectors and that markets in these sectors are allocated to inspectors, who closely and continuously monitor them, greatly facilitates our approach. However, we believe that a similar project can be successfully implemented in competition authorities organised by enforcement areas, given that such authorities can use external expertise (i.e. from academia or business consultancy) to collect and structure the relevant information.

From our perspective, the AICP has proved to be a robust instrument. Firstly, the way the AICP is defined rests on solid and widely accepted microeconomic theory, refined over

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[42] It is worth stressing that, given the importance we place on barriers to entry, viewed quasi-unanimously as essential for competition, they form a category of their own, and have the largest weight in the construction of the AICP.

[43] Despite the well-known limitations of aggregate indexes, they are still widely used in practice because many phenomena have multiple facets and because it is much easier to communicate a single value, which (imperfectly) combines all available information.

several years by competition practitioners and economic scholars alike. Secondly, the calculation methodology is transparent and hard to distort. Thirdly, the results (which are presented below) are homogenous for distinct evaluations, showing no major gaps from one year to another, which is in line with our belief that the overall competitive pressure of an industry cannot display significant changes in a short period of time. Finally, the objective data used to construct the aggregate index are difficult to influence in such a way that the lack of competitive pressure in an industry can be hidden in order to influence the AICP results. In this case, companies should adopt a competitive behaviour in the market that would lead to the elimination of potential competition issues, and which is actually the goal of the competition authority.

We also believe that the AICP is a useful addition to a competition authority's toolbox. Internally, the AICP can improve the standardisation of market monitoring, can be used to prioritise sector studies, and can even complement other data and information when launching a law infringement investigation. Externally, the AICP can supplement the advocacy efforts of the competition authority. In addition, changes in the AICP over time may be seen as a measure of the competition policy impact, since investigations conducted by competition authorities and other efforts (i.e. regulatory review) may lead to changes of certain aspects of the economic environment, and should impact one or more of the component factors of the AICP.
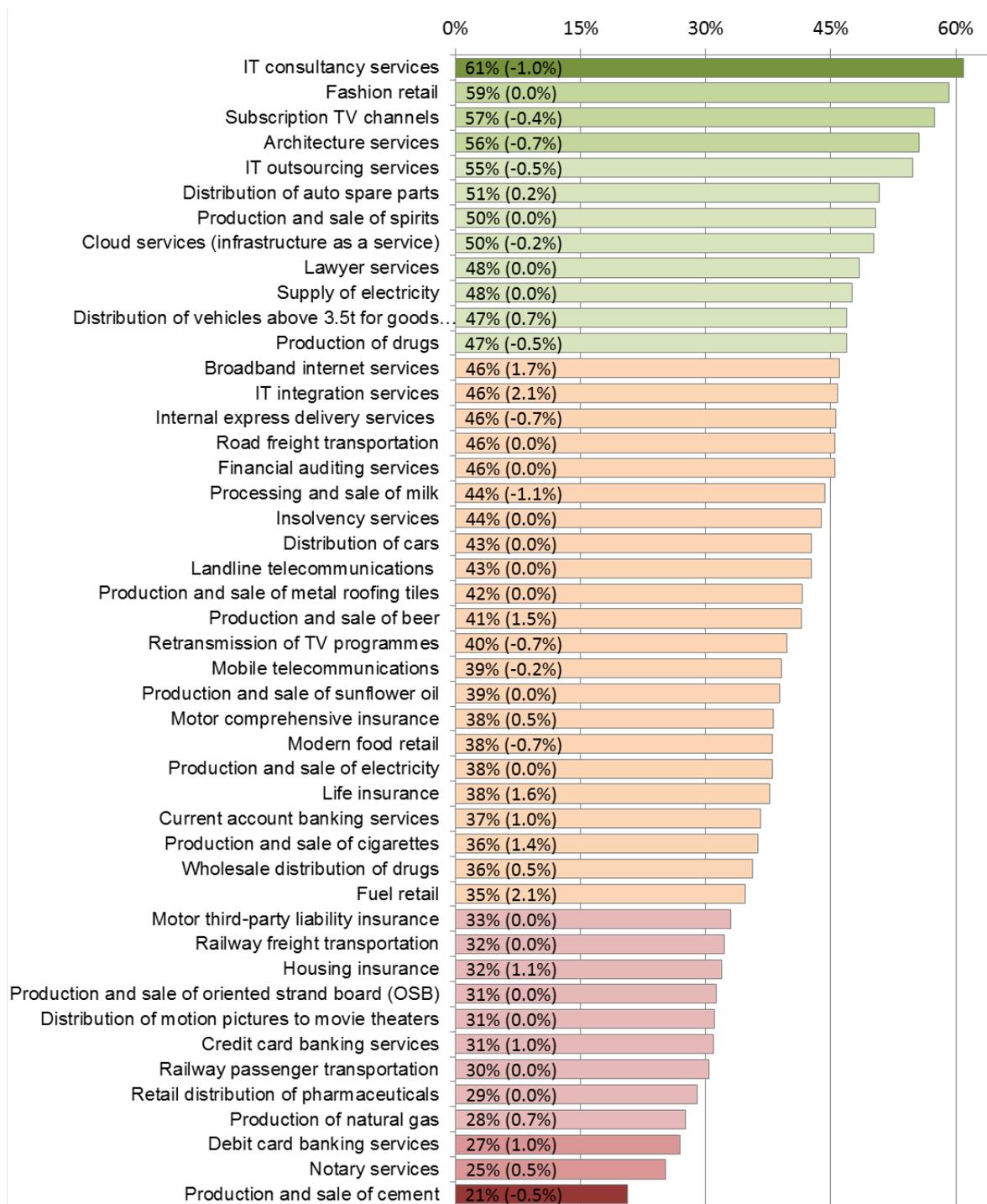
The AICP was launched by the RCC in 2013 and covered 20 national industries. Given that the evaluation by the aggregate index has proven useful, the project was continued and the industry coverage has expanded over time. The figure below shows the latest results (2016) for 46 industries in the national economy.

