

Minimum time of debarment to discourage corruption: the Operation Car Wash case



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ABSTRACT

The current scenario of Brazilian corruption, characterized, among other points, by the cartel action in Petrobras public tenders for more than a decade, involving the largest construction companies in the country in schemes of fraudulent contracts, generating significant overbilling in the largest national construction sites, forges a context in which the time of debarment repute needs to be adequately adjusted to provide an incentive design that allows the continuity of the institution of leniency agreements and, at the same time, to bring the necessary deterrent effect in corrupt companies. Faced with this reality, this article, based on the theory involved in the Law and Economics and the Economics of Crime, used an investment analysis technique called net present value to quantify the necessary period of debarment that would lead the criminal option to not be a rational investment anymore. As a result, in the concrete case of one of the construction companies involved in the cartel that operated in Petrobras, it is concluded that the attribution of debarment repute penalties of less than one year would bring a scenario where the crime of corruption would compensate.

Keywords: Operation Car Wash; Debarment; Corruption; TCU; Law and Economics.



1. INTRODUCTION

In the midst of the rise of the perception of corruption in light of facts unveiled with Operation Car Wash, the discussion about the optimized role of each one of the organs integrating the Control Network gains momentum. Such a debate is as relevant as it is complex because of an intricate network of entities – the Federal Court of Accounts (TCU), the Comptroller General’s Office (CGU), the Attorney General of the Union (AGU), the Federal Public Prosecutor’s Office (MPF), Federal Police Department (DPF), Administrative Council for Economic Defense (CADE), Federal Courts, Supreme Federal Court (STF) – and variables – fines, damages, kickbacks, plea bargains, leniency agreements, unavailability of assets and debarment repute – which make up the national scene, as explained by Dallagnol (2017).

Thus, it is relevant to analyze not only legally, but also analytically, from an economic point of view, the tool available to the TCU for it to accomplish its constitutional purpose. In other words, it is relevant to use the Law and Economics to ensure, according to Cooter and Ulen (2010), a greater efficiency of the Punitive Administrative Law itself.

Consequently, this article presents a quantitative subsidy for the calculation of the sentence for debarment repute due to the application of article 46 of Law 8.443/1992. At this pace, and within the particularities of the national scenario, it is further sought to overcome

the understanding in which the debarment repute penalty antagonizes with the continuity of leniency agreements. Instead, it is based on analytical criteria that allow the two instruments to be combined in a proportional way. This way, adjustment is sought between the penalties mitigated by leniency agreements and the duration of the debarment repute penalty in the greater purpose of discouraging the perpetuation of corruption.

It is worth mentioning that the content of this article¹ is extracted from a case file of the Court of Accounts that addresses a concrete case of one of the construction companies involved in Operation Car Wash. Regardless, the necessary anonymity was granted in order to preserve the company, focusing instead on the showcase of the proposed modeling, as well as its consequences.

The main result of this work is the exposition of the discounted cash flow analysis technique as a means of considering the debarment repute penalty applied by the TCU in a more reasonable way, considering the context of leniency agreements, which can be of up to five years.

In light of the above introduction, it is important to clarify that this work will be developed with the following divisions: the second section presents the branch of Crime Economy, since this branch of knowledge, inaugurated by Becker (1969), represents the core of the theoretical basis, as well as the strong connection with the pedagogical and sanctioning role of TCU in the fight against corruption. The third section presents

the practical application of the fundamentals of Crime Economics, using typical resources of the investment analysis – discounted cash flow and net present value – to indicate which debarment repute terms would be more proportional to the case on the screen. Lastly, in the conclusion, the implications of the dissemination of this new type of analysis are presented and possible extensions to the present study are signaled.

2. ECONOMICS CRIMES AND THE TCU

The external control body is responsible for a series of actions aimed at the protection of the Treasury and the punishment of those who have harmed the public assets. In this set, fines are included up to the cost of the damage (article 57 of Law 8.443/1992), reimbursement of debt in Special Rendering of Accounts (section II, article 12 of Law 8.443/1992 and sole paragraph of article 198 of TCU Internal Regulations) and also the declaration of the debarment repute penalty (article 46 of Law 8.443/1992). In view of this arsenal and the importance of the Court of Auditors decisions, it is convenient and opportune to improve the studies involved in the calculation of the sanctions at TCU's disposal, especially considering the new context with the advent of leniency agreements.

