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**Working Paper**

## The unnoticed difference between antitrust and competition policy

IES Working Paper, No. 38/2011

**Provided in Cooperation with:**

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*Suggested Citation:* Luňáčková, Petra (2011) : The unnoticed difference between antitrust and competition policy, IES Working Paper, No. 38/2011, Charles University in Prague, Institute of Economic Studies (IES), Prague

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# The Unnoticed Difference between Antitrust and Competition Policy

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IES Working Paper: 38/2011



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# The Unnoticed Difference between Antitrust and Competition Policy

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December 2011

## **Abstract:**

This paper presents a model which focuses on differences between the competition policy of the EU and antitrust of the U.S. It introduces three versions – Neutral, American, and European. Two-stage game model takes the authority's perspective and describes options and behavior of antitrust officials when a firm engages in non-price vertical agreement (possibly restraint). Optimal behavior is expressed as expected income of the authority (EIA) which is a function of probability of wrong decision(s) in the course of action. It takes into account specific preferences, different types of errors, fear of those errors, and harm they might cause. Comparison shows some unnoticed features and results slightly in favor of the EU.

**Keywords:** competition policy, antitrust, non-price vertical restraints, National Competition Authority, game form

**JEL:** L42, L44, C79, D79

## **Acknowledgements:**

I would like to express my thanks to Prof. Karel Janda for his helpful comments and important suggestions. Thanks belong also to those who encourage me.

## 1. Introduction

This paper presents a model which focuses on differences between the competition policy of the European Union (EU) and antitrust of the United States of America (U.S.)<sup>1</sup>. Its aim is to highlight the consequences of these differences and give them more precise form. Among all the differences, the most significant one to be found is the different attitude towards non-price vertical restraints (Paldor 2008) e.g. RPM<sup>2</sup> or exclusivity based on territory. For the above reason, this particular type of difference will serve as a model example throughout the paper. The model presented describes behavior and options that antitrust officials face when a firm engages in some vertical agreement (not necessarily a restraint).

The term “vertical restraint refers to vertical agreements<sup>3</sup> that may affect trade between EU member states and that prevent, restrict or distort competition” (EC 2010). In simple terms, two agents (frequently producer and his supplier) that operate at different levels of the same production chain collaborate and thus affect supply or price.

The U.S. and the EU perceive some aspects of competition policy differently. European<sup>4</sup> competition law condemns many more vertical agreements than the U.S. antitrust law. The EU is said to pursue vertical non-price restraints with “extraordinary hostility”. On the other hand, in the U.S. vertical agreements are presumed to be legal unless the plaintiff can show otherwise.

Enforcement of antitrust laws in the U.S. has come in waves. During the last three decades, under the influence of the Chicago School, attitude of the U.S. towards

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<sup>1</sup> Both terms – competition policy and antitrust – are often used as synonyms, however, depending on context they may also refer to specific geographic area.

<sup>2</sup> Resale Price Maintenance

<sup>3</sup> As defined by the Commission Regulation No. 330/2010 vertical agreement refers to “an agreement or concerted practice entered into between two or more undertakings each of which operates, for the purposes of the agreement or the concerted practice, at a different level of the production or distribution chain, and relating to the conditions under which the parties may purchase, sell or resell certain goods or services.” (EU 2010)

<sup>4</sup> By European(s) it is referred to the population of the EU or EU itself; by American(s) to the United States of American or its population.

vertical agreements was tolerant (Gevurtz 2006)<sup>5</sup> compared to the EU, where the development of competition policy has been quite consistent and strict and largely influenced by the development of EU itself.

It is worth noting that American antitrust focuses mainly on the advantages of vertical integration such as decreased price volatility, facilitated long run planning, guaranteed supplies, reduction of selling expenses, and more predictable demand. Moreover, vertical integration also solves the double markup problem. In the United States, the emphasis is less on remaining competitors and the merged firm's anticompetitive leverage and more on the effect of a merger on future prices and output levels in a given market.<sup>6</sup>

On the other side, the EU is more concerned about anticompetitive effects of vertical restraints. European authorities stress possible market foreclosure, creation of barriers to entry, facilitated collusion, and exclusive contracts that may limit competition within the internal market. The EU is worried the most about vertical agreements that would increase dominant firm's power.

EU and U.S. competition policy differ however; both believe to deal with anticompetitive effects. In American perspective EU often protects competitors not competition, even though EU (through its officials e.g. former European Commissioner for Competition Neelie Kroes) has announced that: "First, it is competition, and not competitors, that is to be protected."<sup>7</sup> Moreover, each view is up to a certain point influenced by different structure of both entities; EU member countries in many ways do not resemble U.S. states.

The question is why we observe such a difference. Is the different attitude towards competition explainable? What is the real impact of the difference? Should it be included into antitrust decision making? This paper compares American and European treatment of non-price vertical restraints and confronts the findings.

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<sup>5</sup> also see for more details on historical development of antitrust law in the U.S.

<sup>6</sup> <http://www.ftc.gov/speeches/pitofsky/fordham7.shtm>

<sup>7</sup> <http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/05/537>

Non-price vertical restraints became an issue in late 80's when the *Sylvania Case* changed the standards (for more details see Pitofsky (1978)). Current literature often focuses on descriptive analysis (e.g. Harbord and Fehr 2007). In fact a recent paper by Sokol (2010) asks for more “comparative institutional analysis in antitrust”. With the exception of Cooper et al. (2004), who analyzed vertical antitrust policy within the Bayesian framework to overcome the lack of appropriate natural experiments, other technically oriented comparative analyses are missing.

This paper takes the authority's perspective because it is distinguishable in practice and because authority sets and creates the antitrust environment/rules. The paper is structured as follows. Firstly, the neutral (policy free) version of the model is developed which represents theoretical description of the market situation. Secondly, the American version of the model is introduced and afterwards compared with the third – European version of the model. Both American and European versions reflect state specific preferences about economic policy. The final part of the paper confronts all three models and concludes.

## **2. Neutral Version**

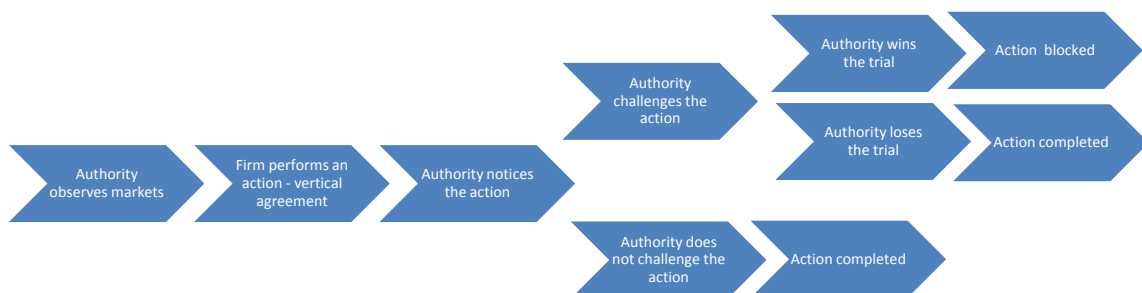
Competition policy and antitrust are primarily focused on the protection of competition as an intermediate goal for increasing social welfare. Thus it should be specified what it means to protect competition. If we consider the antitrust laws as given ex ante, it is crucial to actually notice that someone has been breaking the rules of fair competition. In the opposite case, if firms believed that they are not being constantly watched, there would be danger that they would engage in moral hazard. Theoretically, the rules of fair competition should be followed and in case they are not, the authority would notice and challenge the practice and firm in question.

