The Empirical Analysis of Legal Standards in antitrust investigations: The example of Greece and France

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Abstract

The purpose of this paper is to explain the choice of legal standards of Greek and French Competition Authorities (CAs) concerning antitrust enforcement in relation to the judicial review of the decisions reached.

This paper is based on a data set of infringement decisions of the two CAs for the period 2000[1]-2017 and Court appeals. Based on the described methodology presented to a forthcoming paper of Katsoulacos Y., S. Avdasheva and S. Golovaneva, qualitative and quantitative analyses are applied to derive an understanding on the choice of legal standards of each CA in their enforcement practice. The analysis reveals that CAs in the cases they investigate, still apply more *Per Se* legal rules; they use a moderate degree of economic analysis on effects. It is also shown that the majority of the cases investigated by both of the CAs concern horizontal and vertical agreements, i.e. cases that require less input in economic analysis. Most of the econometric results are inconsistent, thus we can't reach a safe conclusion regarding the effect of the degree of economic analysis undertaken to the (high or low) probability of annulment.

KEYWORDS: competition authorities, Greece, France, legal standards, effect-based approach

1. Introduction

In recent years, the debate on competition policy has focused on the role played by economics in improving the analysis of antitrust enforcement and merger cases. The discussion has raised issues concerning the substantial arguments to use in cases as well as the legal standards that should be adopted.

[1] Since 1996 for Greek CA.

Almost all substantive issues in competition law require significant reference to economic analysis. Competition law is usually divided in four broad areas: horizontal agreements (i.e. agreements between competitors), vertical agreements (i.e. agreements between suppliers - manufactures - distributors), abuse of dominance (i.e. anticompetitive practices by firms who have significant market power) and mergers.

The extent to which economic analysis and evidence Competition Authorities (CAs) relied upon in assessing whether specific conduct violates the law, depends crucially on the legal standard adopted by the CA, that is on the decision rule that provides the basis for its assessment of the conduct. Broadly speaking, there are two types of decision rule that can be used, those (to use the terminology common in the EU) that are effects based and those that are object-based, which in US are referred to as Rule of Reason and Per Se rules, respectively, though the terms are not strictly speaking exactly equivalent.

Choosing appropriate decision rules or legal standards is extremely important in implementing competition law, since they affect welfare; the basic idea is that legal standards should minimise the sum of the welfare costs caused by decision errors of type I (false positives or false acquittals) and type II (false negatives or false convictions)[2].

CAs at both national and EU level have adopted many significant reforms in decision and enforcement procedures, following EUs reforms. The Commission has adopted important reforms on cartel cases (article 101 TFEU) and merger control, which were explicitly motivated by the attempt to apply "more economics" in competition policy. Also, in 2009 the DG Competition has reshaped the enforcement of article 82 (now 102 TFEU), pursuing an approach that rests on a deeper and more intelligent use of the new findings of economic analysis in the enforcement against unilateral practices, which led to the "heated" discussion regarding effect based (or more economic) as opposed to the traditional Per Se (or form-based) approach.

Hence, using the described methodology presented to a forthcoming paper of Katsoulacos Y., S. Avdasheva and S. Golovaneva (2017), where they attempt - by constructing indices of the type of analysis undertaken by the CAs and of the extent of economics and economic evidence applied in this analysis - to identify where, is the standard of proof *Per Se* and full effects-based applied by the CA in any given case, we attempt to measure how European CAs, namely Greece and France, enforce competition law, what similarities or differences have their enforcement practices and how they evolve over time.

[2] The mistaken decisions that the courts hand down fall into one of the two categories, i.e., Type I and II errors. Type I error is also known as a "positive false," which means that an innocent person is wrongly convicted. Alternatively, Type II error is also known as a "negative false," which means that a guilty person is wrongly acquitted. Particularly, in antitrust, a Type I error occurs when a court wrongly condemns a healthy (or procompetitive) business practice. And a Type II error occurs when a court wrongly let a harmful (or anticompetitive) business conduct goes free.

In particular, we calculated the values of effect-based indicators for Hellenic Competition Commission (HCC) infringement decisions, from 1996-2017, and the French Competition Authority (FCA), from 2000-2017, as well as their aggregate[3]. We attempted, by constructing CAs decision dataset and Court decisions, to provide a detailed quantitative description and assessment of the evolution of Effects Based indices, to indentify the factors affecting the choice of legal standards in their decisions and the probability of their annulment.

In theory, the practices of European CAs are quite interconnected. All European CAs competition practices are based on the same European competition law and all of them are strongly involved in the activities of the European and International Competition Network ("ECN" and "ICN", respectively). They carefully follow European case law and the decision-making practices of the other European CAs.

In this framework, we observe from the analysis of the dataset that the two CAs, other than the structural similarities they have, they also present similarities to the moderate degree of the economics applied to their antitrust decisions and to the "optimal" set of legal standards they choose to apply. We do not observe any particular increasing reliance on economics based methodologies and consequent use of an Effects Based rather than a Per Se approach to deciding cases. Also, the results on judicial review do not allow us to evaluate the effects of the chosen legal standard on the probability of annulments.

The remainder of this paper is organized as follows. In Section 2, we provide a brief overview of the methodology used to construct our database and measure the extent of economic analysis (legal standards). Section 3 briefly describes HCC's and FCA's Enforcement Rules and in Section 4, we discuss the economic analysis undertaken by the CAs in specific enforcement areas; this review helps us interpret the findings of qualitative and quantitative analysis on effect based indicators and the factors affecting legal standards, presented in Sections 5, 6 and 7. Section 8 concludes.

2. Measuring the extent of economic analysis and evidence applied by Competition Authorities in infringement cases assessed on the basis of object-based or effects-based legal standards

The methodology referred to the forthcoming paper of Katsoulacos Y., S. Avdasheva and S. Golovaneva (2017), begins with the assumption that there are variations between pure *Per Se* (or pure object-based) and full *Rule of Reason* (or full effects-based) decision rules. According to them it is probably best to think of legal standards as forming a continuum at the extremes of which are the Per Se (or object based) and the ("full") rule of reason (or full effects-based) standards (these variants are discussed in more detail below).

[3] Decisions issued up to 12/2017.

The authors, in order to capture the differentiation and complexity of decision rules, propose a set of indicators, aligned with the case law tests broadly used in competition textbooks. They suggest that all the information needs to be extracted from texts of appealed decisions and recorded through "Yes=1" or "No=0" responses to the statements below. They distinguish between four statement categories (A, B, C and D) and a number of sub-statements associated and ordered with the type of economic analysis undertaken as we move form low (Per Se) to high (Effect based) legal standards (see Table below).

The statements [in which the authors assign (0/1)] under consideration are:

Table 1: Type of Analysis – Statement Categories

		Restrictions of competition other that Exploitative conducts	**Exploitative conducts**	
Statement Category	**Title**	**Description**		**Score**
A	**Discussion of the nature and characteristics of the conduct**			
		Since in all cases there must be some discussion of the nature and characteristics of the conduct, we should not get a score of "0" here – in this sense perhaps this category is not needed. It is included for purely formal reasons, to remind ourselves that an overall score of "1" is a strict *Per Se* approach to the assessment and that this means that the CA only considered the nature and characteristics of the conduct.		0/1
B	**Contextual analysis of the market and the firms**			
B.1.	Basic analysis of market characteristics based on available market statistics	Economic theory is even necessary in order for a CA to "frame" a case. This typically involves information about the structure of the industry, the firms, the structure of demand and the technology, determination of market shares (without formal analysis of market definition). It is e the first step in an economic analysis in the context of a competition case.		0/1
B.2.	Formal market delineation and market share determination, based on Hypothetical Monopolist methodology[4]	Market definition decisions based not on qualitative assertions but on more sophisticated economic tests (e.g. SSNIP test, Price correlation and Critical loss analysis)		0/1
C	**Establishing unlawful competition restriction and extent to which it can be rebutted**			
C.1.	Examination of interaction between the market players taking into account the market characteristics and / or analysis of how	This need not include the construction of a formal model (e.g. examination of incentive compatibility constraints in a concerted practice case, or examination of how exclusive contracts could lead to exclusion	Analysis undertaken to compare price with cost (e.g. profit sacrifice test, no economic sense test)	0/1

[4] Note that in decisions where formal market definition B.2 is provided, then B.1 must also be given a score 1. The authors emphasise that B.1=0, when CA's decisions only mention briefly what is considered to be the product and geographic market (e.g. on decisions on price fixing conducts, concerted practices).

		Restrictions of competition other that Exploitative conducts	Exploitative conducts	
Statement Category	**Title**	**Description**		**Score**
	conduct enhances market power	or prevent entry in the specific context, or "equally efficient competitor test").		
C.2.	Articulation of theory of harm to competition (consumer welfare or total welfare)	When "scoring" CAs decisions this need not be a full-blown formal analysis, but one could also score some effort towards determining where the case stands on the basis of assessing crucial aspects of the situation e.g. assessing the size of non contestable demand of a dominant firm, negative impact on consumers.	Comparison of the prices of the dominant firm with the prices in other markets	0/1
C.3.	Analysis of potential efficiency defense	Analysis should be based on efficiencies that are expected to result from conduct that will create benefits to consumers (again, this need not be very sophisticated but must indicate a serious effort to take efficiencies into account).	Comparison of the prices of the dominant firm with the price of competitor.	0/1
C.4.			Excess profitability analysis	0/1
D	**Additional (effects) analysis**			
D.1.	Counterfactual Analysis	Analysis proposing that theory of harm does not stand and demonstrating the absence of foreclosure effects and consumer harm of an exclusionary conduct.	Analysis of potential justification of exploitative conduct.	0/1
D.2.	Balancing of potential anticompetitive & pro-competitive effects of the conduct	This is any analysis "over and above" the analysis that may have been included under "efficiencies" above. By "balancing" here we mean any formal economic analysis that attempts to measure the net effect of the conduct, that may not be related to efficiencies - e.g. balancing the short-term and long-term implications of refusal to license (or of compulsory licensing) an innovative activity.	Analysis of welfare effects of exploitative conduct.	0/1
Total Score		**8**	**9**	

Following the above methodology, Katsoulacos, Avdasheva and Golovaneva, suggest to construct the effects based (hereinafter EB) indicators, using, for conducts other than exploitative abuse, the 8 statements above, A, B1, B2, C1, C2, C3, D1 and D2 and then

constructing the following 8 sets (S) of decisions, in order to avoid aggregation problems of decisions' dataset. At this point we note that, apart from Exploitative practice, the other practices that will be examined are categorised as below:

I. Horizontal agreements. These are divided into:
   i. Concerted practices (including information exchanges and facilitating practices);
   ii. Other horizontal agreements (such as price fixing)
II. Vertical agreements (RPM and other vertical restraints and contractual terms)
III. Unilateral exclusionary practices by dominant firms (such as predatory pricing, tying and bundling, refusal to deal, margin squeeze, exclusive contracts, loyalty rebates).

In particular, the authors identify the following Sets of Effect based (hereinafter SEB) where they assign the same level of scores only to cases where the same type of anaylsis is undertaken; thus, analysis of S1 has the minimum EB-indicator value since for S1 the value of the EB-indicator is 1; in S2 its value is 2; in S3 its value is 3; in S4 its value is 4; in S5 its value is 5 etc. To summarize, the sets of decisions described above are:

S1: {A}

S2: {A, B1}

S3: {A, B1, B2}

S4: {A, B1, B2, C1}

S5: {A, B1, B2, C1, C2}

S6: {A, B1, B2, C1, C2, C3}

S7: {A, B1, B2, C1, C2, C3, D1}

S8: {A, B1, B2, C1, C2, C3, D1, D2}

By comparing different sets, Si ,i = 1,.....8, one can identify the effects of additional economic analysis. Hence, by using these Sets of analysis, we are also able to identify the frequency with which a CA applies the analysis associated with each one of the sets in assessing different conduct types and, thus, infer the extent to which the CA favors a certain legal standard for the different conduct types.

As noted above one issue that may be faced with here is that associated with a situation in which the score for some statements in all decisions is zero. If this occurs with, for example, statement B1, then we will still be comparing between themselves the sets that result when B1 is missing. Thus, comparing set S1 with (new) set S3(i) = {A, B2} we can identify the

implications associated with adding block of analysis B2 to decisions relative to decisions in which only A is present[5].

The same set of statements can also be constructed for exploitative conducts.

Finally according to Katsoulacos, Avdasheva and Golovaneva, the above values of *Sets* are interpreted as indicators of the legal standards applied in CA's decisions. So, they distinguish between four main distinct legal standards[6] and standards that are intermediate between them, corresponding to the above mentioned *Sets* of economic analysis (see Table below).

Table 2: Sets of EB (SEB) and legal standards

[5] Also, as noted above that it may make sense to consider a different order of statements. Thus, for example, the following order of statements may be worth considering in which counterfactual analysis is undertaken by the CA immediately after its analysis of C1: A, B1, B2, C1, D1, C2, C3, D2.

[6] The authors for simplicity reasons assume that welfare (consumer or total) is the criterion on the basis of which the CA decides whether there is an infringement or not.

	Legal Standards	Presumed variables of the analysis	Sets of EB
1	Strict Per Se (**SPS**): *the CA makes inferences about effects (on welfare) from the formal characteristics of the conduct and some basic analysis of the market*	A or A & B.1	S1 & S2
2	Modified Per Se (**MPS**): *the CA makes inferences about effects (on welfare) from the formal characteristics of the conduct, detailed analysis of market characteristics and, depending on the type of conduct, their implications for incentives for sustainable collusion and/or evaluation of market power*	A, B.1, B.2	S3
3	Truncated Effects Based (**TEB**): *the CA makes inferences about effects (on welfare) from the potential of the conduct to distort the competitive process by disadvantaging rivals or by enhancing market power*	A, B.1, B.2, C.1 or A, B.1, B.2, C.1 and D.1	S4
4	Intermediate between Truncated and Full Effects Based (**Intermediate TEB**)	More than EB=4	S5-S7
5	Full Effects Based (**FEB**): *the CA assesses and compares all potential anticompetitive and also procompetitive effects of the specific conduct*	Complete set of variables	S8[7] / S9[8]

3. Review of HCC's and FCA's Competition Enforcement Rules

3.1. Review of HCC's Competition Enforcement Rules

The Hellenic Competition Commission ("HCC") is the authority responsible for the enforcement of Greek Law 3959/2011[9], "Protection of Free Competition" (hereinafter "Competition Act"), previously Law 703/1977, as well as of Articles 101 and 102 of the Treaty for the Functioning of the European Union (TFEU). According to the Explanatory Nite by the Ministry accompanying Law 703/1977, its purpose was twofold. First, it aimed to protect free competition in the marketplace for the benefit of the economy in general and of consumers in particular[10]. Second, it intended to harmonize the Greek law with the EU (then EEC) legislation in this field, in view of Greece's then prospective accession to the Common Market.

[7] For practices other than exploitative.
[8] For exploitative practices.
[9] Year 2011 marked the abolition of Law 703/1977 (with consecutive amendments).
[10] There are no exclusions or exemptions from the general competition law (Law 3959/2011 which replaced Law 703/1977). The only existing sectoral exclusion concerns the telecoms sector. EETT (Hellenic Telecommunications and Post Commission) is entrusted with the competences to act as the Competition Authority

The substantive as well as the procedural provisions of Law 703/1977 followed the model of the EU (then EC) competition rules, i.e. Articles 81 and 82 of the EC Treaty (ex Articles 85 and 86) and Regulation 17/1962[11], with the necessary adaptations being made in order to facilitate their application in conformity to the Greek reality.

