Empirical analysis of legal standards in antitrust investigations: the example of Russia

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This paper explains the choice of legal standards for the investigation of competition authority under a high probability of judicial review of undertaken decisions. We propose an approach to measure legal standards empirically and then apply this approach for the analysis and explanation of the use of economics in decision-making processes in investigations of the Russian competition authority, the Federal Antimonopoly Service. Economic analysis still plays a modest role in investigations because competition authority applies *per se* legal standards, and analysis of the effects of conduct is limited. There is no evolution toward a more effect-based approach during the period of 2008-2015. It is driven by the high cost of applying a higher legal standard together with modest influence on the outcomes of judicial review (annulments). Applying truncated effect-based analysis instead of per se competition authority increases the probability of the decision being sustained after judicial review by 18 percentage points, but at the same time, it increases litigation costs by up to 2/3.

Key words: antitrust, legal standard, effect-based enforcement, judicial review, annulments

I. Introduction

Legal standard in antitrust investigations is crossroads of economic concepts, legal rules and enforcement procedures. The primary goal of economic analysis in antitrust investigations is to avoid or minimize the number of legal errors. Correct market delineation, explicit formulation and testing of the hypotheses on competition restrictions serve to achieve this goal. Economic analysis is especially important for conduct, except for illegal under *Per Se* rules (e.g., explicit collusion), by which investigations focus on hard evidence.

Legal standards or decision rules presume the amount and sequence of the evidence that should be presented to make specific decisions. Legal standards vary from *per se*, or *object-based standards,* according to which the very fact of specific conduct must be established to make a

decision, *to Effect-Based standards* (in the European tradition), or the *Rule of Reason* (in the US tradition), according to which the effects of actions on competition and welfare are to be identified (Katsoulacos, 2018). For the broad range of conduct (e.g., vertical restraints, bundling, or excessive pricing), adequate legal standard or a decision rule is *Effect-Based rules*, and application of an adequate standard is crucial to increasing deterrence.

Legal standards influence the outcomes of enforcement and therefore welfare. There is an optimal legal standard that is the result of welfare maximization decisions by social planners. Studies of optimal legal standards (Katsoulacos and Ulph, 2009, 2011, 2016, 2017) have specified these properties and their implications for the real-life policies of competition authorities.

Systematic empirical assessments of legal standards are limited until recently. In terms of empirical strategies, there have been case studies based on particular decisions or meta-analyses of groups of decisions, but there is no *statistical representation* of the legal standards applied by competition authorities. There are several explanations for this lack. First and most important is a measurement problem. Legal standards, which are higher than *Per Se*, require not only particular economic analyses but also specific sequences of economic analyses. An obvious example is demand or entry cost analysis, which is pointless without correct market definitions. Second is a limited presentation of the analysis undertaken in the decisions of competition authorities. Normally, there are no checklists that facilitate understanding of the type of analysis that has been performed. Third is the limited comparability of economic analysis that should be undertaken under different types of investigations in the same jurisdiction. Consider abuse of dominance and agreements illegal by the *Rule of Reason*. In the first case, dominance must be established; therefore, a very precise market definition is necessary, using SSNIP or similar procedures. In the second case, the necessity for SSNIP is doubtful.

At the same time, the absence of empirical measurements and statistics regarding legal standards limits our ability to answer important questions. First, this lack renders any international comparisons of legal standards applied in different jurisdictions speculative. What do we mean by saying that in country *A*, legal standards in antitrust enforcement are *higher* than in country *B?* How can we judge the role of economic analysis in different jurisdictions? Second, it impedes the analysis of the evolution of legal standards and explanation of the factors that drive this evolution. Both issues are important for the identification and explanation of the deviations of legal standards actually applied in competition cases from the optimal legal standards that minimize welfare losses from restrictions on competition.

The primary objectives of this paper are:

1. To measure to what extent economic analysis and evidence is used in the decisions of the CA and how it evolves over time, which we can use to compare to its optimal level, for any given conduct (given the appropriate (optimal) Legal Standard (LS) for that conduct);
2. To develop and measure specific indexes that reflect legal uncertainty as a variation of approaches to investigate specific conduct;
3. To examine what factors influence the choice of LSs by competition authorities;
4. Examine how changes in the extent of economic analysis / LS, for any given conduct affect the probability that decisions on that conduct are annulled by the courts;
5. To examine effect of increase in LSs on litigation costs.

Our main observations are as follows. First, legal standards in Russian competition enforcement are sufficiently low. At most, they lie between *Modified Per Se* rule and *Truncated Effect-Based*, as defined by Katsoulacos (2018). There are many cases in which attempts to provide economic analysis suffer from inconsistency. An example is the attempt to analyze the impacts on competition and welfare without proper market definitions.

Second, there is high variations of the legal standards applied for the analysis of particular conduct. It reflects the disagreements both inside CA and between CA and courts on the proper legal standard. This variation indicates high legal uncertainty that participants of enforcement face.

Third, the outcomes of judicial review do not favor either a very low legal standard (application of the *Per Se* approach for cases in which authorities should consider using *Effect-Based rules*) or a reasonably high legal standard. The absence of economic analysis decreases the probability of a decision being sustained under judicial review, but extensive economic analysis does not significantly help the decision to be upheld.

Fourth, legal standards significantly increase the resources necessary for investigation. On the stage of litigation, *Truncated Effect-Based* analysis increases duration of litigation by about 2/3 of standard deviation. For the cases important to the parties increase of the resources spent on litigation due to higher LS is higher.

The remainder of the paper is organized as follows. The second section describes an empirical approach for measuring the legal standard. The third section briefly reviews the context of Russian competition enforcement, which is important for understanding the origin of informational datasets, as well as opportunities and limitations to interpreting the statistical analysis. The fourth section explains the time trends of the indicators of economic analysis and legal standards in Russian competition enforcement. The fifth section tests the hypotheses

regarding the factors that influence the choice of legal standard by competition authorities. The sixth section concludes the study.

II. Measuring the legal standard

To use legal standards for *positive* assessment of the depth of economic analysis, we use a rather standard approach. We identify important components of economic analysis necessary to substantiate the final conclusion that particular conduct restricts competition (or imposes harm because of restricted competition). Then, we analyze the documents on particular decisions made and identify whether this type of analysis has been undertaken or not. We assign to the variable responsible for this analysis the value of 1 in cases in which particular type of analysis has been undertaken and a value of 0 otherwise. The approach presented in (Katsoulacos, 2017; Katsoulacos 2018a, Katsoulacos 2018b, Katsoulacos et al, 2018) identified four parts of economic analysis that constitute effect-based analysis. One or several variables reflect every part of the analysis (see Table 1). Considering that restrictions on competition and exploitative conducts require different bundles of economic analysis for different conduct, the variables in the index differ.

Table 1. Types of analysis as a variables in the index of EB-scores and LS-scores

	Restrictions of competition	*Exploitative conducts*
A. Conduct definition	A.1. Discussion of the nature and characteristics of the conduct	
*B. Market analysis**	B1. Basic analysis of the market (for instance, can include calculations of market shares without formal analysis of Relevant Market Definition using SSNIP or similar approach)	
	B2. Formal market delineation using SSNIP (Hypothetical Monopolist test)	
C. Evidence on restrictions of competition/ harm imposed	C1. Analysis undertaken in order to identify whether conduct has market power enhancing effects	C1. Analysis undertaken to compare price with cost
	C2. Articulation of the theory of harm to competition (consumer welfare or total welfare)	C2. Comparison of the prices of dominant supplier with the prices in other markets
	C3. Analysis of potential efficiencies	C3. Comparison of the prices of dominant supplier with the price of competitor
		C4. Excess profitability analysis
D. *Analysis to support robustness of C*	D1. Counterfactual analysis undertaken	D1. Analysis of potential justification of exploitative conduct
	D2. Balancing of potential anticompetitive effects of conduct with the efficiencies	D2. Analysis of welfare effects of exploitative conduct

Variables are based on the judgment of whether relevant analysis has been undertaken or not; it says nothing about the correctness of the analysis, the absence of mistakes in the data, or the methods applied to undertake a particular analysis. In other words, variables indicate whether a competition authority in a particular case attempts to answer specific questions necessary to assess the impact of conduct on competition and/or welfare. Katsoulacos et al (2018) provides more detailed explanation of the selection of specific types of analysis.

II. I. Effect-based scores

Our main objectives in undertaking this empirical research can be described as follows:

- Measure to what extent economic analysis and evidence is used in the decisions of the CA, relative to its optimal level for any given conduct, given the appropriate (optimal) Legal Standard (LS) for that conduct.
- Measure how the extent of economic analysis in the decisions, for any given conduct evolves over time in a country;
- Examine how changes in the extent of economic analysis for any given conduct is related to the probability that decisions on that conduct are annulled in Courts of Appeal.

The above objectives all relate to analyzing the data at the level of specific conducts. However even for countries like Russia in which there is a large number of antitrust decisions, the number of decisions for each specific conduct type is not large enough at least for some conduct types for undertaking empirical analysis, and this problem is much more acute in other countries in which the number of antitrust decisions is much smaller than in Russia.

The question is, is it reasonable for undertaking empirical analysis to use data that aggregate scores (or aggregate EB-indicators) over many conducts (e.g. all non-exploitative conducts)?

The answer is that a straight aggregation of scores across different conduct types will not provide indicators which we can use to measure meaningfully any of the above. Thus, aggregate indicators cannot be used to measure meaningfully whether economic analysis is used "optimally" – since optimal LSs can only be defined at the level of each conduct. Aggregate indicators cannot be used to make comparisons between different countries and over time – since the level of the aggregate indicator will depend on the composition of conduct types that will be different for different countries and will change over time.