The figures are in line with the economic intuition behind the functioning of those respective industries. The more concentrated industries, with higher barriers to entry, homogenous products and less innovative processes are at the bottom of the list, while the more dynamic ones, with many competitors and 'maverick' players are at the top. In addition, it seems that the AICP contains enough information in order to reflect more subtle differences between industries with similar market structures, where other factors, such as innovation, have a significant impact on competitive pressure. Finally, it can be observed that changes from one year to another are rather limited (maximum 2 percentage points), underlining the fact that the index is inclined to structural aspects, which display high inertia.

Even though it is not displayed in the figure, we need to stress the evolution of a certain industry over a longer period of time: the AICP for mobile telecommunications has gone up from 34% in 2013 to 37% in 2014 and 39% in 2015 (then stable in 2016). This is the largest AICP increase in all analysed industries. It is worth mentioning that, in the last few years, the RCC has been deeply involved in this area, making full use of its tools. We consider this a good example of the RCC's involvement in a field, which has led to pro-competitive results and consumer benefits. The pro-competitive results can now be measured by the AICP.

The RCC plans to continue expanding the industry coverage of the aggregate index and to integrate the AICP in its other activities. At the same time, the Research Department is constantly thinking of ways to further refine the index, so we look forward to any comment in this respect.

Figure 1. AICP results of 2016 and changes from the previous year

Category	Value
IT consultancy services	61% (-1.0%)
Fashion retail	59% (0.0%)
Subscription TV channels	57% (-0.4%)
Architecture services	56% (-0.7%)
IT outsourcing services	55% (-0.5%)
Distribution of auto spare parts	51% (0.2%)
Production and sale of spirits	50% (0.0%)
Cloud services (infrastructure as a service)	50% (-0.2%)
Lawyer services	48% (0.0%)
Supply of electricity	48% (0.0%)
Distribution of vehicles above 3.5t for goods…	47% (0.7%)
Production of drugs	47% (-0.5%)
Broadband internet services	46% (1.7%)
IT integration services	46% (2.1%)
Internal express delivery services	46% (-0.7%)
Road freight transportation	46% (0.0%)
Financial auditing services	46% (0.0%)
Processing and sale of milk	44% (-1.1%)
Insolvency services	44% (0.0%)
Distribution of cars	43% (0.0%)
