The Choice of Legal Standards in Competition Law Enforcement:
A Positive Theory and Some Empirical Findings

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Objective of presentation

- Present a summary of the theoretical and empirical work undertaken in last 3-4 years on the choice of legal standards by Competition Authorities (CAs) and Courts, using a positive approach, and on identifying the role of economic analysis in Competition Law (CL) enforcement.
- Work originated and empirical research still conducted in Russia utilizing a large data set of appealed decisions made by the Russian CA (FAS) – main co-researchers: Svetlana Avdasheva and Svetlana Golovaneva (HSE).
- Empirical work using the same methodology currently been undertaken in many other countries (EC, Canada, France, Greece, South Africa, Turkey).

Background papers

1. "On the Choice of Legal Standards: a Positive Theory for Comparative Analysis", 2018. DP available in http://www.cresse.info/default.aspx?articleID=3388.
2. "A Note on the Concepts of Legal Standards and Substantive Standards (and how the latter influences the choice of the former)", 2018. DP available in http://www.cresse.info/default.aspx?articleID=3388.
3. "A methodology for empirically measuring the extent of economic analysis & evidence and identifying legal standards applied in Competition Law" (with S Avdasheva and S Golovanova), 2017. DP available in http://www.cresse.info/default.aspx?articleID=3388.
4. "Optimal institutional structure of Competition Authorities under reputation maximization" a model and empirical evidence from the case of Russia" (with S Avdasheva and S Golovanova). **The Review of Industrial Organization**, 2018.
5. "Legal Standards and the Role of Economics in Competition Law Enforcement" (with S Avdasheva and S Golovanova). **European Competition Journal,** 2017.
6. "Regulatory Decision Errors, Legal Uncertainty and Welfare: a General Treatment" (with D Ulph), **International Journal of Industrial Organization**, 2016.
7. "Optimal Substantive Standards for Competition Authorities" (with Eleni Metsiou and David Ulph), **Journal of Competition, Industry and Trade**, 2016.
8. "Legal Uncertainty, Competition Law Enforcement Procedures and Optimal Penalties" (with D. Ulph), **European Journal of Law and Economics,** 2016, 41(2).
9. "Optimal Enforcement Structures for Competition Policy: Implications of Judicial Reviews and of Internal Error Correction Mechanisms" (with D. Ulph), **European Competition Journal**, March/April 2011.
10. "On Optimal Legal Standards for Competition Policy: A General Welfare-Based Analysis" (with D. Ulph), **Journal of Industrial Economics,** September 2009**.**

Notes on terminology

- Legal Standard (or Decision Rule): describes *how* decisions in CL cases are reached. Related but clearly distinct from:
- Substantive (or Liability) Standard: *criterion* for deciding whether or not there is violation of law.
- Standards vs. Rules: legal distinction.
- Two types of legal standards:

- *Per Se* (or *object-based*): decision in a specific investigation of a given conduct made on basis of *general presumption* about impact of a general class of conducts, within which (class) we must establish that conduct investigated falls.
- *Effects-based* (EB, or *rule-of-reason*): decision made after pursuing assessment of the *specific* case and establishing impact in this specific case on whatever liability criterion is used.
- Idea of *continuum* from "low" (Per Se) to "high" (EB) legal standards.

- Welfarist vs. non-welfarist Substantive Standards (SS):

- *Welfarist* (consumer surplus or efficiency) usually assumed in academic discussions by economists but probably rarely used in practice.
- *Non-welfarist* SSs: can be distinguished into (a) SSs that are just one of a *continuum of criteria* that need to be examined in order to form a judgement about the ultimate criterion of welfare (e.g. criterion of the "preservation of competition" or "not-disadvantaging rivals"); and (b) non-welfarist SSs related to "*public interest concerns*" (popular in developing countries, BRICS – and not only).
- Note: Can have welfarist SS with Per Se LS and non-welfarist SS with EB LS.

Recent literature on optimal legal standards

- *Welfare maximisation approach* (generalises traditional decision-theoretic approach) taking into account both decision errors and deterrence effects (and legal uncertainty).[References 8 – 10].
- Main result: shifting from Per Se to EB legal standards for *presumptively illegal conducts* will improve welfare if:
- The presumption of illegality is not too high;
- The discriminating quality of the economic models (in terms of their ability to distinguish between harmful and benign cases) is sufficiently high.
- Developments in IO and evidence suggest that these conditions hold for large number of conducts in the categories of vertical constraints and abuse of dominance so, for these conducts, EB legal standards seem appropriate.
- Legal uncertainty and administrability issues do not seem to reverse this conclusion.
- This has led to move towards such standards in North America in last 25 years. But move has not been followed in Europe and other countries.

The main questions (1)

- What determines *in practice* the choice of legal standards by Competition Authorities (CAs) and Courts? And, closely related: what determines the role of economic analysis in Competition Law (CL) enforcement?
- What is the relationship between Legal Standards and Substantive (or Liability) Standards?
- Why are legal standards different in different countries (both across mature jurisdictions – e.g. US vs. EU - and between young/developing jurisdictions and mature ones)?