First, the authority – that would be e.g. National Competition Authority (NCA) according to the EU's notation – observes the market situation. Second, a firm performs an action which can be either procompetitive or anticompetitive in relation to market (neutral actions are considered to be procompetitive). The character of

action performed is not known to the authority. However, it is supposed that the firm always knows in what practice it is engaged. Third, the authority may notice that action or not and based on evidence it may challenge it or not. Finally, if the action gets challenged the authority may win the lawsuit or not. Moreover, it should be taken into consideration that neither the decision of the authority to challenge the practice nor the outcome of the trial has to be correct. There is certain nonzero probability of errors. What matters even more than the errors themselves is the fear of those errors (as proved by model by Cooper, et al. 2005).

The previous paragraph describes the basic timeline of the problem and also gives a basic setup for the protection of the competition game, which is a perfect information game in its extensive form. It is a one-shot game, even though it might be played repeatedly. However, the firm – second player – is never the same one (in this case).

**Graph 1: Basic Timeline of the Game**

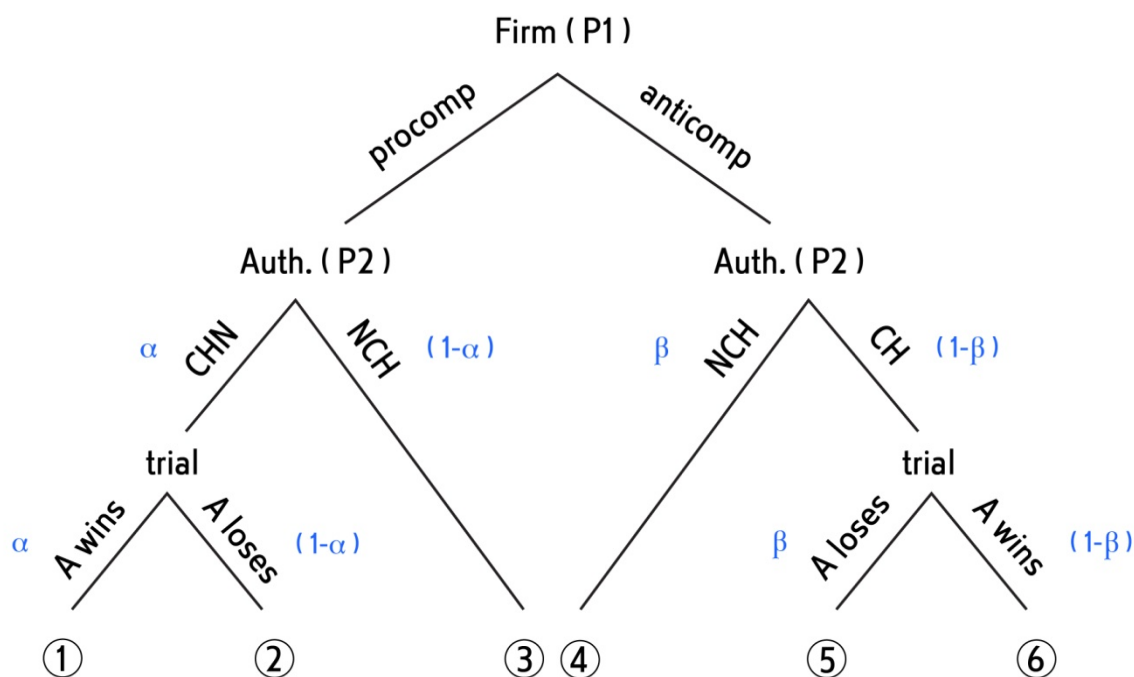


Source: own model

In line with the previously described setting and timeline, my suggestion is to characterize the options and final payoffs that the authority faces while protecting competition by the following game form (technical form); more precisely, it is a two stage game with two subgames (Church and Ware 2000):

**Graph 2: Neutral Version – General Game (full)**





Source: own model

The above game is a general version that will be modified (payoffs specified) according to the assumptions throughout the analysis, which is why it does not include payoffs (yet). There are two players – Player 1 is the Firm (F) and Player 2 is the Authority (A). Authority represents enforcement officials. Firm stands for the entity that is engaged in a vertical agreement, which is the action in question (by vertical merger we do not consider mergers that subject to prior announcement). An example of a case that would fit this setting is e.g. specific vertical agreement between vertically already interconnected firms, upstream and downstream, which decide to further deepen their business relationship.

A firm can decide for either procompetitive or anticompetitive action. Procompetitive actions tend to improve the “internal efficiency”<sup>8</sup> of the chain production structure (e.g. lower transaction or production costs). Anticompetitive actions aim at decreasing competitive pressure, possibly causing market foreclosure

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<sup>8</sup> (Verouden 2008)

or simplifying illegal cooperation (mainly exclusive contracts or territories, RPM in some cases, it depends on the type of RPM, the authority has to assess it and may be right or wrong, see further the game description). Depending on the conditions and primarily on consequences for the market, particular action, e.g. royalties, discount or payment schemes, or even contractual conditions, cannot be automatically deemed anti- or pro-competitive. That is why the rule of reason<sup>9</sup> (Peritz 1988) approach is used so often.

Many real life cases would fit this setting. In 2005, after a five-year long antitrust probe, the European Commission (EC) settled with the Coca-Cola company. The issue was Coca-Cola's exclusive arrangements and target/growth rebates.<sup>10</sup> Recently, in May 2009, EC fined Intel Corporation 1,06 billion euro for applying conditional rebates and payments and thus, based on Intel's market share, for abusing its dominant position.<sup>11</sup> Microsoft Corporation was charged with both contractual tying (with Internet services providers and original equipment manufacturers) and physical tying of Windows Media Player in the EU (lawsuit lost in 2004) and for Internet Explorer in the USA (settled in 2002).<sup>12</sup>

As for the model, (CH) is an abbreviation for challenged practice – a case when the authority files a suit against the firm, whereas (NCH) means unchallenged practice. If the authority chooses to challenge the action it can either win or lose the trial. Probability  $\alpha$  (type-I error) is the probability of loss from prosecuting (CH) a procompetitive practice. Probability  $\beta$  (type-II error) is the probability of loss from

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<sup>9</sup> Rule of reason approach used to require full market analysis. Nowadays it is rather a set of steps, the inquiry into market can be stopped after any of the steps if an anticompetitive effect is found.

