WHEN CRIME PAYS: MEASURING JUDICIAL EFFICACY AGAINST CORRUPTION IN BRAZIL

Carlos Higino Ribeiro de Alencar
Financial Administration School – ESAF

Ivo Gico Jr.
Law Department – UCB

WORKING PAPER nº 0004/10

Draft of 04/12/10

Departamento de Direito
Programa de Pós-Graduação *Stricto Sensu* (Mestrado)

When Crime Pays: Measuring Judicial Efficacy against Corruption in Brazil

Carlos Higino Ribeiro de Alencar *
Ivo Gico Jr.**

Abstract:

There is a widespread perception in Brazil that civil servants caught in corrupt practices are not punished. Yet, until now, there was no hard evidence that would support such claim and some argued that this was just a mislead perception due to the recent increase in anti-corruption measures. One of the main reasons for this notably absence is that it is very difficult to identify actual cases of corruption to, then, measure whether or not they are actually punished by the judicial system. This paper proposes a method of measuring judicial system efficacy against corruption by comparing proven corruption cases punished by administrative committees with criminal and civil judicial performance for the same cases. Ours results show that in fact the Brazilian judicial system is highly ineffective in fighting corruption.

Key-words: Corruption, Public Administration, Legal Procedure, Judiciary, Enforcement, Brazil.
JEL: D73, K14, K42

Resumo:

Há uma percepção generalizada no Brasil de que funcionários públicos corruptos não são punidos. Não obstante, até o momento, não há evidências empíricas que apóiem essa afirmação e muitos argumentam que se trata de uma percepção equivocada decorrente do aumento de medidas anticorrupção. Uma das principais razões para essa notável ausência é a grande dificuldade de se identificar casos comprovados de corrupção para então se averiguar se eles foram ou não punidos pelo sistema judicial. O presente trabalho propõe uma metodologia para medir o a eficácia do sistema judicial contra a corrupção pela comparação entre casos administrativos em que foi comprovada a existência de corrupção e o desempenho judicial, tanto na área penal quanto cível, para os mesmo casos. Nossos resultados mostram que realmente o sistema judicial brasileiro é altamente ineficaz no combate à corrupção.

Palavras-Chaves: Corrupção, Administração Pública, Processo Legal, Judiciário, Eficácia, Brasil.
JEL: D73, K14, K42

* Instructor at Financial Administration School / Ministry of Finance – ESAF and Deputy General Economic Inspector at National Disciplinary Board / Presidency of the Republic, Brazil. The author may be contacted at carlos.higino.alencar@hotmail.com.
** Professor of Law & Economics at Universidade Católica de Brasília, Brazil and Associated Researcher at the Law & Economics Research Group – GPDE/UCB. The author may be contacted at gico@ucb.br.

Table of Contents

1. Introduction

Corruption is a widespread phenomenon. It has been reported in ancients times and in practically in all societies through time, even today. Some societies were able to restrict corruption closer to the efficient level, though not eliminate it, while in others corruption remains endemic. It is not at all clear how each society achieved the current equilibrium and how one changes itself from one type of society to the other. In any case, most if not all scholars agree that corruption can be a serious obstacle to social cooperation, hence, development. Therefore, corruption is a problem worth paying attention.

There is a widespread perception in Brazil that civil servants caught in corrupt practices are not punished. Yet, until now, there was no hard evidence that would support such claim and some argued that this was just a mislead perception due to the recent increase in anti-corruption measures. One of the main reasons for this notably absence is that it is very difficult to identify actual cases of corruption to, then, measure whether or not they are actually punished by the judicial system. This paper proposes a method of measuring judicial system efficacy against corruption by comparing proven corruption cases punished by administrative committees with criminal and civil judicial performance for the same cases.

The anti-corruption corruption system in Brazil allows corrupt agents to be prosecuted independently by both administrative committees and judicial courts. These prosecutions are completely independent, but they grossly abide to the same legal infrastructure and all evidence collected in one proceeding can be used in the other. Hence, one would expect that once a case of corruption is identified by one system, it would quickly be prosecuted and punished in the other. If that was the case, then the system would really impose higher punishment on corrupt civil servants.

In our paper we explore this redundant punishment system to estimate judicial efficacy against corruption. Assuming that all corruption cases punished by administrative committees are actual corruption events, we use this sample as a proxy for all corruption occurrences and then try to identify whether or not the judicial system is able to identify theses cases and actually punish the corrupt servant. Unfortunately, ours results show that in fact the Brazilian judicial system is highly ineffective in fighting corruption.

2. The Economic Theory of Crime

2.1. Law Enforcement, Penalties and Rational Behavior

Originally employed by economists to explain consumption and production, the Rational Choice Theory became a widespread framework to explain human behavior in many other social sciences in the last sixty years, including Sociology, Political Sciences and the Law. The application of this theoretical framework to legal issues connected with criminality started last century with Gary Becker's seminal article "Crime and Punishment: an economic approach" (1968) and became known as the Economic Theory of Crime.

According to this theory, the key to understand criminal behavior is to assume that most people commit an offense only if the perceived expected utility to her exceeds the utility she could get by employing her time and other resources at other activities, like a regular job. As a result, some people become criminals not because their basic motivation differs from that of other people, but because their benefits and costs differ. This approach brought back the debate between retributive and dissuasive effects of criminal penalties[1] and can be summarized as follows:

$$E[U] = (1 - p) \cdot U(R) - p \cdot U(R - c) \qquad [1]$$

Where E[U] is the individual expected utility for committing a crime, p is the punishment probability (therefore, (1 - p) is the probability of not being punished), while U is the individual utility function, R is the income obtained with the illicit activity and c is the cost of being punished.