And, aggregate indicators cannot be used to examine how changes in the economic analysis, if measured by changes in the value of aggregate indicator, affect the annulment rate, since the latter is expected to be influenced by what "type" of economic analysis[1] is utilized and how this changes, while a given value of the aggregate indicator cannot reflect what "types" of analysis are utilized and, when the value of the indicator changes, what "type" of economic analysis is responsible for the change in the indicator's value.

We can respond in two ways to the above difficulties for undertaking empirical analysis. One way is to increase the available data for each conduct type by putting together different countries. This is not an approach without difficulties, one of which is the collection of the data in different countries. A second way, that we report in this paper in which we concentrate on the

[1] For example, different types of economic analysis can lead to a score 3 and different ways of increasing economic analysis can increase the score from 3 to 4 but the implications of each case for the rate of annulment may not be the same.

data of one country (Russia), is, rather than use the aggregate EB scores described above, to use EB scores that result from aggregation across conduct types but for which, when aggregating, we make sure that we assign the same score to different decisions only when the same amount and the same "type" of economic analysis is undertaken. We follow this procedure below for all non-exploitative conducts together (these include horizontal and vertical agreements and exclusionary conduct[2]) and for all exploitative conducts together.

According to this procedure, we use the statements that describe the different steps of economic analysis that are utilized in antitrust investigations, which have been ordered in Table 1 above in a sequence that represents what most economists would recognize as successively increased application of economic analysis. That is, Table 1 describes additional blocks of analysis applied, as we move from a *Pure Per Se* to a *Full Effects-based LS*. This is very useful when we come to map the extent of economic analysis applied in a case to the legal standard adopted. However, while we consider the order of statements above to reflect a common (or "natural") order in which economic analysis is applied as we move from low (*Per Se*) to high (*Effects-Based*) legal standards, this order cannot be considered as unique for the assessment of all conducts in practice. Indeed, the statements described in Table 1 distinguish between what is a reasonably good set for all conducts other than exploitative and another set of statements, given for exploitative conducts[3].

Given these remarks, the aggregate EB indicator that will be used below is obtained by constructing the following Sets of EB analysis (hereafter, LS) using the 8 statements in Table 1:

S1: this contains all the infringement decisions in the sample in which we find "1" scores just for the A statement (for all other statements score is "0").

[2] There are significant common elements in the assessment of these conducts to justify using a unified methodology for constructing EB-indicators. Of course we could distinguish (additionally) between two sub-categories of anticompetitive agreements and exclusionary conduct (and, can disaggregate even further) and construct EB-indicators for each of these more disaggregated conduct categories. As already noted, the main disadvantage of disaggregating further is that disaggregation leads to smaller samples with which to undertake statistical work.

[3] However, note that this does not necessarily imply, when in the text of a decision we find some analysis of a higher level (in the sequence), that lower level analyses *has been* included and has also been explicitly described in the decision text. This is particularly important with regard to the statements B relating to the Contextual Analysis of the Market and the Firms. Examination of a large data set of the Russian Authority (FAS) decisions indicate that decisions may for example provide a description that aims to provide a "theory of harm" (under statements C.2 below) even though there is NO explicit analysis or description of the market characteristics under B. We believe, however, that an analysis putting forward a theory of harm even if it is not preceded by an explicit description of the market in the decision text, will be based on developing some understanding of market characteristics and conditions.

S2: this contains all the decisions in which we find “1”scores for the A statement and for the B1 statement (for all other statements score is “0”).

S3: this contains all the decisions in which we find “1” scores for the A statement and for the B1 statement and for the B2 statement (for all other statements score is “0”).

S4: this contains all the decisions in which we find “1” scores for the A statement and for the B1 statement and for the B2 statement and for the C1 statement (for all other statements score is “0”).

S5: this contains all the decisions in which we find “1” scores for the A statement and for the B1 statement and for the B2 statement and for the C1 statement and for the C2 statement (for all other statements score is “0”).

S6: this contains all the decisions in which we find “1” scores for the A statement and for the B1 statement and for the B2 statement and for the C1 statement and for the C2 statement and for the C3 statement (for all other statements score is “0”).

S7: this contains all the decisions in which we find “1” scores for the A statement and for the B1 statement and for the B2 statement and for the C1 statement and for the C2 statement and for the C3 statement and for the D1 statement (for all other statements score is “0”).

S8: this contains all the decisions in which we find “1” scores for the A statement and for the B1 statement and for the B2 statement and for the C1 statement and for the C2 statement and for the C3 statement and for the D1 statement and for the D2 statement.

Thus, by construction, our aggregate EB-indicator with a value of 1 is represented by the set of decisions S1, that is, 1 is the value of the indicator when, in decisions, only block of analysis A is undertaken; our aggregate EB-indicator with a value of 2 is represented by the set of decisions S2, that is, 2 is the value of the indicator when, in decisions, only block of analysis A and B1 is undertaken; our aggregate EB-indicator with a value of 3 is represented by the set of decisions S3, that is, 3 is the value of the indicator when, in decisions, only block of analysis A, B1 and B2 is undertaken; etc.

To summarize, the sets of decisions $S_i, i = 1,.....8$ described above and the corresponding value of the aggregate EB-indicator for each set are:

S1: {A} – aggregate EB-indicator of value 1.

S2: {A, B1} - aggregate EB-indicator of value 2.

S3: {A, B1, B2} – aggregate EB-indicator of value 3.

S4: {A, B1, B2, C1} – aggregate EB-indicator of value 4.

S5: {A, B1, B2, C1, C2} – aggregate EB-indicator of value 5.

S6: {A, B1, B2, C1, C2, C3} – aggregate EB-indicator of value 6.

S7: {A, B1, B2, C1, C2, C3, D1} – aggregate EB-indicator of value 7.

S8: {A, B1, B2, C1, C2, C3, D1, D2} – aggregate EB-indicator of value 8.

Now, by comparing the different sets of decisions, $S_i, i = 1,.....8$, we can identify the effects of additional economic analysis. For example, by comparing decisions in S2 with decisions in S3 we can identify the effect of adding the block of analysis B2; by comparing decisions in S3 with decisions in S4 we can identify the effect of adding the block of analysis C1. We are also able to identify the frequency with which the CA applies the analysis associated with each one of the sets in assessing different conduct types and, hence, infer the extent to which the CA favors a certain legal standard for the different conduct types (see below).

We can then map the LS to legal standards as described in detail in Katsoulacos, Avdasheva and Golovanova (2018).

Table 2. Observations on *LS* and legal standards

	Legal Standards	*Presumed components of the analysis*	*LSs*
1	Strict Per Se	A or A and B1	S1 and S2
2	Modified Per Se	A, B1 and B2	S3
3	Truncated Effect-Based Standard	A, B1, B2, C1 or A, B1, B2, C1 and D1	S4
4	Intermediate between Truncated Effect-Based Standard and Full Rule of Reason	more than [4]	S5-S7 (8)
5	Full Effect-Based Standard	complete set of components	S8 (9)

III. Russian context of competition enforcement and dataset

III.I. Economic analysis in Russian competition enforcement

Russian competition enforcement is recognized on a large scale worldwide. This large scale has different dimensions. First, the national competition authority, called the Federal Antimonopoly

Service, has an unprecedented set of responsibilities, including antitrust enforcement, control over competition in public procurement and procurement of state-owned and regulated companies, tariffs and sector-specific access regulation, unfair competition and advertising, etc. Second, the national competition authority is organized as a nexus of regional offices with relatively independent powers. There are 84 regional offices responsible for enforcement within the borders of the subject territories of the Russian Federation (regions) and a Central Office responsible for enforcement over the national market. In total, there are more than 3,500 officers in the FAS, approximately 1/3 of whom are employed in the Central Office. Third, the number of FAS decisions is extremely high in all areas of responsibility. For instance, in 2016, FAS analyzed approximately 44,600 complaints of violations of antitrust law and made 6,900 infringement decisions, considered more than 20,000 cases of violations of advertising law and made 6,700 infringement decisions. In the area of procurement, FAS launched approximately 10,000 raids to monitor compliance with public procurement rules, examined approximately 48,000 procurement procedures and found 16,500 cases of non-compliance. In the area of procurement of state-owned and regulated companies, FAS reviewed 15,000 complaints and found 6,000 cases of non-compliance. A large part of the expert and business community considers the scale of activity to be disproportional, compared to the outcomes achieved. One reason for this opinion is the limited conclusiveness of the evidence in antitrust infringement decisions. A large number of decisions made by FAS coexist with a large number of claims to annul infringement decisions. For instance, in 2016 there were 7,000 claims to annul decisions made by competition authorities in the commercial courts of first instance (approximately ¼ of all claims to annul the decisions of executive authorities and other responsible bodies in the administrative system of the Russian Federation).

For the decisions on agreements lessening competition and on abuse of dominance, insufficient economic analysis is considered an important cause of the weakness of the enforcement. Very often, evidence collected by Russian competition authorities is insufficient to prove the restriction of competition, or in cases in which restriction of competition occurred, it was not counterbalanced by positive effects. In 2013, the Organization for Economic Co-operation and Development (OECD), reviewing Russian competition enforcement, emphasized the need to improve the quality of economic analysis in competition enforcement as a primary recommendation for future actions of FAS.