<sup>10</sup> For more details on the Coca-Cola case see:

[http://ec.europa.eu/competition/elojade/isef/case\\_details.cfm?proc\\_code=1\\_39116](http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=1_39116)

<sup>11</sup> For more details on the Intel case see:

[http://ec.europa.eu/competition/elojade/isef/index.cfm?fuseaction=dsp\\_result&policy\\_area\\_id=1,2,3&case\\_title=intel](http://ec.europa.eu/competition/elojade/isef/index.cfm?fuseaction=dsp_result&policy_area_id=1,2,3&case_title=intel)

<sup>12</sup> For more details on the Microsoft case see:

[http://ec.europa.eu/competition/elojade/isef/case\\_details.cfm?proc\\_code=1\\_37792](http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=1_37792)

[http://www.justice.gov/atr/cases/ms\\_index.htm](http://www.justice.gov/atr/cases/ms_index.htm)

failing to prosecute (NCH) an anticompetitive practice. Both  $\alpha$  and  $\beta$  are positive and are supposed to fall somewhere between zero and fifty percent.

Next to introduce is the court, even though it is not a player, it stands on the side of the authority and has the same preferences. The challenged practice option automatically means that there is a trial which the authority can either win or lose. Therefore, the beliefs of authority on the character of action in question can be confirmed or not. With no loss of generality, we can suppose that probability  $\alpha$ , the authority decides to challenge a procompetitive practice, is equal to the probability that it wins the trial. Even though court is an independent body, the available information does not change much. On average, the court would gather the same evidence, and ask for opinion experts whose number in each (sub)field is rather limited. For competition lawsuits, economic opinions matter and the study performed by Aiginger et al. (2001) shows that industrial organization economists tend to behave similarly based on their origin especially when it comes to the way markets work and efficiency questions. Thus, the court is very likely to decide identically to the authority with the same probability of error mostly because it does not employ a different approach. The same reasoning applies to the probability  $\beta$ .

Based on whatever option arises in the game there are six possible outcomes and, therefore, six possible payoffs for both authority and firm. The payoffs are numbered to facilitate orientation and notation. The structure of the game remains the same throughout the paper. However, the payoffs will differ according to the specific version of the model.

Payoffs in any case already include all effects of a particular situation when the “game” (not necessarily the deal) is over. If a procompetitive action is claimed anticompetitive it is also treated in such way which implies same payoffs in the Neutral version of the model in case ONE and SIX.

The payoffs in the case of Neutral version of the model are as follows:

ONE:	procomp; A CH; A wins	$[-m - t; m]$
TWO:	procomp; A CH; A loses	$[b - tf; -ta]$

THREE:	procomp; A NCH	$[b; 0]$
FOUR:	antcomp; A NCH	$[z; -c]$
FIVE:	antcomp; A CH; A loses	$[z - tf; -c - ta]$
SIX:	antcomp; A CH; A wins	$[-m - t; m]$

All variables are positive and defined as follows:

$t$	total litigation costs
$ta$	litigation costs of the authority
$tf$	litigation costs of the firm
$b$	profit (benefits); stands for profit the firm gains once the procompetitive practice is in place
$m$	penalty (fine) for breaking the competition policy rules; the penalty is equal in case of both anticompetitive and procompetitive practice because if a procompetitive action is accidentally claimed illegal, it is treated as anticompetitive anyway
$z$	“superprofit”, stands for profit the firm enjoys once an anticompetitive practice is in place
$c$	is the loss (costs) that the authority (representing the interests of society) suffers when it fails to notice or convict anticompetitive practice

In order to keep the notation clear and simple, benefits that the authority (society) enjoys in case of procompetitive practice are set to zero (normalized) because a procompetitive practice is considered to be normal and it does not constitute an extra profit. This approach mimics the standard economic profit which also equals zero; it is the damage in term of  $c$  that the authority is mainly worried about. Variable  $c$  stands for measurable loss i.e. output decrease, price increase, transaction costs, loss from tax evasion etc.

Further, some more restrictions on the variables; we suppose that the total costs  $t$  are the sum of litigation costs of the authority  $ta$  and the litigation costs of the firm  $tf$ . Moreover,  $z \gg b > m$ , which means that anticompetitive superprofit  $z$  is greater than the procompetitive profit  $b$ . Otherwise, there would be no incentive for the firm to engage in an anticompetitive action. Penalty  $m$  is supposed to be smaller than the possible benefits/profit  $b$  in the case of a procompetitive practice. Then the following is assumed  $m > t$  and  $c > b$ . Note that the game describes what could be called “antitrust mechanism”, not the exact decision rule of the authority (which would have influenced choice of firm’s behavior).

Brief discussion of all options follows. First, in the case a firm gets challenged and the authority wins, it does not really matter whether the action was anticompetitive or procompetitive; it is blocked anyway thus there are just litigation costs and penalty to pay (option ONE and SIX). Moreover, it is reasonable to suppose that the firm will pay the litigation costs  $t$  for both as it has lost the trial.

Second, in the case a practice gets challenged but the authority is proved to be wrong (i.e. firm wins the trial), each player pays own litigation costs. In addition the practice is in place so there is either profit  $b$  (procompetitive action) or superprofit  $z$  and loss  $c$  (anticompetitive action) (options TWO and FIVE).

Third, if the practice is not challenged, there are no extra costs and the outcome depends on the kind of action the firm has undertaken (options THREE and FOUR). In case of procompetitive action (the most desirable one – option THREE) the authority receives zero (see the definition of  $c$ ) and the firm gets profit  $b$ . If authority fails to notice an anticompetitive action it will suffer from loss  $c$  while firm enjoys “superprofit”  $z$  (option FOUR).

The model holds even if a firm exports significant part of its production because firms are liable in their home country as well as for their production/products abroad.

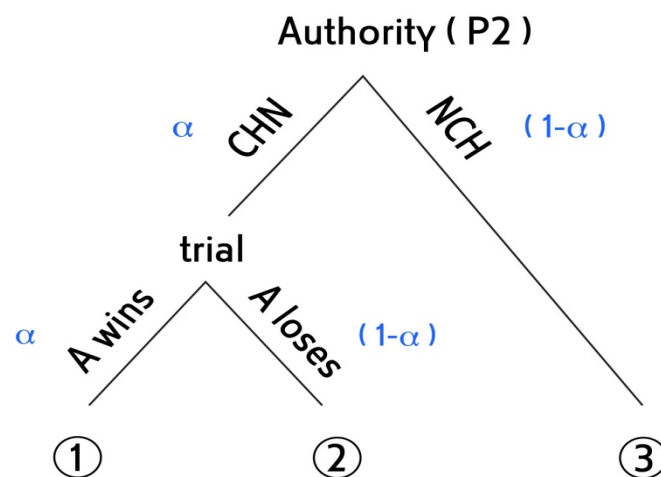
The time line has been already constructed, thus it is obvious that the firm moves first. Player 1 predetermines probable outcome by its, publicly unknown, decision.

For this reason, the game further splits into two subgames. The firm always knows what practice it engaged; however, it does not know how the practice will be judged by the authority. For the authority the situation is different. Based on evidence and prior knowledge it has to decide what kind of action it is facing. Therefore, the authority might be wrong. This is the crucial catch of antitrust prosecution – procompetitive action can be unintentionally prosecuted or an anticompetitive action may be unintentionally let go.

