Damage and Earned Benefits in Antitrust Sanctions: An Analysis of the International Experience

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Abstract

With the OECD's recent peer review of Brazilian competition law and policy, and the outlook on the application of concepts such as "earned benefits" or "damages" to the fines set by the Brazilian competition authority (*Cade*), this article sought to review about how five foreign jurisdictions understand the concepts in their guides. We conclude that while there is parsimony in the use of concepts in most jurisdictions, in practice the concepts are not entirely discarded and proxies that approximate the concepts of "earned benefits" or "damage" are generally used. The authors of the article conclude that the Brazilian authority, in line with its peers, could incorporate similar guidelines consolidated in a brazilian guide.

1. Introduction

At the beginning of 2019, the Brazilian competition authority – *Conselho Administrativo de Defesa Econômica* (Cade) –, joined the Competition Committee of the Organization for Economic Cooperation and Development (OECD) as an Associate Member. To this end, the Organization has previously conducted peer reviews of Brazilian competition law and policy, with a view to assessing whether they are in line with the OECD's competition policy instruments. With the review, the Organization concluded that "the competitive regime in Brazil has strong competences and instruments for competitive pursuit" (OECD 2019: 3) and that the country "has not only successfully implemented the new and improved competitive regime, but in so doing it has consolidated its position among the leading antitrust jurisdictions around the world"

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(OECD 2019: 17). However, the OECD has not shied away from criticizing and identifying areas that, according to its standards, are amenable to improvement.

Among the points raised by the OECD, there are aspects that must be improved so that the sanctioning activity of anticompetitive conducts in Brazil allows greater compliance with what it advocates as best practices. These recommendations are aimed at increasing transparency in the determination and application of the penalty - giving greater predictability to this process and promoting greater legal certainty for administrators - as well as ensuring the proportionality and adequacy of the sanction imposed for the offense committed - avoiding cases of under-punishment and excessive punishment.

In drawing attention to the need for Cade to apply a more objective, more explicitly-based penalty dosimetry methodology, the OECD suggested to the authority that it adopt a simplified approach based on easily identifiable data, avoiding complex calculations concerning the advantage the company would have gained from anticompetitive practice. Regarding this last point, the report even recommends amending the Competition Law or Law 12.529/2011 (*Lei de Defesa da Concorrência* – LDC) to exclude the reference to "earned benefits" (article 37, I)[1].

The controversy surrounding the inclusion of the damage and the advantage obtained in the quantification of the penalty imposed by Cade was not, however, established with the OECD recommendation. In fact, the peer review itself acknowledged that the authority has faced internal disagreements on this point and noted some Board members' understanding that quantifying the impacts of conduct on the market would be more important than, for example, considerations of size of the offending company (OECD 2019: 127). On the one hand, it is argued that the deterrent capacity of the sanction is necessarily linked to the estimation of the advantage obtained, since the economic agents would ponder the potential costs and benefits of an infringement and would only commit it if their expectation of surplus was higher than its expected punishment[2]. On the other hand, it is argued that the difficulty of calculating the damage

[1]The translation could also go as "earned advantages". A more precise translation might be in set for a newer version of the article.
[2]See on that matter Schmidt (2018).

and the advantage gained would create legal uncertainty, which would undermine rather than increase the deterrent power of the fine[3].

Given this scenario, the objective of this paper is to review and analyze whether the main competition authorities, in the specific scope of cartel practice, actually incorporate the concept of "damages" and "earned benefits" while imposing its fines - and if so, how the authority performs it.

To compose the benchmarking in question, the following jurisdictions were selected due to the international recognition of their competition authorities as institutions of excellence[4]: United States; European Union; France; Germany and Japan. Moreover, considering that antitrust enforcement regimes often distinguish anticompetitive behaviors according to their nature and sanction them in a different way, the present article adopts the thematic treatment of cartel cases. Examination of the methodology used in the calculation of the fine, in turn, is based mainly on the positive norms in laws, guidelines or guides that deal specifically with this matter.[5.]

Thus, initially, the article seeks to define the scope of analysis and concepts that will be used ("'Damages' and 'earned benefits'"), before proceeding to the fundamental analysis of the article ("Damages and earned benefits in applying cartel fines: international experience"). Finally, the article presents a concluding section ("Conclusion").