Subsequently, it is useful to share some of the lessons of the Nobel in Economics of 1992, Gary Stanley Becker, which of special interest are the conclusions reached by the scholar in the article "Crime and punishment: an economic approach" that, according to Cerqueira and Lobão (2004, pg. 233-269, grifos nossos) can be synthesized as:

The decision whether or not to commit the crime would result from a process of **maximizing expected utility**, in which the individual would confront, on the one hand, the potential gains resulting from the criminal action, the cost of the punishment and the associated probabilities of detention and imprisonment, on the other hand, the opportunity cost of committing crimes, translated by the alternative wage in the labor market.

The "utility function" – which quantifies the level of satisfaction of an economic agent -, exposed above, culminated in the construction of what came to be called the **beckerian** optimum fine. According to this concept, the disinterest of the corrupt agent tends to materialize when the total pecuniary punishment is

at least the result of the quotient between the damages arising from the criminal action (illicit product – which varies a lot from case to case) by the probability of detection (generally considered to be at most 30%, according to the economic doctrine².

Thus, for example, deviations which characterize a total damage of U\$ 1 billion, a minimum of U\$ 3.33 billion (result of the division between U\$ 1 billion and 30%) in order to eliminate interest in relapse. This conduct was known in the US as treble damage.

At the national level, the relevance of this type of approach is also corroborated by the Cade (Administrative Council for Economic Defense) advisor's article³, in which economist Cristiane Alkmin criticizes the fact that cartelists in Brazil are not sanctioned for the damage they caused. While noting the negative consequences of disregarding the damage⁴, the researcher pointed out that in the United States it is common to apply three times the amount of the damage as a fine, while in the European Union there is an imputation corresponding to the product of the damage for the number of years the cartel lasted for.

In addition, the concept of the Becker's fine is already used in addition to the academic contours, for example AC 08012.003931/2005-55 analyzed by Cade – case of irregularities in the purchase of ambulances in which the amount of compensation for the company was approximately 4.5 times the value of the contract covered by the cartel. Thus, there are undeniable paradigms for quantifying a dissuasive punishment.

Furthermore, it is worth recording the level of diffusion of Gary Becker's initial ideas – the approach of crime/corruption under an economic bias – quoting other researchers.

Ehrlich (1974) comments in his model that the criminal agent seeks the satisfaction of his preferences, reacting to incentives and disincentives in the selection of the conduct to be adopted. Similarly, Ghignone (2013) explains that, as in any economic activity, the rational agent can consider the possible expected gains and losses and their respective probabilities, so that if the expected benefit as a result of the criminal action is higher to any damages, the agent will opt for the perpetration of the corrupt action. Klitgaard (1988) argues that, according to an economic approach to corruption, the agent will opt for a criminal stance when the probable benefits exceed the expected costs, which causes the client to offer a bribe (or other illicit methods) to the public agent if the expected rewards exceed the costs.

Also in line with the lessons learned, it is imperative to keep in mind one of the core concepts of behavioral economics – widely disseminated in the study of decision making –, risk aversion. According to researcher Kahneman (2011), Nobel in Economics of 2002, agents generally respond more strongly to losses than to gains, so that the possibility of loss of a certain amount generates much less utility than the possibility of increasing the equity in the same amount. Consequently, the effect of discouragement is greater on punishments than on awards.

This conclusion draws attention to the weighting between the burden and bonuses given to potentially lenient companies, which the State must evaluate in order to base its decisions also in a pedagogical way, which is significantly impacted by the time of debarment – the time in which companies involved in the commission of illicit activities will be prevented from contracting with the Federal Public Administration – as it will be covered further ahead.

Moreover, it is relevant to understand, under a quantitative bias, the design of incentives and their implications in view of the complexity of the theme and the decentralized performance of the State.