Authority is “compensated” for the unknown character of firm’s action by possible lawsuit, and the court can correct the decision about the character of action in place. Even though it is improbable, the court might also be wrong. Options ONE, FOUR and FIVE capture possible “mistakes” that may occur. They represent mistake scenarios that the authority is trying to avoid.

In order to resolve the game and describe the authority’s behavior in greater detail it is convenient to split the game into the two following subgames.

**Graph 3: Neutral Version – Procompetitive Subgame**



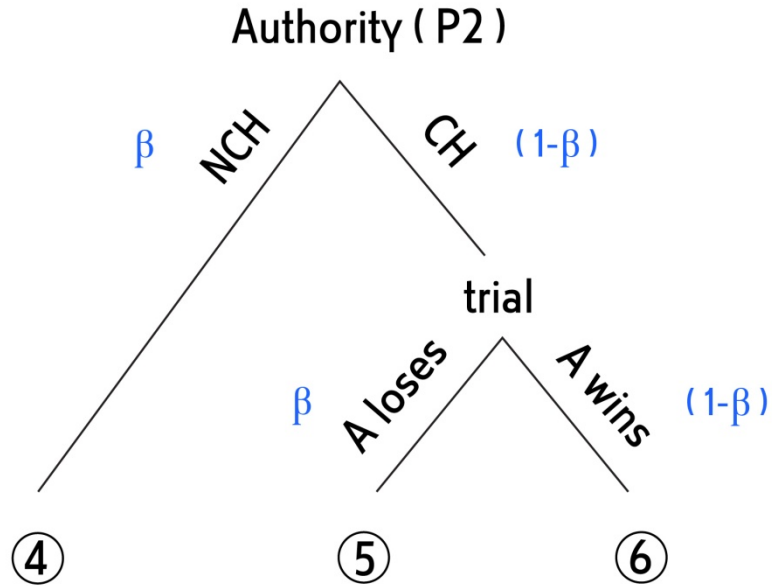
Source: own model

ONE:	procomp; A CH; A wins	$[-m - t; m]$
TWO:	procomp; A CH; A loses	$[b - tf; -ta]$

THREE: procomp; A NCH

$[b; 0]$

**Graph 4: Neutral Version– Anticompetitive Subgame**



Source: own model

FOUR: anticom; A NCH  $[z; -c]$

FIVE: anticom; A CH; A loses  $[z - tf; -c - ta]$

SIX: anticom; A CH; A wins  $[-m - t; m]$

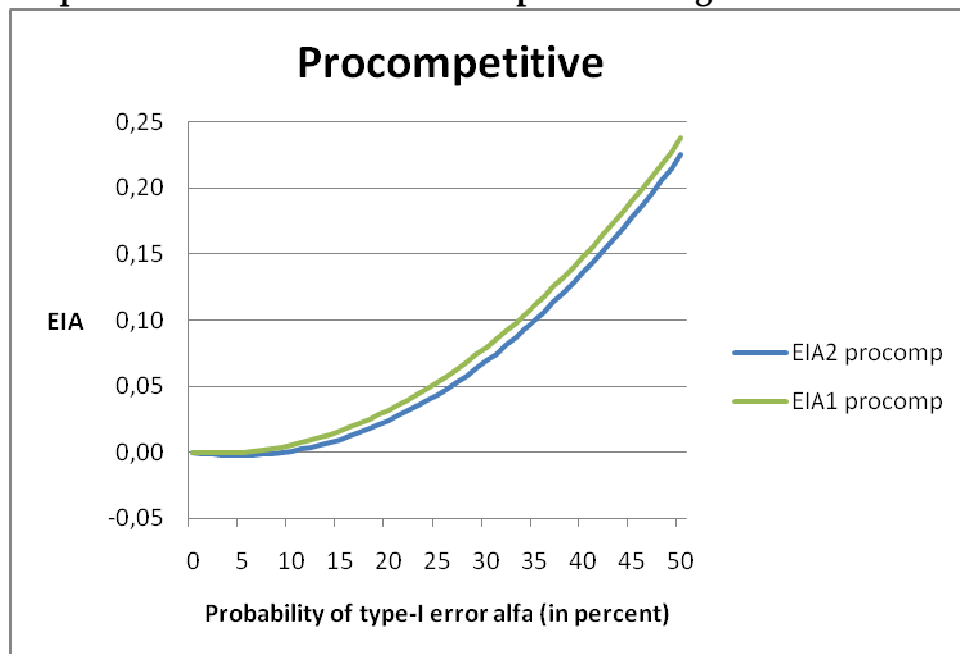
Authority optimizes its behavior when facing the option of intervening or not. Therefore, it could make a use of an estimate of the costs of its possible antitrust actions that would be general enough to be applicable to (almost) all cases. Given the probability  $\alpha$  and the payoffs the expected income of the authority (EIA), if the firm decides for a procompetitive action (Graph 3), is given by:

$$EIA = \alpha [\alpha m + (1 - \alpha)(-ta)] + (1 - \alpha)0$$

Graph 5 shows how the EIA depends on probability  $\alpha$  (horizontal axis). The EIA is expressed as a multiple of  $m$  (vertical axis shows the percentage of  $m$  the authority gains for different probabilities  $\alpha$ ). The idea is that the amount of fine (penalty  $m$ ) set by the law reflects the seriousness of the case and the damage the action could have caused, it is therefore used as a unit. Also, if other variables are expressed in terms of  $m$ , for the above equation this regards the litigation costs  $ta$ , then the EIA can be plotted against the probability  $\alpha$  and thus give us a graphical idea of potential financial gain or loss the authority is facing (in the terms of  $m$  multiples).

The amount of fine is always case specific, however, the graph can be recalculated for any amount of  $m$  or  $ta$ . Graph 5 shows the EIA as a function of probability  $\alpha$  given that the  $ta = 0,05m$  (lower bound EIA1) and  $ta = 0,10m$  (upper bound EIA2). The spreadsheet that was developed to demonstrate EIA recalculates all parameters and redraws the graphs for any variable(s) change. Because we are interested in comparison the exact amount of  $m$  is not important as long as the data is related to a single case.