On the one hand, the first term of equation (1 - p) U(R) indicates the possibility of not being punished. Note that (1 - p) is the probability that weights the individual utility considering only the potential gains resulting from the offense, U(R). On the other hand, the second term p . U(R - c) weights the probability of being punished (p) with the individual disutility resulting from punishment plus incurred costs. According to this model, when expectation E[U] is positive, the agent has incentive to commit the illicit, otherwise, he does not. Here punishment probability and magnitude are the key elements in the juseconomic analysis of criminal behavior.

[1] At the end of 18th century and first half of 19th century, one could identify two great philosophical approaches to criminal punishments: one followed by Kant and Hegel and the other defended by Beccaria and Bentham. The first one argued, essentially, for a retributive character of the penalty, *i.e.*, a species of talion law applied by a professional Justice that would impose on the prisoner a penalty that would cause him a similar pain as the one resulting from the incurred criminal act. The second approach argued that the imposed penalty would have to be calculated in order to be sufficient to prevent the occurrence of crime. Becker retakes the argument of this last line of thought.

It should be clear by now that, according to theory, criminal activity is highly dependent on the factors that influence the allocation of time in legal and illegal activities (opportunity cost).

This theory was tested in empirical researches like EHRLICH (1974) that found supporting evidence indicating that there is a statistically relevant negative relationship between punishment probability and occurrence of all types of crimes. Even more interesting is the fact that the same study found a similar relationship between punishment magnitude and crime rate, though only with statistical significance for half the cases. This empirical evidence may indicate that the certainty of being caught may produce a stronger deterrence effect than the severity of punishment when people are actually caught.

2.2. Economic Theory of Corruption

When applying the general Economic Theory of Crime to corruption cases here the reader should keep in mind that our research deals only with public civil servants. It means that the most relevant opportunity cost involved in being corrupt is not represented by other allowed activities that could be undertaken by the civil servant, but by the potential loss of wage, retirement and other benefits the civil servant may forfeit if caught in corruption. Therefore, some adjustments to the general model may be required and we do it à la Bowles (2001).

Suppose an individual wishes an illegal income R, which may result from a tax evasion, an overpriced commodity sold to the government or some similar scheme. In order to obtain this income, normally, there must be collusion, ergo, a bribe will be paid. Let's call it B for bribe. There is a probability p that this collusion is discovered and reported by a third party such as an external auditor, the agent boss, a co-worker or an injured competitor, for example. If the scheme is discovered, the corruptor is likely to be effectively punished by a penalty J, applied by the Judiciary, which may involve both criminal (prison time or fines) and civil sanctions (fines). As a result, corruption is only worth it for the corruptor agent if:

$$(1 - p)(R - B) - p(J + B) \geq 0$$

The first term of the equation represents the situation where corruption is not detected, indicating the illegal income obtained by the individual (R) less the cost of this income (bribe B) weighted by the chance of not being discovered (1 - p). If the offense

is discovered, the individual will be subject to a penalty J and, additionally, will have incurred in the bribe B cost anyway. As p is the probability of being punished, p (J + B) represents the expected burden of being caught.

If we rearrange the terms in order to isolate B and call B^S the upper limit that an individual would be willing to pay (maximum value of the bribe), the model gives us:

$$R - B - pR + pB - pJ - pB \geq 0$$

$$R - B - pR - pJ \geq 0$$

$$R - pR - pJ \geq B$$

$$B^S \leq (1 - p) R - pJ \qquad [2]$$

As per the corrupted servant, she is vulnerable not only to a penalty J resulting from criminal and civil judicial sanctions, but also to an additional penalty called A that represents her opportunity cost as a civil servant. In this case, the opportunity cost involves the potential loss of any benefit she may forfeit such as future wages, pensions and health benefits resulting from administrative sanctions, which is inapplicable to the corruptor agent. Hence, for the servant, corruption (bribes or kickbacks) is interesting only if:

$$(1 - p) B - p (A + J) \geq 0$$

Where (1 - p) represents the probability of not being punished, which, multiplied by bribe B, must be greater than the chance of being punished (p) multiplied by the judicial and administrative burden potentially supported by the servant. If we rearrange the terms in order to isolate B and calls B^I the lower limit that a servant would be willing to receive (minimum value of the bribe), the model gives us:

$$B^I \geq p (A + J) / (1 - p) \qquad [3]$$

From equations 2 and 3 we can show that corruption is likely to happen only if the upper limit of an individual's willingness to bribe is greater than the lower limit of the servant reserve bribe or $B^S \geq B^I$, which implies:

$$B^S \geq B^I$$

$$R (1 - p) - pJ \geq p (A + J) / (1 - p)$$

$$R (1 - p) \geq [p (A + J) + pJ (1 - p)] / (1 - p)$$

$$R (1 - p) \geq [pA + 2 pJ - p^2 J] / (1 - p)$$

$$R \geq [pA + 2 pJ - p^2 J] / (1 - p)^2 \qquad [4]$$

This model suggests some interesting conclusions. First, corruption level is continuous and not discrete, in other words, the degree of corruption is linked with incentive structure of the agents involved so that there are many possible different levels of corruption. We may even talk about an efficient level of corruption (MOOKHERJEE & PNG, 1995)[2], just like we normally talk of an efficient level of pollution or any other human activity.