The main questions (2)

- Why are the legal standards adopted often lower (sub-optimal) than what welfare maximization choices would suggest?
- Why do CAs often choose different legal standards than Courts?
- How does the choice of legal standards, for assessing different conduct types, influence other aspects of CL enforcement? E.g. decisions reached by a CA on different types of conduct?

Contributions of research

- Provide a positive theory of the choice of legal standards by utility maximizing CAs that provides answers to above questions.
- Provide a methodology for empirical research seeking to identify the extent of economic analysis and evidence in CL enforcement and legal standards adopted.
- Undertake empirical analysis using datasets of decisions by CAs in a number of countries.
- Start with a brief description of the last two.

Methodology for empirical research (1)

- Objective: to measure empirically, in the form of well-defined indicators (the Effects-Based, or *EB-indicators*), the extent to which economic analysis and evidence is been applied in the enforcement of CL, using data collected from the decisions of CAs.
- Then, using a mapping of the value of these indicators to different legal standards, identify the legal standards adopted in the assessment of the different conducts that were investigated by the Authorities.
- Importance: undertake comparative analysis in different countries, examining the extent to which Authorities favor specific legal standards in the assessment of specific conducts and the way in which the judicial review process treats decisions depending on the legal standard used.

Methodology for empirical research (2)

- Statements, representing *blocks of economic analysis*, used for identifying the value of the EB-indicator for each decision.

A. Discussion of the nature and characteristics of the conduct.

B. Contextual analysis of the market and the firms. B.1 Basic market analysis / description of market characteristics based on available market statistics. B.2 Formal market delineation and market share determination – based on Hypothetical Monopolist methodology

C. Establishing unlawful competition restriction and extent to which it can be rebutted. C.1 Analysis undertaken to identify whether conduct has exclusionary or, more generally, market power enhancing effects. C.2 Articulation of a theory of harm to welfare. C.3 Analysis of potential Efficiency Defense.

D. Additional (effects) analysis. D.1 Counterfactual analysis. D.2 Balancing of potential anticompetitive and pro-competitive effects of the conduct undertaken.

Maximum score: 8

Methodology for empirical research (3)

- Construction of *aggregate EB-indicators* - to allow meaningful comparisons across decisions. Very important for examining effects of increasing economic analysis (or higher standards) on the outcome of the judicial review and comparing legal standards in different countries.
- These are represented by 8 Sets (S) each of which contains only decisions that are identical in terms of their scores as follows:

1. S1: {A} – aggregate EB-indicator of value 1.
2. S2: {A, B1} - aggregate EB-indicator of value 2.
3. S3: {A, B1, B2} – aggregate EB-indicator of value 3.
4. S4: {A, B1, B2, C1} – aggregate EB-indicator of value 4.
5. S5: {A, B1, B2, C1, C2} – aggregate EB-indicator of value 5.
6. S6: {A, B1, B2, C1, C2, C3} – aggregate EB-indicator of value 6.
7. S7: {A, B1, B2, C1, C2, C3, D1} – aggregate EB-indicator of value 7.
8. S8: {A, B1, B2, C1, C2, C3, D1, D2} – aggregate EB-indicator of value 8.

Methodology for empirical research (4)

- The values of the aggregate EB-indicator, or the different sets of decisions described above correspond in the following way to the legal standards:
- Strict Per Se (SPS): S1 or S1 and S2 (value of aggregate EB-indicator of 1 or 2).
- Modified Per Se (MPS): S3 (value of aggregate EB-indicator of 3).
- Truncated Effects-Based (TEB): S4 (value of aggregate EB-indicator of 4).
- Intermediate between TEB and FEB: S5, S6, S7 (value of aggregate EB-indicator of 5 to 7).
- Full Effects-Based (FEB): S8 (value of aggregate EB-indicator of 8).

- In summary and simplifying somewhat, under (Strict) Per Se **(SPS)** only conduct characteristics are examined and assessed, under **MPS** these are examined as well as market characteristics, under **TEB** additional analysis establishing exclusionary or market power enhancing effects is undertaken and under **FEB** the above are supplemented by additional analysis and evidence to establish the net effect of the specific conduct on some measure of welfare taking into account potential efficiencies.

Empirical research: datasets and basic statistics

Country / Period	Total number of antitrust decisions (average p.y)	Number of infringement decisions (% of total)	Appealed decisions		Annulled decisions		Average value of the EB-indicator (max: 8)
			Number	%	Number	%	
DGCOMP (1992 – 2016)	465 (18,6)	197 (42,4%)	136	69%	54	40%	
Russia (2008 – 2015)			987 (+146) (1133)		437 (+75) (512)	44,2 (51,4%) (45,2%)	2,47 (3.38) (2,59)
Greece (1996 – 2017)	147 (6,7)	88 (60%)	69	78,5%	23	33,5%	3,61
France (2000 – 2015)	778 (48,6)	199 (25,6%)	128	64,5%	51	40%	3,91
Turkey (1998 – 2017)	310 (15,5)	229 (74%)	191	83,5%	55	29%	3,40
Canada (1986 – 2016)	18 (0,6)	9 (50%)	4	44,5%	3	75%	3,22
South Africa (2001 – 2016)	27 (1,7)	16 (59,3%)	10	63%	8	80%	5,31