Landline telecommunications	43% (0.0%)
Production and sale of metal roofing tiles	42% (0.0%)
Production and sale of beer	41% (1.5%)
Retransmission of TV programmes	40% (-0.7%)
Mobile telecommunications	39% (-0.2%)
Production and sale of sunflower oil	39% (0.0%)
Motor comprehensive insurance	38% (0.5%)
Modern food retail	38% (-0.7%)
Production and sale of electricity	38% (0.0%)
Life insurance	38% (1.6%)
Current account banking services	37% (1.0%)
Production and sale of cigarettes	36% (1.4%)
Wholesale distribution of drugs	36% (0.5%)
Fuel retail	35% (2.1%)
Motor third-party liability insurance	33% (0.0%)
Railway freight transportation	32% (0.0%)
Housing insurance	32% (1.1%)
Production and sale of oriented strand board (OSB)	31% (0.0%)
Distribution of motion pictures to movie theaters	31% (0.0%)
Credit card banking services	31% (1.0%)
Railway passenger transportation	30% (0.0%)
Retail distribution of pharmaceuticals	29% (0.0%)
Production of natural gas	28% (0.7%)
Debit card banking services	27% (1.0%)
Notary services	25% (0.5%)
Production and sale of cement	21% (-0.5%)

CADE's Experience on the Development of Economic Filters for Detecting Cartels
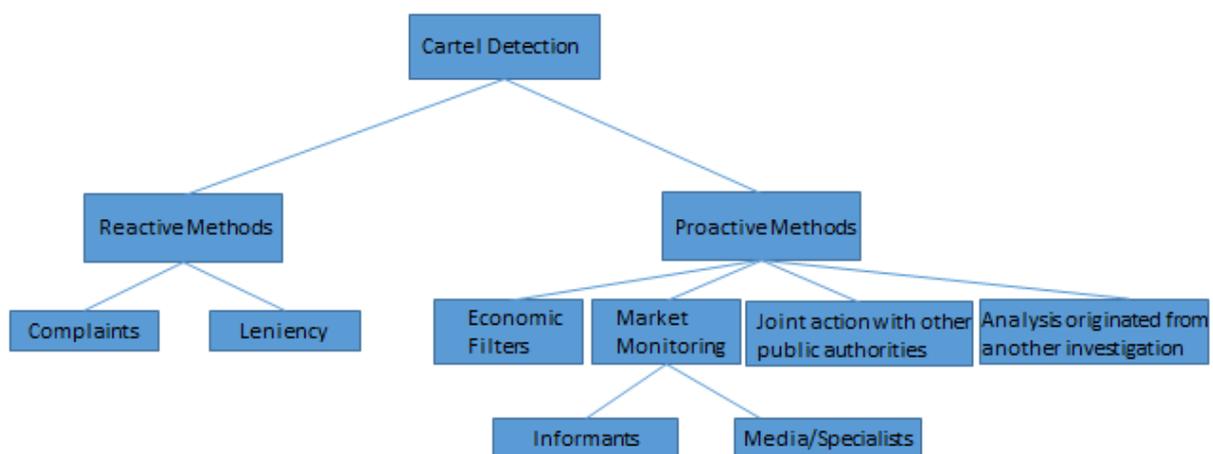
Felipe Leitão Valadares Roquete
Head of CADE's Screening Unit
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The use of different investigation techniques is acknowledged as an effective strategy for enhancing the odds of detecting collusive conducts. These techniques should be complementary and can partly also overlap in order to achieve the intended results.

Consequently, when setting up its Screening Unit the Administrative Council for Economic Defense – CADE (Competition Authority of Brazil) placed great emphasis on the development and implementation of both reactive and proactive investigation techniques.

Decision makers focused on the premise that a combination of both reactive and proactive investigative methods – as opposed to an approach focused solely on one or a set of techniques – would render the development of innovative cartel detection tools more agile and effective. The knowledge and the expertise brought by well-established tools – such as CADE's leniency programme, joint actions with other public authorities, methodologies for the treatment and investigation of complaints and analyses based on precedents – provide a favourable environment for creating and testing new approaches.[44]

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[44] OECD (2013), *Roundtable on ex officio cartel investigations and the use of screens do detect cartels*.