The lack of economic analysis has several explanations. The first is that competition legislation arose before modern economic education in Russia. Immediately after the adoption of the first competition law, there were no competition officers in Russia who had taken courses in

microeconomics, industrial organization, or institutional economics. The first students who graduated under modern standards of economic education were able to be hired by competition authorities only at the beginning of the 2000s. However, during this period, the standard approach to substantiate infringement decisions was already in place. Therefore, path dependence alone is an explanation. A more important and relevant explanation is the system of FAS motivation, including performance measurement. FAS is strictly motivated in a large number of decisions with the low rate of annulments. With a limited budget, FAS is motivated to select groups of cases that do not require deep economic analysis to avoid the costs of evidence collection and proceedings, as well as more straightforward arguments to limit the possible counterevidence under judicial review. Therefore, among different enforcement targets, competition authority selects the group of conducts that requires less effort in economic analysis. As a result, the average level of economic analysis decreases. Evidence from Avdasheva et al (Avdasheva et al, 2016; Avdasheva et al, 2018 (forthcoming)) supports this explanation. According to this explanation, the outcomes of judicial review, conditional on the type of case, are important to explain the scale of economic analyses undertaken by FAS in its investigations. In Russia, access to judicial review is easy, so courts are motivated to have no backlog and make fast decisions. The low cost of fast litigation motivates companies to claim annulment of infringement decisions under a low probability of annulment. Fast decisions provide timely feedback on FAS arguments and has allow FAS to consider the court's arguments in recent decisions.

However, FAS selection of the enforcement targets differs from the decisions regarding the legal standard to follow when considering particular types of cases (e.g., excessive pricing concerted practice, or vertical restraints). FAS can take fewer of what we call 'proper antitrust cases' (see below) but use appropriate legal standards when investigating these cases. Analysis of our dataset is concentrated on the second issue.

III.II. Specific features of the Russian dataset on competition enforcement

We use a dataset based on data on the judicial review of FAS infringement decisions during the period of 2008-2015. The first year of observation is the year following the new law 'On protection of competition' (better harmonized with European rules than the previous version was). Thus, our first observations in our dataset concern the first claims to annul decisions made according to the new law. The large number of infringement decisions predicts the large number of claims to annul them (see Table 3 below). We use the content on judicial decisions instead of a FAS dataset. There are two reasons for this decision. The first is that in Russia, commercial

courts present the data on judicial review for all instances[4] in very systematic and user-friendly manner. More importantly, the dataset of courts' decisions covers all of the decisions made by commercial courts. For the dataset of FAS decisions, it is not a case. The second reason is that the outcomes of judicial review form a crucial part of our analysis. An important question is whether it offers deeper economic analysis to make decisions more convincing or less convincing or whether it affects the balance of evidence at all. We believe that the answer to this question affects the choice of legal standard by competition authorities.

There are also two additional features of judicial review of infringement decision, which make the analysis of court decisions an attractive source of information. The first is that, in contrast to the publicly available decisions of competition authorities, court decision discovers approach to prove violation more clearly. Evidence presented by the authority under review is at least not less complete than what FAS publishes in the text of decisions. The second is that in the Russian commercial courts, judges have limited discretion over the time of litigation. There are a limited number of reasons for postponing court session. One typical reason is that the party presents additional information (for instance, expert opinions) and other party requires time to become familiar with it. Another reason is that the judge needs time to call for additional expertise appointed by the court. However, the rule is that longer litigation periods indicate greater complexity, the disputability of cases and/or efforts by the parties to dispute the evidence.

Specific features of Russian competition legislation affect the content of our dataset. Articles 10 and 11 of the Russian law 'On protection of competition' contain bans on the abuse of dominance and agreements (horizontal and vertical), respectively, and they are almost a precise translation of Articles 102 and 11 of the Treaty on the European Union. However, the most important specific feature is an interpretation of so-called exploitative abuses. The Russian legislation borrowed provisions on the illegality of exploitative conduct of dominant sellers (Vickers, 2008) from European competition law. However, in the practice of enforcement, the casual link between market power and actions that harm counterparties (e.g., consumers) was broken. As a result, companies with market power in Russia are in fact considered strictly liable for any harm imposed on counterparties, irrespective of whether market power (and/or restriction of competition) explains the harm or not. There are two implications. The first is the emergence of non-proper antitrust decisions, or NPADs (see below for definition), as a specific group of

[4] In Russia, there are four instances in commercial courts: first instance, appellate instance, cassation instance and highest (Supreme) court. Supreme Court has the discretion to consider or not consider cases. Supreme and cassation courts can send cases back to the first instance court. The same decision can result in a cassation instance. As a result, the number of instances regarding the case can be large (the maximum number in our dataset is 10).

decisions. The second is greater willingness to enforce the rules on the exploitative conduct of dominant sellers (e.g., excessive pricing and price discrimination).

The second feature that distinguishes Russian competition legislation from European legislation is the division between conduct that is illegal under per se and under rule of reason. There is a specific article in the Russian competition law (art. 13 'Permissibility of Actions (Omission to Act), Agreements, Concerted Actions, Transactions and Other Actions') that divides actions into illegal per se and illegal under the under rule of reason. This division in Russia (Table 2) does not completely correspond with the tradition of mature competition enforcement.

Table 2. Violations of competition law: *Per Se illegality* and *Rule of Reason* under Russian law

	Article 10	Articles 11 and 11.1	
	Abuse of dominance	Horizontal agreements	Vertical agreements
Unfair price	Per Se		
Price fixing		Per Se	
Bid rigging		Per Se	
Concerted practice		Rule of Reason	
RPM min			Per Se
RPMmax			Rule of Reason
Tying	Per Se		
Boycott		Per Se	
Vertical exclusionary agreements			Per Se
Price discrimination	Per Se	Rule of Reason	Rule of Reason
Non-price discrimination	Rule of Reason		
Market sharing		Per Se	
Exclusive territories			Rule of Reason
Coordination		Rule of reason	

Source: classified using Russian competition law

An observation in our dataset is a claim to annul infringement decisions in article 10 (on abuse of dominance) and articles 11 and 11.1. (on agreements and concerted practices). For the analysis of legal standards from all of the claims to annul, we select only *proper antitrust decisions in contrast to non-proper antitrust decisions* (Table 3). Non-proper antitrust decisions represent a large part of enforcement targets of FAS (Avdasheva et al., 2016; Avdasheva et al, 2018 forthcoming). There are three important features of NPADs compared to PADs:

(a) harm without competition concerns is considered sufficient proof of a violation;

(b) no causal interrelation 'market power – harm' is justified; and

(c) conduct affects a very small group (even one person at the extreme).

Comparison of two groups (Avdasheva et al, 2018, forthcoming) indicates that the probability of claiming annulment is higher when the decision is a PAD (proper antitrust decision or a decision on conduct that could be internationally recognized as anticompetitive), in contrast to an NPAD. Therefore, our sample should cover approximately half of the proper antitrust decisions made by FAS during the period. The dataset is skewed toward decisions with (ceteris paribus) a greater probability of annulment and larger penalties to be avoided by the claimant.

Table 3. Investigations, infringement decisions, including proper antitrust and judicial review in Russian competition policy: 2008-2015

	2008	2009	2010	2011	2012	2013	2014	2015
Number of infringement decisions on articles 10 and 11	1045	1731	1979	2625	2096	2157	2768	2768
Number of the claims to annul decisions	337	648	962	1129	821	1015	1150	938
(share of the decisions made)	0,32	0,37	0,49	0,43	0,39	0,47	0,42	0,34
Number of proper antitrust decisions among the claims to annul (observations in the dataset)	69	153	231	116	94	146	216	108
(share of the claims)	0,20	0,24	0,24	0,10	0,11	0,14	0,19	0,12

Source: FAS statistics and authors' calculations using the dataset

An important feature of our dataset is that we do not observe the complete economic analysis conducted by FAS. However, we suppose that the nature of litigation ensures that materials presented by FAS under judicial review are considered to be the best evidence to support the decisions made. If the competition authority conducts an analysis and does not present the results of this analysis under judicial review, it indicates that the results of the analysis do not support the logic of the decision. We cannot expect that executive authority distorts the evidence, but we can easily imagine that the authority understands that the analysis produced is not convincing as such. According to this logic, FAS presents under judicial review the best outcomes of economic analysis.

The following analysis aims at discovering the determinants of legal standards applied by Russian competition authorities in antitrust investigations. We also assess the impact of

economic analysis on the results of judicial review and the time costs of court proceedings. Analyzing the content of judicial decisions. we code different characteristics of cases and use them as factor variables.

The total number of observations in our dataset is 1133. The observations are claimed to appeal infringement decisions made under art. 10 and 11 (including 11.1.) on the law 'On protection of competition'. Art. 10 prohibits abuses of dominance of both exploitative and exclusionary natures. Art. 11 prohibits agreements, both horizontal and vertical. In 2012, art. 11.1. which prohibits concerted practice. was separated from art. 11. In our dataset, 14 conduct types (see Table 2) are presented.

In the analysis below, we classify conducts by conduct groups:

- conduct group A consists of exploitative abuses of dominant companies, including unfair prices and price discrimination. Below, we also refer to this group A as 'exploitative practices';
- conduct group B is the most heterogeneous. It consists of violations of art. 10 and art. 11, which have strong market power-enhancing effects. They include price fixing, bid rigging, boycotts, market sharing and exclusive territories;
- conduct group C includes concerted practices and coordination;
- conduct group D are vertical restraints that, according to conventional wisdom, can have both competition restriction and welfare-enhancing effects.
- conduct group E consists of tying and non-price discrimination but by dominant companies and due to agreements between groups of market participants.