Model and main assumptions

- A CA makes its choice of investigations/decisions (D) and the legal standard (LS), for assessing any given conduct type, by maximizing its utility (U) net of enforcement costs (C). In choosing LS it takes into account the LS anticipated to be adopted by Appeal Courts.
- Appeal Courts choose optimal LSs influenced by the Substantive Standard (SS) that they adopt (taking into account influence of LS on decision errors and incentives).
- The CA's utility depends on *"enforcement success" (S)* (that determines reputation, R) and on the *"quality" of enforcement (Q)*.
- S depends on decisions reached *not annulled* by Appeal Courts.
- Quality of enforcement of a LS is measured in terms of the welfare benefits from lowering decision errors and adverse deterrence effects. Given LS, Q is non-decreasing in the amount of economic analysis utilized.
- A *pure reputation-maximizing CA* maximizes utility *without* taking into account the "quality" of enforcement.
- With higher legal standards the disputability of the CA's decisions increases and this increases the probability of annulment.

The CA utility and cost functions

$U_k = U_k(R_k, Q_k)$, k = 1,…..K

$R_k = R_k(S_k)$

$S_k = D_k(1-\Phi_k(e_k\ (LS_k)))$

$Q_k = Q_k\ (e_k\ (LS_k)))$

$e_k = a\ measure\ of\ the$ economic analysis and evidence utilized on average in the assessment of specific investigations of conduct of type k, which depends on the LS and the SS.

$\Phi_k = \varphi_k^{\mathrm{r}}\ (e_k\ (LS_k))\ \varphi_k^{\mathrm{A}}\ (e_k\ (LS_k))$ = prob. of annulment

$AC_k = MC_k = c_k(e_k\ (LS_k)) + \varphi_k^{\mathrm{A}}(e_k\ (LS_k))c_k^{\mathrm{A}}(e_k\ (LS_k))$ = cost per decision of conduct of type k.

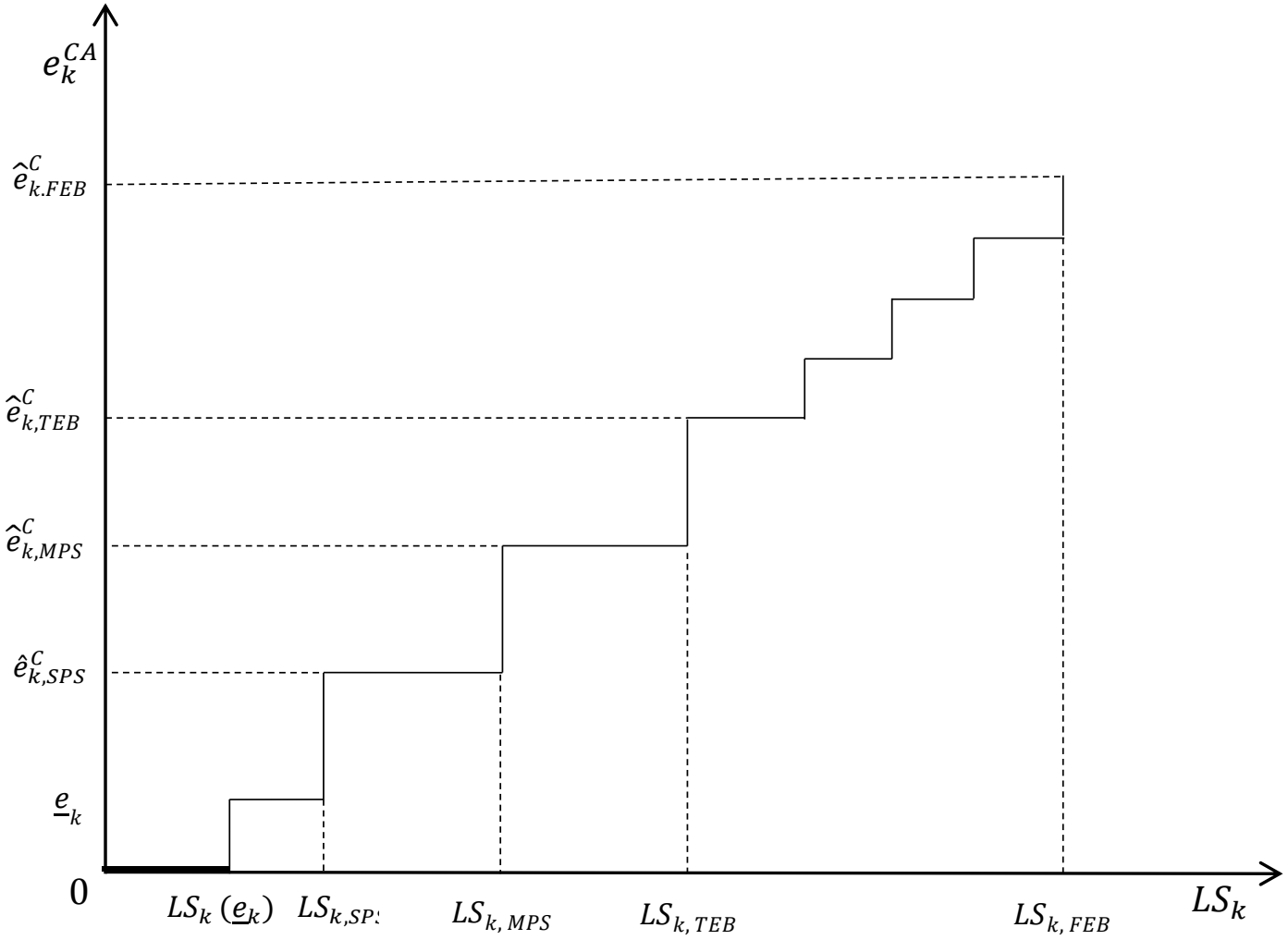
Use for simplicity:

$U_k = D_k(1-\Phi_k(e_k\ (LS_k)))Q_k\ (e_k\ (LS_k)))$, k = 1,……K.

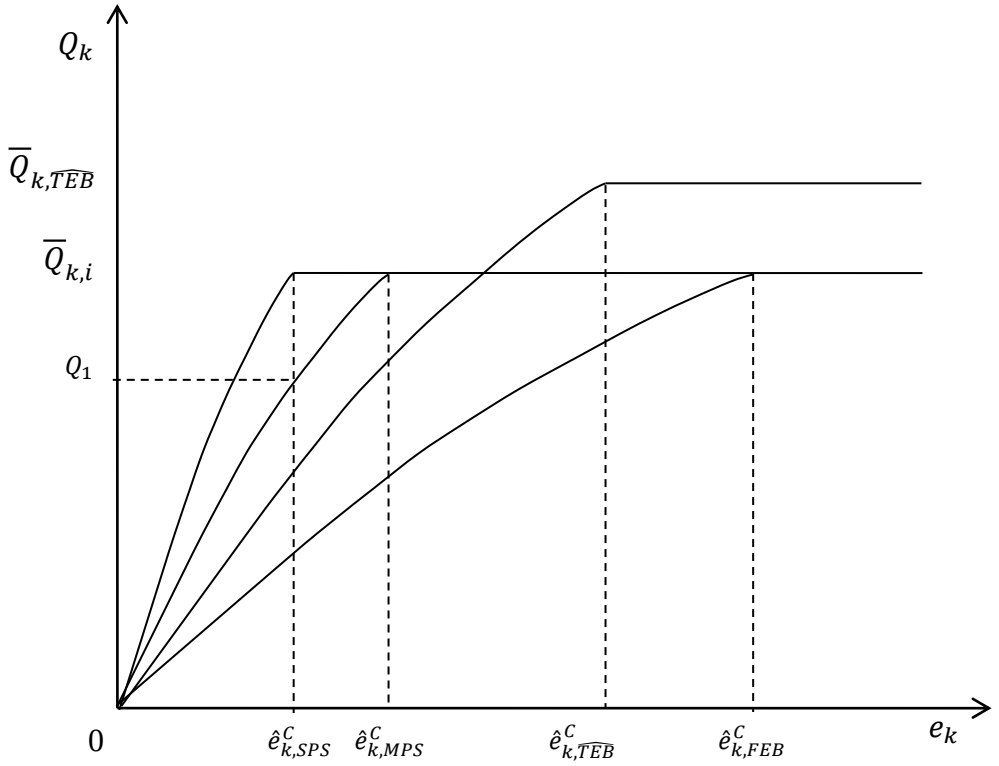
Consider four distinct legal standards: SPS, MPS, TEB and FEB.

Then (with $\hat{e}_k$ denoting the optimal value of e) we assume:

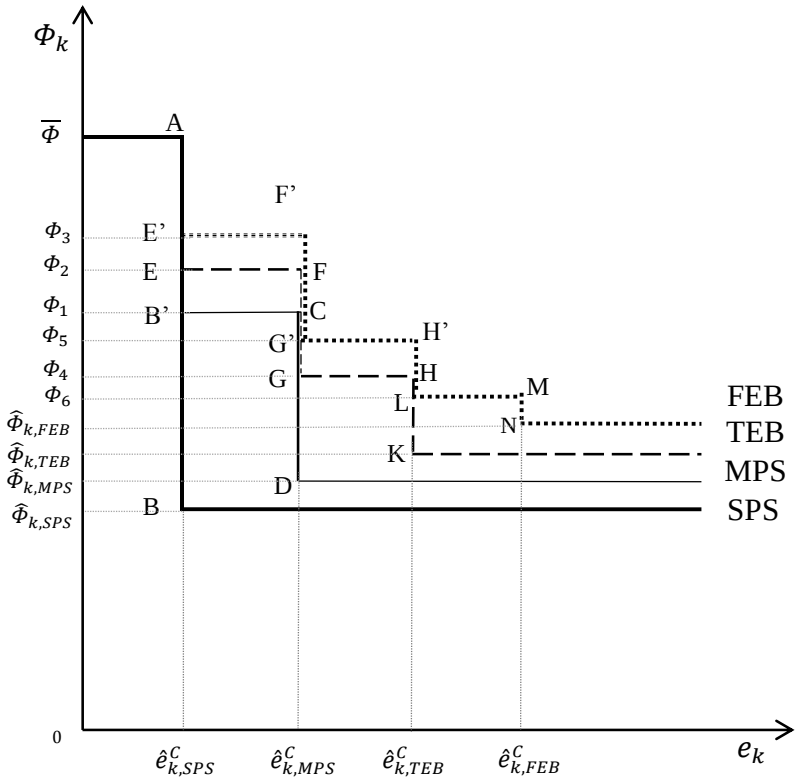
$e_k\ (LS_k)$


e_k^{CA}
$\hat{e}_{k.FEB}^{C}$
$\hat{e}_{k,TEB}^{C}$
$\hat{e}_{k,MPS}^{C}$
$\hat{e}_{k,SPS}^{C}$
$\underline{e}_k$
0
$LS_k\ (\underline{e}_k)$
$LS_{k,SP}$
$LS_{k,\,MPS}$
$LS_{k,\,TEB}$
$LS_{k,\,FEB}$
LS_k

$Q_k\ (e_k\ (LS_k)$


Q_k
$\overline{Q}_{k,\widehat{TEB}}$
$\overline{Q}_{k,i}$
Q_1
0
$\hat{e}^C_{k,SPS}$
$\hat{e}^C_{k,MPS}$
$\hat{e}^C_{k,\widehat{TEB}}$
$\hat{e}^C_{k,FEB}$
e_k

$\Phi_k(e_k\ (LS_k)$



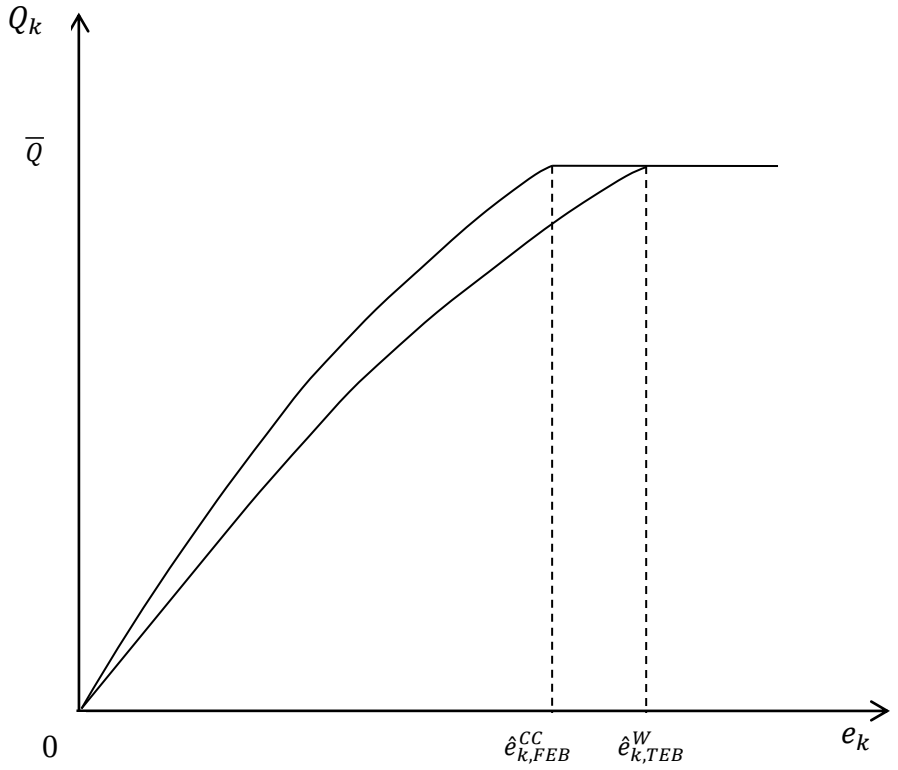
$\overline{\Phi}AB(SPS)$: $function\ \Phi(e)\ with\ SPS\ Legal\ Standard\ (LS)$