In this context, CADE assembled a team at the beginning of 2013 to evaluate the possibility of creating in house economic filters for detecting cartels. The first stage of this initiative involved research regarding the best practices related to the use of information technology applied by other antitrust authorities in cartel detection. With the support of experts from CADE's Department of Economic Studies, from the International Unit and from the General Superintendence, gathering information from other jurisdictions[45] not only allowed CADE to map the advantages provided by innovative techniques, but also the main challenges faced in the implementation of similar projects.

In parallel, CADE sought to develop partnerships with other Brazilian public authorities with expertise in the use of big data, such as the Federal Court of Accounts (TCU, in its acronym in Portuguese), the Ministry of Inspection, Transparency and Control (MFTC, in its acronym in Portuguese) and the Council for Financial Activities Control (COAF, in its acronym in Portuguese).

The initial findings pointed to public procurement as the most appropriate area for the project's initial purpose, since (i) there would be more data available, bearing in mind the public status of procurement within public bodies, and (ii) that the fight against cartels in public bids would have a relevant impact in an economy with considerable public expenditures, such as the Brazilian economy.

Moreover, CADE's bid rigging investigation unit was favourable to the development of economic filters, since its experience – in line with the experience of its sister agencies – demonstrated that cartels are organised so as to defraud a significant set of public bids in order to secure contracts for all the colluding companies. In addition, the economic filters strategy requires a significant amount of data to be analysed regarding the bids procedures and information concerning the companies' conduct and strategies of coordinated action. This analysis would only be feasible and effective with the support of robust IT and statistical tools.

The project's second stage, initiated in 2014, involved hiring consultants with specialised knowledge in the field of statistics, IT and data mining, with the purpose of developing analytical tools. The development and the review of the proposed tools involved both the authority's staff involved in the field of cartel investigation and experts from the Department of Economic Studies, who designed the tools using the highest investigative and technical standards available.

Based on the products delivered by the consultants, an interface called *Cérebro* (or Brain, in Portuguese) was developed, incorporating data mining instruments and economic filters available to CADE's cartel investigators and case handlers.

The data mining tools allow for the automatisation of analyses formerly conducted by investigators and case handlers. The objective of this set of techniques is both the identification of evidence of cartels in public bids – like suspicious, implausible facts or behavioural patterns with signs of simulated competition[46] – and the provision of

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[45] It is worth mentioning the contributions presented by the countries that participated at the OECD roundtable on *Ex officio* cartel investigations and the use of screens to detect cartels, conducted in October 2013.

[46] For instance, the existence of closed bids with the same value – and presented by different contractors –that are different from the reference

relevant information for the investigation of the cases.[47]

As for the economic filters, based on the specialised literature and on econometrics, they seek to generalise evidence of the existence of cartels based on big data related to prices, costs, profit margins, market share and spatial econometrics. Through the identification of companies' behaviour as described in academic articles, it was possible to derive mathematical models as statistical tests of general use in a kind of reverse engineering process.[48]

Despite the ongoing development of this set of techniques, many of its tools – data mining tools and screening ones – are already in operation and are undergoing steady improvement through continuous testing.[49]

In the project's current stage, it is possible to identify some questions that will inevitably be encountered during the implementation of similar initiatives:

a) Database: the greatest challenge of this initiative relates to the accessibility and manipulation of data – ETL "Extract, Transform, Load" functionalities –

which is a human resource intensive activity;

b) Human Resources: difficulties relating to the recruitment and training of specialist staff in data science, which play an important role from database infrastructure up to computational science specialised algorithms;

c) Institutionalisation: Despite being innovative in nature, given the complexity of the techniques involved and the fact that such innovation requires a certain amount of time for tests and improvement to be made, it is important to embed the project within the competition authority's institutional structure in order to ensure its sustainability.

d) Emphasis on the final user: the use of data mining and economic filters does not imply the obsolescence of the case handler and/or investigator. The development of the parameters of such tools relies on the knowledge and the experience of analysts regarding cartel activity. Analysts are indispensable for identifying evidence of collusive conduct, the backbone of both data mining modelling and filters' algorithms. Such individuals are crucial for the activities, testing and improvement of these mechanisms.