In the analysis of the determinants and effects of legal standards, we use groups of variables that reflect the following:

- Characteristics of violators (size and recidivism);
- Characteristics of penalties (amount of monetary fines and specific behavioral remedies);
- Characteristics of sub-divisions of competition authority (considering the Central Office of FAS as one of the subdivisions) – the indicator of expertise measured by the number of claims to annul infringement decisions to particular subdivisions;
- Characteristics of the experience of competition authorities in judging particular conduct – measured by the order of given claims between all claims to annul infringement decisions on particular conduct types, ranked according to the date of claim submission (as we mentioned before, our dataset starts from nearly the first claims to annul

decisions, and as a result, we believe that our measure of experience is highly relevant); and

- Characteristics of the legal requirements regarding the approach to a particular conduct. Two indicators are important here. The first is the 'law period' that divides the overall period into two equal sub-periods: from 2008 to 2011; and from 2012 to 2015. The reason to create two sub-periods is the so-called 'third antimonopoly package' – a list of changes to competition legislation adopted at the end of 2011. Among the novel 'third antimonopoly package' was a clear division between violations that restrict competition and those that only impose harm. For the large part of the latter group, the changes introduced a cap on fixed penalties (instead of turnover penalties). Before the changes, violations that restrict competition and violations that only impose harm coexisted in the law for twenty years. However, law amendments established a clear borderline between these two groups. By dividing the penalty regimes, changes implicitly indicated different welfare effects of enforcement. At the same time, they implicitly emphasized the need for a divergent approach for necessary evidence for the investigation of conduct from two groups. The need for effect-based analysis of violations that restrict competition was emphasized. The second indicator of the legal regime is the 'rule of reason' binary variable. As we mentioned before, division between conduct that is illegal per se and according to the rule of reason is specific in Russian legislation (Table 2). However clear-cut differences introduced precisely by the text of the law (art. 13) presumes the analysis of effects (especially possible welfare-enhancing effects) for some conduct.
- Outcomes of judicial review, as an important type of independent external assessment of the analysis undertaken by competition authorities. We consider both annulments of infringement decisions in the first instance courts and final annulments (which might be made by the court of either instance, except for the Supreme Court). The means of the two variables coincide (Table 4), and the correlation is rather high. At the same time, there might be a substantial difference for particular observations because, in our sample, every 7^{th} decision supported by the court of first instance is annulled by one of the higher courts, and at the same time, every 6^{th} annulment decision is reversed by one of the higher courts.
- Number of instances that consider particular claim and duration of the litigation (in days) as the indicators of the resources spent by courts, competition authority and litigants under considering the claim.

Table 4 presents descriptive statistics of the variables that we use.

Table 4. Characteristics of infringement decisions in the dataset

Variables	Description	Mean	St. dev.	Min	Max
Annulment in the first instance	=1 if the infringement decision is annulled by the court of first instance, =0 if otherwise	0.48		0	1
Final annulment	=1 if the infringement decision is finally annulled after all instances, =0 if otherwise	0.49		0	1
Number of instances	number of court instances that considered the claim to annul infringement decision and further appeals on the decisions of lower courts	2,82	1,34	1	10
Duration of court proceeding	duration of court proceeding in days	358	216	22	1700
Legal period	=1 for cases initiated after the change of the Russian antitrust legislation in 2011, = 0 otherwise	0.46		0	1
Rule of reason (ROR)	=1 if the competition case is considered according to rule of reason, =0 if the competition case is considered per se according to the Russian legislation	0.41		0	1
Size of violator	=1 if the alleged violator is one of the 400 largest companies in Russia, =0 if otherwise	0.20		0	1
Penalty	=1 if monetary penalties are imposed on the alleged violator, =0 if otherwise	0.19		0	1
Conduct group experience	= logarithm of the number of cases of the particular conduct group initiated in the past by all regional subdivisions of FAS	3.78	0.93	0	4.85

Source: calculated by authors using dataset

In general, our sample is sufficiently large to represent the appealed decisions of Russian competition authorities. However, the limitations of our assessment of legal standards applied by FAS arise because observations represent appealed decisions only. Ceteris paribus, appealed decisions have a higher probability of being annulled under judicial review. Therefore, our assessment likely underestimates the level of economic analysis conducted by FAS.

IV Legal standards in Russian competition enforcement

This section provides descriptive statistics for the *EBS* and *LS* measured using the approach explained above. The objective of this description is threefold. We want first, to assess the time trends in the application of economic analysis in Russian competition enforcement; second, to

analyze the degree of standardization (consistency) of the approach that Russian competition authorities adopt regarding different allegedly illegal types of conduct; and third, to compare the assessments of economic analysis using *EBS* and *LS* approaches.

IV.I. EB scores and LS scores over time

Table 5 summarizes the descriptive statistics of legal standards in the investigation of particular types of conduct and conduct groups, as well as the outcomes of judicial review. A small number of observations renders year-to-year comparisons difficult.

Table 5. EB-scores and LS-scores for types of conducts and conduct groups

		2008	2009	2010	2011	2012	2013	2014	2015	Av. for period
Other than exploitative conduct										
EB-score	mean	2,59	2,50	2,04	2,22	2,27	2,58	2,25	2,09	2,28
	N	68	144	222	113	86	89	184	81	987
Set	mean	2,74	2,67	1,83	2,05	2,24	2,74	2,26	2,09	2,22
	N	34	69	144	58	33	35	65	23	461
Share of finally annulled decisions		0,44	0,40	0,52	0,48	0,48	0,52	0,38	0,28	0,44
Exploitative conduct										
EB-score	mean	3,00	4,11	3,33	1,67	4,00	3,33	3,13	3,56	3,38
	N	1	9	9	3	8	57	32	27	146
Set	mean	3,00	2,00	3,17	1,00	4,25	2,94	2,91	2,92	2,98
	N	1	1	6	1	4	34	22	13	82
Share of finally annulled decisions		0,00	0,56	0,56	0,67	0,50	0,60	0,38	0,48	0,51
Other than exploitative conduct: by type of conduct										
Price fixing										
EB-score	mean	-	3,53	2,25	2,00	3,33	2,50	2,20	2,17	2,80
	N	-	15	4	2	6	12	5	6	50
Set	mean	-	3,64	2,50	-	3,60	2,50	3,00	1,50	3,13
	N	-	14	2	-	5	8	1	2	32
Share of finally annulled decisions		-	0,40	0,25	0,50	0,50	0,58	0,80	0,67	0,52
Bid rigging										
EB-score	mean	-	2,62	2,11	1,82	2,26	2,00	2,07	2,00	2,09
	N	-	13	71	17	19	23	76	44	263
Set	mean	-	1,00	1,78	1,00	1,00	-	-	-	1,62
	N	-	1	41	8	2	-	-	-	52
Share of finally annulled decisions		-	0,54	0,55	0,41	0,37	0,48	0,34	0,20	0,40
Concerted practice										
EB-score	mean	3,14	3,02	2,61	2,52	2,33	-	4,00	1,00	2,78
	N	21	46	31	31	12	-	1	1	143

Set	mean	3,40	3,41	2,54	2,32	2,33	-	4,00	1,00	2,86
	N	15	29	26	22	6	-	1	1	100
Share of finally annulled decisions		0,19	0,35	0,65	0,42	0,67	-	0,00	1,00	0,43
RPM min										
EB-score	mean	5,00	3,00	3,00	1,00	-	3,75	4,00	2,00	3,00
	N	1	1	4	2	-	4	1	2	15
Set	mean	5,00	-	2,50	1,00	-	4,00	4,00	-	3,11
	N	1	-	2	2	-	3	1	-	9
Share of finally annulled decisions		0,00	1,00	0,50	1,00	-	0,50	0,00	1,00	0,60
RPM max										
EB-score	mean	-	2,50	-	-	-	-	-	1,00	2,33
	N	-	8	-	-	-	-	-	1	9
Set	mean	-	1,50	-	-	-	-	-	1,00	1,40
	N	-	4	-	-	-	-	-	1	5
Share of finally annulled decisions		-	0,75	-	-	-	-	-	0,00	0,67
Tying										
EB-score	mean	-	-	2,00	-	-	2,25	2,41	2,20	2,33
	N	-	-	5	-	-	4	37	5	51
Set	mean	-	-	2,00	-	-	2,25	2,39	2,20	2,34
	N	-	-	2	-	-	4	33	5	44
Share of finally annulled decisions		-	-	0,40	-	-	0,50	0,11	0,40	0,20
Boycott										
EB-score	mean	-	1,00	1,40	-	2,00	-	3,00	-	1,90
	N	-	1	5	-	1	-	3	-	10
Set	mean	-	1,00	1,40	-	-	-	2,00	-	1,43
	N	-	1	5	-	-	-	1	-	7
Share of finally annulled decisions		-	1,00	0,40	-	0,00	-	0,67	-	0,50
Vertical exclusionary agreement										
EB-score	mean	2,00	1,71	1,37	1,82	1,96	2,42	1,95	1,89	1,79
	N	11	45	54	38	24	19	37	9	237
Set	mean	1,00	1,00	1,13	1,00	1,75	2,14	1,55	1,00	1,29
	N	2	16	40	14	12	7	20	3	114
Share of finally annulled decisions		0,45	0,27	0,41	0,50	0,38	0,42	0,57	0,22	0,41
Non-price discrimination										
EB-score	mean	2,44	2,23	2,35	2,59	2,20	3,18	2,82	3,67	2,57
	N	25	13	46	17	20	22	17	6	166
Set	mean	2,25	2,50	2,38	3,43	2,00	3,18	2,86	4,25	2,72
	N	8	4	24	7	6	11	7	4	71
Share of finally annulled decisions		0,56	0,62	0,57	0,53	0,60	0,64	0,41	0,33	0,55
Market sharing										
EB-score	Mean	-	-	-	3,75	3,00	2,50	3,00	1,67	2,71