To this end, it is essential to recognize the existence of: i) group 1: known corrupt companies interested in leniency agreements; (ii) group 2: companies known to be corrupt but not interested in leniency agreements; iii) group 3: corrupt companies not discovered by the Control Network; iv) group 4: non-corrupt companies. The proportion of business enterprises in each of these four groups is dynamically and directly influenced by the sum of benefits and sanctions charged by the State to groups 1 and 2.

As a result, excessively severe leniency agreements (along with other sanctions at the disposal of the State, such as the debarment penalty) tend to increase the number of companies in group 2, which would delay knowledge of crime engineering vis-a-vis the more limited pace of investigative leverage due to the lack of collaboration. On the other hand, excessively lenient punishments will lead to the increase of group 1, but also to the reduction of group 4, whose members will begin to consider the commission of harmful acts to ensure their survival in response to the growth of the other groups and also because of the dissuasive character of punishments. In the latter case, we would be faced with the undesirable scenario in which leniency agreements are encouraged, but corruption is not discouraged. Such a scenario would hide short-term

positive results with dire consequences in the medium and long term.

So, it proves valuable to use the Law and Economics in the opportunity to analytically examine the benefits and punishments, including the debarment repute penalty – to achieve the delicate balance in which the agreements of leniency are stimulated and, at the same time, corruption is discouraged.

This article explored the idea that the “utility function”, from the perspective of the offending agent, must necessarily have a negative result for groups 1 and 2, and the first group should still present better results than the second, since it decided to collaborate with the State.

3. DEBARMENT AND DETERRENCE

The initial part of the methodology adopted here is based on the work of the Organization for Economic Cooperation and Development (2016). This article sought to present quantitative arguments the presence or not of monetary sanctions to deter new corrupt acts (payment of fees) for works construction contracts, when considering the legislation of more than 30 countries.

That said, also in this article, through the methodology of discounted cash flow, it was assessed if the amounts involved with bribe, overbilling and pecuniary penalties would portray a positive or negative net present value (NPV) to the company involved (belonging to group 1). Thus, if the NPV presented a value greater than zero, there would be an investment option (in bribe) that would rationally tend to be reproduced in the future. In a reflexive way, a negative NPV would have a result that would discourage the repetition of the corruption offense.

Likewise, it is also important to comment that such methodology is fully adherent to the national and international literature regarding rational choice theory, according to Rose-Ackerman’s (2016) explanations for large-scale white collar crimes, involving large sums of resources⁵.

According to this approach, for the specific case – delimited here by the participation of one of the 16 companies that acted most incisively in the scheme that injured Petrobras –, the decision as to its performance in the cartel, or not, went through a risk analysis which compared the following variables:

i) amount of illicit investment (kickback and associated concealment costs);

- ii) amount of unlawful incremental gain resulting from this bribe (overbilling/damage/debt/illicit products⁶;
- iii) probability of being discovered;
- iv) probability of, being detected, if punished;
- v) probability of, being punished, in fact paying some importance, and finally⁷;
- vi) the expected value of this hypothetical penalty payment.

All variables exposed to some extent are related to the five anti-corruption mechanisms, consisting of: prevention, detection, investigation, correction and monitoring, in accordance with the Federal Court of Accounts's Framework for Combating Fraud and Corruption (2017). Thus, the perception of the market agent is that it will define its way of acting, an understanding widely disseminated in the research area of the Crime Economy, as already explained.

In the present case, the company's performance in the cartel for more than a decade attests to the combination of the abovementioned variables to a large extent in disfavor of the Public Administration. In other words, the construction company saw a derisory "entrance fee" when compared to maximizing profits from high overbilling, together with the ineffectiveness of detection and punishment for deviating values.

Another relevant observation is that, in relation to the OECD article cited above, an adaptation was made that added clarity and, at the same time, conservatism to the analysis carried out. This is because in this article we considered all the probabilities previously predicted by the potential criminal to be 100% (he migrated from the probabilistic approach – which is generally based on maximum percentages of 30% – for deterministic – 100%). So, it would be the same as treating the problem of deterrence by the following question: "If the cartel company knew in advance that it will necessarily be detected, tried and punished again, still, the repetition of the scenario under consideration will be a financial transaction profitable and therefore rational?"