CADE's experience with the development of project *Cérebro* demonstrates that the use of active techniques for the detection of cartels works as an additional element in the incentives system of reactive tools. In other words, the consolidation of economic filters – by means of the opening of administrative proceedings and resulting in possible condemnations in the administrative sphere – certainly serves as an additional incentive for companies to submit Leniency applications, to sign Cease and Desist agreements and to report anticompetitive conducts to CADE.

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value provided by the public authority that conducted the bid.

[47] The identification of contextual information of specific public bids and register data from companies, for example.

[48] The work developed by the consultants consisted in programming algorithms to define suspicious behaviour – as presented in the econometric literature – in databases of public bids collected by CADE. The purpose of this effort was to allow analysts to observe patterns of similarity regarding behaviours deemed suspicious and the behaviour effectively confirmed in public bids databases to which CADE had access.

[49] An the end of 2015, the analyses based on such databases played an important role in dawn raids conducted by CADE. Furthermore, CADE's screening unit provided several inputs for other investigations in the field of public bids.

Influence of Market Information Systems on Competition: Experience of Ukraine

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In 2015 the Antimonopoly Committee of Ukraine completed an investigation of the food retail market in Ukraine's capital, with an appropriate decision being taken[50].

One of the most important elements of the investigation was the study of the information provided to market players by a third party. Given the complex market structure, it was vital to determine the information flows on the investigated market that would facilitate coordination of the market participants. It was found that the anticompetitive concerted actions of retail chains were to a large degree supported by an information exchange that distorted information flows within the market and led to an asymmetric access to information for different market players.

The European Commission's guide on the application of Article 101 of the Treaty on the functioning of the European Union to horizontal agreements turned out to be a particularly valuable source to inform the Committee's assessment of information exchange.

Due to constant complaints by suppliers and consumers of food products with regard to actions of retail chains, the Committee started an investigation in 2012.

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[50]http://www.amc.gov.ua/amku/doccatalog/document?id=113528&schema=main

Market and market structure

The products in demand are general food retail services that offer a wide range of daily consumption products. The retail shops are organised in a chain store network format. Thus, the relevant products are both differentiated and heterogeneous, and the market under investigation:

- Is unstable with regard to price trends, duration, and rate of development.
- Is non-transparent and initially asymmetric with regard to the level of information available to the participants (both suppliers and retailers, and the end users as well). The consumer has the lowest degree of access to reliable information concerning the product, and has no capacity to compare price offers from different chains, as this would require a significant investment of money and time.
- Has low levels of concentration. The market shares of retailers by volume vary from 0.35 to 23.06 percent. At the same time the total aggregate share of 3 out of 5 of the largest networks is far from critical in terms of concentration levels.
- Is complex and heterogeneous in structure and composition of the participants. All retailers are at different stages of development, which provides for differences in costs, marketing policies and procurement policies. There is also a difference between the retail chains in the way they organise logistics; the existence or absence of discount programmes to customers. The quantity of goods sold in different

retail chains can vary up to factor 79. The number of producers which supply goods to the retail chains also differs up to factor 8 between the different chains.

Thus, all retail chains have different characteristics that define the specifics of their behaviour on a market with a complex system of competitive interaction. This should reduce the ability and opportunities for harmonising behaviour and should motivate market participants to compete actively. Competition, in turn, would ensure efficient pricing, increased product quality, and a broader product offering.

However, the reality of the market situation as observed by the Committee is the opposite:

1. Prices on the retail market for food are rising faster than prices on the wholesale market that supplies the food products, and also faster than consumer income grows. At the same time, retail chains demonstrate a synchronicity of changes in trade indicators and tend to converge on a common trend, regardless of the seasonality factors of supply and demand.
2. Product quality is going down.
3. The range of products offered is declining.
4. Chain retailers have established inefficient relations with suppliers.

The central question of the investigation was: why is competition in this market not working?

To obtain the answer to this question the Committee needed to find out how the retail chains learn about the market situation and the actions of competitors, including information on their prices, as this information will inform their decisions about competing on prices and assortment.