2. "Damages" and "Earned Benefits"

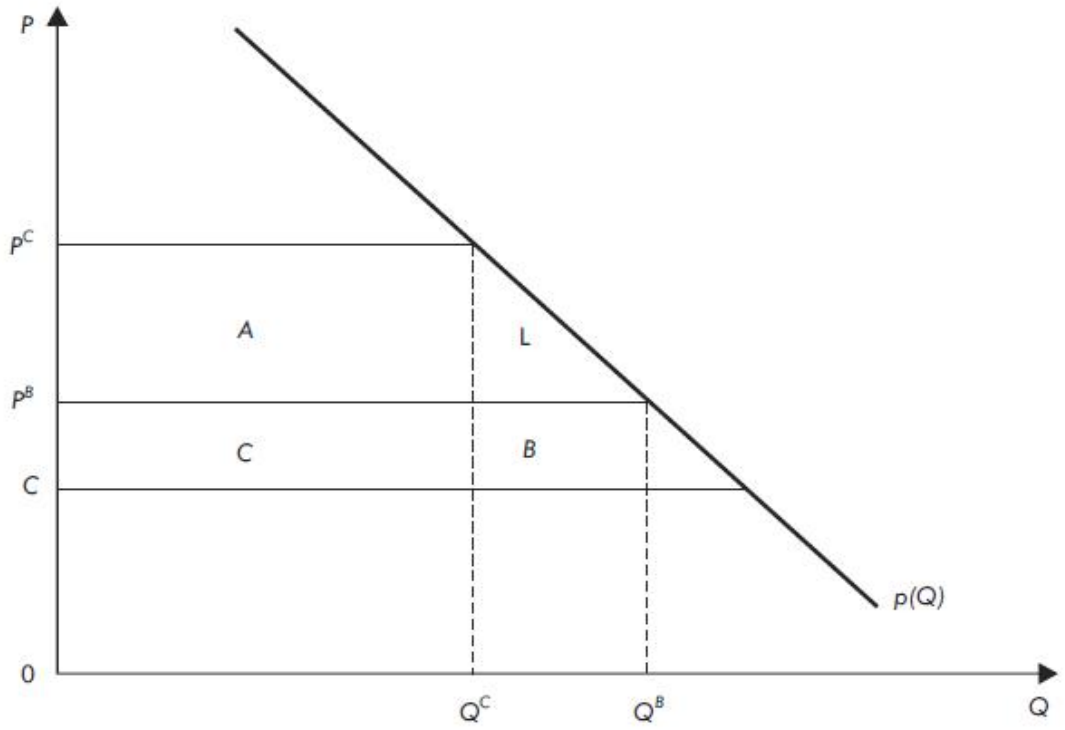
From the point of view of economic theory, the overpricing established in classic cartels results in unrecoverable efficiency losses: the "deadweight loss" of microeconomics textbooks, a complete loss of efficiency, with a slice of values that are not captured by companies with their price increase. This effect is embodied in the concept of "damages", which considers not only the benefits appropriated by the offenders, but the loss of efficiency of the conduct and thus the harm to consumers or society. On the other hand, the "earned benefits" corresponds to the additional benefit of the companies

[3]See on that matter a report on the skepcticism on fines calculated on illegal gains (CANDIL, 2018).
[4]See on that matter the ranking at the 2018 Rating Enforcement da Global Competition Review - GCR.
[5]In fact, with the exception of Japan, whose antitrust law regulates the minutiae of the imposition of administrative pecuniary sanctions, all other jurisdictions considered have a specific document dealing with the methodology that the antitrust authority should use when imposing fines for violations of competition.

by pricing at the cartel price. The "earned benefits" would therefore be an "additional profit" *vis-à-vis* a non-cartel situation[6].

Below we reproduce a diagram presented in Katsoulacos et al (2019), in order to synthesize the logic presented here and make it more explicit:

Figure 1 – Monopolist or Cartel[7] pricing diagram



Source: *Appendix 1* in Katsoulacos et al (2019).

Figure 1 makes it easier to identify the concepts of "damage" and "earned benefits". The variables P^c, P^B, Q^C, Q^B C represent, respectively, the cartel (or monopoly) price, the price of a non-cartel situation, the quantity sold under the cartel hypothesis and the quantity sold under the non-cartel hypothesis and the marginal cost[8]. Area "B" represents the producer's loss in profit considering his pricing in a non-cartel situation, ie the loss in profit if companies were producing more. Area "A" represents the gain with the cartel price relative to the price of a non-cartel situation. If area "A" is larger than area "B", it is a rational decision for cartelists to price in P^C – if not, then the

[6] The term "non-cartel" is used to explain any competitive outcome other than the cartel outcome, from the abstraction of perfect competition to oligopoly results. The assumption is that all these results have lower prices than the cartel price.