**Graph 5: Neutral Version – Procompetitive Subgame**



Source: own model

The same reasoning holds for the anticompetitive subgame (see Graph 4). Given the probability  $\beta$  of failing to prosecute the anticompetitive practice and the payoffs



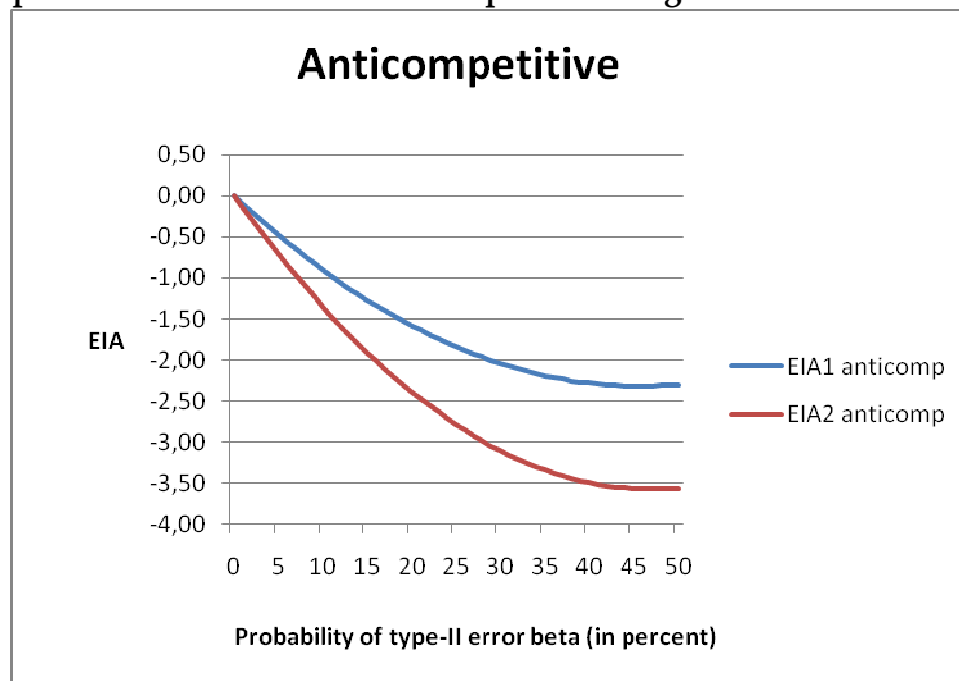
the expected income of the authority (EIA), if the firm decides for an anticompetitive action (Graph 4), is given by:

$$EIA = \beta(-c) + (1 - \beta)[\beta(-c - ta) + (1 - \beta)m]$$

Graph 6 shows how the EIA depends on the probability  $\beta$  (horizontal axis). The EIA is expressed as a multiple of  $m$  (vertical axis shows the percentage of  $m$  the authority gains for different probabilities  $\beta$ ). To obtain the lower bound (EIA1) we assume  $ta = 0,05m$  and  $c = 10m$ . For the upper bound (EIA2) the assumed values are  $ta = 0,10m$  and  $c = 15m$ . The relation of  $ta$  and  $c$  with  $m$  is supposed to represent some imaginary model case that will enable the comparison. The values can be easily changed to reflect any particular case. The aim is to compare how the American and European authority optimize facing the same case. Based on different preferences their losses/gains differ and influence their decisions; thus the way they perceive the same market action. Therefore, the Neutral – economic policy and preference free – version is developed first (Graph 3 and 4), the American and European versions follow and in the end all three versions are compared and evaluated.

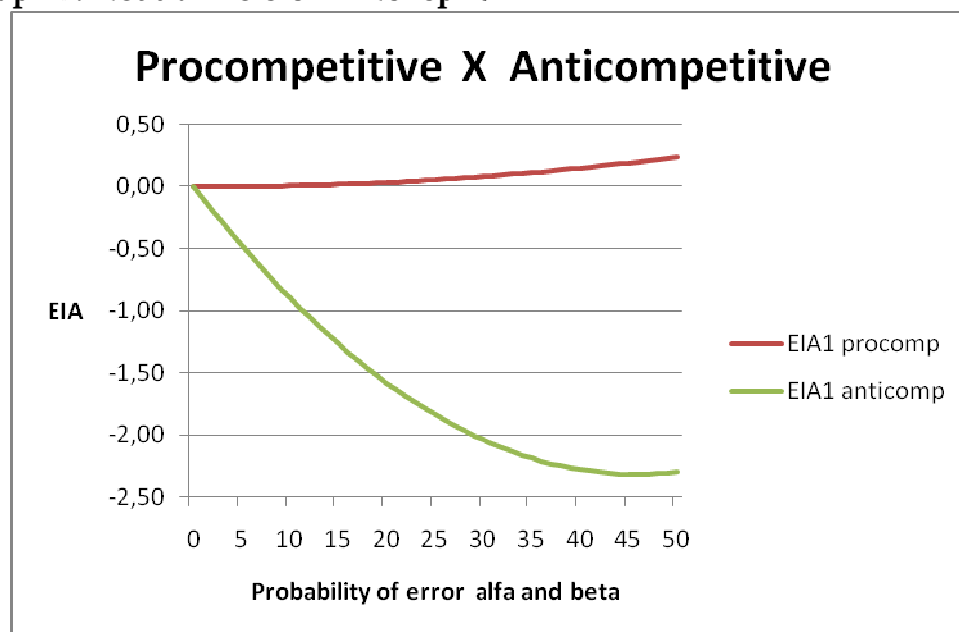
Graph 7 combines the expected income of the authority of the entire (nonsplit) Neutral version game (the lower bound values are used) and plots the expected gain/loss against the probability of making a mistake. Graphs 5, 6 and 7 nicely show the effect of increasing probability of error.

**Graph 6: Neutral Version – Anticompetitive Subgame**



Source: own model

**Graph 7: Neutral Version – Nonsplit**



Source: own model

Anti- or pro-competitive action (see p. 6) could be also defined using the (total) welfare approach where welfare is the sum of producers' surplus (PS) and consumers' surplus (CS). Anticompetitive action decreases welfare of society and

procompetitive increases it. However, if a firm gains by anticompetitive action (e.g. cartel) more than consumers lose (e.g. because they switch to substitutes) it is still not desirable. Thus, this approach is not always appropriate here. Both PS and CS could be given different weights based on political (authority's) preferences and/or policy. However, assumptions about the way in which society (in this case the EU and the U.S.) weighs/values PS or CS are strong and would negatively affect generality of the model, that is why the model optimize expected income not expected value of the authority and it is also why the variables are expressed as multiples of  $m$ .

### 3. American Version

The American version of the previous model follows (by American it is referred to the version valid for the USA, by European to the version valid for the EU); the U.S. authorities (Department of Justice, Federal Trade Commission) are biased against costs of type-I errors i.e. loss from prosecuting a procompetitive practice; loss from preventing desirable agreement (Cooper, et al. 2005).

Explanation of why the U.S. are biased against type-I errors follows. The U.S. law system is based on the doctrine of *Stare Decisis* ('stand by decided matters') which transmits a one-shot mistake into a significant long run loss that increases over time. If the U.S. officials condemn a beneficial practice, the benefits may be lost for good due to the *Stare Decisis* doctrine (Cooper, et al. 2005). This attitude is further supported by the reluctance to change precedents which can be overruled only under exceptional circumstances.

This means that one kind of the costs got significantly higher compared to the Neutral version. If the over-enforcement and deterrence is considered to be so harmful then obviously the costs of "challenged procompetitive action" option have to increase significantly. How does this prior knowledge about American preferences alter the payoffs?