Pursuant to Law 2296/1995, the HCC is an Independent Administrative Authority with procedural and decision-making autonomy. Pursuant to Law 2837/2000, the HCC also enjoys financial autonomy. Also, the Authority has a dualist structure, essentially comprising two bodies: the Directorate General for Competition ("Directorate-General") which is conducting the investigations, and the HCC Board, which is the decision-making arm of the Authority[12].

The HCC co-operates closely with the European Commission and the national competition authorities in all EU Member States in order to enforce the EU competition rules, primarily in the context of the Regulation (EC) 1/2003.

The HCC performs all the enforcement actions of a designated National Competition Authority to apply national and EU competition rules, in accordance with Regulation (EC) 1/2003 (see Art. 5). It also has consultative powers in the area of identifying and removing regulatory barriers to competition. In particular, the HCC has broad enforcement powers in the area of collusive practices/cartels, abuses of dominance and merger control. In this context, the HCC may: take decisions finding an infringement of Article 1 of the Competition Act and Article 101 TFEU and/or of Article 2 of the Competition Act and Article 102 TFEU (abuse of dominance) (collusive agreements and/or concerted practices between undertakings that have as their object or effect the restriction of competition) and impose administrative fines, take interim measures in case of suspected infringement of the above said articles, review prior notifications of envisaged mergers & acquisitions (merger control of concentrations), launch investigations and conduct dawn raids for the enforcement of antitrust and merger control rules, deliver opinions on competition issues, and conduct sector inquiries.

Finally, in 2011, as a means of rationalizing the handling of complaints, the law finally permits the prioritization of cases which meet certain criteria specified by the authority[13] and take into account "*in particular the public interest, the likely effect on competition, consumer protection, the newly introduced prescription period and the impact expected from the authority's intervention*".

in the electronic communications market (fixed and mobile telephony, wireless communications and Internet access providers) and the postal services market (postal and courier service providers).

[11] OJ 13, 21.2.1962, p. 204 /62.

[12] As a result, the Greek institutional arrangements preserved their basic quasi-judicial characteristics (including the exchange of rounds of written pleadings and a fully-fledged oral hearing before a separate decision-making body, with rights to examine witnesses, cross-examine etc.).

[13] See HCC Decision 525/VI/2011 on the Criteria for the Prioritization of Cases, issued on 7/7/2011 available at: http://www.epant.gr/img/x2/apofaseis/apofaseis652_1_1315906934.pdf.

The **French Competition Authority** (*Autorité de la concurrence)* is an administrative body created in 2009 out of the *Conseil de la Concurrence*'s transformation[14]. It acts in the name of the State, although not being under the authority of the Government in the exercise of its powers. It takes up cases either when referred to by a plaintiff or ex-officcio. According to relevant reference to its website, the Authority's top priority remains consumer welfare.

French competition law applies to the entire business activity. It is the economic nature of the business that determines the applicability of competition rules, not the operator's performance or the shape it presents. All production, distribution and service activities are concerned, regardless of the perpetrators' identity (Article L. 410-1)[15].

The FCA has the competence to apply both national (Book IV of the French Commercial Code) and European legislation (Articles 101 and 102 of the TFEU, formerly Articles 81 and 82 of the EC Treaty).

The investigation is conducted in an independent matter by the investigation services headed by the General Rapporteur. After an *inter partes* procedure, the cases are examined by the Board of the FCA, sitting by division in most cases. The FCA is a collegiate institution comprising seventeen members appointed for a five-year term by a decree issued further to a report from the Minister of Economy. They may not be removed from office, except in cases strictly defined by the French Commercial Code (Art. L. 461-2).

The FCA has the competence to: issue injunctions, impose fines, accept commitments and grant leniency to certain companies which choose to cooperate by helping to detect or prove the existence of anticompetitive agreements. It represses anticompetitive agreements, abuses of a dominant position and excessively low prices. It may also be called upon to issue opinions, or do it at its own initiative, on various competition issues. According to the FCA, its composition, organisation and referral procedures guarantee its effectiveness and its independence.

Decisions of the FCA are made collectively, except in certain cases when the President or one of the Vice-Presidents appointed by him may issue a decision alone. The FCA may sit in plenary sessions, by division, by standing committee or as a single judge. Quorum rules are set by the rules of procedure of the FCA. The permanent committee consists of the President and four Vice-Presidents. The Board usually sits by division. The divisions are general in their scope and do not deal with any sector in particular.

Within the Authority operates an Economic Service, which is placed under the supervision of the General Rapporteur and is composed of one chief economist, one deputy,

[14] For the rest of our analysis we will refer to both of them as the "FCA".

[15] Sector regulators (French Telecommunications and Posts Regulator - ARCEP, French Energy Regulatory Commission - CRE, French Broadcasting Regulator- CSA) have the power to solve disputes in cases that may sometimes raise competition issues. Risks of divergence between decisions issued by the FCA and those of other sector authorities are limited by bridges provided by the legislator (mutual consultation procedures).

and four economists. Its main tasks are: to contribute to investigation, strategy and inspection requests; to help consolidate the economic reasoning; and to contest possible economic studies produced by the parties.

3.2. Judicial review of HCC's and FCA's decisions

Both competition agencies are subject to judicial review. In particular:

The decisions of the **HCC** may be challenged before the Athens Administrative Court of Appeals, within a period of sixty days from notification, which conducts full review - judicial control of substance and procedure of the decision of the HCC. In these cases, the Administrative Court of Appeal acts as a first instance court. The judgments of the Administrative Court of Appeals may be brought for judicial review (control of legality[16]) before the Council of State (Supreme Administrative Court – Conseil d'Etat). In this case the Council of State acts as a second (and last) instance court. There is not third instance for decisions issued by the HCC. The courts can exercise their powers and either uphold or annul the decision. The Athens Administrative Court of Appeal can examine the case on the merits and reduce the fine imposed by the Competition Commission.

The new Competition Act (Law 3959/2011) provided that specialised competition chambers can be established at the Athens Administrative Court of Appeals, the aim being to further enhance the effectiveness of judicial review (not yet implemented; nonetheless, in practice, competition cases are adjudicated by specific chambers of the Court).

Accordingly, **FCA's** decisions on anticompetitive practices are subject to the control of the Paris Court of Appeal and the Cour de cassation (Supreme Court). The Authority's decisions on mergers are subject to the review of the French Administrative Supreme Court (Conseil d'Etat).

The Paris Court of Appeal is empowered to check the legality of FCA's decisions, to make full assessments on the merits, and is increasingly being called to adjudicate on complex economic issues.

4. Economic Analysis in HCC's & FCA's competition enforcement

HCC is considered as a rather medium in terms of size Competition Authority. According to the latest data (2016), 57 out of 86 staff members focus on competition enforcement. The non-administrative staff consists of 57 professionals, including **18 lawyers**, **34 economists** and five having other background.

[16] I.e. wrong application of the law, assuming as correct the factual basis.

Cases are dealt with by the two Economics Directorates (A and B) and the Legal Services Directorate, which report to the Director General. The Advocacy Unit is a separate unit, also reporting to the Director General. The legal and economic Directorates are organised by sectors, while there are no specific units dealing only on specific types of cases (e.g. there is no merger-specific unit or directorate). As a result, all staff works on all areas of competition enforcement and on advocacy matters, if necessary. Case teams are normally multi-disciplinary, including both lawyers and economists. In relation to the latter, the organization of HCC's DG is quite unique in the EU; its Directorates are organized by competition experts (lawyers – economist) and sectors and thus instead of having a Chief Economist position, it has two Economists Directors.

HCC is being criticised that in its decisions follows rather a standard formalistic assessment of the facts on the basis of (per se) legal rules; the evaluation of potential anti-competitive practices do not rely on the examination of the effects or the impact of the specific practices on welfare (i.e. on effects-based legal standards).

As mentioned above the substantive features of the Greek Competition Act are based on EU law. Articles 101 and 102 of the TFEU are directly applicable in Greece in cases with a community dimension, while the Greek Competition Act contains equivalent provisions for national cases. Similarly, merger control is modeled on the EU Merger Regulation. HCC in the treatment of merger cases and various forms of horizontal and vertical agreements, as well as of abuse of dominant cases, follows the relevant presumptions of the EU law and case-law.

However, the HCC is increasingly applying a more economics-based analysis in its assessment especially in merger cases in particular, those that are subject to in-depth review. The HCC has recently used more sophisticated analysis to perform its market definition exercise and its assessment of merger effects, following the standard used in the EU Merger Regulation (the so-called SIEC test). In the substantive assessment of mergers, the HCC generally applies the principles and guidance adopted at EU level and interprets the corresponding provisions of the Competition Act accordingly.

The competitive assessment of the HCC takes account of a number of factors, namely: the structure of all the relevant markets, actual or potential competition from domestic or foreign competitors, barriers to entry, the market position of the merging Parties and their economic and financial power, alternatives available to suppliers and users, supply and demand trends for the relevant goods and services, the interests of intermediate and ultimate consumers and the contribution to technical and economic progress and improvement of economic efficiency (provided that it is to consumer's advantage and does not form an obstacle to competition).

In practice, the HCC considers theories of harm regarding unilateral, coordinated, vertical and conglomerate effects that may result from the concentration[17]. The definition of the relevant markets remains of crucial importance for setting the scope of the analysis on the effects of the concentration, as well as an assessment of market shares, cost structure, pricing, switching costs, bargaining power of suppliers or customers.

Regarding HCC's practice on Articles 1 and 2 of Greek Competition Act (equivalent 101 & 102 of TFEU), the authority follows the European Commission Notice (EC, 1997) and decisions in its approach to market definition, and defines dominance with reference to EU and Greek past cases and jurisprudence, e.g. EC (2009)[18].

The most recent prominent cases where HCC examined the use of or used more advanced economic tools are summarized below[19]:

i. Horizontal Agreements: in the recent Audatex decision[20], which examined an agreement on hourly rates for repair services between a number of Greek insurance companies, the authority found that indicative or recommended hourly rates for repair services, in combination with the number of the working hours, were directly related and necessary for the implementation and application of the Audatex system, a database used to create repair estimates in the case of accidents involving insured vehicles. The HCC found that this was an ancillary restraint under the Guidelines on the application of Article 101(3) of the Treaty (2004/C 101/08) and did not fall under the prohibition of Article 1 of the Competition Act.
ii. Vertical Agreements: in 2015, the HCC accepted commitments proposed by four leading producers and importers of tobacco products in Greece[21] to amend certain clauses in their distribution agreements with local distributors. The amendments addressed HCC's concerns regarding unnecessary restrictions of intra-brand competition amongst distributors and tentative access of competing manufacturers and importers to each other's sensitive business information. The efficiency of new distribution networks was an important factor in the assessment of the distribution networks in this sector.
iii. Abuse of Dominance: the most important cases in recent years have arguably dealt with rebates and exclusivity clauses, and refusal to supply and provide access to an essential facility, on the other (in these cases the HCC has investigated a number of abuse of

[17] For a presentation of HCC's merger cases & the use of economics tools, see also, K. Benetatou & M. Deredaki, EPLO, 22.06.2017, available (in Greek) at: http://slideplayer.gr/slide/11854360/.
[18] Dominance is defined as "a position of economic strength enjoyed by an undertaking, which enables it to prevent effective competition being maintained on a relevant market, by affording it the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of consumers". See EC (2009), paragraph 10.
[19] For a presentation of HCC's use of economics tools in antitrust cases, see also, K. Benetatou, EPLO, 24.02.2018, available (in Greek) at: http://judgestraining.eu/wp-content/uploads/2018/03/hcc_kelly-benetatou.pdf.
[20] HCC Decision 640/2017, available at www.epant.gr/Pages/DecisionDetail?ID=1835, and press release available at www.epant.gr/en/.
[21] HCC Decision 612/2015, available at: https://www.epant.gr/Pages/DecisionDetail?ID=1642.

dominance cases in the energy sector[22]). In a recent decision the HCC examined a rare case of exploitative abuse. The authority considered and dismissed allegations of excessive pricing in the Thessaloniki International Airport[23]. The operator of the only parking lot within the airport was found to hold a dominant position. In order to ascertain the abuse, the HCC analysed profit margins and the difference between prices and costs. Margins were found to be low or negative over the period of the alleged abuse, leading the HCC to conclude, in line with EU case law, that excessive pricing could not be established. Prominent decisions on rebates include those against Heineken's subsidiary Athenian Brewery[24] and Procter & Gamble[25]. Earlier decisions on the subject include the case against Tasty Foods[26].

In all of the above cases, both the defendant and / or the complainant, commissioned extensive economic analysis[27] that was thoroughly examined by the HCC in the text of the decision. In addition, the HCC gathered, through its dawn raid and information requests, a significant amount of data, and (a more or less) extensive economic analysis was also conducted for the purpose of defining the relevant product market (depending on the case). In order to establish the foreclosing effect of target rebates, the HCC primarily examined the market position of the dominant undertaking, as well as the structure and the conditions for granting the rebates (e.g. duration and amount). Moreover, the HCC reviewed the "as efficient competitor" (AECT) analysis submitted by the dominant undertakings.

The above mentioned cases were upheld by the Court of Appeals[28]. The Court of Appeals in all of these cases a) relied on the market share criterion (AKZO[29]) as to the market definition[30], b) concluded that the HCC has no legal obligation in finding the abusive effects that a rebate scheme, operated by a dominant undertaking, has on the market based

[22] The HCC decisions in the energy sector concerned: a) the gas sector and in particular the Hellenic Gas Transmission System Operator (DESFA) and the incumbent gas supplier (DEPA), both of which were state-owned. Moreover, at the time DESFA was a wholly owned subsidiary of DEPA and it was operationally separated from DEPA, in accordance with sector regulation and b) the electricity sector, the HCC intervened against Public Power Corporation (PPC), also state-owned.

[23] HCC Decision 630/2016, available at https://www.epant.gr/Pages/DecisionDetail?ID=1814.

[24] HCC Decision 590/2014, available at https://www.epant.gr/Pages/DecisionDetail?ID=1645. The Athenian Brewery case required the examination of a complex system of payments and the vast amount of evidence included direct evidence from dawn raids, testimonies, evidence obtained through information requests and written agreements.

[25] HCC Decision 581/2013, available at https://www.epant.gr/Pages/DecisionDetail?ID=1420. The Procter & Gamble case dealt with the novel issue of mixed bundling rebates.

[26] HCC Decision 520/2011, available at https://www.epant.gr/Pages/DecisionDetail?ID=1352.

[27] Including SSNIP test, critical loss analysis, price correlation analysis, cointegration analysis, analysis of market shares, seasonality analysis, price correlation, critical loss analysis, as efficient competitor test.

[28] The cases against Athenian Brewery and Procter & Gamble are still pending in front of the Council of State.

[29] See: C‑ 62/86, AKZO vs Commision, EU:C:1991:286, p. I-3359, par. 60.