[7] The cartel pricing is similar to one giant monopolist pricing. The profits will, then, be shared equally if each firm has the same size and same technology (e.g. costs).

[8] This last variable, the marginal cost, equals the price in the perfect competition benchmark.

cartel price is not the rational choice. The “earned benefits”, therefore, are just the difference between areas “A” and “B” ($Earned\ Benefits = A - B$), that is, the additional cartel gain vis-à-vis the non-cartel situation .

“Damages”, on the other hand, is the sum of area A with area L[9] ($L = A + L$). The concept of “damages” presented utilizes Becker's (1968) classic result, assuming that competition authorities seek to maximize social welfare and thus also aim to reduce efficiency losses.

The main effect of setting the fine on the basis of “earned benefits” would be the deterrent effect of the fine. That is, by using the benefit of conduct as the minimum amount for punishing offenders, the fine would be rationally deterrent - even if the amount of “damages” is higher. The concept of “damages”, in turn, effectively weights the values in which consumers have been harmed and lends itself to compensate consumers (or further punish companies) rather than merely deter or discourage the anticompetitive conduct.

However, the authors point out that there is a possibility of modifying the concepts under other hypotheses, which involve the incorporation of chances of detection or other indirect effects of harmful conduct. What is clear from an economic point of view is that the concept of “damages” is quantitatively larger than “earned benefits”[10].

Despite the definitions of “earned benefits” of “damages” offered by economic theory, it should be noted that the use of these concepts by the rules governing the defense of competition does not necessarily correspond to such definitions. Perhaps because they result in similar challenges in terms of calculation and quantification, it is observed that, in reality, the use of these expressions often does not accurately and accurately reflect the distinctions made by economic theory. On the other hand, a sensitive part of the regulations analyzed ahead focus on “illicit gains” (“earned benefits”), which makes it possible to infer the search for the deterrent effect of fines. In any case, the review to be undertaken later in the guides of the competition authorities, each time one of the concepts is mentioned or alluded to, will emphasize both “damages” or “earned benefits”.

[9] The L area consists of the deadweight loss in the scenario of constant marginal costs.
[10] If other indirect effects, spillovers of conduct are incorporated, there is reason to believe that the "damage" should always be considerably greater.

3. **Damages and earned benefits in applying cartel fines: international experience**

This section examines whether the competition authorities of the selected jurisdictions (United States, Europe, France, Germany, and Japan) incorporate the concept of "damages" and "earned benefits" while imposing a fine on companies convicted of cartel practice. The focus of the analysis is essentially the positive norms in laws, guidelines or guidelines in these jurisdictions.

3.1. United States

In the United States, the enforcement of pecuniary sanctions for cartel practice is governed by the Federal Sentencing Guidelines Manual (USSG), which contains a specific section on this type of violation (Chapter 2, part R). In the case of companies, it is the combined reading of this chapter and the chapter that deals with the application of sanctions[11] for the commitment of crimes in general (chapter 8) which guides the application of fines for cartel crime.

In the USSG, the concepts of "damages" or "earned benefits" are mentioned at different stages of the fine determination process. In detail, there are five stages: the definition of the base penalty or initial amount; the culpability count; the definition of the range or limits of the fine; the final setting of the fine within its limits; and the review of the limits of the fine (departures). In three of these stages there is mention of the concept of "damages" or "earned benefits": in the first stage (while setting the "base penalty"), in the fourth stage and in the last and fifth stage (departures). Because the American methodology is the most detailed and composed of stages that tend to neglect the aim of this article, in this single section we omit a detailed explanation of the five stages and focus on the three phases that mention the concepts of interest in the article.

Chapter 8 of the USSG, concerning organizations, states that the base penalty shall correspond to the highest value among the following assumptions: (i) the pecuniary earnings obtained by the organization from the illicit practice; ii) the pecuniary damage ('pecuniary loss') caused by the organization; or iii) the amount of the fine

[11] According to the USSG, "*'[o]rganization' means 'a person other than an individual.' 18 U.S.C. § 18. The term includes corporations, partnerships, associations, joint-stock companies, unions, trusts, pension funds, unincorporated organizations, governments and political subdivisions thereof, and non-profit organizations*" (§8A1.1., *Application Notes*,1.).

corresponding to the offense level determined by the USSG[12-13]. According to the guide, the pecuniary earnings mean the additional pre-tax earnings of the defendant as a result of the conduct, which may be additional revenue or cost savings (8A1.2, *Application Notes*) [14]. The 'pecuniary loss' is not defined peremptorily by the USSG, which chooses to refer to different loss definitions presented throughout the guide[15].