	N	-	-	-	4	3	2	6	6	21
Set	Mean	-	-	-	3,75	5,00	2,50	4,00	1,67	2,79
	N	-	-	-	4	1	2	1	6	14
Share of finally annulled decisions		-	-	-	0,75	0,33	0,50	0,83	0,17	0,52
Exclusive territories										
EB-score	Mean	2,29	-	-	5,00	-	-	-	-	2,63
	N	7	-	-	1	-	-	-	-	8
Set	Mean	2,20	-	-	5,00	-	-	-	-	2,67
	N	5	-	-	1	-	-	-	-	6
Share of finally annulled decisions		0,86	-	-	0,00	-	-	-	-	0,75
Coordination										
EB-score	Mean	2,00	2,00	1,00	3,00	2,00	3,00	2,00	2,00	2,14
	N	3	2	2	1	1	3	1	1	14
Set	Mean	2,00	-	1,00	-	2,00	-	-	2,00	1,71
	N	3	-	2	-	1	-	-	1	7
Share of finally annulled decisions		0,33	0,00	1,00	0,00	1,00	0,33	1,00	0,00	0,43
Exploitative conduct: by type of conduct										
Unfair price										
EB-score	mean	-	3,86	3,67	-	5,67	3,39	3,22	3,80	3,56
	N	-	7	6	-	3	44	18	20	98
Set	mean	-	2,00	3,25	-	6,00	2,92	2,83	3,14	3,06
	N	-	1	4	-	2	24	12	7	50
Share of finally annulled decisions		-	0,43	0,67	-	0,67	0,57	0,38	0,50	0,52
Price discrimination										
EB-score	mean	3,00	5,00	2,67	1,67	3,00	3,15	3,00	2,86	3,00
	N	1	2	3	3	5	13	14	7	48
Set	mean	3,00	-	3,00	1,00	2,50	3,00	3,00	2,67	2,84
	N	1	-	2	1	2	10	10	6	32
Share of finally annulled decisions		0,00	1,00	0,33	0,67	0,40	0,69	0,36	0,43	0,50
By conduct groups										
Group A										
EB-score	mean	3,00	4,11	3,33	1,67	4,00	3,33	3,13	3,56	3,38
	N	1	9	9	3	8	57	32	27	146
Set	mean	3,00	2,00	3,17	1,00	4,25	2,94	2,91	2,92	2,98
	N	1	1	6	1	4	34	22	13	82
Share of finally annulled decisions		0,00	0,56	0,56	0,67	0,50	0,60	0,38	0,48	0,51
Group B										
EB-score	mean	2,29	3,03	2,08	2,29	2,55	2,19	2,17	1,98	2,23
	N	7	29	80	24	29	37	90	56	352
Set	mean	2,20	3,31	1,77	2,15	3,13	2,50	3,00	1,63	2,24
	N	5	16	48	13	8	10	3	8	111

Share of finally annulled decisions		0,86	0,48	0,53	0,46	0,38	0,51	0,41	0,25	0,44
Group C										
EB-score	mean	3,00	2,98	2,52	2,53	2,31	3,00	3,00	1,50	2,72
	N	24	48	33	32	13	3	2	2	157
Set	mean	3,17	3,41	2,43	2,32	2,29	-	4,00	1,50	2,79
	N	18	29	28	22	7	-	1	2	107
Share of finally annulled decisions		0,21	0,33	0,67	0,41	0,69	0,33	0,50	0,50	0,43
Group D										
EB-score	mean	2,25	1,85	1,48	1,78	1,96	2,65	2,00	1,83	1,88
	N	12	54	58	40	24	23	38	12	261
Set	mean	2,33	1,10	1,19	1,00	1,75	2,70	1,67	1,00	1,42
	N	3	20	42	16	12	10	21	4	128
Share of finally annulled decisions		0,42	0,35	0,41	0,53	0,38	0,43	0,55	0,33	0,43
Group E										
EB-score	mean	2,44	2,23	2,31	2,59	2,20	3,04	2,54	3,00	2,51
	N	25	13	51	17	20	26	54	11	217
Set	mean	2,25	2,50	2,35	3,43	2,00	2,93	2,48	3,11	2,57
	N	8	4	26	7	6	15	40	9	115
Share of finally annulled decisions		0,56	0,62	0,55	0,53	0,60	0,62	0,20	0,36	0,47

Source: calculated by authors using dataset

However, we can make several important observations. First, economic analysis, measured either by the *EBS* or *LS*, does not increase over time. This observation should be interpreted with caution. The structure of the database changes over time. Absolute and relative numbers of exploitative conduct cases increase. The number of cases on other than exploitative conduct demonstrates no clear trend. Starting in 2013, cases on concerted practice disappeared (see a sharp decrease in the number of cases in group C). At the same time, the number exploitative conduct cases (group A) and number of cases on tying increased sharply. At some point, competition authorities find specific conduct especially dangerous for competition, and waves of investigations and decisions on this particular conduct begin. The changing structure of the appealed decisions across conduct types further complicates the task of drawing definite conclusions about clear time trends of economic analysis in competition enforcement over time.

The conclusion of no definite trends over time is also true for annulment. The data differ for different time periods and different conduct types and conduct groups. The share of finally annulled decisions increased up to 2013 and then started to decrease. In group B, the share of finally annulled decisions has tended to decrease. For other groups, the trends are not obvious.

For most types of conduct, no clear conclusions can be drawn due to the small number of observations. Exceptions are decisions on non-price discrimination in which there was a decreasing trend in annulments over time and concerted practice, in which there was a decreasing trend in the share of final annulments through 2012.

Another observed difference is between exploitative conduct cases and other conduct (restrictions of competition): higher level EB scores, higher average sets (legal standards) and, at the same time, higher annulments ratios than those for competition restrictions. In general, evidence presented in Table 5 suggests that the overall time trend (general experience of competition enforcement and judicial review of infringement decisions) does not explain the changes in legal standards applied. This observation allows us to analyze the distribution of decisions across legal standards not considering the time period as explanatory variable.

IV. II. Heterogeneity of approaches to legal standards as a measure of legal uncertainty

With the analysis of economics in competition enforcement, an important question is the coherence of the methods applied. Comparison of *EBS* and *LSs* allows us to judge exactly the consistency of analysis in particular conduct groups. Another important question is the existence of 'standards' in the sense that competition authorities recognize particular approaches as the most reliable for particular conduct types. Finally, analysis of *LSs* allows for highlighting the source of limited economic analysis in the investigations: it is a low but definite standard (for instance, modified per se) or a variation in standards, with relatively a high proportion of per se approaches.

An indicator of (in)consistency is the share of observations missed by the calculations of *LSs*, compared to the *EBS.* An indicator of standards is the distribution of observations across 'mean' or 'median' standards. Ideally, since we do not remove observations about the decisions on conduct, which are illegal per se, in cases of 'mature legal standards' (which can be high or low), we observe small variations in *LSs* around two values: one is *LS=1* (which refers to the per se approach); and another is *LS=X* (which refers to the approach applied in investigations of cases in which the competition authority decides on an effect-based basis). The latter can refer either to conduct that is illegal on the basis of the rule of reason according to the law (see above) or to conduct by which the competition authority voluntary decides to analyze more intensively.

Table 6 contains some interesting observations. First, there is no expected 'double-picked' distribution of the *EBS* or *LS*. Second, there is no type of normal distribution either. It seems that competition authority does not have conventional EBS or LS.

Second, the economic analysis is highly 'disordered'. Many efforts at economic analysis dissipate because they are not integrated into coherent approaches to the evidence. A striking example is conduct group B. It seems that, in the majority of cases, the competition authority attempts to perform economic analysis, in addition to informal market description. However, only a small part of this analysis relies on correct market delineation. A similar distribution is in group D, and the other groups are not much better.

An interesting observation is that in Russia, conduct that restricts competition requires less economic analysis than exploitative conduct. More than half of "other than exploitative conduct" decisions demonstrate EB-score = 2. Exploitative conduct decisions concentrate around EB scores = 3 or 4. The exception is counterintuitive: these cases are price fixing and market sharing cases. Higher scores and higher sets for both types of conducts are explained by the specific approach of the Russian competition authority to the presumed and actual effects of anticompetitive agreements. The law 'On protection of competition' prohibits agreements if they *'may limit or limit competition'*. Recently, the Russian competition authority considered this formula an opportunity to make judgments about law violations using potential anticompetitive effects unless restrictions of competition are actually in place. If the competition authority considers anticompetitive effects to be actually in place, it should prove this fact. We can easily see that this rule is something like 'reverse *per se*'. In the context of international comparisons, this case is one more example of the danger of superficial formalistic approaches to the meaning of imported legal rules. Their meaning in the borrowing country can differ from the meaning in the country of origin.

Overall, the variations in both the EBS and SES are very large, demonstrating the conclusion regarding the absence of conventional legal standards in competition analysis for either conduct. In other words, there is a large legal uncertainty in the enforcement that we measure empirically, which is an important contribution of the suggested approach.