The payoff in option ONE has to be changed notably. Letter  $h$  stands for harm and we suppose that  $h \gg m$ . Variable  $h$  is larger than  $m$  because if the authority and the court under the common law regime (U.S. law system) by mistake block procompetitive action then they will not only prohibit this specific agreement but also every similar agreement in the future. Moreover, it will create deterrence effect. Thus, wrong judgment (uncorrected by the court) has long-run consequences. Due to the American setting, the negative effect of bad decision multiplies over time and the possible loss can become simply too big to bear such a risk. In order to obtain EIAs all variables must be expressed in  $m$ , harm  $h$  is preset to equal  $100m$ .

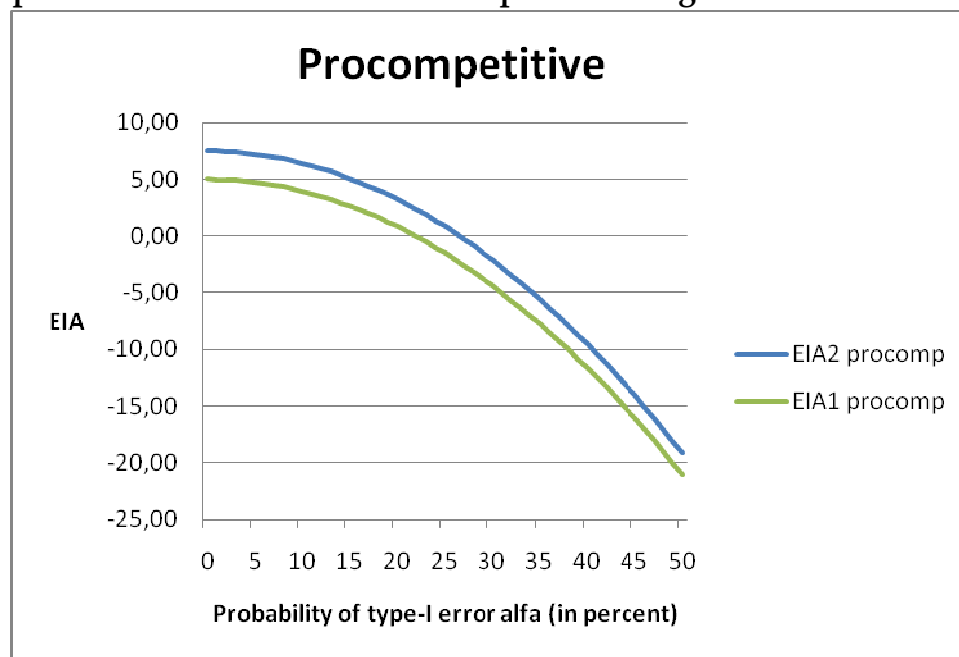
Variable  $h$  that was included into payoffs goes beyond “real” money transfers which were considered in the Neutral version. Value of certain situations is greater for the authority than its objective value expressed in money (which does not cover positive externalities). This concept is important because if we stopped being “neutral” we must also include some other costs. Neither the American nor the European authority is “selfish”; they both care about competition, society, and welfare. Thus, while optimizing they also take into account effects that are hardly measurable but important. The authority cares about promoting and supporting competitive environment. If an agreement is procompetitive it creates positive externalities in terms of increased social welfare, new innovation motives, sets the right precedents, improves market situation etc. This positive externality/spillover effect which is unintentionally produced by the firm when it engages into a procompetitive vertical structure is captured by benefit  $b$ , which depends entirely on the profit  $b$  the firm is making due to its procompetitive action. For this reason the benefit for society reflects the profit of the firm. The firm does not include benefit  $b$  (positive externality) into optimization because it is focused on own real profit  $b$  and not increased social welfare (firm’s gains does not equal  $2b$ ).

In the light of previous reasoning we must change the payoffs in both the American and European versions. The American payoffs (for the game see Graph 2) are shown below:

ONE:	procomp; A CH; A wins	$[-m - t; m - h]$
TWO:	procomp; A CH; A loses	$[b - tf; b - ta]$
THREE:	procomp; A NCH	$[b; b]$
FOUR:	antcomp; A NCH	$[z; -c]$
FIVE:	antcomp; A CH; A loses	$[z - tf; -c - ta]$
SIX:	antcomp; A CH; A wins	$[-m - t; m]$

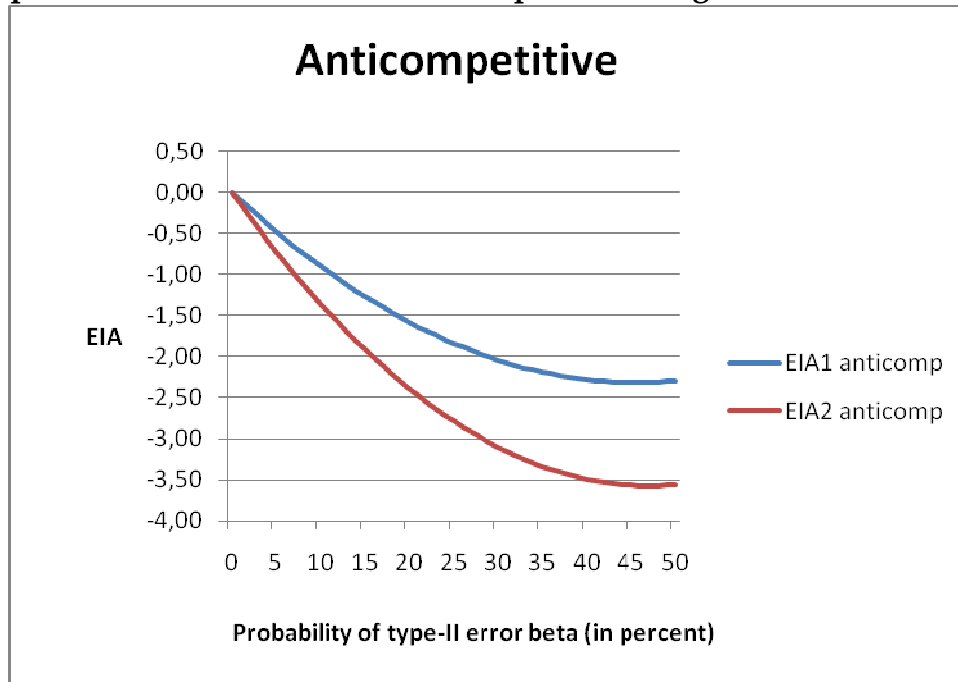
The corresponding graphs for both subgames that show the dependence of EIA on probabilities  $\alpha$  and  $\beta$  for American game follow. With the exception of above described payoffs' changes, other assumptions are equal to Neutral version.