However, it should be noted that, in the case of anticompetitive offenses, the chapter on this subject specifies that, in determining the base penalty according to the above criteria, rather than considering the pecuniary loss caused or pecuniary gain obtained by the organization, it should be considered twenty percent (20%) of the trade volume affected by the conduct (USSG, 2R1.1, d, 1; USSG, 2R., Application Notes). This volume, in monetary value, concerns transactions in goods or services made by the defendant[16] and influenced by the cartel during its duration[17-18]. In short, the volume is the "influenced market revenue" multiplied by 20%.

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[12] For each offense imputed to the offending agent, USSG Chapter 2 shall apply, which, while establishing the different types of offenses, assigns each of them a level of violation and indicates the adjustments that must be made according to the circumstances. In the case of anticompetitive conduct, Chapter 2, Part R, states that the basic level of violation is 12 (twelve). This value, in turn, is increased according to the characteristics of the conduct. Thus, if the conduct involves participating in an agreement to defraud a bid, one (1) point is added to the level of the violation (USSG, 2R1.1, b, 1). In addition, if the amount of trade attributed to the defendant (dollar volume of the goods or services affected by the conduct) exceeds US$ 1,000,000 (one million dollars), the level of the violation should be gradually increased accordingly. with said volume. If, for example, the practice of a particular cartel involves a trade volume in excess of US$ 10,000,000 (ten million dollars), then 4 points should be added to the level of the violation. On the other hand, if such a practice involves a trade volume in excess of US$ 50,000,000 (fifty million dollars), add 6 points to the breach level (USSG, 2R1.1, b, 2)..

[13] Chapter 8 presents a table listing the fines applicable to each level of violation committed by a company. Thus, for example, in case the cartel practice falls under level 12 (basic level of offense for this type of offense), the amount of the corresponding fine is US $ 70,000 (seventy thousand dollars). If, however, the level of the offense is 16 (in which case, for example, 4 points would have been added due to the volume of trade involved in the conduct), the amount of the corresponding fine becomes US$ 300,000 (three hundred thousand dollars) (USSG, 8C2.4, d).

[14]In addition to defining what the monetary gain consists, USSG also exemplifies its application: "*For example, an offense involving odometer tampering can produce additional revenue. In such a case, the pecuniary gain is the additional revenue received because the automobiles appeared to have less mileage, i.e., the difference between the price received or expected for the automobiles with the apparent mileage and the fair market value of the automobiles with the actual mileage. An offense involving defense procurement fraud related to defective product testing can produce pecuniary gain resulting from cost savings. In such a case, the pecuniary gain is the amount saved because the product was not tested in the required manner*" (8A1.2, *Application Notes*).

[15]Thus, for example, the USSG refers to the use of this term when typifying other illicit acts such as theft, fraud and tax offenses. (8A1.2, *Application Notes*).

[16]According to the USSG writing, "*under §2R1.1(d)(1), the volume of commerce, which is used in determining a proxy for loss under §8C2.4(a)(3), is limited to the volume of commerce attributable to the defendant*" (8C2.4, *Application Notes*).

[17]According to the USSG writing, *"[f]or purposes of this guideline, the volume of commerce attributable to an individual participant in a conspiracy is the volume of commerce done by him or his principal in goods or services that were affected by the violation*" (2R1.1, b, 2).

In making the USSG, the United States Sentencing Commission sought to relate the fines foreseen to violators' gains or damages to victims of misconduct[19]. However, given the recognition that the measurement of these amounts would be too difficult[20], the commission chose to establish proxies that would serve as a reference for calculating gains[21] and losses (OECD, 2016g: 3)[22]. In practice, it is this proxy that usually defines the base penalty applied (OECD, 2016g: 15).

The concepts of "damages" or "earned benefits" reappear in the fourth and fifth stages (Departures) to determine the fine. The fourth stage deals with the inclusion of aggravating or attenuating factors that may increase the fine, within a specific limit of the previously defined fine. In the fourth stage there is a clear mention of non-pecuniary damages, damages that can be interpreted within the concept of "moral damages"; also "pecuniary damages" actually incurred with the illicit conduct[23].

It should be noted, however, that cartel offenses amount to a maximum penalty in the fourth stage of determining the fine in the US jurisdiction. Therefore, it is understood that - effectively - the concepts can be applied after the first phase, in cartel cases, only in the fifth phase for determining the fines (departures), specifically under the assumption that there were reparations paid to the authority higher than the illicit gains ("earned benefits"). However, given the incentives and because of the nature of the issue, this is an for setting the fine that could be motivated by the company or organization that was fined.