[30] Decisions of Court of Appeals: 869/2013 Athenian Brewery, 2458/2017 PROCTER & GAMBLE and 4055/2017 Tasty.

on the AECT or other economic test[31], c) concluded that it is not necessary to prove the effect of the rebate scheme at issue, it suffices to prove that it is capable of restricting competition or (probably) could have such a result[32], d) did not assess the review by the HCC of the AECT, however, e) concluded that the Court itself examines and takes into consideration all the arguments and facts concerning the infringement, including the economic analysis submitted by the dominant undertaking[33].

The scarcity of use of sophisticated economic analysis (especially with regard to efficiency and effects analysis, such as, as efficient competitor test, counterfactual analysis, etc) in infringement decisions could be attributed to several reasons, apart from the limites resources in personnel and time constraints (i.e. prescription). Even though, we consider that before discussing relevant explanations, we need to look at the impact of economic evidence on the outcomes of appeals, one should bear in mind that HCC mainly follows the EU current and past cases and jurisprudence, as well as, that the mix of cases the HCC is dealing with could influence the degree of economics used. When the cases dealt by a CA, are more often horizontal and vertical agreements, hence cases that are considered to restrict competition by object, they require less economic analysis. For example, from 2012 to 2017, 9 out of a total of 14 decisions concerning horizontal agreements concerned violations by trade associations or professional bodies. As a result one could argue that in this case the average level of economic analysis decreases.

Two of the variants that determine the mix of the cases dealt by HCC is: a) the complaints (formal or informal) it receives, which are often more and better substantiated in the case of vertical agreements and b) its prioritization system.

As already mentioned with the 2011 Competition Act, the HCC was granted the ability to set strategic objectives and to select the cases it investigates, in line with international practice. Henceforth, the HCC sets priorities at two levels: i) strategic goals, which concern overarching objectives and focus on economic sectors; and ii) case-level, according to a Notice on enforcement priorities, issued by the HCC in 2011[34], and a Notice on the quantification of priority criteria on the basis of a point system[35] (ranking cases on a scale of one to ten). With the above mentioned Notice HCC aimed to focus its actions on cases with a significant impact on consumers' welfare, and to refrain from investigating complaints which serve only private interests and not competition at large. The criteria adopted are a mix of economic and legal criteria.

[31] Decision of Court of Appeals: 2458/2017 PROCTER & GAMBLE, available at https://www.epant.gr/Pages/DecisionDetail?ID=1420.

[32] Decisions of Court of Appeals: 869/2013 Athenian Brewery, https://www.epant.gr/Pages/DecisionDetail?ID=1645.

[33] Decision of Court of Appeals: 2458/2017 PROCTER & GAMBLE.

[34] See, HCC Decision 525/2011, available at www.epant.gr/Pages/DecisionsOpinions, and press release of 18.05.2011, available at www.epant.gr/en/.

[35] See, HCC Decision 616/2015 (updating the HCC Decision525/VI/2011), available at www.epant.gr/Pages/DecisionDetail?ID=1647, and press release of 10.03.2016, available at www.epant.gr/en.

Figure 1 (in Appendix, below), shows the effects of the applications of the above mentioned Prioritization system. Thus, since 2012, 203 cases have been filed before the HCC. These cases concern formal complaints submitted before the HCC that a) either do not fall within its competences or, b) are manifestly unfounded, are rejected by an act/decision issued by the President of the HCC, which may be appealed before the Athens Administrative Court of Appeals (Article 37 of Competition Act). Additionally, complaints which receive a low score under the prioritization point system, provided for by art. 14 of the Competition Act are also rejected by an act/decision issued by the President of the HCC, which may be appealed before the Athens Administrative Court of Appeals. Finally, by an act/ decision issued by the President complaints withdrawn by the complainant are closed. All other formal complaints are closed by a decision of the HCC (board).

FCA is perceived as being among the best European CA. There were 187 employees (working on the competition enforcement) of the FCA in 2016, of which **52,4% lawyers**, **21,4% economists**, and 26,2% percent other experts.

Cases are investigated by case officers (magistrates, civil servants, economists, engineers, legal experts, etc) under the supervision of a General Rapporteur and Deputy General Rapporteurs. The investigation services also include dedicated units (Chief Economist's Team, Inspection Unit, etc.)

During the last years FCA has been attributing a growing role to the assessment of the effects of agreements and cartels, which requires extensive use of economic analysis. This interrelates with the obligation of the French Competition Law to take into account the effects of an anticompetitive practice to be taken into account in the determination of fine; an idea that seems to promote an effects-based approach to fines. However, the authority has apparently limited itself to verifying whether the market is characterised by the specific factors listed in its notice of penalties[36] (e.g. scale of the infringement, short-medium and long term consequences of the infringement, sectors involved, impact on the economy and on final consumers), hence considering that a qualitative assessment of such factors suffices[37].

Bruno Lasserre, former President of FCA (2012), stressed out that the FCA has taken into account the new effects-based analysis and adopted a case-by-case approach to examine the dynamics of the market at hand, rather than question the market definition tool in itself. In particular, with regard to unilateral practices, the FCA is more open to efficiency claims. According to Bruno Lasserre, FCA looks at the economic context, the competitive dynamics and focuses on vetting efficiency claims and alleged exclusionary effects of a case with the help of its economic staff.

[36] Autorité de la Concurrence (2011), 'Notice of 16 May 2011 on the Method Relating to the Setting of Financial Penalties', para. 32. English version of the text available at: http://www.autoritedelaconcurrence.fr.

[37] Autorité de la Concurrence (2015), "Étude thématique: Le dommage à l'économie", available at: http://www.autoritedelaconcurrence.fr.

Regarding merger cases, FCA substantive test centers (as HCC) on the substantial lessening of competition, whatever form it may take. Competition assessments integrate all market circumstances and economic parameters, including likely foreseeable changes. Within this context, the FCA has published guidelines presenting its processes, methods, and practices (December 2009). These guidelines underline the importance of economic analysis in merger control, whereby market definition is supplemented by a competitive assessment, which allows inter alia for the review of key market features such as barriers to entry, potential competition or clients' countervailing power.

Accordingly, in its decisional practice on predatory pricing, the Authority makes use of cost-based tests while it insists that the resulting presumption remains in any event rebuttable[38]. The FCA also weighs the justifications which can be adduced to demonstrate the non objectionable nature of the firm's behavior against the elements pointing towards an exclusionary strategy.

Regarding horizontal and vertical agreements, since the entry into force of the New Economic Regulations Act (2009), the French substantive test (article L420-1 of French Competition Law) prohibits concerted practices, agreements, express or tacit, between undertakings that have as their object or may have as their effect the prevention, restriction or distortion of competition in a market. The FCA has traditionally considered proof of a demonstrable effect on competition to be not necessary where the object of an agreement is to restrict competition.

5. Survey of descriptive statistics & econometric analysis on the effect-based analysis in the HCC (1996-2017)[39] and the FCA (2000-2017)[40]

5.1. Overview

Our overview, in the previous Section, of the competition authorities in the two European countries reveals significant similarities. The similarities between the national authorities stem to a large extent from the "pressure" exerted by the EU for the harmonization of competition laws and enforcement practices but also from a global trend towards convergence, promoted by the exchange of ideas between the European Commission and various national competition authorities of the ECN, academics and practitioners, notably in the framework of the ICN.

[38] I.e. the burden to disprove the existing of an exclusionary strategy, due to charging unit price below the average variable (or avoidable) costs, lies with the defendant.
[39] Decisions issued up to 12/2017. Note that the full document of Court Decisions on HCC's cases is available in its website, for Court cases issued from 2011 to date.
[40] Decisions issued up to 12/2017. Note that the full document of Court Decisions on FCA's cases is available in its website, from 2003 to date.

In both countries, the competition laws are essentially the same, being based on EU law. The competition authorities also have similar powers of investigation and can make use of similar tools, such as fines, commitments, early settlement procedures, and leniency. Another major common feature is that the enforcement of competition law in both countries is entrusted to independent agencies. Both competition agencies decisions are subject to judicial review.

As mentioned above, the **HCC's and FCA's** enforcement records focus on investigations pertaining to vertical agreements, abuses of dominance, horizontal collusion practices, as well as mergers of strategic nature which warranted more complex remedial action[41].

Table 22 (in Appendix) shows the evolution of types of **HCC decisions** over time. The data indicate that one important explanation for non-increasing demand for economic analysis is the structure of competition enforcement. Decisions requiring low economic legal standards (Per Se) in the database account to about 67% of the total HCC's decisions (on Article 1 & 2 of Competition Act 3959/2011). Out of these and in particular of those concluded with infringement, vertical agreements represent 25.3%, while horizontal agreements represent about 39.2% of cases and abuse of dominance cases 29.1% for the whole period. The number of decisions on abuse of dominance in comparison to the decisions on agreements and concerted practice indicate the "slow" progress in performing economic analysis. We consider however, as already mentioned, that before discussing relevant explanations, we need to look at the impact of economic evidence on the outcomes of appeal, and therefore on the effectiveness of HCC's actions.

Table 23 below (in Appendix) shows the evolution of types of **FCA decisions** over time. The data do not indicate any obvious explanation for non-increasing demand for economic analysis is the structure of competition enforcement, although the observations for Horizontal & Vertical Agreements (Per Se infringements) are higher in number (45% vs. 34% of Abuse of Dominance case). Out of these cases and in particular of those concluded with infringement, horizontal agreements & vertical agreements represent 45%, while mixed cases represent about 21% of the total cases and abuse of dominance cases account for 34% for the whole period. Contrary to HCC law, decisions which find that complaints do not fall in FCA's competence or are manifestly unfounded and thus rejected are issued by FCA's Board.

Finally, the following Table presents the main decision types. Out of a total of 463 cases (issued by both authorities), around 81% (HCC: 89%, FCA: 79%) represents decisions finding an infringement of Articles 101 & Articles 102 and settlement decisions (the total prohibition decisions). The commitment and settlement decisions[42] account for a very small

[41] Henceforth, for simplification reasons, instead of referring to national articles of competition law of Greece and France, we will refer to them as articles 101 & 102 of TFEU.

[42] HCC introduced the Settlement procedure for horizontal infringements of competition law in 2016 (see Decisions 628/2016), while the FCA introduced the first settlement regime in 2001, and concern all types of conducts. The Macron law (2015) amended and simplified the procedure.

percentage of the total cases, about 35%, especially in HCC. In FCA, the prohibition decisions show a decline since 2009 which could be attributed to the rise in settlement decisions (also, 3% concerns decisions reached w/o a fine[43]).

Table 3: Evolution of HCC's & FCA's decisions by type of decision

CA:	Infringment Decisions (1)				Commitment Decisions (2)	Total (1+2)
	with fine	Settlement	w/o fine	Total		
HCC & FCA	**288**	**73**	**13**	**374**	**89**	**463**
%	*62%*	*16%*	*3%*	*81%*	*19%*	*100%*
HCC	**66**	**4**	**9**	**79**	**10**	**89**
%	*74%*	*4%*	*10%*	*89%*	*11%*	*100%*
1997	1			1		1
2000	2			2		2
2002	3			3		3
2003	5			5		5
2004	2			2		2
2005	2		1	3		3
2006	2		2	4	1	5
2007	7		2	9	1	10
2008	5		1	6	1	7
2009	7		1	8		8
2010	5			5	1	6
2011	5		1	6		6
2012	4			4	2	6
2013	7			7		7
2014	3			3		3
2015	3		1	4	3	7
2017	3	4		7	1	8
FCA	**222**	**69**	**4**	**295**	**79**	**374**
%	*59%*	*18%*	*1%*	*79%*	*21%*	*100%*
2000	16			16	4	20
2001	35			35	3	38
2002	12			12		12
2003	18	2	1	21	2	23
2004	24	4	2	30	2	32

[43] Due to various reasons, for examples small duration of the infringement, insolvency of the defendant, etc,

CA:	Infringment Decisions (1)				Commitment Decisions (2)	Total (1+2)
	with fine	Settlement	w/o fine	Total		
2005	28	4	1	33	4	37
2006	13	2		15	6	21
2007	20	6		26	12	38
2008	10	6		16	5	21
2009	10	7		17	5	22
2010	9	3		12	7	19
2011	3	3		6	5	11
2012	6	5		11	6	17
2013	3	5		8	3	11
2014	3	4		7	5	12
2015	5	5		10	5	15
2016	5	8		13		13
2017	2	5		7	5	12

5.2. Preliminary remarks

The information needed for the construction of our dataset was extracted from texts of infringement HCC & FCA decisions issued from 1996 to 2017 and recorded through "Yes = 1" or "No = 0" responses to the statements as described in the previous Section.

To describe and explain the essential features of the standards of proof of competition investigations, we combine qualitative and quantitative analyses. We use decisions of HCC & FCA and their corresponding Appeal Courts and Supreme Administrative Courts and attribute to these observations quantitative characteristics, including the following:

- type of alleged infringement (abuse of dominance or agreements and concerted practice, Articles 101 and 102 of TFEU, respectively);
- decisions that are considered as violating competition law both as "agreements" and as "unilateral exclusionary conduct", i.e. those that fall under both Articles 101 and 102 TFEU (we include them in both categories).
- indicators of the court decisions (whether the court of first instance upholds or rejects the appeal, whether the parties appeal to a higher court, whether the higher court reverses the outcome of the decision of the first instance)[44];
- duration of the anti-competitive investigation[45] (available only for HCC);

[44] Also note that in the published text of decisions we may not observe the total economic analysis undertaken by the CAs (in the meaning that usually decisions are much shorter and condensed than Statement of Objections, we are not public documents, however).

[45] Duration of investigation = date of the complaint / or initiation of an ex officio investigation to date of HCC decision.

- qualitative features of the alleged investigation.

One drawback is the relative small sample of the decision cases by CA [(HCC: 148 decision cases, of which 79 concluded with an infringement decision and out of them 71 were challenged before court, so far) and (FCA: 678 cases, of which 295 were concluded with an infringement decision (i.e. only 44% of the cases) and of them 171 were challenged before court, so far)] used to assess the quality and coherence of economic evidence by CA. The HCC's and FCA's decisions that are (finally) upheld by court, rate to about 70%[46] and to about 68%[47], respectively.

Further from the above made assumptions analysed when describing the indicators that we will use, we also made the following hypothesis:

- When assessing the values of the indicators we took into consideration also the above mentioned CA's competition enforcement rules.
- We used both the texts of CAs and court decisions. However in the "scorecard" we count only the evidence that each CA undertook. For example, if some additional analysis is submitted by company (defendants/complainant), we do not count it in the score.
- Parallel claims (e.g. in case of more than one defendants) to annul the same infringement decisions (which imply double-counting) are excluded from consideration[48].
- Most of the CA cases, in their first stage of investigation usually concerned mixed cases, i.e. cases with alleged infringements of both articles 101 (case of vertical agreements) and 102 (cases of abuse of dominance) TFEU (and/or the corresponding articles of each national competition law). In these cases we count, as mentioned above, only the article / type of behavior that the infringement was ascertained. In cases where the infringement is ascertained for both articles / types of behavior, we count both infringements (see also above).
- We haven't included in our database the interim and referrals decisions of the CA.
- We haven't included the acquittal or commitments decisions.