Second, an increase in the judicial sanction to the individual, J, tends to reduce corruption, since it increases the individual's cost if he is caught (pJ in equation 2) what reduces B^S, since pJ has negative sign, even if B^I is kept constant. Analogously, if the penalty is raised to the servant (A + J in equation 3), B^I increases even with B^S kept constant, which tends to reduce corruption. One can also argue that an increase in the penalty magnitude for both agents (J) tends to reduce corruption even more since it negatively affects both.

Another possible conclusion derived from the model is that the increased punishment probability (p) also tends to reduce corruption, once it tends to simultaneously increase B^I and decrease B^S narrowing the gap B^S - B^I on which corruption rationality ultimately depends on.

In addition, we are ready to argue that an increase in the punishment probability (p) is the most important variable in establishing the actual corruption level equilibrium, since it exponentially decreases the numerator and exponentially increases the denominator in equation 4. Consequently, the effect of an increase in the punishment probability results in a higher increase in income R required to make corruption actually interesting for the corruptor agent. This conclusion is consistent with several studies in the economic analysis of crime that indicate that the best results in fighting crimes are achieved through an increased in the likelihood of arrest and conviction.

This issue was the subject of numerous studies comparing the probability of being imprisoned and the occurrence of all types of crimes (e.g. EHRLICH, 1972, 1973, 1974, 1975, 1976, 1982; EHRLICH & POSNER, 1974; EHRLICH & GIBBONS, 1977; EHRLICH & MARK, 1977; EHRLICH & LIU, 1999), though not without some discussion (BRIER & FIENBERG, 1980). About this debate EIDE (2006) comments that:

> The great majority of correlation studies and cross-section regression analyses show a clear negative association between punishment variables and the crime rate. Almost without exception the coefficients of the punishment variables (which usually are the elasticities of the crime rates with respect to the punishment variables) are negative, and in most of the cases significantly so.

[2] This opinion should not be read as suggesting that not all corruption must be fought, but only that from an efficiency perspective (cost-benefit analysis) achieving a zero level of corruption may have a cost so high (including bureaucratization costs) that it can become socially undesirable.

In line with these studies, we consider that law enforcement has a material deterrence effect, given the theoretical model and the available empirical evidence. In sum, it seems reasonable to assume from theory that the most important variable to decrease corruption is the punishment probability (p), followed by severity of judicial sanctions (J) to both corruptor agent and corrupted servant and, finally, the severity of administrative sanction (A) applicable to the corrupted servant only.

Notwithstanding the aforementioned, since the associated costs of increasing punishment probability (e.g. better monitoring devices, specialized prosecutors and judges) are normally much higher than the costs associated with just increasing punishment magnitude (basically legislative process), we would expect the later strategy to be more commonly followed than the first one. In any case, theory has shown us that punishment probability is a key variable in fighting corruption. From an empiric perspective, then, the question is how does one measure punishment probability in corruption cases to inform future corruption combat policies?

3. Measuring Judicial Efficacy in Corruption Cases

3.1. Measuring Corruption and Punishment Probability

In order to measure punishment probability we would have to be able to identify all the cases of corruption that happened on a given period of time, the sample space. Unfortunately, corruption cases are highly characterized by moral hazard or hidden action problems. Although we believe all criminal cases are characterized by some form of underreport of occurrences, the problem is especially relevant in corruption contexts.

The principal in our case (Government) not only is a legal entity, but it is also a legal entity with highly dispersed ownership. In the regular crimes context, like theft or assault, the victim is individualized and, many times, a witness of the occurrence. This makes measuring occurrence intensity easier. Even underreport for lack of trust on the system, fear of retaliation or trauma can be mitigated by some victimization rates techniques (PYLE, 2000).

When dealing with corruption cases, most times only the agents involved in the crime are actually aware of its occurrence (information asymmetry), what lead us to the second problem: collusion. Fighting corruption is to a large extend similar to fighting cartels, for in both scenarios the agents involved collude to achieve the illegal result without revealing the collusion to the outside world. Hence, we say that bureaucratic

corruption can be analyzed as a moral hazard problem, a.k.a., a contract between a principal and a privately informed agent[3].

Due to the information asymmetry problem, most estimates of corruption are based on perception of it like LAMBSDORFF (2006), KAUFMANN, KRAAY & MASTRUZZI (2006) and WOODRUF (2006) and not on corruption itself. This kind of research is done on the premise that corruption estimates derived from subjective perceptions and expertise is correlated with underlying real levels of corruption. This method has suffered recent criticism by specialists, not only because perception is misleading (maybe even be culturally and historically established), but also because it can discourage transparency due to availability bias on perceptions when corruption is actually fought against (CGU, 2009)[4]. In any case, corruption perception is not useful information if one is interested in assessing judicial efficacy.

In this context, measuring judicial efficacy against corruption presents the challenge of first discovering the number of corruption cases that happened during a given period of time or a proxy of it. Only then can one compare this result with the number of cases where punishment was actually imposed by courts (judicial efficacy). Since direct observation of corrupt conduct is not always possible, we searched for a natural experiment that would serve as a proxy for such data. In the next section we will explain why the Brazilian triple system of corruption punishment is an adequate natural experiment.

3.2. The Brazilian Anticorruption System: a natural experiment

Unlike many other places, public civil servants in Brazil enjoy a lot of prerogatives established – in thesis – to guarantee that they would be able to fulfill their duties relatively immune to the ever changing political group in charge. Most importantly, they enjoy lifetime tenure (can only be fired by fault and after due process), are granted full pension (not available to regular workers) and are among the most well paid workers in any sector (though this may very through the years).