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[18]According to the United States contribution to OCDE (2016: 3), "*[t]he volume of commerce attributed to a participant in a cartel operating entirely with the United States is its sales of products subject to the cartel during the cartel's period of operation*".

[19](OECD, 2016: 3)

[20]This is noted by the USSG: "*[c]hapter Two provides special instructions for fines that include specific rules for determining the base fine in connection with* ***certain types of offenses in which the calculation of loss or gain is difficult, e.g., price-fixing****. For these offenses, the special instructions tailor the base fine to circumstances that occur in connection with such offenses and that generally relate to the magnitude of loss or gain resulting from such offenses*" (8C2.4, *Background,* grifos nossos).

[21] *In verbis*: "*[t]he purpose for specifying a percent of the volume of commerce is to* ***avoid the time and expense*** *that would be required for the court* ***to determine the actual gain or loss***" (USSG, 2R1.1, *Application Notes*, our emphasis).

[22] The guide also clarifies the option of using a proxy to calculate gains and losses: "*[t]he offense levels are not based directly on the damage caused or profit made by the defendant because* ***damages are difficult and time consuming to establish****. The* ***volume of commerce is an acceptable and more readily measurable*** *substitute*" (USSG, 2R1.1, *Background*, our emphasis).

[23] The concepts could be possibly addressed in other attenuating factors such as "onerousness of the penalty" or other factors such as "reparation of damages", under the assumption that already reparations have been paid. But it should be noticed that cartel bahavior automatically sets the fine in its highest amount in the fouth stage.

3.1.1. Summary of the use of the concepts “damages” or “earned benefits” – United States

In short, the concepts of “damages” or “earned benefits” may eventually be used in setting the base penalty, but only considered indirectly using proxies based on cartel studies. The concepts may also have mentions in other subsequent stages, but their effective use might be only in the last and fifth phase - and on the probable motivation that the fined company seeks to demonstrate that it is being fined more than it should.

3.2. European Union

The European Comission (EC) also performs a step-by-step procedure for setting the fine, although probably simpler. The European Union (EU) fines for competitive offenses go through two stages, but these stages go through different phases. (CE, 2006a).

The first step is to determine the initial value or base amount of the fine and requires the EC to consider three aspects: (i) the value of sales, (ii) the seriousness of the infringement and (iii) the period in which the agent or company participated in the conduct. The value of sales corresponds to the value sold of goods or services performed by the company, related to the infringement and in the affected geographical region, in the last full year of the agent's participation in the offense. The seriousness of the infringement is expressed as the percentage (with a 30% limit) to be applied to the sales value previously stipulated; the percentage is defined based on some case characteristics (e.g. cartel or other illicit). In the last phase of the first stage, the authority defines the duration of the conduct, which is quantified in years by the guide. Once the number of years is established, the percentage (obtained in the second phase) is applied to the sales value (obtained in the first phase), obtaining a result that will be multiplied by the number of years (third phase). In the specific case of cartels, there is a prediction of an increase between 15% and 25% in order to ensure the deterrent aspect of the fine.

In the second stage of setting the fine, the base amount obtained is adjusted with aggravating and attenuating elements; these reflect, among other things, the background of the offending company, its involvement in the offense and its collaboration with the EC. Also, as na additional deterrent aspect, the EC may assess the need for the fine to be increased by considering the size of another set of businesses of the offending

company (but not related to the infringement) **or whether there is a need to increase the fine to ensure that it will exceed illicit profits where it is possible to calculate them** (EC 2006a, paragraph 30). It is then ascertained that the amount determined does not exceed 10% (ten per cent) of the company's total turnover in the year prior to the conviction, as this is the maximum fine applicable and must be observed by the competent authority. Finally, the authority investigates the reduction of the fine based on collaborative programs or the inability of the offender to meet the value of the penalty.

It is, therefore, a single moment of mention of the concepts of "damages" or "earned benefits", as initially addressed in this article. It should be noted, however, that while the authority recognizes that the illicit profits obtained through practice should be considered to ensure a deterrent effect, the authority considers that the quantification of the illicit gains in question is excessively complex and costly. Moreover, given the fact that there is no legal requirement that quantifying the effects of conduct, the EC in practice works with parameters that seek to designate these amounts indirectly. In one example, the sales volume affected by the infringement in the relevant period is considered as a possible indicator of the economic impact of the conduct, while its specific characteristics would be indicative of its harmfulness. (OCDE, 2011: 177-178)[24].