**Graph 8: American Version – Procompetitive Subgame**



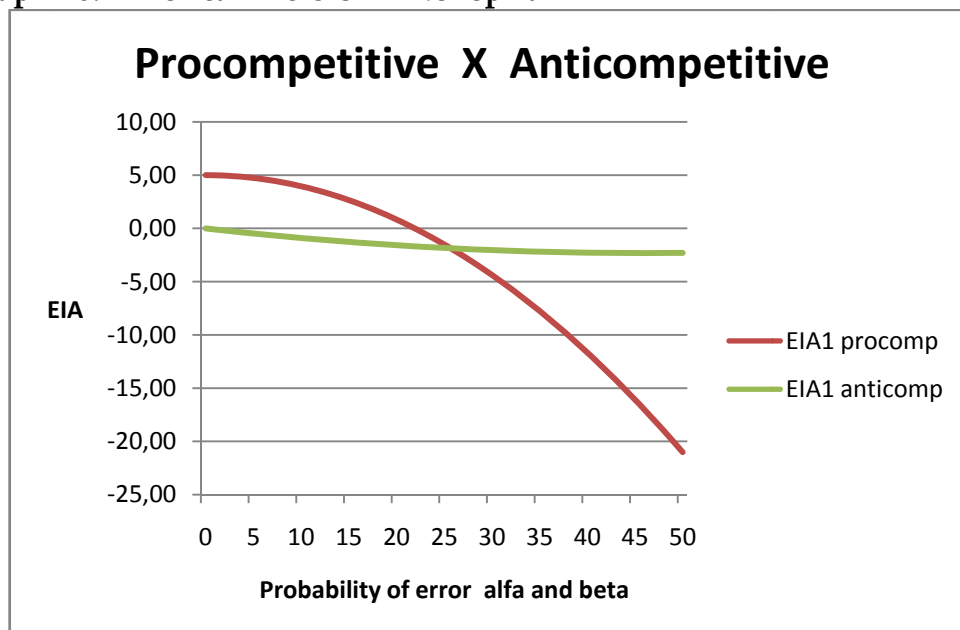
Source: own model

**Graph 9: American Version – Anticompetitive Subgame**



Source: own model

**Graph 10: American Version – Nonsplit**



Source: own model

#### 4. European Version

The European version equals neither the American nor the Neutral one. According to Cooper, et al. (2005) European authorities (European Commission, National Competition Authorities) are biased against the costs of type-II error i.e. loss

from failing to prosecute an anticompetitive practice. For this reason, in the European case, the costs of option FOUR and FIVE rise significantly. Now both also include the harm  $h$  that these options would cause in the eyes of EU. Why is EU biased against this particular type of error?

One of the building stones of the European Union is its single market, which stands on four fundamental freedoms – free movement of goods, services, labor, and capital, and a non-discriminating principle. Nonchallenged anticompetitive practice or lost trial against an anticompetitive action would affect equal opportunities in the common market. A firm could gain an unfair advantage over its competitors which would distort competition within the internal market, which is prohibited (see the Articles 101 and 102 of the TFEU<sup>13</sup> that are fundamental for the European competition policy; both forbid certain actions based on the fact that these actions are incompatible with the internal market (Bishop and Walker 2010)).

Any arrangement that would discriminate, create barriers to entry or foreclose any market would harm the single market significantly. For example, exclusive territories based on national borders would impair it severely. Costs of type-II errors are simply too high for Europeans who treasure their integration. Compared to the U.S., the costs of type-I error i.e. loss from prosecuting a procompetitive practice for the EU are possible but do not have far reaching consequences and cause “only” a one-shot loss.

For the above stated reasons it is necessary to modify the payoffs so they would reflect the costs of the EU. The costs of anticompetitive action (option FOUR and FIVE) rise rapidly thus, there is not only minus  $c$  but also the harm/damage caused to the internal market represented by minus  $h$ .

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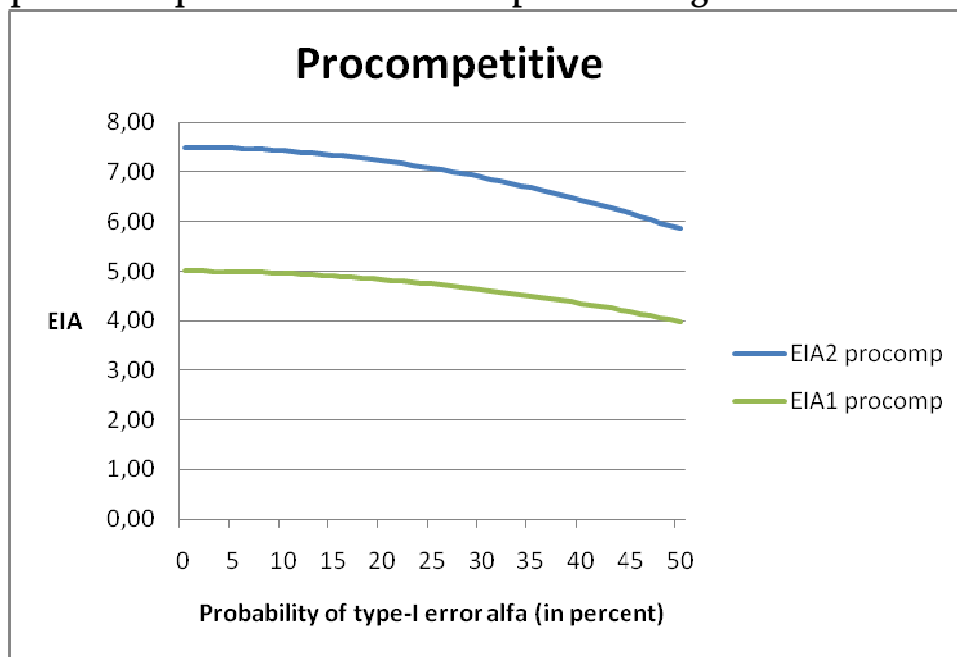
<sup>13</sup> Treaty on the Functioning of the European Union, in force since December 1<sup>st</sup>, 2009

In the line with the previous reasoning the payoffs change. The European payoffs (for the game see Graph 2) are shown below:

ONE:	procomp; A CH; A wins	$[-m - t; m]$
TWO:	procomp; A CH; A loses	$[b - tf; b - ta]$
THREE:	procomp; A NCH	$[b; b]$
FOUR:	anticomp; A NCH	$[z; -c - h]$
FIVE:	anticomp; A CH; A loses	$[z - tf; -c - ta - h]$
SIX:	anticomp; A CH; A wins	$[-m - t; m]$

The corresponding graphs for both subgames that show the dependence of EIA on probabilities  $\alpha$  and  $\beta$  for European game follow. With the exception of above described payoffs' changes other assumptions and the procedure are equal to Neutral version.