Table 7 deepens the descriptive analysis of both the quality of decisions and legal uncertainty for non-exploitative conduct, and it also presents the quality of the decisions made. We can see several indicators of the deviation of legal standards from what is considered best practice in international antitrust enforcement, using the approach of measuring the weighted average legal standard (WALS), legal standard with the highest share and two neighboring legal standards

with the highest cumulative share in the sample. The first observation is that, for conduct that is traditionally illegal *per se* (price fixing and market sharing), the weighted average legal standard is higher than for the conduct that is traditionally considered on a rule of reason basis (first–vertical agreements). The second observation is the absence of dominant legal standards other than *per se* for either conduct group. The largest share of legal standards if this standard differs from 1 (which is the case for D conduct groups) is substantially less than 50%. This outcome suggests a very low level of legal certainty for either conduct. The third observation is that under 'the two-peaked distribution' of legal standards, the distance between two peaks might be very large. Consider, for instance, concerted practice. Decisions are concentrated around the truncated rule of reason (S4), but another peak is per se or modified per se (S2).

Two indicators in Table 7 measure legal (un)certainty. The first is the index of the concentration of legal standards (exactly, the *HHI* concentration index calculated for the shares multiplied by 100), and the second is the standard deviation. Except for group D conduct, the concentration of LS is very low, and even for group D, the approach of CA is not sufficiently predictable: a high concentration coexists with a large variation. This fact indicates that, although most decisions are made using *per se* rules, there are a few outliers, which are decisions made using relatively high legal standards. Deviations are very large for other groups as well.

Two indicators measure the legal quality of enforcement as a location of WALS or most typical legal standards within the interval from the most distant to the best practice point. For the most distant point, the value of the indicator refers to zero, and for the point of best practice, it is one. This approach allows us to determine the quality of enforcement for different conduct. We can see in Table 7 that the conduct of groups D and E has the lowest legal quality of decisions. Price fixing and market sharing exhibit the highest legal quality according to both types of indicators, but this observation reflects only 'relatively small amount of excessive analysis' compared to a *per se* approach, which is best for this type of conduct. The 'typical' decision (with the largest share in the sample) regarding concerted practice exhibits the same level of legal quality ($I_{Q,2}$ = 4). However, because of the two-peak distribution with the second peak at the legal standard close to *per se*, the legal quality for concerted practice is much lower ($I_{Q,1}$ = 1,79).

After providing descriptions of the legal standards for the sample in the next section, we test the hypotheses regarding the explanations for the choice of legal standard.

Table 6. Values of EBS and LS for different conduct groups

		Value of the *LS* indicator						
		1	2	3	4	5	6	7
Group A								
EB-score	Share	0,02	0,21	0,34	0,26	0,14	0,01	0,01
	N	3	31	50	38	20	2	2
Set	Share	0,04	0,30	**0,35**	0,28	0,01	0,00	0,01
	N	3	25	29	23	1	0	1
share of missed observations = **0.44**								
Group B								
EB-score	Share	0,16	0,56	0,17	0,07	0,03	0,00	0,00
	N	58	198	61	26	9	0	0
Set	Share	**0,52**	0,10	0,07	0,23	0,08	0,00	0,00
	N	58	11	8	25	9	0	0
share of missed observation=**0.68**								
Group C								
EB-score	Share	0,13	0,32	0,23	0,31	0,00	0,00	0,00
	N	21	51	36	49	0	0	0
Set	Share	0,20	0,28	0,07	**0,46**	0,00	0,00	0,00
	N	21	30	7	49	0	0	0
share of missed observations = **0.32**								
Group D								
EB-score	Share	0,39	0,44	0,08	0,07	0,02	0,00	0,00
	N	103	114	21	19	4	0	0
Set	Share	**0,80**	0,09	0,00	0,08	0,02	0,00	0,00
	N	103	12	0	10	3	0	0
share of missed observations = **0.51**								
Group E								
EB-score	Share	0,10	0,51	0,20	0,14	0,04	0,00	0,00
	N	22	111	44	31	9	0	0
Set	Share	0,19	**0,38**	0,16	0,20	0,07	0,00	0,00
	N	22	44	18	23	8	0	0
share of missed observations = **0.47**								

There are no observations with LS= 8

Source: calculated by authors using dataset

Table 7. Indicators of legal quality and legal (un)certainty for particular conducts and conduct groups

	Price fixing and market sharing (Group B)	Concerted practice (Group C)	Vertical agreements (Group D)	Exclusionary conduct (Group E)
Number of observations	46	107	128	115
'Best practice' legal standards	1	8	8	8
Weighted average legal standard , WALS (1 to 8)	2,24	2,79	1,42	2,57
LS with highest share, share in brackets	1 (0,52)	4 (0,46)	1 (0,80)	2 (0,38)
Two LSs with highest sum of two neighboring shares (sum of shares in brackets)	1,2 (0,62)	3,4 (0,53)	1,2(0,90)	1,2 (0,57)
Index of Concentration of LSs, $\boldsymbol{I_{CON}}$ (index of legal certainty)	35	33	65	25
Index of Uncertainty, $\boldsymbol{I_U}$	0,17	0,17	0,28	0,13
Quality of Enforcement: $\boldsymbol{I_{Q,1}}$, $\boldsymbol{0 \leq I_{Q,1} \leq 7}$	5,76	1,79	0,42	1,57
Quality of Enforcement: $\boldsymbol{I_{Q,2}}$, $\boldsymbol{0 \leq I_{Q,2} \leq 7}$	7	4	0	1

Source: calculated by authors using dataset

V. Factors that affect the choice of legal standard

The objective of our analysis in this section is to explain the choice of legal standards across our sample. We do so by econometric analysis of the determinants of *LS*, as well as the influence of *LS* on annulments and time for litigation. There is an evident 'reverse causality' (endogeneity) problem. If *LS* affects the probability of annulment and time for litigation, then the competition authority considers this influence when deciding on legal standards. However, at this stage of the analysis, we consider this approach, not considering endogeneity issues to be relevant.

One specific reason for this choice is that three dependent variables are influenced by the choice of different enforcement agents. More importantly, we observe only part of the possible outcomes in every decision. Competition authorities decide on *LS* maximizing objective functions, under the influence of legal rules. In turn, *LS* affects the outcomes of investigations (to make infringement decisions or not). In turn, a company that is found infringing competition law

decides whether to claim for annulment or not. We observe only the proportion of investigations resulting in infringement decisions and. among infringement decisions, only the decisions that companies appeal. *LS* chosen by competition authorities affects the strategy of evidence presentation under judicial review, both by the company and by the competition authority, as well as the assessment the evidence from both parties by judges. Evidence presented by the parties and the assessment of the contested evidence by the judge affect the outcome of judicial review. Thus, the characteristics of parties. as well as their efforts under litigation. affect the outcomes that we observe. The same characteristics affect the time for litigation.

Formulating empirical hypotheses, we derive them from the following models of decisions. Competition authority minimizes legal errors under investigation and, for infringement decisions, the probability for the decision to be annulled. There is a budget constraint for competition authority, including a time constraint. Deviation of optimal *LS from Full Effect-Based analysis*, ceteris paribus, is larger if the time cost for an 'additional' piece of analysis to expand LS is greater.

The court (one judge if we consider the first instance court or judges if we consider more than one instance) assesses infringement decisions in two steps. First, the court decides whether the competition authority applies relevant legal standards to investigations, and second, the court decides whether the competition authority applies all economic analyses under the legal standard correctly. Court may annul infringement decision either because CA applies lower LS that court expect or because CA makes more mistakes when applying necessary (or higher than necessary) LS. Therefore, increase of LS may either decrease or increase the probability of annulment.

We can apply similar logic for the duration of the proceedings. If the competition authority applies relevant (or more than relevant) legal standards and does so without mistakes in the analysis, the higher legal standard can result in a shorter period under litigation. However, if a higher legal standard renders the evidence in a particular case more complex, the higher legal standard can result in longer litigation.

Because different conduct groups requires different types of effect-based analysis, hypotheses on the determinants of *LS* and the impact of *LS* on annulments and the duration of proceedings are tested for market power-enhancing conduct (restrictions of competitions) or conduct groups B to E (group A is excluded). Exploitative conduct (unfair pricing and price discrimination) is excluded from the analysis at this stage.

V.I. Determinants of the choice of legal standard

Here, we use *LS* as a dependent variable. Several hypotheses about the factors that influence the choice of legal standard by Russian CA are tested below.

H1.1. The larger the number of cases resolved by FAS regarding a particular type of conduct, the higher is the legal standard that FAS chooses.

This hypothesis can be considered trivial since it follows from standard interpretation of low legal standards as an outcome of limited experience, and the accumulation of experience incentivizes increasing the level of economic analysis (see, for instance, Gerber, 2015). The issue is not as clear if we consider legal standards as an outcome of optimization decisions by competition authorities. On the one hand, the costs of the application of a certain legal standard decrease with experience of competition authorities, which could cause an increasing trend in the level of legal standards for each particular type of conduct. On the other hand, experience in the investigation of a particular business practice clarifies for the competition authority: a) whether an increase in the legal standard leads to positive effects in terms of the CA utility function (no matter which arguments are in this utility function); and b) whether this effect is sufficiently large to compensate for an increase in the cost of investigations. In case of negative answers for (a) or (b), one should not expect an increasing trend in the level of legal standards**.** In other words, CA can apply higher legal standards over time because they help to prevent mistakes and to decrease the cost of economic analysis, but CA can apply lower legal standards if more economics cannot help pass judicial review. A positive impact indicates that the first effect is greater than the second.