[46] I.e. 21 out of 71 HCC's infringement decisions that claim to annul them are filed so far (we did not count for cases whose final decision is still pending in court). This rate concerns the substantive correctness of the HCC's decisions, not the amount of the fine, which is usually partially amended (lower) by court. The courts frequently lower the quantum of the fine. This is thought to happen partly when the courts are not fully persuaded of the robustness of the case and, partly, because the courts apply "proportionality" considerations to reflect concerns about the economic crisis and the undertakings' difficulty to pay. Out of the total decisions upheld by the courts of first instance, the proportion of cases in which the courts reduce the fine varies significantly over the relevant period, ranging from 30% of cases in 2012 – 2013 to 70% in 2016 (due to financial crisis).

[47] I.e. 54 out of 171 FCAs infringement decisions that claim to annul them are filed so far (we did not count for cases whose final decision is still pending in court). This rate concerns the substantive correctness of the FCA's decisions, not the amount of the fine, which is usually partially amended (lower) by court.

[48] Also cases that were concerned as partially annulled in substance, we considered them as annulled.

5.3. Basic Characteristics of HCC's & FCA's dataset on competition enforcement

As we have already stated above, concerning the structure of the sample according to the type of infringement, the **HCC** investigates overall more vertical and horizontal agreements (67%) that abuse of dominance cases. Decisions of the HCC are 'average' in terms of the resources spent: the average duration of an investigation is about 5 year (see Table: Characteristics of infringement of the variables in the dataset below, it is within the average for cases examined in the European Commission)[49] from the submission of the complaint or the initiation of the ex officio investigation to HCC's final decision. Regarding (aggregate) challenged and annulled decisions, around 90% of the infringement decisions were, while 30% of the appeals succeeded.

Table 4: HCC's decisions: total decisions *v.* decisions with infringements

Year	Number of total antitrust decisions (art, 1 & 2)	Number of infringement decisions (art, 1 & 2)	Number of the claims to annul decisions (Court of Appeals / Council of State)	%	Number of finally annulled decisions (Court of Appeals / Council of State)[50]	%
1996	11					
1997	2	1	1	100%	1	100%
1998	4					
1999	0					
2000	3	2	2	100%	2	100%
2001	3					
2002	0	3	3	100%	2	67%
2003	7	5	5	100%	2	40%
2004	4	2	2	100%	1	50%
2005	4	3	3	100%	1	33%
2006	7	4	4	100%	2	50%
2007	13	9	7	78%	3	43%
2008	13	6	5	83%	1	20%
2009	17	8	8	100%	3	38%
2010	14	5	4	80%		0%
2011	9	6	6	100%	2	33%
2012	8	4	4	100%		0%

[49] In specific: horizontal agreements: 4 years, abuse of dominance cases: 5-6 years and vertical agreements 5 years. Based on comparative information from Global Competition Review for the period 2012 – 2016, the average duration of the HCC's cartel investigations and abuse of dominance cases is longer than for some of the other authorities of comparable size or smaller (i.e. Belgium, Lithuania, Portugal and Switzerland). The average duration of cartel investigations and of abuse of dominance cases in these countries are 28 months and 29 months, respectively. However, this is a rough measure and does not take account of other factors that can affect duration, such as the number and complexity of cases each authority investigates simultaneously, procedural differences and time private parties require to provide fully responsive submissions.

[50] There are cases still pending before Greek Courts for the final decision, especially for years 2014-2017. In particular, Court decisions on 13 cases are still pending (8 in Court of Appeals and 5 in Supreme Court).

Year	Number of total antitrust decisions (art, 1 & 2)	Number of infringement decisions (art, 1 & 2)	Number of the claims to annul decisions (Court of Appeals / Council of State)	%	Number of finally annulled decisions (Court of Appeals / Council of State) [50]	%
2013	7	7	7	100%		0%
2014	3	3	3	100%		0%
2015	9	4	4	100%	1	25%
2016	1					
2017	9	7	3	43%		0%
Total	**148**	**79**	**71**	**90%**	**21**	**30%**

Accordingly, concerning the structure of the sample according to the type of infringement, the **FCA** investigates overall more vertical and horizontal agreements ("pure Article 101 cases": 41% and "mixed Article 101 & 102 cases": 21%) than abuse of dominance cases. Regarding (aggregate) appealed and annulled decisions, around 58% of the infringement decisions were appealed out of which 31% of the appeals was successful.

Table 5: FCA's decisions: total decisions v. decisions with infringements

Year	Number of total antitrust decisions (art, L 420-1 & 420-2)	Number of infringement decisions (art, L 420-1 & 420-2)	Number of the claims to annul decisions (in Court of Appeals)	%	Number of finally annulled decisions (Court of Appeals / Supreme Court) [51]	%
2000	33	16	5	31%	2	40.0%
2001	76	35	22	63%	9	40.9%
2002	51	12	10	83%	4	40.0%
2003	60	21	8	38%	2	25.0%
2004	71	30	15	50%	4	26.7%
2005	68	33	21	64%	10	47.6%
2006	38	15	11	73%	3	27.3%
2007	48	26	15	58%	5	33.3%
2008	25	16	8	50%	3	37.5%
2009	34	17	12	71%	3	25.0%
2010	31	12	5	42%	2	40.0%
2011	15	6	4	67%		0.0%
2012	25	11	7	64%	2	28.6%
2013	18	8	7	88%	1	14.3%
2014	20	7	6	86%		0.0%
2015	18	10	7	70%	1	14.3%
2016	24	13	6	46%	2	33.3%

[51] There are cases still pending before French Courts for the final decision, especially for years 2014-2017. In particular, Court decisions on 22 cases are still pending (9 in Court of Appeals and 13 in Supreme Court).

Year	Number of total antitrust decisions (art, L 420-1 & 420-2)	Number of infringement decisions (art, L 420-1 & 420-2)	Number of the claims to annul decisions (in Court of Appeals)	%	Number of finally annulled decisions (Court of Appeals / Supreme Court) [51]	%
2017	23	7	2	29%		0.0%
Total	**678**	**295**	**171**	**58%**	**53**	**31.0%**

We observe that for both CAs the percentage of prohibition decisions almost coincides, namely amounts to 30%. In the analysis below we define as mentioned above five main categories of conduct types[52], which we analyse either separately or in groups as follow:

- A: Concerted (Horizontal) conduct cases
- B: Other Horizontal conduct cases
- C: Vertical Agreements
- D: Exclusionary abuse of dominance conduct cases
- E: Exploitative abuse of dominance conduct cases
- F: Other (abuse of economic dependence) cases

The following Tables and Figures offer a detailed presentation of the prohibition decisions. Concerning the structure of the sample according to the type of infringement, both CA's investigates overall more vertical and horizontal agreements (72.3%) than abuse of dominance cases, for the whole period. In particular, the majority of these concern infringements of Article 101 TFEU and primarily horizontal restrictions. The latter are characterized either as concerted practices, which involve information exchanges and facilitating practices, or as other horizontal agreements, where price fixing or market sharing took place. Some decisions, which involved a complex of agreements and concerted practices, were counted separately. We notice that about 23% of the decisions involve concerted practices based on some form of exchange of information, and mostly within the context of a Trade Association. In most Article 101 TFEU infringements, the participants fixed the level of the price and/or agreed to share the market. We also notice a rapid declining trend over the years in the vertical agreements. Regarding infringements of Article 102 TFEU, exclusionary conduct accounts for about 24% of total decisions (just 4.1% involve exploitative conduct, with the exception of 2015, where 21,4% of total cases concerned exploitative practices). However, we can observe an increase, above the average, since 2013, in abuse of dominance decisions (unilateral abuses).

[52] Due to the small number of observation we did not defined more types of conducts, such as price fixing, resale price maintenance (rpm), tying, market sharing etc.

Table 6: Share of CA's decisions by year and conduct type

Year	Horizontal Agreement (Concerted Practices)	Horizontal Agreement (Other)	Vertical Agreement	Abuse of Dominance (Unilateral Exclusionary practices)	Abuse of Dominance (Exploitative practices)
2000	**50.0%**	18.8%	12.5%	18.8%	0.0%
2001	**37.1%**	25.7%	11.4%	22.9%	2.9%
2002	26.7%	**46.7%**	13.3%	13.3%	0.0%
2003	30.8%	26.9%	11.5%	23.1%	7.7%
2004	**28.1%**	21.9%	6.3%	**37.5%**	6.3%
2005	22.2%	33.3%	**19.4%**	22.2%	2.8%
2006	5.3%	**47.4%**	**21.1%**	21.1%	5.3%
2007	14.7%	**44.1%**	23.5%	11.8%	5.9%
2008	22.7%	**40.9%**	18.2%	18.2%	0.0%
2009	20.0%	16.0%	**28.0%**	32.0%	4.0%
2010	23.5%	**52.9%**	5.9%	17.6%	0.0%
2011	0.0%	**58.3%**	16.7%	25.0%	0.0%
2012	**28.6%**	28.6%	14.3%	21.4%	7.1%
2013	6.7%	**40.0%**	**20.0%**	**33.3%**	0.0%
2014	10.0%	30.0%	10.0%	**40.0%**	10.0%
2015	7.1%	21.4%	**21.4%**	**28.6%**	**21.4%**
2016	**38.5%**	30.8%	15.4%	15.4%	0.0%
2017	21.4%	35.7%	14.3%	**28.6%**	0.0%
Total	**23.0%**	**33.3%**	**16.0%**	23.6%	**4.1%**

Also, in the analysis of determinants and effects (on annulments) of legal standards we use the following variables that reflect:

- Characteristics of the defendant (its market share in the relevant market)
- Characteristics of sanctions (fine or other sanction, or injunction)
- Duration of CA's investigation (available only for HCC)
- Annulment in the first instance[53], i.e. in the Court of Appeal
- Final Annulment that might be the Court of any instance (either Court of Appeals or Supreme Administrative Court).

The Tables below summarise the descriptive statistics of the variables we use, for all of our datasets:

[53] Note that decisions which were not challenged before Court, or are still pending, are not included in our data, henceforth.

Table 7: Characteristics of infringement of the variables in the dataset of HCC

Characteristics	Description	Mean	St. Dev.	Min	Max
Annulment in the first instance	=1 if upheld, = 0 if annulled	0.81		0	1
Final (court) Decision[54]	=1 if upheld, = 0 if annulled	0.64		0	1
Duration of investigation (in years)	duration of NCA investigation	4.78	3.24	0.5	16
Market share of investigated parties	=1 if market share is >50%, = 0 if otherwise	0.67		0	1
Sanction	=1 if monetary payments are imposed, = 0 if otherwise	0.89		0	1

Table 8: Characteristics of infringement of the variables in the dataset of FCA

Characteristics	Description	Mean	Min	Max
Annulment in the first instance	=1 if upheld, = 0 if annulled	0.65	0	1
Final (court) Decision	=1 if upheld, = 0 if annulled	0.65	0	1
Market share of investigated parties	=1 if market share is >50%, = 0 if otherwise	0.57	0	1
Sanction	=1 if monetary payments are imposed, = 0 if otherwise	0.99	0	1

Table 9: Characteristics of infringement of the variables in the dataset of both CAs

Characteristics	Description	Mean	St. Dev.	Min	Max
Annulment in the first instance	=1 if upheld, = 0 if annulled	0.69		0	1
Final (court) Decision	=1 if upheld, = 0 if annulled	0.65		0	1
Market share of investigated parties	=1 if market share is >50%, = 0 if otherwise	0.59		0	1

[54] Cannot be / have not further appealed.

Characteristics	Description	Mean	St. Dev.	Min	Max
Sanction	=1 if monetary payments are imposed, = 0 if otherwise	0.96		0	1

5.4. Legal Standards in HCC's competition enforcement

This section provides descriptive statistics for EB and Sets of EB measured using the approach described above. The objective of this description is threefold. We want, first, to assess time trend of the application of economic analysis in HCC's & FCA's enforcement, second, to analyse the degree of standardization (consistency) of approach that CAs take in respect to different allegedly illegal conducts, and third, to compare the assessments of economic analysis using EB and Sets of EB approach.

5.4.1. EB scores and LS scores over time

Scores of Economics Based Analysis [as described below by Economic Based (EB) index] are relative low over years. Tables below summarise the descriptive statistics of legal standards in investigation of particular types of conducts and conduct groups, and outcomes of judicial review. However the small number of observations (for each CA) makes year-to-year comparisons difficult (see also Table 24, in Appendix).

Table 10: Share of decisions for any given level of EB score

Type of conduct	EB=1	EB=2	EB=3	EB=4	EB=5	EB=6
HCC		0.08	0.41	0.37	0.15	
Horizontal Agreement (Concerted Practices)		0.11	**0.56**	0.11	0.22	
Horizontal Agreement (Other)		0.18	**0.41**	0.27	0.14	
Vertical Agreement		0	**0.45**	**0.5**	0.05	
Abuse of Dominance (Unilateral Exclusionary practices)		0	0.14	**0.57**	0.29	
Abuse of Dominance (Exploitative practices)		0	1	0	0	
Other		0.2	0.8	0	0	
FCA	**0.01**	**0.06**	**0.37**	**0.5**	**0.05**	**0.01**
Horizontal Agreement (Concerted Practices)	0	0.11	0.28	**0.55**	0.07	0
Horizontal Agreement (Other)	0.03	0.08	**0.43**	**0.42**	0.05	0
Vertical Agreement	0.03	0.03	**0.46**	**0.38**	0.08	0.03

Type of conduct	EB=1	EB=2	EB=3	EB=4	EB=5	EB=6
Abuse of Dominance (Unilateral Exclusionary practices)	0	0.02	0.3	**0.65**	0.02	0.02
Abuse of Dominance (Exploitative practices)	0	0	**0.54**	0.38	0.08	0
HCC & FCA	**0.01**	**0.06**	**0.37**	**0.5**	**0.05**	**0.01**
Horizontal Agreement (Concerted Practices)	0	0.11	0.31	0.51	0.08	0
Horizontal Agreement (Other)	0.02	0.1	0.42	0.39	0.07	0
Vertical Agreement	0.02	0.02	0.46	0.42	0.07	0.02
Abuse of Dominance (Unilateral Exclusionary practices)	0	0.01	0.26	0.63	0.08	0.01
Abuse of Dominance (Exploitative practices)	0	0	0.6	0.33	0.07	0

Table 11: Number of decisions finally annulled for any given level of EB score

Type of conduct	EB=1	EB=2	EB=3	EB=4	EB=5	Total
HCC		**4**	**10**	**4**	**3**	**21**
Horizontal Agreement (Concerted Practices)			1		1	2
Horizontal Agreement (Other)		3		1		4
Vertical Agreement			5	2		7
Abuse of Dominance (Unilateral Exclusionary practices)			1	1	2	4
Abuse of Dominance (Exploitative practices)			1			1
Other		1	2			3
FCA	**1**	**1**	**23**	**22**	**6**	**53**
Horizontal Agreement (Concerted Practices)		**1**	**5**	**6**	**1**	**13**
Horizontal Agreement (Other)			10	5	2	17
Vertical Agreement	1		2	4	2	9

Type of conduct	EB=1	EB=2	EB=3	EB=4	EB=5	Total
Abuse of Dominance (Unilateral Exclusionary practices)			2	6		8
Abuse of Dominance (Exploitative practices)			4	1	1	6
HCC & FCA*	**1**	**4**	**31**	**26**	**9**	**71**
Horizontal Agreement (Concerted Practices)		**1**	**6**	**6**	**2**	**15**
Horizontal Agreement (Other)		3	10	6	2	21
Vertical Agreement	1		7	6	2	16
Abuse of Dominance (Unilateral Exclusionary practices)			3	7	2	12
Abuse of Dominance (Exploitative practices)			5	1	1	7