However, theory and experience tells us that these measures are not enough to countervail corruption. Corruption is a widespread phenomenon in all societies at all times. Aware of this possibility and of the potential social losses associated with

[3] There are many models considering corruption as an adverse selection problem, like TIROLE (1986), LAFFONT & TIROLE (1993) and KOFMAN & LAWAREE (1993), while there are others that approach the problem from a moral hazard perspective, like MOOKHERJEE & PNG (1995).

[4] The more you fight corruption, more corruption is uncovered. However, the more available corruption cases are (even if their absolute number decreases), the higher the perception of corruption in a Government, creating disincentives to investigate corruption cases so that Government is not perceived as corrupt.

lifetime corrupted servants in place, legislators opted for a triple responsibility system where a corrupt agent can face cumulative and independently criminal, civil and administrative sanctions for her actions.

Criminal, civil and administrative sanctions for corruption are completely independent from each other and are carried out by different sets of public bureaucracies. Criminal sanctions are imposed by criminal courts, while civil sanctions are imposed by civil courts and administrative sanctions by administrative committees formed by peers, not necessarily with legal background. Hence, the same conduct can be investigated, independently, simultaneously or not, by three different bodies. This redundancy can be used as a natural experiment to assess how effective the judicial system is in fighting corruption.

If we can gather all corruption cases identified by administrative committees in a given period and compare these results with the punishments imposed by the judicial system, either criminal or civil, for the same conducts, we can reasonably estimate judicial efficacy in fighting corruption for that period.

One possible objection that could be raised to our approach is that a discrepancy in administrative and judicial conclusions may result not from an inefficacy of the judicial system, but from the legal restraints that each of them is subject to. In other words, there could be a discrepancy in public servants considered corrupt by administrative committees and not guilty by courts because each of adjudicative bodies works with different standards of proof or statutes.

We believe that this objection does not apply to our case because of three things: first, administrative and judicial systems are highly similar, with no material difference in standards or applicable statutes, only procedures are really different (though due process is present in all of them); second, according to the Constitution (5º, XXXV) all administrative acts are subject to judicial review so any substantial discrepancy can be resolved by appealing to the Judiciary to reverse the administrative decision; and, finally, although all systems are relatively independent, the evidence collected in one instance is largely borrowed by another, what makes the facts findings basically the same in all of them.

It is important to note that evidence sharing occurs in both directions. Judicial evidence (like telephone interceptions and financial data protected by privacy regulation) is also available to administrative committees and administrative instruments (like auditors' reports or investigations) may serve as basis for criminal and civil actions. These common exchanges largely lead to a convergence among the judicial and administrative criteria and a proof considered as tainted in one proceeding would probably be considered as tainted in the other.

As a result, the actual rate of judicial reversals of administrative decisions can serve as an indication of the divergence between judicial and administrative standards.

If the rate is too high, then one can infer that judicial and administrative spheres treat the cases differently, but if the rate of reversal is low, then one can affirm that the judicial sphere considers adequate the factual assessment of the administrative spheres, hence, their standards are close. We will take this precaution into consideration when analyzing the data.

Hence, our approach for measuring judicial efficacy against corruption assumes that if an agent is found guilty in the administrative sphere, where he is judged under due process, but by peers that are historically protective and the standard of proof are not substantially different from judicial ones, then, the dismissed group can be used as a proxy from the whole corrupted agents universe. Once this subset is identified, we can estimate judicial efficacy by comparing this subset with the rate of judicial punishment for the same cases.

Judicial effectiveness, then, can be understood as the following ratio, where Q_P is the amount of cases effectively punished by the judicial system while Q_o is the estimated amount of occurred cases (punished by the administrative system):

$$\frac{Q_P}{Q_o}$$

It is also important to note that taking Q_o as a proxy for cases where corruption actually happened does not imply that the administrative procedure is assumed infallible or that no other case goes unpunished, but only that those cases actually investigated and punished administratively have a high probability of occurrence of corruption in accordance with the legal general standards.

By employing this simple approach we can estimate not only the effectiveness of the judicial system against corruption, but also the civil and criminal ones separately. All we have to do is adjust Q_P to each area.

Finally, before we move on to the data set, it is important to stress that all administrative sanction are dully published at the Official Gazette and must be notified to public prosecutors, therefore, one cannot reasonably argue that any discrepancy could be attributed to an information flow problem.

4. Data Collection Methodology

4.1. Identifying Corruption Cases – Sample Restriction

Initially, it is important to stress that all relevant information for the present work was not available in any publicly accessible data base, since Brazilian

Government does not maintain any unified records of corruption cases, dismissals or similar information. As a result, we had to manually collect the information by reviewing the Official Gazette for each day during the analyzed period. Since this data mining effort involved a considerable amount of work and we had access to limited resources, we decided to limit our data set in time and space.

Our sample of corruption cases is composed by all federal civil servants dismissed for corrupt practices (bureaucratic corruption) from the main offices (Finance, Planning, Development, Industry and Foreign Trade, Tourism, Foreign Affairs, Agriculture and Agricultural Development) during the 1993-2005 periods. These offices were chosen for their general characteristics regarding: (a) national coverage; (b) organizational structure to fight corruption; (c) a major role in public policy; (d) diversified characteristics of the permanent staff; (e) varying organizational cultures and professionalism levels; (f) activities potentially more vulnerable to corruption (police power and public procurement) and (g) an active role in public funds allocation.

National coverage was privileged to provide the set with a more comprehensive reach and to prevent potential regional effects (a region being more corrupt than another) that could distort our results. Moreover, the presence of a specialized structure to fight corruption was privileged to make our case stronger that the dismissed servants considered were actually corrupt. Federal Government maintains a professional management structure to fight corruption with an integrated system that includes internal affairs offices in various strategic bodies such as the Federal Police, the Internal Revenue Service, the National Institute for Social Security and regulatory agencies.