It turned out that the retail chains have practically no individual systems for collecting (receiving) and taking into account public and generally observable information, such as the prices for similar goods of their direct competitors. Monitoring of competitors' prices by retail chains is non-systematic and sporadic in nature and cannot serve as a proper source of information for taking decisions regarding competitive pricing. It was found that effectively the only information the retail chains use to determine their pricing policies is information obtained from a single research company (hereinafter - the Company) on internal performance indicators of a sample of competing chains. An individual retail chain could not obtain such information from open public sources. At the same time in most cases this information was obtained from the Company on a free basis (by mutual counter payments of minor amounts of money).

The Committee's studies have shown that this resulted in a system of excessive sharing of information organised by the Company (which usually was the initiator of such cooperation) jointly with the retail chains.

The system was centred around the Company, which contrary to the global standards of its parent company, provided the respective flows of formal and informal information between competing retail trade chains.

The exchange of information was characterised by the following:

- Strategic information was exchanged;
- The chains involved in the exchange collectively have a share of more than 70% of the market;
- The information was extremely detailed;
- Low level of aggregation of information;
- High relevance of the information;

- Very frequent exchange of information;
- The information exchange was not public.

The activities of the retail chains were accompanied a by constant and comprehensive exchange of information which took place on the Internet through dedicated servers and portals, via e-mail, and during informal communication among employees in the form of exercises, seminars and meetings. It allowed retail chains to:

- Monitor on a weekly basis the trends in the main indicators of retail chain activity and to adjust their pricing accordingly (reports with current data with a delay of only 5 to 8 days);
- Monitor on a monthly basis and adjust the assortment policy and relations with suppliers (reports with current data within 45 days);
- Plan on an annual basis their targets and ways of achieving them, including predetermining the positions of competitors on the market, so as not to compete actively with each other.

Once a week the Company received information from each retail chain concerning the volume and price of each traded product in each store of the chain and the number of cash transactions. Information was provided regularly on the utilised space, working hours, the number of register gates, etcetera.

The Company processed that information, and within just 5-8 days passed it back on to the retail chains. They obtained specific reports on all major performance indicators not available in the public domain for each retail chain and its respective competitors (volume and value of sales by product categories, number of cash transactions, average cost per purchase ticket, cost of sales per square metre, number of transactions for each store,

for each item, and so on). The reports also provided forecasts and advice to market participants concerning business development.

In addition to these broad and regular formalised contacts and exchange of information (directly provided by contracts between the networks and the Company), the Committee found a significant amount of informal exchange of commercial information, contacts between market participants and meetings under the auspices of the Company, including in the companies' offices, in restaurants, in the course of seminars. The meetings and contacts discussed negotiations with suppliers, pricing issues, forecasts for the food retail market, as well as tactical and strategic issues of retail trade by chain stores. The analysis of e-mails between retail chain staff and employees of the Company has shown that on a personal request of the retailers or an employee of the Company additional information or comments could be provided, even if this was not included in the contractual obligations of the parties.

These concerted actions of retail chains together with the Company by way of an excessive information exchange strengthened the existing asymmetry of information on the market. They distorted the competitive environment and sufficiently simplified it to allow for the coordination of the competitive behaviour of the retail chains.

This situation enabled the retail chains to avoid active competition and helped to set the terms for dealing with suppliers and end-user prices in such a way as would be the case in markets with a monopolistic structure, namely to earn profits as a result of unjustified price increases and the imposition of unfavourable and unequal conditions in their dealings with the suppliers of the products.

The investigation resulted in a decision determining that the retail chains, jointly with the Company, undertook anticompetitive concerted actions. Fines were imposed along with the requirement to terminate the infringement.

Most of the defendants are challenging the decision in courts.

In this case, the Committee for the first time gave a definition for information exchange. It is very important for the development of the enforcement of competition law that judicial experience is obtained with respect to the approaches described above for the assessment of the effects of information exchange on competition. It should be noted that this decision has already provoked considerable interest among economists and legal experts in Ukraine, and has generated a heated debate. In general, it has attracted the attention of economic entities to the issue of information exchange and its influence on competition in many markets.