[24] According to the contribution made by the EU to OCDE: "*it **is difficult in practice for a competition authority to estimate in a given case the magnitude of illegal gains and the overall economic harm caused by an infringement**, and − even more difficult − the (subjective) probability of detection. (...) In particular, in cases of infringements of Article 101 "by object" which make up the large majority of fines cases at EU level, the Commission is not called upon to specifically investigate the effects of the infringement. (...) Making fines dependent on the estimation of the quantum of the illicit gains from a particular antitrust infringement would require a significant change in the focus of the Commission's investigations, would have considerable resource implications and may, in view of the mentioned evidentiary standards, in practice **raise the threshold for public enforcement (with the risk of lowering the level of enforcement), especially for hardcore cartels**. (...) **With a view to achieving sufficient deterrence of its fines, the Commission's fining methodology uses a number of proxies that provide an indication of the possible economic impact of the infringement**. One benchmark for the economic importance of an infringement (also for infringers) and the relative weight of an undertaking in the infringement is the value of sales that was generated by the company in question during the period of the infringement with the product or service to which the infringement relates. The EU Courts have repeatedly approved the Commission's fining methodology and, inter alia, stated that sales affected by an infringement "constitute an objective criterion which gives a proper measure of the harm which the offending conduct represents for normal competition and it is therefore a good indicator of the capacity of each undertaking to cause damage*" (OCDE, 2011: 177, our emphasis).

3.2.1. Summary of the use of the concepts "damages" or "earned benefits" – European Union

In the second stage of setting the fine, there is an explicit mention that the fine should be increased whenever it is possible to calculate "illicit profits" - in this case, a synonym for "earned benefits". However, the EC recognizes that there is considerable complexity in the calculation and, in practice, chooses to work with proxies to determine the fine.

3.3. France

The French Commercial Code (FCC), while defining the penalties applicable to antitrust infringements, establishes the parameters to be used in determining the fine, as well as its ceiling or limit. Notably, in imposing financial penalties for antitrust offenses, the *Autorité de la Concurrence* (ACF) must consider four aspects in relation to the proportionality of the fine: (i) the seriousness of the facts; (ii) the extent of the damage done to the economy; (iii) the situation of the convicted enterprise or the group to which it belongs; and (iv) the possible existence of recurrence in anticompetitive infractions. The authority should also adhere to the following limits: i) € 3,000,000 (three million euros) if the entity is not a company; and ii) 10% (ten percent) of the highest global revenue, before taxes, if it is a company. In the latter case, the revenue must be the highest, among the yearly revenues counted from the year prior to the year in which the offense was committed.[25].

In summary, it is noted that the process of imposing pecuniary sanctions for competitive illicit acts in France is divided into four stages. The first stage concerns the calculation of the initial value or base amount of the fine. The first stage requires the analysis and

[25] As explained in the french dosimetry guide, the limits of fines were increased in the FCC reform, which took place in 2001, with a view to increasing the deterrent effect of penalties and making them more appropriate to the way companies operate and organize themselves: "*[t]hese provisions have been last amended by Article 73 of the Law N. 2001-420 of 15 May 2001 on New Economic Regulations with the aim, recalled in the Preamble to this act, of '**reinforcing the deterrent effect**' of financial penalties. To that effect, the Government and Parliament have, first, added reiteration to the legal criteria according to which financial penalties must be set. They have also called for financial penalties to be '**better fitted to anticompetitive practices undertaken by group[s]', by taking into account 'the turnover of the group to which [the undertaking] belongs**'. They have in addition enabled the Autorité to "take as a reference the **worldwide turnover** of **one of the accounting years** closed since the accounting year prior to that in which the practices have taken place", **and no longer the turnover achieved in France during the last accounting year**, with the aim of "defeating evasion schemes" that had been witnessed in the past. Finally, they have decided that "the ceiling of the penalties [would be] increased" to 10 % of the worldwide turnover, in accordance with the law of the European Union as well as of many of its other Member States*" (ACF, 2011, § 5, our emphasis).

the obtaining of the following values: i) the value of sales; ii) the percentage to be applied to the value of sales; and iii) the period of participation in the conduct. Similar to the methodology presented by the EC in the previous section, the value of sales corresponds to the value of transactions in goods or services performed by the entity and affected by the infringement, but in the geographical region of France, during the last full fiscal year of its participation in the illicit. The percentage to be applied[26] is defined based on the severity and "damage" of the conduct, elements that are based on the characteristics of the offense (e.g. nature of the offense). The period of the conduct is considered by applying a specific multiplier, with a particular calculation, on the percentage of the sales value calculated. The multiplier is calculated as follows: The first full year of participation in the conduct represents a single unit (one or "1") of the multiplier, which is added to half a unit ("0.5") for each full year of subsequent participation. In one example, two years of participation in a price-fixing conduct would result in a multiplier of "1.5", ie the percentage applied to the revenue obtained would be multiplied 1.5 times.