We also privileged offices that have a prominent role in establishing relevant public policy such as foreign, monetary, fiscal, budgetary, production and development policies for, as the theory says, the higher the prize, the higher the probability of corruption.

In addition, we also privileged offices with different servants profile considering school years and regular wages. Differences in educational profile per office can be verified at Table 1 – School Years of Civil Servants, where it can be seen that both highly educated (e.g. Ministry of Finance with 71.8% and Ministry of Foreign Affairs with 63.6%) and less educated (e.g. Tourism with 16.5%) offices were included. There is also a desirable wage variety, as can be seen from Table 2 – Wage Structure of Civil Servants, confirming the diversity of careers within the sample.

We also considered that the chosen offices have diverse organizational cultures. In some, such as the Ministry of Finance and of Foreign Affairs, most of the decision making positions are occupied by career servants, what indicates professional management, while in others these positions are preponderantly fulfilled with non-

career servants. These trends can be seen at Table 3 – Distribution of Decision Making Positions.

The type of activity performed by the office and its relation to third-parties were also considered. It is not enough do run a survey with servants with the same academic and salary levels, it is important to check the activity performed and its possibility to generate illegal income. Two factors are relevant in determining the potentiality of undue income generation: (i) public procurement activities, and (ii) policy power (the power to impose rights restrictions). Many studies consider these careers when dealing with corruption, like ROEMER (2007) involving police officers and KLITGAARD (1994) involving tax authorities.

The ability to provide benefits or impose restrictions on third parties is a very relevant variable when dealing with corruption and it may explain why, for example, one may find different levels of corruption in offices with the similar salary and education levels. In this sense, our analysis also proves adequate, as it contains various careers with police power, such as taxes auditors (Internal Revenue Service), the financial system, securities and insurance (Central Bank, CVM , Susep) and pest control (Ministry of Agriculture).

Moreover, it should be emphasized that some of these offices play a significant role in the control and release of budget allocations, especially the Ministries of Planning and Finance. Therefore, we believe that our sample of civil servants dismissed for corruption is representative of the total amount of corrupted agents.

Once we established our sample substantial restrictions, our next step was to determine our temporal restrictions. We decided to limit our research to the 1993-2005 periods so that we could take into consideration:

(i) the publication and actual enforcement of the then new administrative statute (Law nº 8112, of 1990) that governs disciplinary sanctions since December 1990, assuming that its effects could be better felt after a two-years lag; and

(ii) a 4-years period as a reasonable timeframe for courts to sentence someone already administratively dismissed for corruption. Since the data were collected in 2009, this delay allowed us to reasonably evaluate the proceedings progress. The inclusion of the latest dismissals could artificially decrease judicial effectiveness by giving little time for judicial review.

4.2. Data Collection

Once our sample characteristics were selected, we reviewed each Official Gazette for all dismissed servants during the relevant period. Our initial search included all servants that were sanctioned with punishment normally associated with corruption, such as dismissal, pension forfeiture and removal from designated functions. Once this broader sample was gathered, we processed it to classify the legal ground for each sanction and filter from the sample those dismissals unrelated with corruption[5].

After all identified corruption cases were listed, we scanned the judicial databases for each of these servants in search of any criminal or civil proceeding, irrespective of whether it was concluded or ongoing. This search included those cases where annulment of the administrative decision was sought and reinstatement requested. Our search covered all federal courts and the Superior Court of Law – STJ (the highest authority in legal matter) and the Federal Supreme Court – STF (the highest authority in constitutional matters).

The results of our research are presented in the next section.

5. Results

5.1. Analysis of the Reinstatements

As previously mentioned, in Brazil no administrative act is immune to judicial review. Therefore, in order to make our case stronger, we can use the degree of reversal of administrative dismissals as a test for the legal soundness of these decisions. If we find a high degree of reversals, one could reasonably argue that it is not the judicial system that is ineffective, just the opposite, it is the administrative system that is arbitrary.

Another possible view is that if there were a significant degree of reinstatements, there would be strong evidence of standard divergence between the administrative and judicial systems, which could 'lead us to indeterminacies. In any case, the comparison we employed here would be much less sound. However, the data does not support this position.

For our purposes, reinstatements here are considered the cases where the dismissed servant was ordered back to service by a judicial order. This possibility is expressly established by Art. 28 of Law nº 8112, of 1990 called the Servants Statute. When analyzing the reinstatement data as presented in Table 4 – Overview of

[5] A civil servant may be punished with any of those penalties in other cases like continuous unjustified absence from work.

Reinstatement Claims, the first important conclusion is that reinstatement actions are relatively common, with more than half dismissed servants filing one or more suits to be reinstated (224 servants).

From those who sued for reinstatement, only 29 were granted a reinstatement order, though a third (9) of these rulings is still pending appeal. As a result, only 4.53% of the dismissed servants (441) were judicially reinstated and even if we restrict our comparison to those that actually challenged the administrative dismissal (224), the resulting reinstatements amount only to 8.93% of the cases.

It is also important to emphasize that 104 reinstatement actions were already definitely rejected and 77 were rejected pending appeal. It means that 46.04% of challenges was already rejected, i.e., there a definitive judicial ruling upholding the administrative finding. Both numbers indicate that it is a myth the assertion that most of the dismissed servants return to service. Ergo, we believe it is reasonable to use the administrative dismissal cases as a proxy for actual cases of corruption in order to estimate judicial effectiveness of either the civil and the criminal systems.