To test the hypothesis, we use a variable of *Conduct Group_Experience* as the logarithm of the number of cases that the particular group submitted for judicial review before the particular claim. Since our sample contains only decisions under judicial review, the value of the variable underestimates the experience of FAS and its regional subdivisions. We believe that this effect is not too large. Using our previous analysis (Avdasheva et al, 2018), we expect that our sample covers at least half of the general population of proper antitrust decisions. At the same time, our sample covers claims to annul from the very beginning of the new Russian competition law enforcement (2006) under sufficiently large penalties (in force since 2007).

Statistical significance of the relevant coefficient would reflect the existence of general trends (positive or negative) in the development of legal standards in antitrust enforcement over time.

H1.2. The higher the legal standard is in non-annulled (annulled) decisions under judicial review, the higher the legal standard that CA chooses to decide particular cases.

This hypothesis follows from the assumption about the importance of judicial review in choosing the legal standard. In the administrative model of competition enforcement (Jenny, 2016), judicial review of decisions is particularly important. Studies of the judicial review of competition decisions in the EU (for instance, Lemkuhl, 2008) have shown that courts can be more or less influential in the process of competition enforcement. Earlier studies of the decision making in Russian competition authorities (Avdasheva et al, 2016; Avdasheva et al, 2018) confirmed that FAS considers the outcome of judicial review seriously, partly because of the specific feature of performance assessment. Finally, analysis of Russian courts (Trochev, 2016) confirmed that judges are able to act independently and easily annul decisions of administrative authorities when finding them illegal. Generally, Russian judges when considering the claims against the administrative authorities are not biased (or at least not very biased towards the latter. Therefore, we expect that the outcomes of judicial review influence the choices of legal standards in subsequent cases. The doubt, however, concerns whether confirmation or annulment exerts a greater effect on the choice of legal standard. To test the hypothesis, we generate two variables of the legal standards of the decisions submitted for the judicial review. We assume that in contrast to the experience of enforcement, there is a lag between, on the one hand, particular judicial decisions and, on the other hand, the effect of the judgment being limited in time. So, we ignore the last 5 decisions for particular conduct group, and for the next 10 decisions being submitted for annulment we calculate the following:

- The average set of the sub-group of decisions that finally remained in force; and
- The average set of the sub-group of decisions that were finally annulled

The statistically significant impact of past experience on the choice of legal standard would reflect that regional subdivisions of FAS share information about approaches that they applied in their investigations and consider this information when investigating cases on the same conduct. A particular point of interest is whether past experience regarding annulled decisions exerts a greater impact on the choice of legal standard, compared to the decisions that finally remained in force. This outcome would mean that, in choosing legal standards, FAS aimed to minimize the probability of annulment. The direction of the influence is also important. A negative direction would indicate that high standards of evidence are considered a factor by FAS that increases the probability of annulment. In this case, the best CA strategy would be to decrease legal standards in the future. A positive impact of the legal standards chosen in the past would indicate that CA believes that courts annul decisions because they consider economic analysis to be insufficient.

In addition to these two hypotheses, we use a number of control variables. Control variables are *conduct specific* (*ROR* variable taking the value 1 if the conduct is illegal according to the *rule of*

reason in Russian competition law (see Table 2 above) and 0 otherwise); *decision specific* (*a penalty* variable taking the value 1 if the competition authority applies monetary penalties and 0 otherwise); *violator specific* (*the size of violator* variables takes the value of 1 if the company belongs to the group of 400 largest companies in the Russian Federation); and *conduct specific* (binary variables of conduct groups). In addition, we introduce controls for the legal period. Since 2011, Russian legislation has divided all of the violations of competition law into conduct that limits competition (and also can impose harm) and conduct that only imposes harm on counterparties without competition concerns. Therefore, we introduce the *Legal period* variable, which takes the value of 1 for cases resolved after 2011. Table 2 provides descriptive statistics for the variables.

If effect-based analysis under higher LS decreases the probability of annulment, our expectations on the sign of the influence are as follows.

- CA chooses higher legal standards in cases in which the probability of appeal is higher (therefore of infringement decisions complemented by monetary penalties). The same reasoning might explain higher legal standards in the decisions against larger companies. In addition, the conduct of larger companies can results in greater welfare or consumer losses. To avoid these losses, CA might choose a higher legal standard.
- For the conduct that is illegal *only because* it restricts competition, CA chooses higher legal standards, especially if it is illegal according to *rule of reason*, which is why we expect that, after the legal changes in 2011, for conduct that restricts competition, the level of economic analysis increases.

We apply probit regression to estimate the impact of variables on the probability of choosing legal standards higher than *per se* (LS >1) and higher than *modified per se* (LS >2; LS >3). The results are presented in Table 8. Due to consideration of 'experience' variables, the number of observations in the regression analysis decreases.

For these two types of conduct, the results differ substantially. In addition, coefficients in the regression not only have different magnitudes and statistical significance but also sometimes have different *signs for different 'improvements' in the level of economic analysis.*

Table 8. Determinants of *LSs* for other than exploitative practice. Marginal effects**.**

	Set>1	**Set>2**	**Set>3**
Conduct group experience	-0.00 (0.05)	-0.12** (0.05)	-0.14*** (0.05)
Average set of the sub-group of decisions that finally stayed in force	0.01 (0.02)	-0.01 (0.03)	-0.03 (0.02)
Average set of the sub-group of decisions that were finally annulled	0.06** (0.02)	0.07*** (0.02)	0.08*** (0.02)
ROR	-0.17*** (0.06)	0.26*** (0.09)	0.28***(0.10)
Penalty (binary)	0.02 (0.05)	0.06 (0.05)	0.10* (0.05)
Size of the company	0.01 (0.05)	-0.00 (0.06)	0.05 (0.05)
Legal period (2012-2015/2008-2011)	0.19*** (0.06)	0.11* (0.06)	0.11* (0.06)
Group control variables (B=base level)			
C	0.54*** (0.09)	-0.17* (0.10)	-0.20** (0.10)
D	-0.18*** (0.06)	-0.27*** (0.07)	-0.20*** (0.07)
E	0.48*** (0.10)	-0.19*** (0.08)	-0.29*** (0.07)
Number of observations	412	412	412
Prob F-stat	0.0000	0.0000	0.0000
Pseudo R2	0.3004	0.1543	0.1585

st. err. in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The main result is the absence of positive impacts of the experience itself on the legal standard applied. In contrast, for conduct with market power-enhancing effects, we found a statistically significant *negative impact* of the experience of application on the legal standard. Other things being equal, CA, as experience is gained, less likely moves from *per se* and *modified per se* to *truncated rule of reason.* With every 1% additional bundle of cases resolved, the probability of applying the truncated rule of reason decreases by 0.14%. For this type of conduct, the negative outcomes of judicial review provide the opposite effect: increase in the average set of the annulled cases among ten in the near past increases the probability of applying the truncated rule of reason (*LS>3*) by 0.08%. These two results together indicate that FAS generally tends to decrease the level of economic analysis, unless the courts do not annul decisions based on particular legal standards. The results suggest that courts play important roles in developing legal standards because CA considers too low legal standards to be an important reason for the annulment of infringement decision.

The impact of the legally distinguished group of types of conduct (illegal according to the rule of reason) is as expected (partially the influence mixed with conduct-specific binary variables). Changes in antitrust legislation (captured by the *Legal period* variable) are also important: the very articulation that conduct is illegal only because it restricts competition induces an increase in legal standards. Application of monetary penalties is also important to explaining the move to truncate effect-based analysis.

V.II. Legal standard as a predictor of the outcome of judicial review

This sub-section aims to assess the impacts of legal standards on the probability of FAS decision annulment. As dependent variables, we use both binary variables of FAS decision annulment by the first instance court and the binary variable of final annulment of the FAS decision. In Russia, it makes sense to look both at the decision of the first instance court and at the final decision. Because of easy and inexpensive access to litigation, decisions of first instance courts are often appealed and reversed. For instance, from our dataset of 1333 observations, of 509 annulment decisions of first instance courts, only in 421 cases (83%) did these decisions remain unchanged. The same is true for non-annulment decisions: of 634 decisions, 533 (85%) remain to be unchanged.

The main hypothesis we test is the following:

H2.1. There is a U-shaped dependence of the probability of FAS decision annulment on legal standards.

On the one hand, higher legal standards applied by FAS cause its vision of practice to become more argued, which should increase the probability that a court confirms its decisions. On the other hand. the more that comprehensive economic analysis is presented by competition authorities, the more opportunities exist that alleged violators will have to criticize the analysis, providing opposite effect. That is why we assume that dependence of the probability of FAS decision annulment on legal standards is non-linear: with the increase in legal standards, the probability of annulment decreases but only up to some threshold.

We also include the legal period and conduct-specific (binary variables for conduct groups and also *rule of reason – ROR –* variables), decision-specific (binary variables for monetary penalties) and violator-specific (size of the company) control variables. Our expectations are that *rule of reason* regimes increase the probability of annulment, according to common belief, and monetary penalties induce companies to exert efforts to provide more evidence for annulments.

The legal period might exert the same effect Presumably, larger companies obtain more resources to invest in legal actions for the annulment of infringement decisions.

Table 9 presents the results. The main hypothesis seems to confirm the final decision on annulment. The increase in the legal standard up to modified per se and then to truncated rule of reason (*LS = 3* and *LS=4*, respectively) decreases the probability of annulment. A further increase in legal standard does not provide any effect. *Rule of reason* regimes and penalties are two factors that increase the probability of annulment.