Therefore, for the case in question, it was possible to use real values of a sanctioning nature alluding to leniency agreements previously signed by such company with MPF and Cade⁸.

Additionally, Martins et al. (2017) bring econometric calculations related to the overbilling of contracts of the same company. This study, which indicated as minimum damage estimated a discount of less than 17 percentage points for contracts in the Petrobras Supply

Directorate affected by the cartel, was even accepted by the TCU Plenary in Ruling 3.089/2015⁹.

Other revelations from Operation Car Wash made it possible to use a threshold associated with the illicit investment, representing fees for 3% of the contracted amounts¹⁰. On the other hand, the performance with respect to the reimbursement actually obtained after final decision on the debt at the end of the TCE was extracted from public events in which AGU's employees reported an average percentage of around 3% at the end of a period that often exceeds a decade¹¹.

Thereby, the decision variables linked to the go, no go of the unlawful act of fraudulent bidding by means of collusive actions carried out by a cartel are met. In other words, the understanding of the Bribery in Public Procurement: Methods, Actors and Count-Measures of the Organization for Economic Co-operation and Development (2007, pg. 47) is confirmed:

The bribe offeror usually expects something in return for its payment. Ultimately, the one who invests in the payment of bribes expects a better result than the scenario without the payment of the bribe. Bribe acts are therefore organized and planned to have a calculated profit.

The innovation of this study is due to the estimated monetization of the time of debarment repute as another factor to be added next to the sanctioning portion. In summary, the impact from the time (up to five years) in which the construction company would be unable to contract with the Federal Public Administration was included in the discounted cash flow. For this purpose, public figures were used in the company's balance sheet¹².

The main objective of such a measure is to impose a negative net present value after the processing of bribes, overbilling, amounts to be paid as part of the leniency agreements signed, amounts to be effectively recovered due to the TCE instaurations and loss caused by the time of debarment repute. This last factor was stipulated annually as the average net profit between the period from 2007 to 2015, applied over the double of the year with greater net revenue of the construction company for the interval of 2007 to 2015. This last assumption was made to behave conservatively, intangible and negative externalities associated with the declaration of debarment repute¹³.

With this arrangement, it is clear that the companies belonging to groups 1 and 2 (corrupt lenient and

non-lenient) deserve and need to be punished with a dissuasive tone only compatible with a negative NPV, and this damage is more accentuated to the second group than to first, which chose to collaborate with the investigations in exchange for some easing in his sentence. To sum up, under no circumstances, corrupt companies (lenient or not) can see in the fraudulent past a case of success from a financial point of view.

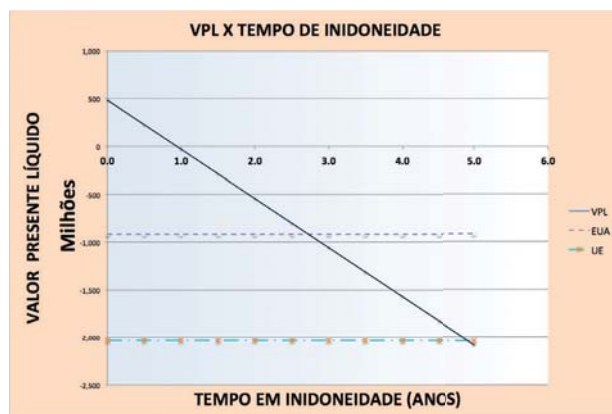
In view of the foregoing, the net present value inherent to the corruption case treated herein can be generically represented by the following equation.

$$VPL = -Pro + \frac{Dano}{(1+i)^m} - \frac{TCE}{(1+i)^n} - \frac{Len A}{(1+i)^o} - \frac{Len B}{(1+i)^p} - \sum \frac{Ini}{(1+i)^q}$$