5.2. Measuring Judicial Effectiveness – The Results

From 1993 to 2005, we were able to identify 687 dismissed civil servants (see Table 5 - Total Dismissed Servants) from which 246 (35.81%) were dismissed for reasons unrelated with corruption and 441 (64.19%) were actually involved in corrupt practices. These results are consistent with another recent study (ROCHA & ALENCAR, 2009) that investigated the causes, whether or not linked to corruption, of expulsion from the federal public service in another period (July 2001 to June 2009), involving all federal employees (see Table 6 – Legal Grounds for Public Servants Dismissals). Both studies indicate that approximately two thirds of federal civil servants dismissals are linked with corrupt practices. The most important cause of servant expulsion after corruption is unjustified absence from work, either by dereliction of duty (absence for more than 30 consecutive days) or usual absence (60 absences or more interpolated over a period of 12 months).

A more detailed exposition with the general results and the criminal judicial system performance is summarized in Table 7 – Dismissed Civil Servants and Criminal Actions. The first interesting conclusion that we can extract from the comparison between the administrative and the criminal systems is that only a third of corrupt servants administratively dismissed (34.01%) actually faces criminal charges. Since these figures refer to cases where corruption was already well documented, but still only a third of the servants were charged, it is reasonable to assume that the probability of facing criminal charges for corrupt practices in Brazil is well below 30%.

It is important to note that those figures are for facing criminal charges only and that does not necessarily mean that the law will really be enforced. In fact, things get even grimmer when we look for actual convictions since only 14 servants definitely convicted were found. Based on our assumption that administrative convictions are a strong indicative of actual corruption, we can estimate judicial efficacy of the criminal system as circa 3%:

$$\frac{Q_{cr}}{Q_o} = \frac{14}{441} = 3.17\%$$

It is also worth mentioning that even this low enforcement figure does not necessarily represent actual prison time, because imprisonment can be commuted to other punishment depending on the length of the imposed sanction. Overall, the unfortunate result we found is that the chance that someone will face jail in Brazil for being corrupt is near zero. Things are not that different when dealing with civil sanctions.

At first one could expect a better performance of the civil judicial system, since the misconduct statutes have a much broader language than the criminal ones. In practice, every single legal ground for administrative dismissal also constitutes legal ground for civil liability for misconduct, so we would expect a much higher degree of convergence between the administrative and civil systems, but unfortunately that is also not the case.

Reviewing the collected data (see Table 8 – Dismissed Civil Servants and Civil Actions of Improbity), we found that only 107 servants were sued, while some of them were sued more than once (122 lawsuits were found). From the general pool of civil actions, until 2009, we found only 13 rulings. Notwithstanding the fact that many more civil actions were filed against corrupt servants, the actual results are even more disappointing than those from the criminal system: only 7 definite rulings were found, i.e., cases where no appeal was still pending judgment (*res judicata*).

With these numbers and applying the same methodology, we can estimate judicial efficacy of the civil system as less than 2%:

$$\frac{Q_{ci}}{Q_o} = \frac{7}{441} = 1.59\%$$

Even if we tried to combine both criminal and civil sanctions, the judicial system performance would not improve much, as the rate of success would still be below 5%:

$$\frac{Q_c}{Q_o} = \frac{21}{441} = 4.76\%$$

As we can see from the results, the general perception that corrupt people never answers to Justice in Brazil is not at all exaggerated. We could just change the "never" part to almost never to be more precise. In any case, taking theory into consideration, it is reasonable to infer that judicial effectiveness is so low that the probability of punishment is also very low. Therefore, we would expect corruption to be highly profitable in Brazil, thus, highly present.

6. Conclusion

In this paper we tried to assess whether or not the Brazilian judicial system, either criminal or civil, was effective in the fight against corruption and our results are unequivocal to show that the system is highly ineffective. In fact, according to the data, the chance of being prosecuted for corruption is much less than 30%. On top of that, the chance of actually be criminally convicted is circa 3% only and the chance of being held liable is even slimmer, less than 2%.

Since the rational agent is normally worried about "p", that is, the probability of being punished and not the probability of being tried, it flows from the theory that at present there is a high incentive for corruption in Brazil, as the corrupt servant is almost certain of leaving unpunished. Here the popular perception is really correct.

If our results are sound, they may imply that Brazilian path from a closed to an open society, which has been announced for the last decades, may be jeopardized or at least delayed by the current levels of bureaucratic corruption, not to mention political corruption, not addressed here. Since the probability of punishment is one of the most relevant variables in determining the level of criminal activity, one would expect corruption level to be still very high in Brazil. A high corruption level is almost certain to curtail social cooperation and to weaken the State capability of implementing good social policy (if it tries).

It is important to stress that no effort was made to explain such poor results or to identify the associated probable causes. Theses questions are left as a following research agenda for future work. We hope that other scholars will be interested in our work and will make some effort to extend, explain or contest it. In any case, as unpleasant as it is, we showed that – at least for now – crime pays in Brazil.

7. References

BECKER, Gary S. (1968). Crime and Punishment: An Economic Approach. **Journal of Political Economy**, Columbia, v. 76, p. 169-217.

BOWLES, Roger. (2001). Corruption. *In*: BOUCKAERT, Boudewijn; GEEST, Gerrit de. **Encyclopedia of Law and Economics**. p. 460-491. Cheltenham: Edward Elgar Publishing Limited.

BRASIL. Controladoria-Geral da União-CGU (2009). **Especialistas discutem novas formas de medir a corrupção**. Brasília, 17.03.2009. Disponível em <http://www.cgu.gov.br/Imprensa/ Noticias /2009/noticia03709.asp>. Acesso em 11.04.2009.