*For comparison reasons we do not include HCC's "other type of conduct" in the aggregate dataset

Table 12: HCC - Descriptive Statistics for SEB-scores by type of conduct

	Type of conduct	Concerted (Horizontal)	Other Horizontal	Vertical	Exclusionary AoD*	Exploitative AoD*	Other	Av.
SPS								
	mean	2.00	2.00				2.00	2.00
	number	1	4				1	6
	number of annulled decisions		3				1	4
	%	0%	75%				100%	67%
MPS								
	mean	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	number	5	9	9	3	2	4	32
	number of annulled decisions	1		5	1	1	2	10
	%	20%	0%	56%	33%	50%	50%	31%
TEB								
	mean	4.00	4.00	4.00	4.00			4.00
	number	1	6	10	12			29
	number of annulled decisions		1	2	1			4
	%	0%	17%	20%	8%			14%
Intermediate between TEB and FEB								
	mean	5.00	5.00	5.00	5.00			5.00
	number	2	3	1	6			12
	number of annulled decisions	1			2			3
	%	50%	0%	0%	33%			25%
Av.								
	mean	3.44	3.36	3.60	4.14	3.00	2.80	3.59
	number	9	22	20	21	2	5	79
	number of annulled decisions	2	4	7	4	1	3	21
	%	22%	18%	35%	19%	50%	60%	27%

*= *AoD = Abuse of Dominance*

Table 13: FCA - Descriptive Statistics for SEB-scores by type of conduct

	Type of conduct	Concerted (Horizontal)	Other Horizontal	Vertical	Exclusionary AoD*	Exploitative AoD*	Av.
SPS							
	mean	2.00	1.73	1.50	2.00		1.82
	number	8	11	2	1		22

	Type of conduct	Concerted (Horizontal)	Other Horizontal	Vertical	Exclusionary AoD*	Exploitative AoD*	Av.
	number of annulled decisions	1		1			2
	%	13%	0%	50%	0%		9%
MPS							
	mean	**3.00**	**3.00**	**3.00**	**3.00**	**3.00**	**3.00**
	number	**21**	**43**	**18**	**20**	**7**	**109**
	number of annulled decisions	5	10	2	2	4	24
	%	24%	23%	11%	10%	57%	22%
TEB							
	mean	**4.00**	**4.00**	**4.00**	**4.00**	**4.00**	**4.00**
	number	**42**	**42**	**15**	**43**	**5**	**147**
	number of annulled decisions	6	5	4	6	1	22
	%	14%	12%	27%	14%	20%	15%
Intermediate between TEB and FEB							
	mean	5.00	5.00	5.25	5.50	5.00	5.12
	number	5	5	4	2	1	17
	number of annulled decisions	1	2	2		1	6
	%	20%	40%	50%	0%	100%	35%
Av.							
	mean	3.58	3.38	3.54	3.71	3.54	3.53
	number	76	101	39	66	13	295
	number of annulled decisions	13	17	9	8	6	53
	%	17%	17%	23%	12%	46%	18%

**= AoD = Abuse of Dominance*

The conclusions that one can deduct from the above Tables for **HCC and FCA** (see also Table 26, Table 27, Table 28, Table 29, in Appendix) are the following: a) economic analysis measured by EB does not increase over time, b) structure of the database changes does not differ significantly over time, c) absolute and relative number of exploitative conduct cases is negligible, and d) number of cases on other than exploitative abuses seems quite stable over years.

The same conclusion stands also for the annulments, over time. Share of annulled decisions starts to decrease from 2006. In groups A and B (Horizontal Practices) the share of annulled decisions is very low (only 6.5% over the years). For many types of conduct no clear

conclusion can be made due to the small number of observations, however it seems that there is a slight increase in the use of economics and the EB score since 2009 rates above 4.

Conduct cases on Abuse of Dominance (Unilateral Exclusionary practices, group D) demonstrate the highest average level of EB scores. Horizontal and Vertical Agreements demonstrate almost the same EB scores on average. No trends are obvious; however the score in Horizontal Agreements ranges from 2 to 5, while for vertical agreements ranges from 3 to 4. Also, from the SEB analysis by year, it is obvious that there is a higher concentration of cases over time on MPS and TEB legal standards.

Comparison of the above data on EB score and SEB, allows us to form a conclusion on the consistency of analysis in particular conduct groups. So it seems that in the majority of HCC's cases, HCC and FCA apply (as a standard) mainly MPS and TEB legal standards to Horizontal and Vertical Agreements, while for (Exclusionary) Abuse of Dominance cases, mainly TEB and Intermediate between TEB and FEB. Overall, variation of both EB and SEB score is small.

Also, as we can see form the Table 30, in Appendix, in almost all cases there is a minimum economic analysis either in the form of discussion of the nature and characteristics of the alleged conduct (column A) or in the form of basic market analysis (column B1). There is no case where a balancing of anti- competitive and pro-competitive effects of the conduct has been undertaken (column D2 for HCC and columns D1 and D2 for FCA), over and above of any analysis undertaken under efficiencies tests (column C.3).

As one can conclude from the data collected on HCC's infringement decisions, the types of effect analysis are different for different types of infringement:

- In abuse of dominance decisions investigation evidence is slightly more concentrated on the harm to competition (C1 UEC) than other types if conduct.
- In all vertical agreements and abuse of dominance cases, as it was expected, interaction between market players is always analysed.
- In all types of infringements (Article 1 and 2 / Article L 420-1 and 420-2 / Article 101 and 102) analysis of the expected efficiencies from the conduct that create benefits to consumers is almost never presented (only in seven decisions of Article 1 & five of Article 2 for HCC and 12 decisions in FCA).

Following the above analysis on the Construction of the EB – Indicators, we may construct the following 11 sets of decisions, allowing for "breaks" (or "jumps") in the sets of decisions. So we grouped decisions (EB-Indicators) that could still be compared between themselves in order to identify the effects of additional economic analysis. For example indicator D2 is missing from all decisions, while B2 is identified only in 2 cases. We notice that **HCC** seems to favor two certain legal standards: MPS [in particular **S3.1={A,B1,C1}**]

(27% of cases) and TEB [in particular **S4.1={A,B1,C1, C2}**] (32% of cases)[55]. Correspondingly, **FCA** seems to favor two certain legal standards: MPS [in particular **S3.1={A,B1,C1}**] (25% of cases) and TEB [in particular **S4.1={A,B1,C1, C2}**] (46% of cases)[56].

Following the above analysis on the Construction of the EB – Indicators, we may construct the following 21 sets of decisions, allowing for "breaks" (or "jumps") in the sets of decisions. So we grouped decisions (EB-Indicators) that could still be compared between themselves in order to identify the effects of additional economic analysis. For example indicator D2 is missing from all decisions, while B2 is identified only in 6 cases.

Finally, the Tables below for the aggregate data of both CAs under consideration are summarised as follows. The conclusions that one can deduct from the above Tables are the same as the ones already mentioned above.

The same conclusion stands also for the annulments, over time. Share of annulled decisions remain stable over the years. For many types of conduct no clear conclusion can be made due to the small number of observations, however it seems that there is a slight increase in the use of economics and the EB score since 2010 (for almost all years) rates above 4, for exclusionary abuse o dominance cases.

Conduct cases on Abuse of Dominance (Unilateral Exclusionary practices, group D) demonstrate the highest average level of EB scores. Horizontal and Vertical Agreements demonstrate almost the same EB scores on average. No trends are obvious; however the score in horizontal Agreements and vertical agreements ranges from 3 to 4. Also, from the SEB analysis by year, it is obvious that there is a higher concentration of cases over time on MPS and TEB legal standards. Also, it seems that in the majority of CA's cases, CA applies (as a standard) mainly MPS and TEB legal standards to Horizontal and Vertical Agreements, while for (Exclusionary) Abuse of Dominance cases, mainly TEB Overall, variation of both EB and SEB score is small.

I addition, as we can derive from the following Tables, in almost all cases there is a minimum economic analysis either in the form of discussion of the nature and characteristics of the alleged conduct (column A) or in the form of basic market analysis (column B1). There is no case where a balancing of anti- competitive and pro-competitive effects or counterfactual analysis of the conduct has been undertaken (columns D1 and D2), over and above of any analysis undertaken under efficiencies tests (column C.3).

As one can conclude from the data collected on HCC's infringement decisions, the types of effect analysis are different for different types of infringement:

[55] See Appendix, Table 28.
[56] See Appendix ...

- In abuse of dominance decisions investigation evidence is slightly more concentrated on the harm to competition (C1 UEC) than other types if conduct.
- In all vertical agreements and abuse of dominance cases, as it was expected, interaction between market players is always analysed.

Following the above analysis on the Construction of the EB – Indicators, we may construct the following 21 sets of decisions, allowing for "breaks" (or "jumps") in the sets of decisions. So we grouped decisions (EB-Indicators) that could still be compared between themselves in order to identify the effects of additional economic analysis. For example indicator D2 is missing from all decisions, while B2 is identified only in 8 cases. We notice that HCC seems to favor two certain legal standards: MPS [in particular **S3.1={A,B1,C1}**] (25.1% of cases) and TEB [in particular **S4.1={A,B1,C1, C2}**] (43.6% of cases)[57].

[57] See Appendix, Table 27 andTable 29.

Table 14: CAs (HCC&FCA) - Descriptive Statistics for Economics Based Analysis score

Type of conduct	Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Av. For period
Horizontal Agreement (Concerted Practices)																				
	mean	3.63	3.46	3.75	3.50	3.56	3.75	3.00	4.20	3.20	3.40	3.25		4.00	3.00	4.00	4.00	3.40	3.33	3.56
	number	8	13	4	8	9	8	1	5	5	5	4		4	1	1	1	5	3	85
	number of annulled decisions	1	4	3		1		1	2	1		1		1						15
	%	13%	31%	75%	0%	11%	0%	100%	40%	20%	0%	25%		25%	0%	0%	0%	0%	0%	18%
Horizontal Agreement (Other)																				
	mean	3.67	2.78	3.71	4.00	3.71	3.50	3.33	3.60	3.22	2.75	3.44	3.43	3.00	3.50	3.00	3.00	2.25	3.60	3.37
	number	3	9	7	7	7	12	9	15	9	4	9	7	4	6	3	3	4	5	123
	number of annulled decisions	1	1	2	1	1	5	2	3	2	1	1						1		21
	%	33%	11%	29%	14%	14%	42%	22%	20%	22%	25%	11%						25%		17%
Vertical Agreement																				
	mean	3.50	3.00	3.50	4.33	3.00	3.57	3.75	3.13	3.75	3.57	3.00	3.50	3.50	5.00	4.00	4.00	3.50	2.50	3.56
	number	2	4	2	3	2	7	4	8	4	7	1	2	2	3	1	3	2	2	59
	number of annulled decisions		2	1	2	1	3	1	1	1	4									16
	%	0%	50%	50%	67%	50%	43%	25%	13%	25%	57%	0%	0%	0%	0%	0%	0%	0%	0%	27%
Abuse of Dominance (Unilateral Exclusionary practices)																				
	mean	4.00	3.75	4.00	3.83	3.75	3.63	4.00	3.75	3.50	3.50	4.00	4.67	4.00	4.20	3.50	3.75	4.00	**4.00**	3.82
	number	3	8	2	6	12	8	4	4	4	8	3	3	3	5	4	4	2	4	12
	number of annulled decisions		1			1	3	1			1		2		1		1	1		11
	%	0%	13%	0%	0%	8%	38%	25%	0%	0%	13%	0%	67%	0%	20%	0%	25%	50%	0%	92%

Type of conduct	Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Av. For period
Abuse of Dominance (Exploitative practices)																				
	mean		3.00		3.00	4.00	3.00	3.00	4.00		4.00			3.00		4.00	3.33			3.47
	number		1		2	2	1	1	2		1			1		1	3			15
	number of annulled decisions		1		1	1			2					1			1			7
	%		100%		50%	50%	0%	0%	100%		0%			100%		0%	33%			47%
All types of conduct																				
	mean	3.69	3.29	3.73	3.77	3.66	3.58	3.53	3.62	3.36	3.40	3.47	3.75	3.57	4.00	3.50	3.57	3.15	3.50	3.56
	number	16	35	15	26	32	36	19	34	22	25	17	12	14	15	10	14	13	14	369
	number of annulled decisions	2	9	6	4	5	11	5	8	4	6	2	2	2	1		2	2		71
	%	13%	26%	40%	15%	16%	31%	26%	24%	18%	24%	12%	17%	14%	7%	0%	14%	15%	0%	19%

Table 15: CAs (HCC&FCA) - Descriptive Statistics for SEB-scores by type of conduct

	Type of conduct	Concerted (Horizontal)	Other Horizontal	Vertical	Exclusionary AoD*	Exploitative AoD*	Av.
SPS							
	mean	2.00	1.80	1.50	2.00		1.85
	number	9	15	2	1		27
	number of annulled decisions	1	3	1			5
	%	11%	20%	50%	0%		19%
MPS							
	mean	3.00	3.00	3.00	3.00	3.00	3.00
	number	26	52	27	23	9	137
	number of annulled decisions	6	10	7	3	5	31
	%	23%	19%	26%	13%	56%	23%
TEB							
	mean	4.00	4.00	4.00	4.00	4.00	4.00
	number	43	48	25	55	5	176
	number of annulled decisions	6	6	6	7	1	26
	%	14%	13%	24%	13%	20%	15%
Intermediate between TEB and FEB							
	mean	5.00	5.00	5.20	5.13	5.00	5.07
	number	7	8	5	8	1	29
	number of annulled decisions	2	2	2	2	1	9
	%	29%	25%	40%	25%	100%	31%
Av.							
	mean	3.56	3.37	3.56	3.82	3.47	3.56
	number	85	123	59	87	15	369
	number of annulled decisions	15	21	16	12	7	71
	%	18%	17%	27%	14%	47%	19%

**= AoD = Abuse of Dominance*

Table 16: CAs (HCC&FCA) - Descriptive Statistics for SEB-scores by year

Type of conduct		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Av.
SPS																				
	mean	2.00	1.63		2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00		2.00				2.00	2.00	1.85
	number	1	8		2	3	1	2	1	2	1	1		1				3	1	27
	number of annulled decisions		2					1	1	1										5
	%	0%	25%		0%	0%	0%	50%	100%	50%	0%	0%		0%				0%	0%	19%
MPS																				
	mean	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	number	5	7	4	4	6	17	7	17	11	13	8	5	5	6	5	7	5	5	**137**
	number of annulled decisions	1	3	3	1	1	7	1	4	1	3	1		1	1		2	1		31
	%	20%	43%	75%	25%	17%	41%	14%	24%	9%	23%	13%	0%	20%	17%	0%	29%	20%	0%	23%
TEB																				
	mean	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	number	8	19	11	18	22	14	8	10	8	11	6	5	7	5	5	6	5	8	**176**
	number of annulled decisions	1	3	3	2	4	4	2		1	3		1	1				1		25
	%	13%	16%	27%	11%	18%	29%	25%	0%	13%	27%	0%	20%	14%	0%	0%	0%	20%	0%	14%
Intermediate between TEB and FEB																				
	mean	5.00	5.00		5.00	5.00	5.00	5.00	5.00	5.00		5.00	5.00	5.00	5.50		5.00			5.07
	number	2	1		2	1	4	2	6	1		2	2	1	4		1			29
	number of annulled decisions		1		1			1	3	1		1	1							9
	%	0%	100%		50%	0%	0%	50%	50%	100%		50%	50%	0%	0%		0%			31%
Av.																				