In the presented flow, (VPL) represents the net present value and the correction of the value in time (taxa i) was made by the average Selic rate in the considered timeframe. The variable (Pro) represents the initial illicit disbursement (bribe). (Len A) and (Len B) express the amounts of fines related to the leniency agreements entered into with CADE and MPF, respectively. The variable (TCE) represents the effectively expected¹⁴ reimbursement and (Ini) is equivalent to the profits prospectively not perceived by the time of debarment, which could be up to 5 years. The coefficients (m, n, o, p and q) were extracted from Ruling 3.089/2015 – TCU – Plenary. Graphically, we arrive at the following result:

Graphic 1:

VPL versus debarment time



Source: prepared by the author

The main results extracted from Graphic 1 are: i) without the declaration of debarment repute, the

company will have an advantageous and rational investment option in crime, since NPV was positive in almost R\$ 500 million; (ii) at about two years and nine months time, the same US deterrence level is reached, in which a negative NPV is charged to the amount of treble damage; (iii) it is only by using the whole period of five years of debarment repute that the same level of disincentive of the European Union would be reached, which imputes to the corrupt agent the proceeds of damage for the duration of the cartel in years; iv) penalties of debarment repute of less than one year provide a positive NPV to the corrupt company, showing that the crime, in such circumstances, would compensate; and (v) the one-day to five-year margin of debarment repute implies a tool of dissuasion by the TCU equivalent to R\$ 2.5 billion (from +R\$ 500 million to -R\$ 2 billion).

These results provide more detailed subsidies to delimit what would be a more proportionate scope of action on the part of the Federal Court of Accounts. In other words, considering the formulation presented with all the conservative premises, it is shown that the penalty of debarment repute in this case should be at least one year¹⁵.

4. CONCLUSION

This article brought an unprecedented proposal of quantitative weighting via Economic Analysis of the Law of the time of debarment repute to be imposed to the corrupt companies, although lenient, discovered in the scope of Operation Car Wash. In other words, a Sanctioning Impact Assessment was presented in the sphere of Administrative Sanction Law.

As a result of this, a discounted cash flow model was constructed, containing inputs and outputs related to variables: bribes, overbilling, expected reimbursements, fines to be paid on account of already signed leniency agreements, and profits not prospectively perceived due to time of debarment repute to be decreed by the Federal Court of Accounts, in compliance with Article 46 of the Organic Law of the Court of Accounts. Barring these variables in mind, the delicate balance in which new leniency agreements are stimulated and, at the same time, discouraged reinvestment in the illicit paths, was assessed by measuring the net present value obtained.

In dealing with a concrete case for which the values necessary for the composition of the cash flow were available, it was concluded that penalties of debarment repute of less than one year will characterize a

scenario in which the crime of corruption compensates (positive net present value). Failure to enact debarment would represent an investment option with a positive NPV in the order of R\$ 500 million. It is worth noting that these results have already served to subsidize the opinion of the MPTCU in the specific case, at which time it manifested¹⁶ itself as states below:

The very high degree of conservatism in the analysis carried out by SeinfraOperations is noticed, especially as regards the immediacy of the impact of the declaration of debarment²⁶ on company billings, the State's ability to detect and punish all cases of fraud and high-level consideration of dependence of the construction company on resources of federal origin, without including, any action of the company itself to diversify its portfolio of contracts.

[...]

The study carried out by SeinfraOperações shows itself to be valuable in understanding the impact of the sanction of unfairness on the particular [construction company] and, in general, on the construction companies involved in fraudulent bidding for Petrobras. (Bugarin, 2017, pg. 12 and 13).

Succinctly, the declaration of d is of fundamental importance in the fight against corruption.

As extensions to this study – replicable for other companies involved in corruption scandals, fraud, damages and search for leniency agreements – we can mention the inclusion of probabilistic factors related to the efficiency of the State in the detection and punishment of corrupt companies. Moreover, the model presented can be refined through the inclusion of intertemporal discount related to the recovery of values by the State.

NOTES

- 1 The publication of this article was authorized by the Honorable Minister Benjamin Zymler, rapporteur for the case TC 036.335/2016-9.
- 2 For more details, see: Fine and punishment, available at <<http://econ.st/2F6JCXl>>; and The Chicago School of Antitrust analysis, available at: <<http://bit.ly/2F4cTqC>>. Accessed on: 1 Mar. 2018.