$\overline{\Phi}AB'CD(MPS)$: $function\ \Phi(e)\ with\ MPS\ LS$

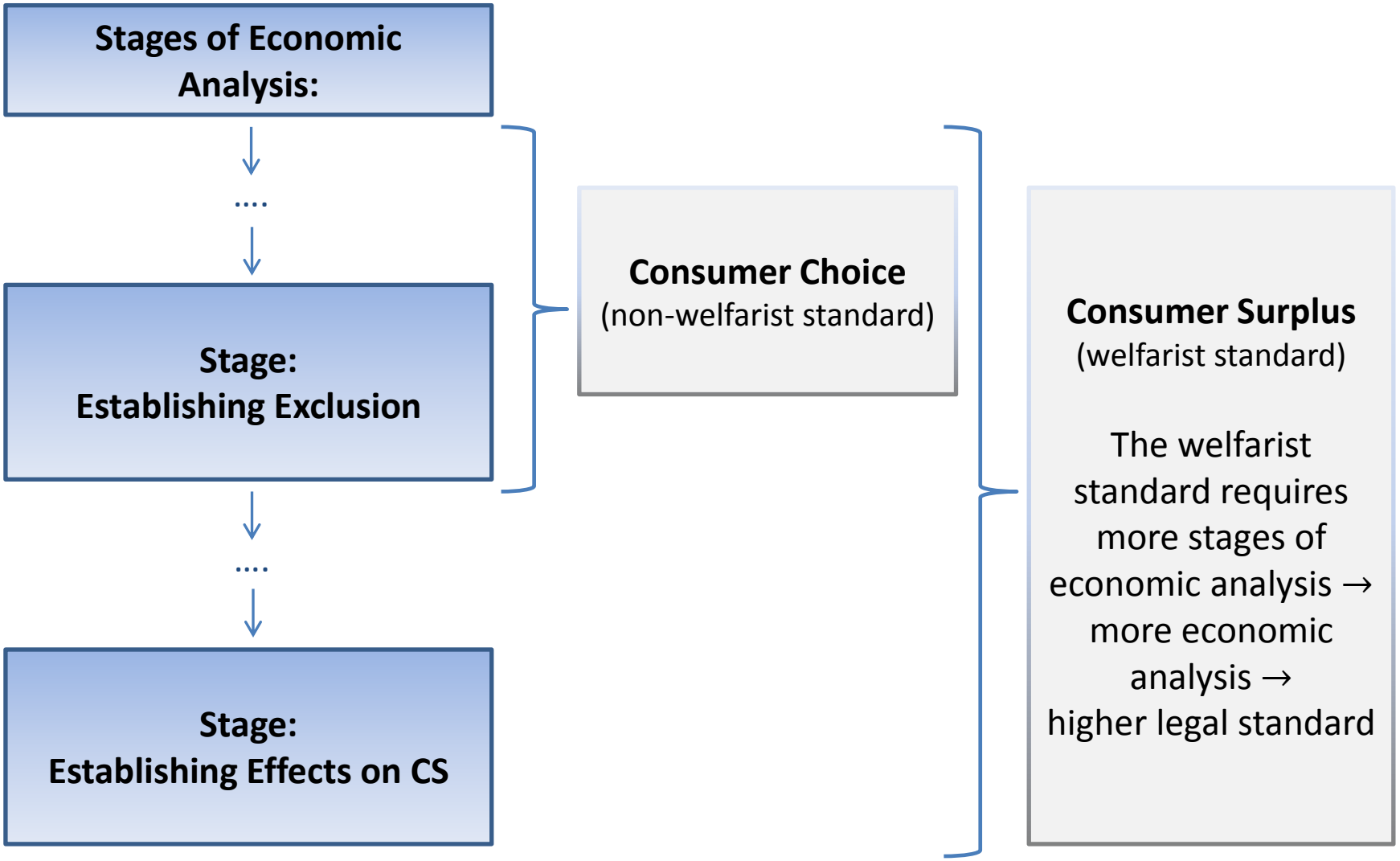
$\overline{\Phi}AEFGHK(TEB)$: $function\ \Phi(e)\ with\ TEB\ LS$

$\overline{\Phi}AE'F'G'H'LMN(FEB)$: $function\ \Phi(e) with\ FEB\ LS$

Effect on Q_k (e_k (LS_k) of change in SS



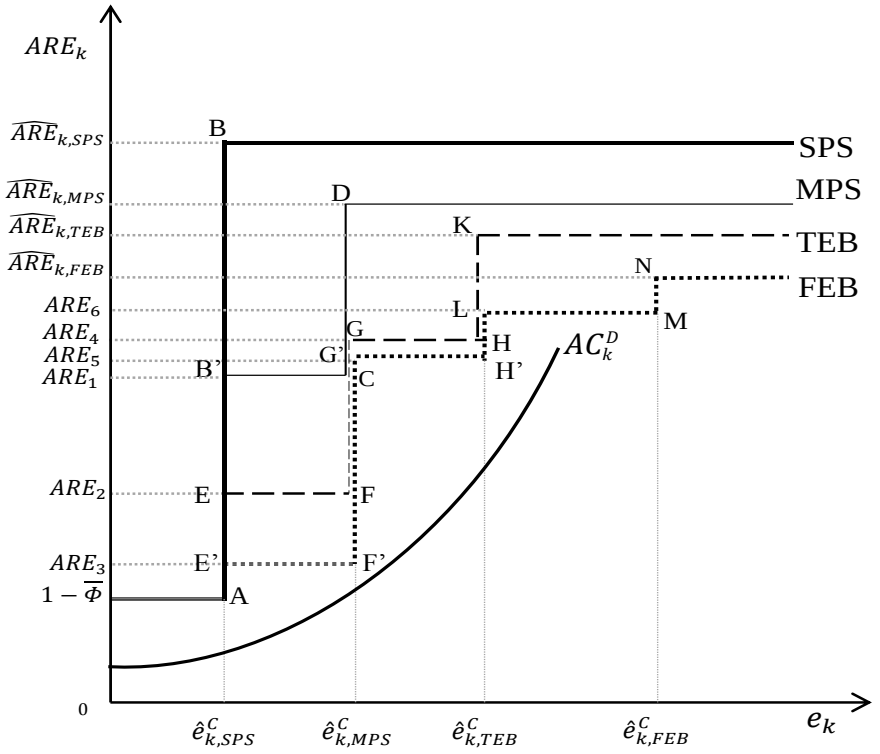
How SSs affect LSs? An example: Consumer Choice Vs Consumer Surplus