BRIER, S. S.; FIENBERG, S. E. (1980). Recent econometric modeling of crime and punishment: support for the deterrence hypothesis. **Evaluation Review**. vol. 4, p.147-191.

EHRLICH, Isaac. (1972). The Deterrent Effect of Criminal Law Enforcement. **The Journal of Legal Studies**, Chicago, v. 1, p. 259-276;

EHRLICH, Isaac. (1973). The Deterrent Effect of Capital Punishment: A Question of Life and Death. **University of Chicago and National Bureau of Economic Research**, p. 1-78, novembro;

EHRLICH, Isaac. (1974). Participation in Illegitimate Activities: An Economic Analysis. *In*: BECKER, Gary S.; LANDES, William M. **Essays in the Economics of Crime and Punishment**. p. 68-134, New York: Columbia University Press.

EHRLICH, Isaac. (1975-1976). Deterrence: Evidence and Inference. **The Yale Law Journal**, New Haven, v. 85, p. 209-227;

EHRLICH, Isaac. (1976). Rejoinder. **The Yale Law Journal**, New Haven, v. 85, n. 3, p. 368-370, January;

EHRLICH, Isaac. (1982). On Positive Methodology, Ethics, and Polemics in Deterrence Research. **The British Journal of Criminology**, v. 22, p. 124-139;

EHRLICH, Isaac; GIBBONS, Joel. (1977).On the Measurement of the Deterrent Effect of Capital Punishment and the Theory of Deterrence. **The Journal of Legal Studies**, Chicago, v. 6, p. 35-50;

EHRLICH, Isaac; LIU, Zhiqiang. (1999).Sensitivity Analyses of the Deterrence Hypothesis: Let's Keep the Econ in Econometrics. **The Journal of law and Economics**, Chicago, v. 42, p. 455-488;

EHRLICH, Isaac; MARK, Randall. (1977).Fear of Deterrence – A Critical Evaluation of the "Report of the Panel on Research on Deterrent and Incapacitative Effects". **The Journal of Legal Studies**, Chicago, v. 6, p. 293-316;

EHRLICH, Isaac; POSNER, Richard. (1974).An Economic Analysis of Legal Rulemaking. **The Journal of Legal Studies**, Chicago, v. 3, p. 257-286.

EIDE, Erling, RUBIN, Paul H., e SHEPHERD, Joanna M. (2006). **Economics of Crime. Foundations and Trends in Microeconomics**. V. 2, nº 6. Hanover: Now Publishers.

FILGUEIRAS, Fernando de Barros. (2004). Notas críticas sobre o conceito de corrupção: um debate com juristas, sociólogos e economistas. **Revista de Informação Legislativa** nº 164, out-dez.

GAROUPA, Nuno; e GOMEZ-POMAR, Fernando. (2004). Punish Once or Punish Twice: A Theory of the Use of Criminal Sanctions in Addition to Regulatory Penalties. **American Law and Economics Review**. Vol. 6 nº. 2, p. 410 – 433.

HART, Oliver; GROSSMAN, Sanford. (1983). An Analysis of the Principal-Agent Problem. **Econometrica**, 7-46, Janeiro.

KAUFMANN, Daniel; KRAAY, Aart; MASTRUZZI, Massimo. Measuring governance using cross-country perceptions data. *In*: ROSE-ACKERMAN, Susan. (2006). **International Handbook on the Economics of Corruption**. p. 52-104. Cheltenham: Edward Elgar Publishing Limited.

KLITGAARD, Robert. (1994). **A corrupção sob controle**. Rio de Janeiro: Zahar Editores,.

KOFFMAN, F.; LAWAREE, J. (1993). Collusion in hierarchical agency. **Econometrica**. n. 61, p. 629-656.

LAFFONT, J-J.; TIROLE, J. (1993). **A Theory of Incentives in Procurement and Regulation**. MIT Press, Cambridge.

LAMBSDORFF, Johann Graf. Causes and consequences of corruption: What do we know from a cross-section of countries? *In*: ROSE-ACKERMAN, Susan. (2006). **International Handbook on the Economics of Corruption**. p. 3-51. Cheltenham: Edward Elgar Publishing Limited.

MOOKHERJEE, D.; PNG, I.P.L. (1995). Corruptible law enforcers: How should they be compensated? **Economic Journal**. 105, p. 145-159.

PYLE, D. J. (2000). **Cortando os Custos do Crime: a Economia do Crime e da Justiça Criminal.** Rio de Janeiro: Instituto Liberal.

ROCHA, Marcelo Nunes Neves da; ALENCAR, Carlos Higino Ribeiro de. (2009). Análise das penalidades graves aplicadas a servidores federais no Brasil: principais causas, modalidades punitivas, avaliação quantitativa e qualitativa. **Anais do XIV Congreso Internacional del CLAD sobre la Reforma del Estado y de la Administración Pública**, Salvador, 27 a 30 de outubro de 2009. Salvador: CLAD.

ROEMER, Andrés. **Economía del Crímen**. (2007). Cidade do México: Noriega Editores.

TIROLE, J. (1986). Hierarchies and bureaucracies: On the role of collusion in organizations. **Journal of Law, Economics and Organization,** Vol. 2, p.181-214.

WOODRUF, Christopher. Measuring institutions. *In*: ROSE-ACKERMAN, Susan. (2006). **International Handbook on the Economics of Corruption**. p. 105-124. Cheltenham: Edward Elgar Publishing Limited.