The ACF, in the second stage, goes to the individualization of the fine, considering, initially, aggravating or attenuating factors (eg role played by the agent, existence of coercion, etc.) or that may give rise to the adjustment of the penalty to make it adequately deterrent (eg, economic power of the company, etc.). At this stage, the guide briefly discusses the possibility of quantifying damage through concepts such as "damges" or "earned benefits". The guide first discusses the diffuse nature that anticompetitive damages can generate to competition, and is not easily quantifiable or accurate (ACF, 2011, § 27). But it considers the possibility of incorporating quantitative elements when they are and enjoy credibility (ACF, 2011, § 28). In this last aspect, it is emphasized that the guide focuses on the possibility of submission of the parts of quantitative studies, but does not consider the possibility that the research may carried by the authority autonomously[27].

Proceeding to the third phase of setting the fine, if the offender is repeated, the authority should adjust the amount previously obtained, increasing it by 15% to 50%, depending on the illicit and the time interval between the current and the previous. .

[26]The percentage could be between 0 to 30% and de 15% to 30% specifically in cartel cases.
[27]The guide explicitly highlights the possibility for parties to submit economic studies (ACF, 2011, § 29).

The last step or fourth step, in turn, comprises that ACF adjusts the individual value of the fine to the legal maximum, considers any reductions resulting from agreements with ACF and applies the relevant reductions (eg inability to pay the fine).

3.3.1. Summary of the use of the concepts "damages" or "earned benefits" – França

There is no explicit consideration in the guide to the use of concepts in its eminently more qualitative analysis of the use of the concepts of "harm" or "gain advantage" to mark or increase the fine, but there is a possibility that the authority will contemplate quantitative studies submitted by the parties in the process.

3.4. Germany

The German competition authority (*Bundeskartellamt* – BKA) determination of the fine for competitive offenses is divided into two main stages. The first being a relatively simple procedure for calculating a base amount and the second with a more investigative assessment.

The first of these steps consists in framing the fine within the maximum limit established by law, by determining the amount corresponding to 10% of the offender's total revenue, in the year preceding the condemnatory decision.

The second stage, in turn, begins with the investigation of the potential gain and damage of the case, which the authority assumes is equivalent to 10% of the revenues obtained from the illicit (domestic revenues of the entity, obtained from the sale of goods or services affected by the antitrust violation over its duration). Over this amount BKA applies a multiplier linked to the entity's revenue, while trying to incorporate the size of the latter among the penalty criteria. If the result of this multiplication is less than 10% of the offender's total revenue, in the year prior to the conviction (as stated in the first stage), it is the result of the multiplication that will be considered as the maximum limit of the fine. If the application of the multiplier results in a clearly low value[28], such a value may exceptionally be increased. With the limits of the fine defined, the authority proceeds to an analysis of aggravating and mitigating factors to define the final value of

[28] In relation to potential gains or damages assessed by the BKA.

the fine, such as the repetition of the offense or whether the cartel is a *classic* or *hardcore* cartel.

On an important point, the German guide states that because the calculated fine is an arrangement based on the offender's revenue and the revenue affected by the anti-competitive conduct, and these are sufficiently adequate metrics in BKA's view, there is no need for the authority to calculate precisely the effects that a particular infringement has had on the market (I, §6). The first revenue, which is the ceiling of the fine, would represent the offender's size and sensitivity to punishment, and the second revenue (revenue influenced by the conduct), the exceptional revenue obtained from the anticompetitive conduct, would be an adequate indicator of the importance of the market in which the violation occurred, the company's position in this same market and the gain and damage with the infringement (I, §5). Thus, it appears that the German court has decided to discuss including the idea of “damages” or “earned benefits” through proxies.

There is also one last prediction that BKA may remove economic benefits from the infringer, either in the fine process or in a separate proceeding. By the statement of "economic benefits", which would therefore be undue in cases of cartelization, it follows that the authority may make indirect use of the concepts of "damages" or "earned benefits".