Optimal choice of LS by CA

- Optimal choice of LS_k and hence of e_k^{CA} is given by:
- $\max_{LS_k}\{U_k - C_k\}$, taking into account the LS anticipated to be adopted by Appeal Courts. Or:
- $\max_{LS_k}\{D_k[(1-\Phi_k(e_k^{CA}(LS_k)))Q_k(e_k^{CA}(LS_k))-\text{AC}(e_k^{CA}(LS_k))]\}$
- Define the *Average Reputation Effect* (ARE):
- $ARE_k(e_k^{CA}(LS_k))=(1-\Phi_k(e_k^{CA}(LS_k)))$. So:
- $\max_{LS_k}\{D_k[ARE_k(e_k^{CA}(LS_k))Q_k(e_k^{CA}(LS_k)-\text{AC}(e_k^{CA}(LS_k))]\}$
- Or: if the CA's utility depends purely on reputational concerns:
- $\max_{LS_k}\{D_k[ARE_k(e_k^{CA}(LS_k))-\text{AC}(e_k^{CA}(LS_k))]\}$
- ARE and AC functions are shown in next Figure.

Optimal choice of LS by CA



$ARE_{SPS} = (1-\overline{\Phi})AB(SPS)$

$ARE_{MPS} = (1-\overline{\Phi})AB'CD(MPS)$

$ARE_{TEB} = (1-\overline{\Phi})AEFGHK(TEB)$

$ARE_{FEB} = (1-\overline{\Phi})AE'F'G'H'LMN(FEB)$

Optimal Decisions of CA

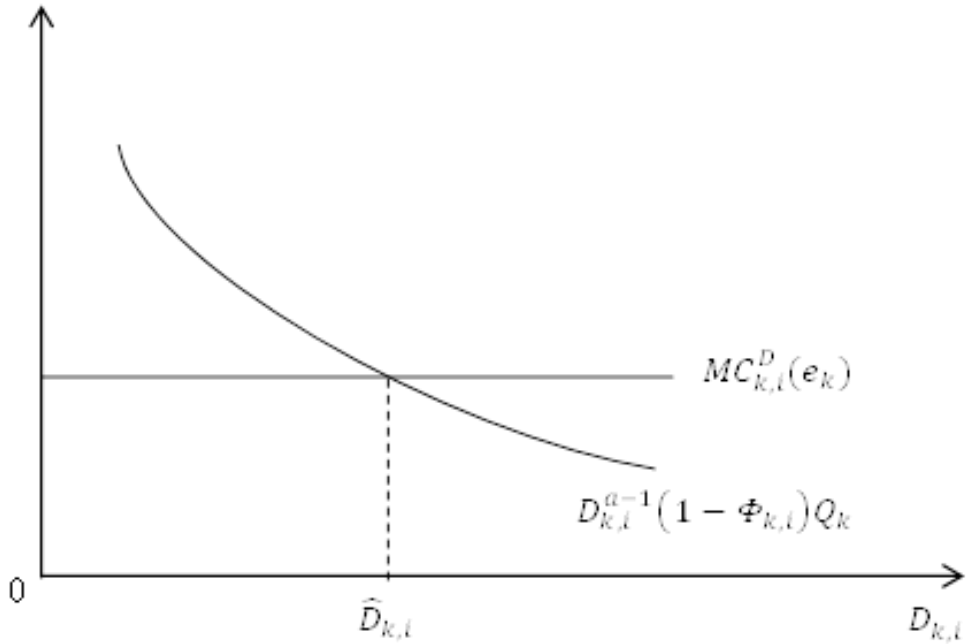
- Use:

$U_k = (\frac{1}{\alpha}) D_k^{\alpha}$ (1-$\Phi_k(e_k\ (LS_k))$)$Q_k\ (e_k\ (LS_k))$), k = 1,……K.

- Then the marginal utility from additional investigations /decisions is the declining curve in the next Figure.
- Optimal number of decisions obtained when marginal utility is equal to marginal cost.
- Clearly *the optimal number of decisions for conduct k will be larger*:

- The smaller the probability (Φ) that decisions will be reversed in Courts of Appeal and hence the larger the average reputation effect of these decisions;
- For the same reason, the greater the quality of enforcement.