- 3 The full content of the article presented in newspaper of great circulation can be seen in: <<http://bit.ly/2tamdDi>>. Accessed on: 1 Mar. 2018.
- 4 Full article found at: <<http://bit.ly/2GUhMhX>>. Accessed on: 1 Mar. 2018.
- 5 It is interesting to note that studies of behavioral economics that question the validity of the theory about the rational choice of the potentially corrupt agent – as found in Dan Ariely's *The Truth About Dishonesty* – bring experiments centered on cases of small corrupt attitudes – petty corruption – which does not apply to Brazil's biggest corruption scandal.
- 6 There is also the recent possibility of glossing over the profit declared by the company in case of obtaining the contract through fraud. This approach, dealt with in Judgment 1.306/2017 – TCU – Plenary, was not applied in this case to add more conservatism to the analysis.
- 7 The joint application of the three probabilities cited is that it consists of the 30% allusive to treble damage. There is evidence that even this percentage of 30% is excessively optimistic for the Brazilian case, which is extracted from a comment by Attorney Deltan Dallagnol, in which the percentage of 3% is cited. Available at: <<http://abr.ai/2GZFccq>>. Accessed on: 1 Mar. 2018.
- 8 The amounts and the form of payment for posting purposes in the cash flow were extracted from: <<https://goo.gl/4X37uc>> and <<https://goo.gl/mNf2uM>>. Access on 1 March. 2018.
- 9 This work includes a series of conservative assumptions, among which we cite: the use of Petrobras' estimates as a paradigm value, disregarding the damages related to the additives and the inefficiencies inherent in a hard-core cartel. Therefore, the percentage of 17% reflects a minimum value of damage, which is also evidenced when comparing this level of damage with that computed by means of Cost Engineering techniques, which led to losses in the 20% house, as expressed in Judgment 2.1092016 – TCU – Plenary. Public works in the market bring overbilling at 35%. Available at: <<https://glo.bo/2rtzDYg>>. Accessed on: 1 Mar. 2018.
- 10 Amount quoted in several statements in the context of Operation Car Wash and used by Petrobras itself in its Balance Sheet, when indicating the minimum losses with corruption. The same percentage was also used by Eletrobras in the case of fraud related to Angra 3 (Judgment 483/2017 – TCU – Plenary)

- 11 As an example, we can cite the Public Dialogue: Combating Corruption in Infrastructure event, available at: <<https://goo.gl/qCckBZ>>; in addition to meetings with TCU auditors in which the same percentage was informed to justify the relevance of the actions of unavailability of assets as a measure to recover the products of the illicit.
- 12 Full reports can be accessed at: <<https://goo.gl/N8Of9s>>. Accessed on: 1 Mar. 2018.
- 13 An extremely conservative assumption based on the period of profits artificially and illegally increased by the cartel's performance. In addition, the company's entire revenue was considered as coming from contracts with the Federal Public Administration, when the most accurate, if the balance so discriminated, would be the gloss of revenues from private contracts and signed with state and municipal bodies. Not only that, but there would still be some deflator due to the current period of economic recession that the country is going through.
- 14 The application of any fine (Article 57 of the Organic Law of the TCU) was not considered because there is no news of a penalty standard by means of such a device in large cases of corruption. This assumption is even more likely to be confirmed in the specific case since the external control process would have to take into consideration the previous confirmed in the specific case since the external control process would have to consider the previous signing of two leniency agreements, from which the collaborative position of the company is assumed.
- 15 There are also other sources of conservatism such as the use of the duration of the cartel for a period of five years (when there is evidence that such an arrangement lasted more than a decade) to adapt to the contracts used in that study and from Ruling 3.089/2015 – TCU – Plenary. In addition, the construction company object of this study still caused damage to the Treasury in contracts with Valec and Eletrobras, overbilling not included in the present study.
- 16 It is worth mentioning that the complete study of the technical unit brought other simulations (other than represented in Graphic 1). The MPTCU notes reproduced are valid for all cases.

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