Type of conduct		**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**Av.**
	mean	3.69	3.29	3.73	3.77	3.66	3.58	3.53	3.62	3.36	3.40	3.47	3.75	3.57	4.00	3.50	3.57	3.15	3.50	3.56
	number	16	35	15	26	32	36	19	34	22	25	17	12	14	15	10	14	13	14	369
	number of annulled decisions	2	9	6	4	5	11	5	8	4	6	2	2	2	1		2	2		71
	%	13%	26%	40%	15%	16%	31%	26%	24%	18%	24%	12%	17%	14%	7%	0%	14%	15%	0%	19%

Table 17 below, deepens descriptive analysis of both quality of decisions and legal uncertainty for non-exploitative conducts and also presents quality of the decisions reached. We use several indicators of deviation of legal standards from what is considered as best practice in international antitrust (optimal), using the approach of measuring

- ✓ weighted average legal standard (WALS),
- ✓ legal standard with highest share and
- ✓ 2 neighboring legal standards with highest cumulative share in the sample.

First of all we notice that for the conducts, which are traditionally illegal per se (price fixing and concerted practices); weighted average legal standard is similar. Secondly the dominant legal standard seems to be EB=3 or 4 for either conduct group. The highest share of legal standard is the case for D (exclusionary abuse) conducts groups, which is above 50%. This suggests relative high level of legal certainty for either conduct. Thirdly, under 'two-peaked distribution' of legal standards, distance between two peaks is close. For all types of conducts decisions are concentrated around either MPS or TEB, and the other peak is TEB or MPS respectively.

There are 2 indicators in Table 17 measuring legal (un) certainty. The first one is the index of concentration of legal standards (i.e. HHI concentration index calculated for the shares multiplied by 100) and the second is the standard deviation. The higher concentration of LS is the one for Group D.

Two indicators measure legal quality of enforcement as a location of WALS or most typical legal standard within the interval from the most distant to best practice point. For the most distant point the value of indicator refers to zero, and for the point of best practice is one. This approach allows us to range quality of enforcement for different conducts. We can see from Table 17 that Concerted Practices and Vertical Agreements have the lowest legal quality of decisions. Horizontal Price-fixing exhibits the highest legal quality according to both types of indicators, but this observation reflects only 'small amount of excessive analysis' in comparison to per se approach that is first best for this type of conduct.

Table 17: Indicators of legal quality and legal (un)certainty for particular conducts and conduct groups

HCC	(Horizontal) Price Fixing	(Horizontal) Concerted Practices	Vertical Agreements	Exclusionary Conduct
	(Number of observations 22)	(Number of observations 9)	(Number of observations 20)	(Number of observations 21)
	[optimal: 1]	[optimal: 8]	[optimal: 8]	[optimal: 8]
WALS (1 to 8)	3.36	3.44	3.60	4.14
LS with highest share (s)	3/0.41	3/0.56	4/0.50	4/0.57

HCC	(Horizontal) Price Fixing	(Horizontal) Concerted Practices	Vertical Agreements	Exclusionary Conduct
Two LSs with highest sum of two neighboring shares	3.4/0.68	3.4/0.67	3.4/0.95	4.5/0.86
Index of Concentrations of LSs [I_{CON} (Indirect index of uncertainty)]	29	38	46	43
Index of Uncertainty [I_U]	0.12	0.21	0.26	0.24
Quality of Enforcement: $I_{Q,1}$, $0 \leq I_{Q,1} \leq 7$	4.64	2.44	2.60	3.14
Quality of Enforcement: $I_{Q,2}$, $0 \leq I_{Q,2} \leq 7$	5	2	3	3

NOTES: "Optimal": according to what economic theory suggests
WALS= Weighted Average Legal Standard

$$I_{CON} = 100 * \sum_{1}^{8} s_i^2 \text{ , } 12. \leq I_{CON} \leq 100$$

I_U= standard deviation of shares, $0 \leq I_U \leq 1$
$I_{Q,1}$=7-D_1, $D_{1=}$ Deviation of WALS from optimal, $0 \leq D_1 \leq 7$
$I_{Q,2}$=7-D_2, $D_{2=}$ Deviation of WALS from optimal, $0 \leq D_2 \leq 7$

FCA	(Horizontal) Price Fixing	(Horizontal) Concerted Practices	Vertical Agreements	Exclusionary Conduct
	(Number of observations 101)	(Number of observations 76)	(Number of observations 39)	(Number of observations 66)
	[optimal: 1]	[optimal: 8]	[optimal: 8]	[optimal: 8]
WALS (1 to 8)	3.13	3.25	3.00	3.55
LS with highest share (s)	3/0.43	4/0.55	3/0.46	4/0.65
Two LSs with highest sum of two neighboring shares	3.4/0.84	3.4/0.83	3.4/0.85	3.4/0.95
Index of Concentrations of LSs [I_{CON} (Indirect index of uncertainty)]	36	39	36	52
Index of Uncertainty [I_U]	0.21	0.24	0.23	0.31
Quality of Enforcement: $I_{Q,1}$, $0 \leq I_{Q,1} \leq 7$	4.87	2.25	2.00	2.55
Quality of Enforcement: $I_{Q,2}$, $0 \leq I_{Q,2} \leq 7$	5	3	2	3

HCC & FCA	(Horizontal) Price Fixing	(Horizontal) Concerted Practices	Vertical Agreements	Exclusionary Conduct
	(Number of observations 123)	(Number of observations 85)	(Number of observations 59)	(Number of observations 87)
	[optimal: 1]	[optimal: 8]	[optimal: 8]	[optimal: 8]
WALS (1 to 8)	3.05	3.15	3.12	3.34
LS with highest share (s)	3/0.42	4/0.51	3/0.46	4/0.63
Two LSs with highest sum of two neighboring shares	3.4/0.81	3.4/0.81	3.4/0.88	3.4/0.90
Index of Concentrations of LSs [I_{CON} (Indirect index of uncertainty)]	34	36	39	47
Index of Uncertainty [I_U]	0.20	0.22	0.25	0.30
Quality of Enforcement: $I_{Q,1}$, $0 \leq I_{Q,1} \leq 7$	4.95	2.15	2.12	2.34
Quality of Enforcement: $I_{Q,2}$, $0 \leq I_{Q,2} \leq 7$	5	3	2	3

6. Factors that affect the choice of legal standards

The objective of our analysis in this section is to explain the choice of legal standard (EB score and SEB) across our sample. We use econometric analysis of the factors that could influence the choice of SEB, as well as of the influence of SEB on annulments and time of investigation. There is an evident "reverse causality" (endogeneity) problem, since if the choice of SEB affects the probability of annulment and time of investigation, then a CA takes this effect into account when deciding on legal standards. However, for our analysis we assume that the CA does not take into account the endogeneity issue as relevant.

One specific reason for this assumption is the fact that three dependent variables of our model are affected by the choice of different agents in a competition case. Even more important is the fact that we observe only part of possible outcomes in every decision. CA decides on SEB maximizing objective function under the influence of legal rules. In turn, SEB affects the outcome of investigation (to conclude to an infringement decision or not). In turn, undertakings that are found infringing competition law, decide whether to challenge a decision. In our analysis, we observe only the part of investigations that result in infringement decision, and among infringement decision – only the decisions that are appealed. The choice of a CA on SEB affects the strategy of evidence presentation under judicial review both by undertakings and CA, as well as the assessment the evidence from both parties by the Court. Evidence presented by the parties and assessment of the contested evidence by Court affects the outcome of judicial review. So, the characteristics of parties as well as their efforts under litigation affect the outcome we observe.

We derive our empirical hypotheses from the following models of decisions. CA minimizes legal errors under investigation, and for infringement decision – the probability for the decision to be annulled. There is budget and human constraint for competition authority, including time constraint (e.g. due to prescription). Deviation of optimal SEB from full effect-based analysis ceteris paribus is larger if time cost for 'additional' piece of analysis to expand SEB is higher.

Court assesses infringement decision in two steps. Firstly, the Court decides whether competition authority applies relevant legal standard to investigation, and, secondly, the Court decides whether competition authority applies all the economic analysis under the legal standard correctly. That is why SEB may provide opposite influence on the probability that court considers evidence presented by HCC is not sufficient to support infringement decision.

Similar logic can be applied also to the duration of the investigation. When a CA chooses to apply "relevant" (or higher than relevant) legal standard, in a correct manner, then higher legal standard may result in higher investigation period, since it may make the particular case more complex Finally, when deciding on legal standard, CA usually takes all complex of factors into consideration.

Taking all of the above into consideration, we present the econometric results of our analysis using a) Sets as a dependent variable and b) hypotheses regarding the factors that could influence the choice of legal standard by HCC.

I. Choice of the Set depends on CA's judicial experience (annulled decisions or not)

To test the hypothesis on the importance of judicial review to choose the legal standard, i.e. whether the upheld or annulment provide larger affect on the choice of legal standard, we generate two variables of the legal standards of the decisions under judicial review. In this case we assume that there is a lag between particular judicial decision, and on the other, effect of the judgment is limited in time. Because of that 5 last decisions for particular conduct group are ignored, and from next 10 decisions submitted for annulment we calculate:

- Average set of the sub-group of decisions that finally upheld
- Average set of the sub-group of decisions that were finally annulled

II. Choice of the Set depends on penalties (fines and injunctions)

We expect that in case a CA aims to decrease the probability of annulment of its decisions higher sanctions correspond to higher legal standards. The logic is as follows. Fines and injunctions affect profitability of defendants thus urging them to undertake additional efforts to annul infringement decision. For HCC to ensure that its decision will be upheld in Court has to provide additional arguments to prove the infringement, thus increasing legal standards. However, in cases that CA aimed to decrease the probability of enforcement error this effect may not exist.

One factor variable is included in our regression model: binary variable of fine[58]. Fines always increase losses (costs) of the defendant.

III. Choice of the Set depends on defendant's market share

We expect that in case a CA aims to decrease the probability of annulment of its decisions higher legal standards have to be applied in cases against companies that possess a high market share, since usually they have more resources to defend their interests in Court. Implicitly it is assumed that legal standards reflect efforts undertaken by CA to ensure its decision is upheld.

So the variable included into the regression model is: binary variable of undertakings market share (in the market defined in each competition decision).

IV. Choice of the Set depends on the type of conduct

We distinguish between conducts that are considered usually as Per Se illegal conducts and those to which Rule of Reason can be applied (binary variable ROR[59]) assuming that the latter cases demand higher standards of evidence. We also use the control variable of conduct group (5 groups, see Sections above).

V. Choice of the Set depends on HCC's in investigation of this type of conduct

To test the hypothesis we construct a variable of Group experience as logarithm of the number of cases of the particular group initiated/handled in the past.

Statistical significance of the variable would reflect existence of general trends (positive or negative) in development of legal standards over time. On one hand costs of application of a certain legal standard decrease with experience of competition authority. This could lead to an increasing trend in the level of legal standards for each particular type of conduct. On the other hand experience in investigation of a particular type of practice makes it clearer for the competition authority a) whether increase in the legal standard lead to positive effect in terms of the CA utility function (no matter which are arguments in this utility function); b) whether this effect is broad enough to compensate increase in the cost of investigation. In case of negative answer for (a) or (b) one should not expect increasing trend in the level of legal standards.

The results presented in the following Tables are for all types of conducts other for **both CA's**. The analysis by type of conduct group and exploitative conducts are omitted when the results are inconclusive due to the small number of observations[60].

[58] There is no infringement decision in HCC's record that resulted in injunctions or other remedies.
[59] We include the following type of conducts: Price Fixing, Concerted Practices and Vertical Agreements.
[60] The results of this analysis by CA were inconsistent, however we present the result for the binary variable Annulment / Upheld decision in Appendix, Table 31 and Table 32.

Table 18: Determinants of SEBs – all types of conducts

(dependent variable: SEB)	**Set**	**Set>1**	**Set>2**	**Set>3**	**Set>4**
Average Set of decisions that were finally upheld	0.35 (0.94)	0.35 (0.94)	0.31 (0.96)	0.31 (0.96)	0.31 (0.96)
Average Set of decisions that were finally annulled	-0.29 (0.68)	-0.29 (0.68)	-0.67 (0.75)	-0.67 (0.75)	-0.67 (0.75)
Group Experience	0.35 (0.42)	0.35 (0.42)	0.41 (0.44)	0.41 (0.44)	0.41 (0.44)
Fine	1.38** (0.77)	1.38** (0.77)	-1.79** (0.82)	-1.79** (0.82)	-1.79** (0.82)
Undertaking's market power	1.10** (0.49)	1.10** (0.49)	1.61** (0.53)	1.61** (0.53)	1.61** (0.53)
ROR	0.64 (0.77)	0.64 (0.77)	0.67 (0.81)	0.67 (0.81)	0.67 (0.81)
Group	-0.19 (0.49)	-0.19 (0.49)	-0.39 (0.30)	-0.39 (0.30)	-0.39 (0.30)
Number of observations	79	79	75	75	75
Prob F-stat	0.1465	0.1465	0.0225	0.0225	0.0225
Pseudo R2	0.0374	0.0374	0.0633	0.0633	0.0633

*, **, ***: indicates that the parameter is significantly different from zero on the 10%, 5% or 1%, respectively

The table contains regression coefficients, the numbers in parentheses are their standard errors

The conclusions for both **HCC & FCA** could be summarised as follows:

a) Group variable outcomes have negative impact on the Set, but it is not statistical significant at any level.
b) Effects of fines are not statistically significant.
c) Effects of undertakings characteristics (market share) on legal standards are positive and statistically significant.
d) Effects of judicial review (average set of decisions that were finally upheld or annulled) on legal standards remain stable as we move from Set 1 to higher Sets of economic analysis and statistically not significant.

7. Factors that affect the probability of annulment of HCC's infringement decisions

This Section aims to assess impact of legal standards on the probability of HCC's decision annulment. As dependent (binary) variables we use both HCC decision annulments by the Court of Appeals (first instance) and of final annulment (as defined above).

So we present the econometric results of our analysis using a) annulment decisions as a dependent variable and b) hypotheses regarding the factors that could influence the probability of annulment.

I. Probability of annulment of HCC's decisions depends on fines

We expect that higher fines increase the probability of annulment of HCC's decisions. This is due to the fact that fine affects directly the profitability of defendants, therefore the latter use their best endeavours to seek the annulment of the HCC's decision imposing the fine. Judges may also require stronger arguments to uphold infringement decision. Thus the variable factor that is included in the regression model is the binary variable of fine.

II. Probability of annulment of HCC's decisions depends on defendant's market share

We expect that undertakings that possess higher market share devote more resources in court proceeding and thus (probably) win cases more often. So the variable factor included in our regression model is the binary variable of undertaking's market share.

III. Probability of annulment of HCC's decisions depends on the type of conduct.

We distinguish between conducts that are usually considered as Per Se illegal conducts and those to which Rule of Reason can be applied (binary variable ROR) assuming that the latter cases demand higher standards of evidence. We also use the control variable of conduct group (5 groups, see Sections above).