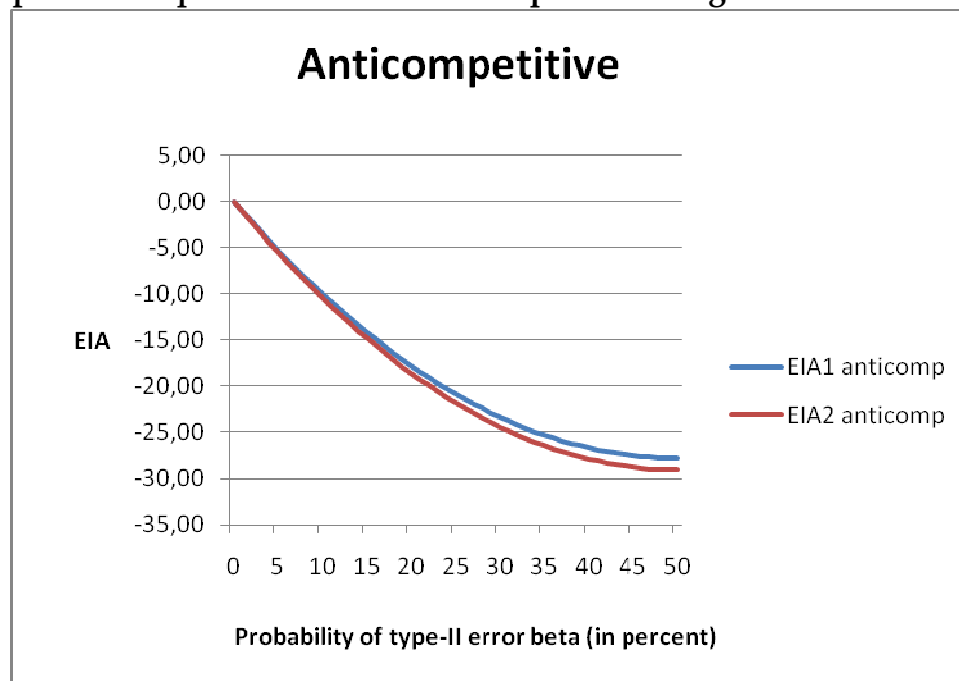
**Graph 11: European Version – Procompetitive Subgame**



Source: own model

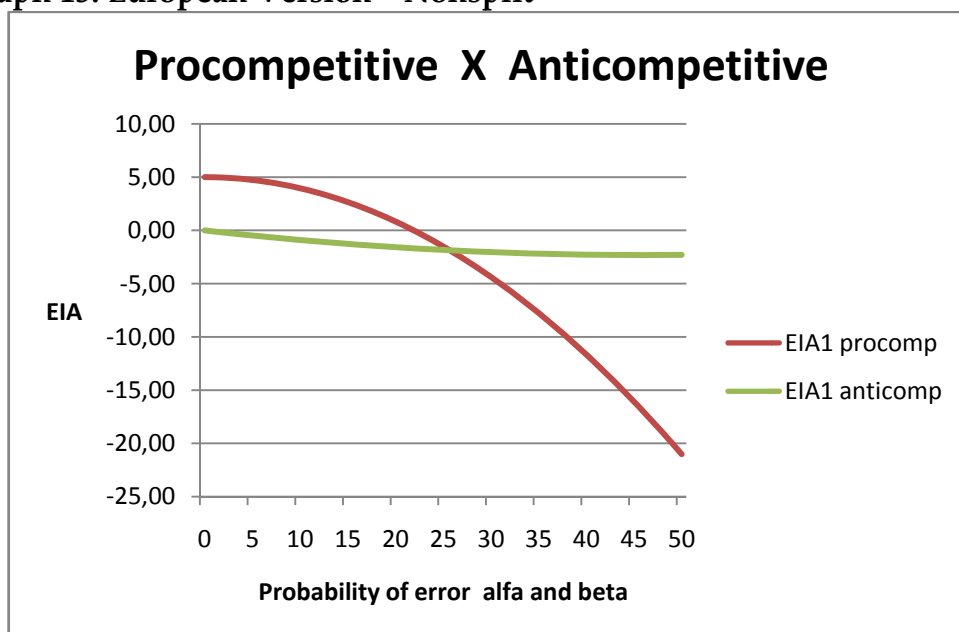


**Graph 12: European Version – Anticompetitive Subgame**



Source: own model

**Graph 13: European Version – Nonsplit**



Source: own model

## 5. Comparison

If antitrust decision making and “fear of errors” are given graphical interpretation, the resulting graphs point out several important facts. In the case of procompetitive action the EU does not really face any possible loss compared to

the U.S. that faces loss starting at  $\alpha$  greater than 22 % (lower bound). In case of anticompetitive action both authorities expect negative income, which implies that on average EU has more positive overall expectations and thus is better off. Moreover, with  $\alpha$  increasing expected income of the U.S. is falling rapidly, contrary to expected income of the EU which is decreasing only moderately.

The model shows that U.S. is more case sensitive because the lower and upper bound diverge significantly for the anticompetitive case which makes it further more vulnerable. The EU is slightly case sensitivity dealing with procompetitive actions, but as it has positive EIA, and the sensitivity loses its importance. For both authorities it holds that if the action is procompetitive, the difference between lower and upper bound diminishes as the probability  $\alpha$  (loss from prosecuting a procompetitive practice) increases.

The EU is more affected by probability  $\beta$  (loss from failing to prosecute an anticompetitive practice) with  $\beta$  increasing EU's income is falling but its case sensitivity stays low which suggests that EU is more consistent in its decisions that thus allows markets to create more reliable expectations.

Competition policy is a policy and as such judged by public and the EU's competition policy is more easily defensible as it does not violate common sense; it is acceptable to be harmed by anticompetitive action but not by a procompetitive one (U.S.'s authority has negative EIA for procompetitive actions). The authorities are indifferent about an action in place for probability of error being equal to approximately 26 % (every case has own indifferent probability).

The difference between American and European policy increases as the probability of any kind of error increases. In case of extreme error of 50 %, the perceived costs can differ by a factor of approximately 8,5 (anticompetitive action).

The Neutral version shows that it is correct to include externalities, both positive and negative, otherwise EIA would be increasing with increasing  $\alpha$ . The American version resembles the Neutral one when it comes to the anticompetitive action, and

the European version shares some common features with Neutral version in case of a procompetitive action but it overcomes the problem of EIA increasing together with  $\alpha$ .

## **6. Conclusion**

This paper introduced three versions of the antitrust behavior model – Neutral, American and European. Each reflects proper preferences and allows comparison. The analysis starts with Neutral version which constitutes basic model and benchmark. Afterwards American version is developed and compared to the European one.

The model brought up to light the “case sensitivity” feature and pointed out the differences. Taking into account that we are comparing the same case, the model shows the difference between American and European attitudes clearly. It is obvious that there is an unnoticed difference. Comparison results slightly in favor of the EU.

The model can be recalculated to reflect any other case. Thus, with minimal information input, it offers a quick rough estimate of options the authority is facing based on its probability to commit errors, which is useful especially for the authority itself. The model connects authority’s behavior with the final outcome, which is generally not the case as authority is rarely considered a player. The attention is often focused on the firm and its action, whereas authority is perceived as mechanically following laws or guidelines. The model shows that it is reasonable to consider authority to be an independent income maximizing player. With this assumption the competition policy analysis is brought up to new level.

The way the model is build enables working with abstract “fear of errors” which is transformed into possible harm and thus enters the estimates. By adjusting the harm variable it is even possible to “personalize” the fear, so it would reflect specific authority’s preferences; sometimes the fear of errors might be more important than the errors themselves as the authority is responsible to public and does not know its exact error rate.

Assumptions of the model are not unnecessarily restrictive thus close to reality. Further, the model suggests that convergence of European competition policy and American antitrust is improbable because the roots of the different attitude are neither economical nor political.

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