Optimal Investigations of CA



Main theoretical results (1)

I. Utility maximizing CAs, that take into account the LS that they anticipate to be adopted by Courts may, nevertheless, choose a lower (and sub-optimal) LS. This is more likely when:

1. The CA's utility depends just on *reputational concerns* – they do not take into account the influence of their choices on the "quality" of enforcement in terms of welfare impact (i.e. impact on decision errors and deterrence effects).
2. When the CA operates in a young jurisdiction and thus it is *uncertain about the LS that Courts will adopt*. This is likely to be an important factor behind the lower LSs adopted in jurisdictions in developing countries.

Main theoretical results (2)

3. Even a mature CA that knows the LS that Courts will adopt may choose a lower LS when the average investigation costs are sufficiently convex with respect to the amount of economic analysis used, relative to the increase in the probability of decision annulment when a lower standard (than that adopted by Courts) is used.

II. Model can help explain empirical evidence showing a non-monotonic relation between the probability of annulment of the CA's decisions and the economic analysis applied in assessment (i.e. the legal standard adopted).

Main theoretical results (3)

III. When the SS adopted by Courts is non-welfarist they are more likely to use lower (Per Se type) LSs. This in turn, makes the LSs adopted by CAs even lower (than they would be under a welfarist SS). This may well explain the difference between the LSs applied in EC and continental EU relative to North America.

IV. Impact of standards on other aspects of enforcement:

1. The higher the LS adopted by a CA in assessing a conduct the smaller the optimal number of investigations of this conduct by the CA (*even if* higher LSs are not characterized by higher costs).

2. Jurisdictions in which Courts adopt non-welfarist SSs and lower LSs will tend, *ceteris paribus*, to be associated with more enforcement in terms of decisions reached. Example: compare EC to Canada (or UK), or Russia to South Africa taking into account differences in resources.

Advantages of approach

- Explain why standards may be “too low” and why/how they may differ between countries.
- Specifically, explain the role of the judicial review process and of Court’s choice of substantive standards.
- Provide basis for empirical comparative analysis examining relative quality of enforcement in different countries – in terms of extent to which they are adopting the “right” legal standards.
- Next Table provides an example for the case of Russia.

LSs and Indices of Uncertainty and Quality of Enforcement: Results from Russian dataset

	Price Fixing (59) (optimal:1)	Concerted Practices (116) (optimal: 8)	Vertical Agreements (78)(optimal: 8)	Exclusionary Conduct (115) (optimal: 8)
WALS (1 to 8)	2,75	2,7	1,4	2,6
LS with highest share (s)	4/0,39	4/0,39	1/0,81	2/0,38
Two LSs with highest sum of two neighboring shares	3,4/0,51	3,4/0,48	1,2/0,91	1,2/0,57
Index of Concentration of LSs, I_{CON} (indirect index of uncertainty)	28	31	67	25
Index of Uncertainty, I_U	0,2	0,17	0,3	0,13
Quality of Enforcement: $I_{Q,1}$, $0 \leq I_{Q,1} \leq 7$	5,25	1,7	0,4	1,6
Quality of Enforcement: $I_{Q,2}$, $0 \leq I_{Q,2} \leq 7$	4	3	0	1

NOTES: WALS = Weighted Average Legal Standard;

I_{CON}**=100*** $\sum_{i=1}^{8} s_i^2$**;** $12{,}5 \leq I_{CON} \leq 100$**;** I_U **= standard dev. 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 LS with max. share from optimal** $0 \leq D_2 \leq 7$**.**

Legal Standards and the Probability of Annulment: Empirical Results from Russian Dataset

- Econometric analysis using the Russian dataset of appealed infringement decisions shows that increasing the value of the aggregate EB-indicator from 1 to 2 leads to a statistically significant *reduction* in the probability of annulment.
- This is consistent with predictions of model (Proposition 3 of paper): FAS finds it optimal to adopt SPS when the "right" standard (adopted by Courts) is higher.
- But the changes in the probability of annulment when the EB-indicator increases from a value of 2 to values of 3 or 4 are not statistically significant.

Some Recommendations

- If standards chosen in practice are “too low”, institutional adjustments and other measures could facilitate the adoption of higher standards and the expansion in the use of modern economic analysis and techniques in CL enforcement. Among these we would put priority on the following:

1. Explicitly incorporating into Competition Law provisions, *substantive standards* that are related to consumer welfare and efficiency.
2. Providing incentives to CAs through appropriate *performance criteria,* related to the welfare effects of enforcement activities, to make legal standard choices taking into account the implications of these choices for the quality of enforcement (in terms of the wider social impact of enforcement, thus incorporating considerations related to error-cost minimization and deterrence/incentive effects).
3. Setting up *specialized tribunals* for dealing in the first instance with competition infringement appeals, some of the members of which should be, ideally, economists.
4. Taking measures to improve the expertise of judges in handling / assessing economic theory arguments and evidence that would allow them to appreciate differences between and to design appropriate standards and reducing the uncertainty of CA’s in relation to the standards that should be adopted.

- Thank you!
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