As our dependent variable (annulment) is a categorical one we estimate logistic regression. The results presented in the following Table are for all types of conducts. The analysis by set, conduct group and exploitative conducts are omitted when the results are inconclusive due to the small number of observations.

Table 19: Determinants of annulment of HCC's decisions – all types of conducts

(dependent variable: Annulment)	**Annulment (Court of Appeals)**	**Final Annulment**
Set	-0.10 (0.14)	-0.10 (0.10)
Fine	2.74** (1.24)	0.84** (0.387)
Undertaking's market power	2.36** (1.03)	1.51** (0.72)
Group	-0.70** (0.35)	-0.52** (0.29)
ROR	0.64 (1.21)	0.68 (0.85)
_cons	0.46 (1.75)	0.56 (1.41)
Number of observations	63	63

Prob F-stat	0.0112	0.0939
Pseudo R2	0.2416	0.1102

*, **, ***: indicates that the parameter is significantly different from zero on the 10%, 5% or 1%, respectively
The table contains regression coefficients, the numbers in parentheses are their standard errors

The conclusions (from both Tables) could be summarised as follows:

a) Group variable outcomes have negative impact on the probability of annulment that is statistically significant.
b) Effects of legal standards (set) are also negative and not statistically significant, but for the case of Final Annulment in Table 19.
c) Effects of fines and undertakings characteristics (market share) are positive and statistically significant (for annulments in Court of Appeals).

Regarding the **FCA**:

Table 20: Determinants of annulment of FCA's decisions – all types of conducts

(dependent variable: Annulment)	**Annulment (Court of Appeals)**	**Final Annulment**
Set	-0.15** (0.07)	-1.74** (0.07)
Fine	(omitted)	(omitted)
Undertaking's market power	0.51 (0.44)	0.67 (0.45)
Group	-0.22 (0.27)	-0.29 (0.28)
ROR	0.27 (0.79)	0.29 (0.80)
_cons	1.91** (0.71)	2.16** (0.73)
Number of observations	152	152
Prob F-stat	0.1996	0.0989
Pseudo R2	0.0305	0.0400

*, **, ***: indicates that the parameter is significantly different from zero on the 10%, 5% or 1%, respectively
The table contains regression coefficients, the numbers in parentheses are their standard errors

The conclusions (from both Tables) could be summarised as follows:

a) Group variable outcomes have negative impact on the probability of (final) annulment.
b) Effects of on legal standards (set) are also negative but not statistically significant, but for the case of Final Annulment in **Ошибка! Источник ссылки не найден.**.

c) Effects of fines and undertakings characteristics (market share) are positive and statistically significant (for annulments in Court of Appeals).

Finally, for the aggregate data for both **CAs**:

Table 21: Determinants of annulment of CA's decisions – all types of conducts

(dependent variable: Annulment)	**Annulment (Court of Appeals)**	**Final Annulment**
Set	-0.06 (0.03)	-0.09** (0.37)
Fine	1.22 (0.80)	1.05 (0.81)
Undertaking's market power	0.82** (0.37)	0.90** (0.37)
Group	-0.23 (0.17)	-0.34* (0.17)
ROR	0.19 (0.53)	0.30 (0.53)
_cons	0.31 (0.96)	0.92 (0.97)
Number of observations	224	224
Prob F-stat	0.0717	0.0104
Pseudo R2	0.0373	0.0539

*, **, *** represent 10%, 5%, 1 % of statistical significance, respectively
The table contains regression coefficients, the numbers in parentheses are their standard errors

The conclusions (from both Tables) could be summarised as follows:

a) Group variable outcomes have positive impact on the probability of (final) annulment (in all types of conducts).
b) Results on effects of legal standards (set) are negative but not statistically significant, except for the case of Final (court) decision and for all types of conducts; in cases the results are positive but not statistically significant.
c) Effects of fines and undertakings characteristics (market share) are positive and statistically significant (for final annulments).

8. CONCLUSIONS

In our paper, we examined the extent to which economic analysis and evidence 2 European CAs, HCC and FCA, rely upon, in assessing whether specific conduct violates the law, which crucially depends on the legal standard adopted by the CA, namely the decision rule that provides the basis for its assessment of the conduct. The "similarities" that the 2

authorties present, also in presumptions and substantive issues in the enforcement of Competition Law, led, especially due to the individual number of observations, to address the above mentioned questions regarding the use of the legal standards by combining both datasets.

To sum up, we observe from the analysis of the dataset that the two CAs apply moderate degree of the economics to their antitrust decisions and the "optimal" set of legal standards they choose to apply is either MPS or TEB, depending on the type of conduct. We have not identified any particular increasing reliance on economics based methodologies and consequent use of an Effects Based rather than a Per Se approach to deciding cases over time.

However, the results on judicial review do not allow us to assess the effects of the chosen legal standard on the probability of annulments.

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APPENDIX

Figure 1: Number of HCC decisions by year and by decision type

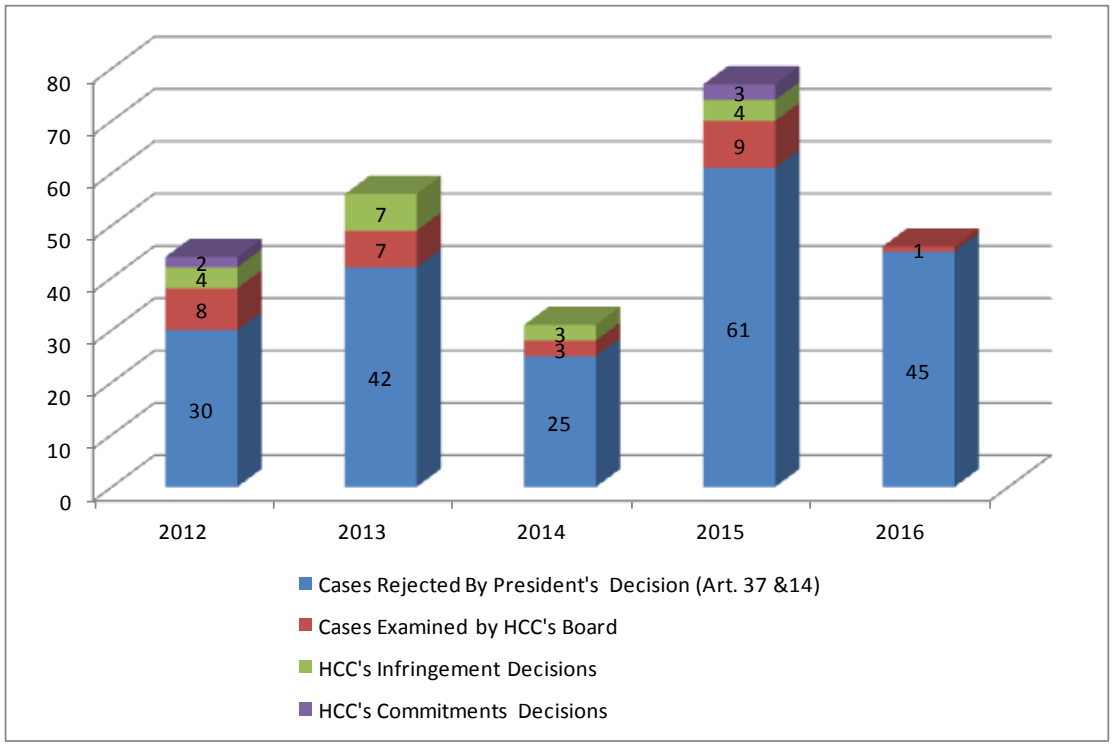

Table 22: Evolution of HCC's decisions[61]

Year	Horizontal Agreements	Vertical Agreements	Abuse of Dominance	Other[62]	Mergers	Interim Measures	Opinions
1995					4	2	1
1996	2	5	4		11	4	0
1997		1		1	36	4	1
1998		4			40	6	0
1999					51	6	0
2000		1		2	48	9	1
2001					27	2	3
2002	2		1		11	4	1
2003	3	1	2		13	8	1

[61] Data from www.epant.gr (for decisions published up to 31.12.2017).
[62] Concerns decisions on cases of prohibition of the abuse of a relationship of economic dependence, which, since 2009, is no longer applied by the HCC and is now incorporated into another body of civil legislation.

Year	Horizontal Agreements	Vertical Agreements	Abuse of Dominance	Other[62]	Mergers	Interim Measures	Opinions
2004	1	3			11	3	0
2005	2	2			14	3	0
2006	1	3	3		13	1	1
2007	3	3	5	1	31	1	1
2008	3	6	3		29		
2009	1	8	6	2	21	1	
2010	5	3	5	1	11	1	
2011	2	1	5		3		2
2012	2		5	1	12	1	17
2013	3	1	1		16		3
2014	1		1		9		1
2015	2	4	1		9	1	
2016			1		8		1
2017	5	2			4	1	2
Total	**38**	**48**	**43**	**8**	**432**	**58**	**36**

Table 23: Evolution of FCA's decisions[63]

Year	Abuse of Dominance (1)	Horizontal & Vertical Agreements (2)	Mixed (1&2)	Mergers[64]	Interim Measures	Opinions
2000	13	15	5	n/a	15	29
2001	18	38	20	n/a	6	23
2002	10	23	18	n/a	13	15
2003	18	31	11	n/a	4	20
2004	32	29	10	n/a	2	23
2005	26	29	13	n/a	2	24
2006	11	15	12	n/a	4	18
2007	12	30	6	n/a	8	16
2008	6	17	2	n/a	8	19
2009	15	11	8	94	6	59
2010	11	12	8	198	8	32
2011	3	8	4	215	3	22
2012	7	10	8	185	1	25
2013	5	5	8	201	2	25

[63] Data from (for decisions published up to 31.12.2017). Decisions on procedural issues and withdrawn are not included.

[64] FCA concurrence is responsible for merger control since 2009. The Government may, nonetheless, have the final say in exceptional cases where the country's fundamental interests are at stake, without calling into question the competitive analysis carried out by the Authority.

Year	Abuse of Dominance (1)	Horizontal & Vertical Agreements (2)	Mixed (1&2)	Mergers[64]	Interim Measures	Opinions
2014	12	6	2	200	1	18
2015	7	8	3	192	1	19
2016	6	15	3	230	2	26
2017	17	4	2	236		10
Total	**229**	**306**	**143**	**1,751**	**86**	**423**

Table 24: Number of decisions for any given level of EB score

Type of conduct	EB=1	EB=2	EB=3	EB=4	EB=5	EB=6	TOTAL
HCC		**6**	**32**	**29**	**12**		**79**
Horizontal Agreement (Concerted Practices)		1	5	1	2		9
Horizontal Agreement (Other)		4	**9**	6	3		22
Vertical Agreement			**9**	**10**	1		20
Abuse of Dominance (Unilaretal Exclusionary practices)			3	**12**	**6**		21
Abuse of Dominance (Exploitative practices)			2				2
Other		1	4				5
FCA	**4**	**18**	**109**	**147**	**15**	**2**	**295**
Horizontal Agreement (Concerted Practices)		8	21	42	5		76
Horizontal Agreement (Other)	3	8	43	42	5		101
Vertical Agreement	1	1	18	15	3	1	39
Abuse of Dominance (Unilateral Exclusionary practices)		1	20	43	1	1	66
Abuse of Dominance (Exploitative practices)			7	5	1		13
HCC & FCA*	**4**	**23**	**137**	**176**	**27**	**2**	**369**
Horizontal Agreement (Concerted Practices)		9	26	43	7		85
Horizontal Agreement (Other)	3	12	52	48	8		123
Vertical Agreement	1	1	27	25	4	1	59
Abuse of Dominance		1	23	55	7	1	87

Type of conduct	EB=1	EB=2	EB=3	EB=4	EB=5	EB=6	TOTAL
(Unilateral Exclusionary practices)							
Abuse of Dominance (Exploitative practices)			9	5	1		15

*For comparison reasons we do not include HCC's "other type of conduct" in the aggregate dataset

Table 25: Mean EB-scores of finally annulled decisions for any type of conduct

Type of conduct	1997	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2015	2016	Av
HCC	2.00	3.00		3.50	3.50	3.00	3.00	3.50	3.33	2.00	3.33		4.50			3.00		3.29
Horizontal Agreement (Concerted Practices)				3.00					5.00									4.00
Horizontal Agreement (Other)				4.00				2.00	2.00	2.00								2.50
Vertical Agreement					4.00	3.00	3.00		3.00		3.33							3.29
Abuse of Dominance (Unilateral Exclusionary practices)								5.00					4.50			3.00		4.25
Abuse of Dominance (Exploitative practices)					3.00													3.00
Other	2.00	3.00																2.67
FCA		**3.50**	**3.22**	**3.50**	**4.50**	**4.00**	**3.40**	**3.67**	**3.80**	**4.00**	**3.67**	**4.00**		**3.50**	**3.00**	**3.00**	**3.50**	**3.58**
Horizontal Agreement (Concerted Practices)		4.00	3.50	4.00		4.00		3.00	3.00	3.00		3.00		4.00				3.54
Horizontal Agreement (Other)		3.00	3.00	3.00	4.00	4.00	3.20	4.00	4.00	4.00	3.00	**5.00**					3.00	3.53
Vertical Agreement			2.50	3.00	**5.00**		3.50	4.00		**5.00**	4.00							3.67
Abuse of Dominance (Unilateral Exclusionary practices)			4.00			4.00	3.67				4.00				3.00		4.00	3.75

Type of conduct	1997	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2015	2016	Av
Abuse of Dominance (Exploitative practices)			3.00			4.00			4.00					3.00		3.00		3.50
HCC & FCA	**2.00**	**3.25**	**3.22**	**3.50**	**4.00**	**3.80**	**3.36**	**3.60**	**3.63**	**3.50**	**3.50**	**4.00**	**4.50**	**3.50**	**3.00**	**3.00**	**3.50**	**3.50**
Horizontal Agreement (Concerted Practices)		4.00	3.50	3.67		4.00		3.00	4.00	3.00		3.00		4.00				3.60
Horizontal Agreement (Other)		3.00	3.00	3.50	4.00	4.00	3.20	3.00	3.33	3.00	3.00	5.00					3.00	3.33
Vertical Agreement			2.50	3.00	4.50	3.00	3.33	4.00	3.00	5.00	3.50							3.50
Abuse of Dominance (Unilateral Exclusionary practices)			4.00			4.00	3.67	5.00			4.00		4.50		3.00	3.00	4.00	3.92
Abuse of Dominance (Exploitative practices)			3.00		3.00	4.00			4.00					3.00		3.00		3.43
Other	2.00	3.00																2.67