3.4.1. Summary of the use of the concepts of “damages” or “earned benefits” – Germany

The authority understands that it uses the concepts of “damages” or “earned benefits” in its proxies to determine the fine (the revenue metrics applied to the stipulated percentages). In addition, the authority may seek to remove “economic benefits” from the offender at the end of the calculation of the fine in the same or separate proceedings. It is understood that in this last hypothesis - due to the mention “economic benefits” - the authority may also have in mind the concepts of “damages” or “earned benefits”.

3.5. Japan

In Japan there is no specific guide to the calculation of fines, the whole analysis being done through the predictions of the Antimonopoly Act (AMA), which is already

considerably specific. According to the AMA, the determination of the financial penalty by the Japanese Fair Trade Comission (JFTC) can be divided into four stages. The first stage is to define the base amount for the fine, considering the volume of transactions of goods or services of the offending company (in monetary terms) affected by the illicit practice, considering a limit of three years.

In the second stage, there is the fixing of the base rate to be applied to the value calculated in the first stage. The base rate is determined according to the type of conduct practiced and the line of business of the offending company (whether retailer or wholesaler), something apparently *sui generis* considering the other authorities assessed. For "unreasonable trade restrictions", the base rate should consider other metrics: whether the business is small or medium in size.

The third stage consists of an adjustment that must be made in the calculation, which its usefullness is to ascertain whether certain circumstances are present in the specific case that may attenuate or aggravate the sanction[29]. Finally, the fourth stage determines the final amount of the financial penalty by applying to the basis of calculation the rate identified as appropriate to the case[30].

There is therefore no prediction by the Japanese authority to use the concepts of "damages" or "earned benefits" under current rules. It should be noted, however, that such methodology is in the process of changing[31]. One change is the inclusion of elements relating to illicit profits (JFTC, 2019b), which in turn could possibly be a consideration of concepts of "damages" or "earned benefits".

3.5.1. Summary of the use of the concepts of "damages" or "earned benefits" – Japan

There is no current prediction, as worded by the AMA, of the use of those concepts to set the fine. But there is the possibility of including the concept of "illicit profits"

[29]Regarding mitigations, this is a hypothesis foreseen in cases of "unreasonable restrictions on trade"; regarding aggravating factors, both in cases of "unreasonable restrictions on trade" and "private monopolization".

[30]In the event of "unreasonable restriction on trade", there is a provision to reduce the administrative penalty, when, in the criminal sphere, a fine has been or will be applied to the same case under judgment in the JFTC.

[31] In June 2019, the upper house of the Japanese parliament (House of Councillors) approved an amendment to the AMA, with the intention of making pecuniary sanctions more appropriate to the nature and extent of the violations.

amendment of the law, which in turn potentially allows for a consideration of the concepts of “damages” or “earned benefits” in the future to come.

4. Conclusion

Considering the controversies in Brazil regarding the establishment of fines in cartel offenses and the uncertainties that have arisen as to the best way to quantify them, this article has proposed to revise the predictions regarding pecuniary sanctions of five foreign jurisdictions: United States, European Union, France, Germany and Japan.

From the assessment made in this article, it appears that most authorities do not regularly quantify their fines using concepts of “damages” or “earned benefits” in their literalness or as predicted by economic theory. However, most authorities mention the possibility of incorporating the concepts through proxies, that is, the proposed methodology should *aproximate* the the concepts of “damages” or “earned benefits”. The US jurisdiction and the EC explicitly mention, in their percentage references used to set their finea, academic references for calculating cartel overpricing.

In some cases, the concepts can be used indirectly in the aggravating or mitigating definition phases - a common stage in all methodologies evaluated in this article.

Furthermore, it is important to note that while limitations are recognized for the authorities to perform complex calculations and there is no legal requirement in any of the jurisdictions analyzed for the calculation of “damages” or “earned benefits”, some authorities, such as the European Union, make room for an “occasional” use of quantitative methodologies, especially when there is accurate information.

Therefore, it is understood in the view of the authors of this article that the “damages” or “earned benefits”, in terms roughly robust to academic production, by the provision of the guides, can be used indirectly in setting the financial penalties in cartel offenses. Also, in some cases, it is important to note that these same authorities consider revising their fines based on the evidence brought by the parties involved in the process.

Considering that the international authorities do not entirely abandon the concept of “damages” or “earned benefits” and the Brazilian authority does not even have a guide

to pecuniary penalties for cartel offenses, prior to a change in the LDC, such as the removal of the concept of "earned benefits" in setting the fine (Article 37, I), there is reason to believe that a guide with thrifty rules and appropriate clarity, in line with the main authorities, would be considerably more advantageous and effective.

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