Table 9. Determinants of the annulment of infringement decision by the first instance court, and final annulment respectively (marginal effects are reported)

	First instance court	**Final decision**
ROR	0.24*** (0.07)	0.33*** (0.06)
Legal period (2012-2015/2008-2011)	-0.06 (0.05)	-0.02 (0.05)
Penalty (binary)	0.13** (0.06)	0.10* (0.06)
Size of the company	0.01 (0.06)	0.01 (0.06)
Set (set1 = base level)		
2	-0.05 (0.07)	-0.11 (0.07)
3	-0.05 (0.10)	-0.18* (0.10)
4	-0.09 (0.06)	-0.18*** (0.06)
5	0.11 (0.12)	-0.00 (0.12)
Group control variables (B = base level)		
C	-0.41*** (0.08)	-0.36*** (0.08)
D	-0.13** (0.06)	-0.07 (0.06)
E	-0.40*** (0.07)	-0.30*** (0.08)
Number of observations	461	461
Prob F-stat	0.0000	0.0000
Pseudo R2	0.0678	0.0614

st. err. in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Therefore, improvement of legal standards decreases the probability of annulment only to some extent.

V.III. Legal standards as a predictor of costs of decisions

We use time, measured by days from the submission of a claim to the final decision, as an indicator of the cost of litigation. This approach makes sense since longer litigation incurs higher costs, both explicit and implicit, for all litigation parties, as well as for society. CA and companies bear the costs of litigation, and they also suffer from uncertainty about the final decision. Since particular decisions affect the expectations about the approaches of courts in

subsequent cases, longer litigation increases the perceived uncertainty for all enforcement participants.

In addition to time variables, we use the number of instances as another indicator that reflects the cost of litigation. From some perspectives, this indicator measures explicit litigation costs even better than the pure 'days' indicator because every additional instance incurs additional costs. Because of the evident dependence of duration on the number of instances, explicitly proven for the Russian commercial courts (Shastitko, 2016), we also use this effect to render the magnitude of influence more precise.

The main hypothesis that we test is the following:

H3.1. Litigation costs increase monotonically with legal standards.

Higher legal standards increase the cost of analysis, and the comparison of evidence is presented in at least in two ways. First, under higher legal standards, the number of questions that the judge(s) should review the answers to increases, which necessarily follows from the very definition of effect-based analysis. Second, higher legal standards require more sophisticated methods of economic analysis.

We apply OLS regression to test the hypothesis. In addition, we divide our sample into two sub-samples. The influence of effect-based analysis could differ for cases with lower and higher values for the parties. If the value is high, parties exert greater efforts to provide evidence and to spend more resources. To differentiate between two groups of cases, we use submission to the Higher (Supreme) court as the classification criterion. In Russia, submission to the Supreme court is not very expensive. At the same time, Supreme court is the only instance where discretion exists to consider or not to consider particular cases. The conditional probability of the case being considered and resolved is much lower for submissions to the Supreme court; therefore, the value of the case for the party should be greater, all other things being equal, to decide on submission. In our sample, 20% of the decisions of the lower courts were submitted to the Supreme court. The number of observations in the sub-samples is sufficient to compare these two groups.

The results presented in Table 10 confirm our hypothesis. In the sample, as well as in both sub-samples, higher legal standards cause additional days to be spent to resolve the case. Two results are worth mentioning. First, there is a monotonic increase in litigation costs with the increase in legal standards. Second, in the sub-sample of high value cases, increases in legal standards result in larger increases in costs. Under the low value of the case, only a shift to truncated effect-based analysis (S4 and S5) provides a statistically significant increase in the number of days. In

contrast, under high value of the case, even a small shift from *per se* to *modified per se* (S3) increases the number of days for the case to be decided. Relevant coefficients are higher for high-value cases, especially for truncated effect-based analysis (S5). Compared to per se, *TEB* increases the duration of litigation by 39% for lower-value cases and by 68% for higher-value cases.

Table 10. Determinants of the duration of judicial review (OLS regression)

	All claims	*Low value*	*High value*
ROR	11.66 (38.62)	-0.02 (36.24)	-134.03 (69.31)
Legal period (2012-2015/2008-2011)	60.26** (24.01)	77.71*** (24.45)	-9.24 (52.48)
Penalty (binary)	-11.89 (27.70)	-29.66 (28.11)	43.03 (61.96)
Size of the company	54.03** (27.04)	31.51 (28.56)	36.56 (58.11)
Set (set1 = base level)			
2	24.27 (32.73)	10.55 (31.90)	178.05* (94.73)
3	101.13** (45.24)	52.23 (47.54)	160.83*(90.67)
4	152.89*** (30.05)	131.76*** (31.65)	155.48** (65.51)
5	170.39*** (53.78)	107.9*** (54.30)	367.03*** (123.69)
Conduct group variables (B = base level)			
C	-24.75 (48.58)	3.22 (47.43)	omitted
D	-83.16*** (30.67)	-35.47 (30.82)	-165.74** (76.46)
E	-115.58*** (39.66)	-68.72* (38.04)	14.44 (76.89)
Constant	334,30*** (25,83)	277.37*** (26.68)	538.52*** (54.57)
Number of observations	461	367	94
Prob F-stat	0.0000	0.000	0.0000
Adj R-squared	0.1183	0.0691	0.1230

st. err. in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Regression of he number of instances (Table 11) shows similar results. Higher legal standards induce re-submission of claim to higher courts. It is the main predictor of litigation cost.

Table 11. Determinants of the number of instances under judicial review (OLS regression)

	All claims	Not submitted to Higher Court	Submitted to Higher Court
ROR	0.14 (0.32)	-0.04 (0.23)	-0.78 (0.72)
Legal period (2012-2015/2008-2011)	0.17 (0.20)	0.19 (0.16)	-0.15 (0.53)
Penalty (binary)	-0.48** (0.23)	-0.48** (0.18)	-0.31 (0.63)
Size of the company	0.26 (0.22)	0.31* (0.18)	-0.91 (0.59)
Set (set1 = base level)			
2	0.05 (0.27)	0.05 (0.21)	0.75 (0.96)
3	1.24*** (0.37)	0.34 (0.31)	2.82*** (0.92)
4	1.10*** (0.25)	0.68*** (0.20)	1.51** (0.66)
5	0.96** (0.44)	1.02*** (0.35)	0.58 (1.25)
Group control variables (B = base level)			
C	-0.37 (0.40)	-0.02 (0.30)	-0.24 (0.78)
D	-0.50** (0.25)	-0.03 (0.20)	-1.00 (0.77)
E	-0.59* (0.33)	0.02 (0.24)	omitted
Constant	3.04*** (0.21)	2.38*** (0.17)	5.32*** (0.55)
Number of observations	461	367	94
Prob F-stat	0.0000	0.0024	0.0723
Adj R-squared	0.0802	0.0484	0.0796

st. err. in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Substantial increases in litigation costs with higher legal standards support the traditional arguments of Bork (1965) and Easterbrook (1984) regarding effect-based enforcement. Higher litigation costs should be justified by the larger welfare effects of enforcement. From this point of view, the reluctance of competition authorities to apply very high legal standards in decisions does not necessarily contradict the presumable choice of legal standards by social planners.

VI. Conclusion

Our results contribute to the development of measurement tools for legal standards. In doing so, we apply two simple indices. One is similar to the traditional measurement of the 'amount' of economic analysis that implicitly suggests that evidence in competition investigations results from summarizing all of the data and conclusions available, regardless of the links between then. The second approach suggests that additional analysis contributes to the evidence if and only if it relies on relevant prerequisites. An approach to measurement that considers the necessary successive steps of the analysis with the benchmark affords a better understanding of legal standards applied by competition authorities.

Our second contribution is an analytical description of the role of economic analysis in Russian competition enforcement. Our approach allows us to precisely assess the economic analysis in

comparison to judgments based on anecdotical evidence. We found that an insufficient degree of economic analysis is caused by it being 'disordered' rather than due to its absence. In investigations of similar conduct, the legal standards applied vary substantially, creating high levels of legal uncertainty that we also measure empirically and compare across different conduct groups.

Next, our results contribute to understanding the process of evolution of evidentiary standards in young competition jurisdictions. Legal norms are important. We show that after the explicit division between violations that impose harm and violations that restrict competition, FAS analyzes the effects of alleged violations more extensively. Explicit statements that some conduct is illegal because it limits competition affect the approach to the analysis to a greater extent than, for instance, belonging to the group of types of conduct that is illegal according to *rule of reason.*

Finally, econometric analysis supports the overall impression that in general, the level of economic analysis in Russian competition enforcement will not improve unless we do not consider the outcomes of judicial review. Accumulation of experience with enforcement against a particular conduct reduces the legal standard. Assessment of the influence of legal standards on the probability of annulment and the cost of litigation, measured by time spent, explains this effect. Higher legal standards decrease the likelihood of decisions being annulled. However, for the statistically significant increase in probability to remain in force, not *any* economic analysis, but a shift from per se decision rules to truncated effect-based decision rules, is necessary. An increase in legal standards to this extent incurs additional costs for competition authorities. In terms of time necessary for litigation, decisions in which the competition authority applies effect-based analysis cost up to 2/3 more than decisions based on *per se* decision rules. At the same time, outcomes of judicial review induce the opposite trend. Annulment of the decisions based on particular decision rules explains the higher legal standards applied by competition authorities in future decisions.

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