Table 26: HCC - Descriptive Statistics for Economics Based Analysis score

Type of conduct		1997	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2017	Av. For period
Horizontal Agreement (Concerted Practices)																			
	mean			3.00	2.50		5.00		5.00						3.00			3.33	3.44
	number			1	2		1		1						1			3	9
	number of annulled decisions			1					1										2
	%			1	0				1						0			0	0
Horizontal Agreement (Other)																			
	mean			4.00		5.00	3.00	2.00	3.33	2.00		4.00	4.00	2.50	3.33	3.00		3.50	3.36
	number			1		1	1	1	3	1		2	2	2	3	1		4	22
	number of annulled decisions			1				1	1	1									4
	%			100%		0.00		1.00	0.33	100%		0.00	0.00	0.00	0.00	0.00		0.00	18%
Vertical Agreement																			
	mean				4.00	3.00	3.00		3.00	3.50	3.60	3.00	4.00		4.50	4.00	4.00		3.60
	number				1	1	1		3	2	5	1	1		2	1	2		20
	number of annulled decisions				1	1	1		1		3								7
	%				100%	1.00			0.33	0.00	60%	0.00	0.00		0.00	0.00	0.00		35%
Abuse of Dominance (Unilateral Exclusionary practices)																			
	mean			4.00	4.00			4.50	3.00	3.67	4.00	4.00	4.67	5.00	5.00	4.00	4.00		4.14
	number			1	1			2	1	3	3	2	3	1	1	1	2		21
	number of annulled decisions							1					2				1		4
	%			0.00	0.00			50%	0.00	0.00	0.00	0.00	67%	0.00	0.00	0.00	50%		19%

Type of conduct		1997	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2017	Av. For period
Abuse of Dominance (Exploitative practices)																			
	mean				3.00			3.00											3.00
	number				1.00			1.00											2.00
	number of annulled decisions				1.00														1
	%				100%			0.00											50%
Other																			
	mean	2.00	3.00						3.00					3.00					2.80
	number	1	2						1					1					5
	number of annulled decisions	1	2																3
	%	100%	100%						0.00					0.00					60%
All types of conduct																			
	mean	2.00	3.00	3.67	3.20	4.00	3.67	3.50	3.33	3.33	3.75	3.80	4.33	3.25	3.86	3.67	4.00	3.43	3.59
	number	1	2	3	5	2	3	4	9	6	8	5	6	4	7	3	4	7	79
	number of annulled decisions	1	2	2	2	1	1	2	3	1	3		2				1		21
	%	100%	100%	67%	40%	50%		50%	33%	17%	38%	0%	33%	0%	0%	0%	25%	0%	27%

Table 27: FCA - Descriptive Statistics for Economics Based Analysis score

Type of conduct		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Av. For period
Horizontal Agreement (Concerted Practice)																				
	mean	3.63	3.46	4.00	3.83	3.56	3.57	3.00	4.00	3.20	3.40	3.25		4.00		4.00	4.00	3.40		3.58
	number	8	13	3	6	9	7	1	4	5	5	4		4		1	1	5		76

Type of conduct		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Av. For period
	number of annulled decisions	1	4	2		1		1	1	1		1		1						13
	%	13%	31%	67%	0%	11%	0%	100%	25%	20%	0%	25%		0%		0%	0%	0%		17%
Horizontal Agreement (Other)																				
	mean	3.67	2.78	3.67	4.00	3.50	**3.55**	3.50	3.67	3.38	2.75	3.29	3.20	3.50	3.67	3.00	3.00	2.25	4.00	3.38
	number	3	9	6	7	6	11	8	12	8	4	7	5	2	3	2	3	4	1	101
	number of annulled decisions	1	1	1	1	1	5	1	2	1	1	1						1		17
	%	33%	11%	17%	14%	17%	45%	13%	17%	13%	25%	14%	0%	0%	0%	0%	0%	25%	0%	17%
Vertical Agreement																				
	mean	3.50	3.00	3.50	4.50	3.00	3.67	3.75	3.20	4.00	3.50		3.00	3.50	6.00		4.00	3.50	2.50	3.54
	number	2	4	2	2	1	6	4	5	2	2		1	2	1		1	2	2	39
	number of annulled decisions		2	1	1		2	1		1	1									9
	%	0%	50%	50%	50%	0%	33%	25%	0%	50%	50%		0%	0%	0%		0%	0%	0%	23%
Abuse of Dominance (Unilateral Exclusionary practices)																				
	mean	4.00	3.75	4.00	3.80	3.75	3.63	3.50	4.00	3.00	3.20	4.00		3.50	4.00	3.33	3.50	4.00	4.00	3.71
	number	3	8	1	5	12	8	2	3	1	5	1		2	4	3	2	2	4	66
	number of annulled decisions		1			1	3				1				1			1		8
	%	0%	13%	0%	0%	8%	38%	0%	0%	0%	20%	0%		0%	25%	0%	0%	50%	0%	12%
Abuse of Dominance (Exploitative practices)																				
	mean		3.00		3.00	4.00	3.00		4.00		4.00			3.00		4.00	3.33			3.54
	number		1.00		1.00	2.00	1.00		2.00		1.00			1.00		1.00	3.00			13

Type of conduct		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Av. For period
	number of annulled decisions		1			1			2					1.00			1.00			6
	%		100%		0%	50%	0%		100%		0%			100%		0%	33%			46%
All types of conduct																				
	mean	3.69	3.29	3.75	3.90	3.63	3.58	3.53	3.69	3.38	3.24	3.33	3.17	3.64	4.13	3.43	3.40	3.15	3.57	3.53
	number	16	35	12	21	30	33	15	26	16	17	12	6	11	8	7	10	13	7	295
	number of annulled decisions	2	9	4	2	4	10	3	5	3	3	2	0	2	1	0	1	2	0	53
	%	13%	26%	33%	10%	13%	30%	20%	19%	19%	18%	17%	33%	9%	0%	14%	20%	0%	757%	18%

Table 28: HCC - Descriptive Statistics for SEB-scores by year

	Type of conduct	1997	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2017	Av. For period
SPS																			
	mean	2			2			2	2	2				2					2
	number	1			1			1	1	1				1					6
	number of annulled decisions	1						1	1	1									4
	%	100%			0%			100%	100%	100%				0%					67%
MPS																			
	mean		3	3	3	3	3	3	3	3	3	3		3	3	3	3	3	3
	number		2	1	2	1	2	1	6	2	2	2		2	3	1	1	4	32

	Type of conduct	1997	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2017	Av. For period
	number of annulled decisions		2	1	1	1	1		1		2						1		10
	%		100%	100%	50%	100%	50%	0%	17%	0%	100%	0%		0%	0%	0%	100%	0%	31%
TEB																			
	mean			4	4			4		4	4	4	4		4	4	4	4	4
	number			2	2			1		3	6	2	4		2	2	2	3	29
	number of annulled decisions			1	1						1								3
	%			50%	50%			0%		0%	17%	0%	0%		0%	0%	0%	0%	10%
Intermediate between TEB and FEB																			
	mean					5	5	5	5			5	5	5	5		5		5
	number					1	1	1	2			1	2	1	2		1		12
	number of annulled decisions							1	1				1						3
	%					0%	0%	100%	50%			0%	50%	0%	0%		0%		25%
Av.																			
	mean	2	3	3.67	3.2	4	3.67	3.5	3.33	3.33	3.75	3.8	4.33	3.25	3.86	3.67	4	3.43	3.59
	number	1	2	3	5	2	3	4	9	6	8	5	6	4	7	3	4	7	79
	number of annulled decisions	1	2	2	2	1	1	2	3	1	3		2				1		21
	%	100%	100%	67%	40%	50%	33%	50%	33%	17%	38%	0%	33%	0%	0%	0%	25%	0%	27%

Table 29: FCA - Descriptive Statistics for SEB-scores by year

	Type of conduct	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Av.
SPS																				
	mean	2.00	1.63		2.00	2.00	2.00	2.00		2.00	2.00	1.00						2.00	2.00	1.82
	number	1	8		1	3	1	1		1	1	1						3	1	22
	number of annulled decisions		2																	2
	%		25%																	9%
MPS																				
	mean	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	number	5	7	3	2	5	15	6	12	9	11	6	5	4	3	4	6	5	1	**109**
	number of annulled decisions	1	3	2			6	1	3	1	1	1		1	1		1	1		23
	%	20%	43%	67%			40%	17%	25%	11%	9%	17%		25%	33%		17%	20%		21%
TEB																				
	mean	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	number	8	19	9	16	22	14	7	10	5	5	4	1	7	3	3	4	5	5	**147**
	number of annulled decisions	1	3	2	1	4	4	2		1	2			1				1		22
	%	13%	16%	22%	6%	18%	29%	29%	0%	20%	40%			14%				20%		15%
Intermediate between TEB and FEB																				
	mean	5.00	5.00		5.00		5.00	5.00	5.00	5.00		5.00			6.00					5.12
	number	2	1		2		3	1	4	1		1			2					17
	number of annulled decisions		1		1				2	1		1								6
	%		100%		50%				50%	100%		100%			0%					35%
Av.																				
	mean	3.69	3.29	3.75	3.90	3.63	3.58	3.53	3.69	3.38	3.24	3.33	3.17	3.64	4.13	3.43	3.40	3.15	3.57	3.53

	Type of conduct	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**Av.**
	number	16	35	12	21	30	33	15	26	16	17	12	6	11	8	7	10	13	7	295
	number of annulled decisions	2	9	4	2	4	10	3	5	3	3	2		2	1		1	2		53
	%	13%	26%	33%	10%	13%	30%	20%	19%	19%	18%	17%	0%	18%	13%	0%	10%	15%	0%	18%

Table 30: HCC - Number of observations by type of conduct

	A	B1	B2	C1 UEC*	C2 UEC	C3 UEC	C1 EP**	C2 EP	C3 EP	C4 EP	D1	D2
Other than Exploitative Practices												
Horizontal Agreement (Concerted Practices)	9	9		6	5	1					1	
Horizontal Agreement (Other)	22	22		10	13	**5**					2	
Vertical Agreement	20	20	1	**20**	10	1						
Abuse of Dominance (Unilateral Exclusionary practices)	21	21	1	**21**	**18**	**5**						
Other	5	5		2	2							
Exploitative Practices												
Abuse of Dominance (Exploitative practices)	2	2						1	1			
Total	**79**	**79**	**2**	**59**	**48**	**12**		**1**	**1**		**3**	

*=UEC= Unilateral Exclusionary conducts

**=EP= Exploitative Practices

Table 31: HCC - Determinants of SEBs – all types of conducts

(dependent variable: SEB)	**Set**	**Set>1**	**Set>2**	**Set>3**	**Set>4**
Decisions that were finally annulled or upheld	-0.26 (0.49)	-0.88 (0.54)	-1.64** (0.68)	-1.49* (0.82)	-1.23 (0.81)
Fine	0.199 (0.81)	0.65 (0.86)	0.43 (1.02)	-0.37 (1.33)	-0.41 (1.33)
Undertaking's market power	1.39** (0.57)	2.40*** (0.67)	2.87*** (0.94)	1.22 (1.27)	0.94 (1.24)
ROR	0.99 (0.67)	0.86 (0.72)	0.73 (1.01)	3.24* (1.73)	2.24 (1.86)
Group	-0.31 (0.23)	-0.47* (0.27)	-1.01** (0.47)	-3.33** (1.15)	-1.87 (1.61)
Group Experience	0.34 (0.39)	-0.08 (0.41)	0.80 (0.56)	1.55 (0.175)	-0.33 (1.93)
Number of observations	63	57	43	35	34
Prob F-stat	0.0174	0.0009	0.0004	0.0026	0.0452
Pseudo R2	0.0621	0.1088	0.1692	0.1948	0.1365

*, **, ***: indicates that the parameter is significantly different from zero on the 10%, 5% or 1%, respectively

The table contains regression coefficients, the numbers in parentheses are their standard errors

The conclusions for **HCC** could be summarised as follows:

a) Group variable outcomes have negative impact on the Set, that is also statistical significant for Set>2. This stands also for decisions that were finally annulled or upheld however it is statistically significant only for Set>2 and Set>3.
b) Effects of fines are not statistically significant.
c) Effects of annulments are negative and not statistically significant for almost all cases of Sets.
d) Effects of undertakings characteristics (market share) on legal standards are positive statistically significant, for Set>1 and Set>2.

Accordingly, for the **FCA**:

Table 32: FCA - Determinants of SEBs – all types of conducts

(dependent variable: SEB)	**Set**	**Set>1**	**Set>2**	**Set>3**	**Set>4**
Decisions that were finally annulled or upheld	-0.93** (0.33)	-0.97** (0.33)	-0.92** (0.33)	-0.88** (0.343)	-0.84** (0.34)
Fine	0.18 (1.47)	0.35 (1.47)	0.32 (1.47)	0.45 (1.47)	0.44 (1.47)
Undertaking's market power	2.06*** (0.39)	1.97*** (0.40)	1.95*** (0.40)	1.75*** (0.40)	1.70*** (0.40)
ROR	-2.29** (0.72)	-2.63*** (0.73)	-2.47*** (0.74)	-2.28** (0.75)	-2.16** (0.75)
Group	0.265 (0.25)	0.38 (0.25)	0.34 (0.25)	0.25 (0.26)	0.20 (0.26)
Group Experience	0.39 (0.31)	0.47 (0.32)	0.46 (0.32)	0.39 (0.33)	0.32 (0.33)
Number of observations	153	150	148	143	142
Prob F-stat	0.000	0.000	0.000	0.001	0.0002
Pseudo R2	0.0695	0.0729	0.0708	0.0631	0.0602

*, **, ***: indicates that the parameter is significantly different from zero on the 10%, 5% or 1%, respectively
The table contains regression coefficients, the numbers in parentheses are their standard errors

The conclusions for the **FCA** could be summarised as follows:

a) Group variable outcomes have negative impact on the Set, that is also statistical significant for Set>3 (for Set>3, in other than exploitative practices). This stands also for decisions that were finally annulled, and it is statistically significant for all legal standards.
b) Effects of fines are not statistically significant.
c) Effects of annulments are negative and statistically significant.

d) Effects of undertakings characteristics (market share) on legal standards are positive statistically significant.

Table 33: Determinants of SEBs – all types of conducts

(dependent variable: SEB)	**Set**	**Set>1**	**Set>2**	**Set>3**	**Set>4**
Decisions that were finally annulled or upheld	-0.67** (0.26)	-0.68** (0.26)	-0.82** (0.27)	-0.77** (0.27)	-0.75** (0.27)
Fine	-0.31 (0.68)	-0.29 (0.69)	-0.22 (0.70)	-0.21 (0.70)	-0.21 (0.70)
Undertaking's market power	1.53*** (0.30)	1.46*** (0.30)	1.70*** (0.31)	1.55*** (0.31)	1.51*** (0.31)
ROR	-0.66 (0.46)	-0.75 (0.47)	-1.03** (0.48)	-0.84* (0.49)	-0.75 (0.49)
Group	-0.01 (0.15)	0.16 (0.15)	0.05 (0.15)	0.02 (0.16)	-0.05 (0.16)
Group Experience	2.75** (1.12)	3.09** (1.13)	3.19** (1.18)	2.84** (1.20)	0.51** (0.24)
Number of observations	224	221	213	208	207
Prob F-stat	0.000	0.000	0.000	0.000	0.0000
Pseudo R2	0.0431	0.0423	0.0548	0.0474	0.0452

*, **, ***: indicates that the parameter is significantly different from zero on the 10%, 5% or 1%, respectively

The table contains regression coefficients, the numbers in parentheses are their standard errors

The conclusions for both **HCC & FCA** could be summarised as follows:

a) Group variable outcomes have positive impact on the Set, but it is not statistical significant at any level.
b) Effects of fines are not statistically significant.
c) Effects of annulments are negative and statistically significant.
d) Effects of undertakings characteristics (market share) on legal standards are positive statistically significant.