8. List of Tables:

Table 1 – School Years of Civil Servants

Offices	Graduate		Intermediate		Primary		Unavailable		Total
	Qtde	%	Qtde	%	Qtde	%	Qtde	%	Qtde
Presidency of the Republic	2.050	27,4	1.708	22,8	29	0,4	3.697	49,4	7.484
General Law of the Union	6.419	71,6	1.194	13,3	31	0,3	1.318	14,7	8.962
Agric., Pec. e Supplying	4.070	33,8	6.146	51,1	1.293	10,7	522	4,3	12.031
Cities	201	42,1	73	15,3	-	-	204	42,7	478
Science and Technology	3.415	50,3	3.007	44,2	39	0,6	335	4,9	6.796
Communications	778	39,1	771	38,7	1	0,1	442	22,2	1.992
Culture	1.418	47,9	977	33,0	69	2,3	498	16,8	2.962
Defense	5.245	19,4	16.455	60,8	3.037	11,2	2.320	8,6	27.057
Agrarian Development	2.370	35,7	3.792	57,2	4	0,1	464	7,0	6.630
Social Development and Hunger Combat	108	15,7	100	14,5	-	-	480	69,8	688
Development, Industry and For. Trade	1.305	46,9	1.267	45,5	25	0,9	188	6,8	2.785
Education	109.717	56,8	65.179	33,7	11.486	5,9	6.863	3,6	193.245
Sport	12	5,2	44	18,9	1	0,4	176	75,5	233
Finance	23.564	71,8	8.322	25,3	458	1,4	496	1,5	32.840
Governments of the Former-Territories	5.197	31,5	9.454	57,3	1.855	11,2	3	0,0	16.509
Nacional Integration	563	20,3	1.848	66,5	1	0,0	366	13,2	2.778
Justice	3.563	12,5	23.239	81,7	375	1,3	1.254	4,4	28.431
Environment	3.515	41,0	2.995	34,9	149	1,7	1.924	22,4	8.583

Mines and Energy	1.427	44,5	1.249	39,0	22	0,7	506	15,8	3.204
Planning, Budget and Management	3.385	19,1	9.946	56,0	42	0,2	4.395	24,7	17.768
Social Security	9.609	24,2	29.303	73,7	77	0,2	786	2,0	39.775
Foreign affairs	2.215	63,6	1.195	34,3	4	0,1	69	2,0	3.483
Health	27.002	25,6	63.488	60,1	6.190	5,9	8.928	8,5	105.608
Work and Job	3.471	49,4	3.300	47,0	33	0,5	216	3,1	7.020
Transports	1.467	26,6	3.282	59,4	35	0,6	739	13,4	5.523
Tourism	71	16,5	112	26,0	1	0,2	247	57,3	431
Total	222.157	40,9	258.446	47,6	25.257	4,6	37.436	6,9	543.296

Source: Ministry of the Planning, Budget and Management.

Table 2 – Wage Structure of Civil Servants

Position	Initial wage	Final wage
Ministry of Finance Attorney	14.549,53	18.260,00
Inspector of Internal Revenue Service	13.067,00	18.260,00
Diplomat, Central Bank Analyst, Analyst of Planning and Budget, Analyst of Finances and Control, Specialists in Public Politics	12.413,65	17.347,00
Inspector of Ministry of Agriculture	9.552,00	13.400,00
Agronomist Engineer of the INCRA	4.349,37	6.580,51
Administrative positions (graduate) - Ministry of Finance	3.534,22	5.650,00
Administrative analyst of the INCRA (graduate)	3.348,41	5.067,08
Administrative positions (graduate) - General	2.870,19	3.405,04

Administrative positions (intermediate) - Ministry of Finance	2.590,42	3.147,11
Administrative positions (intermediate) - General	2.148,47	2.448,44
Administrative positions (auxiliary) - Ministry of Finance	2.124,46	2.160,78

Source: Ministry of the Planning, Budget and Management.

Table 3 – Distribution of Decision Making Positions

	Temp positions	**Internal career servants**		**External career servant**		**Outsiders**	
		Qt.	%	Qt.	%	Qt.	%
Internal Revenue Service Regional Superintendents	10	10	100,00%	0	0 %	0	0 %
Internal Revenue Service Local Chiefs	120	120	100,00%	0	0 %	0	0 %
Federal Superintendents of Agriculture	27	14	51,85%	6	22,22%	7	25,92%
Patrimony of the Union Local chiefs	29	8	27,58%	5	17,24%	16	55,17%
INCRA Superintendents	30	9	30%	4	13,33%	17	56,67%
Ministry of the Agrarian Development Commission Agents	26	0	0%	7	26,93%	19	73,07%

Sources: IRS, Ministry of Agriculture, Secretariat of the Patrimony of the Union - MPOG, INCRA, Ministry of Planning.

Table 4 – Overview of Reinstatements (1993-2005)

	MAP	MDA	MDIC	MTUR	MF	MPOG	MRE	Former-territories	TOTAL
Dismissed servants	45	57	19	1	255	44	14	6	441
Reinstatement Actions	30	58	17	3	180	32	8	5	333
Servants that Sued	23	33	9	1	124	24	7	3	224
Preliminary Injunctions	0	0	0	0	5	1	0	0	6
Reinstatement Rulings	0	4	0	1	21	3	0	0	29
Definite Reinstatement Rulings	0	6	6	0	6	1	1	0	20
Negative Ruling	5	18	0	1	39	8	2	4	77
Definite Negative Rulings	9	18	8	0	56	10	3	0	104

Source: Federal Official Gazette and Judicial Databases.

Table 5 - Total Dismissed Servants (1993-2005)

1993 - 2005	MAP	MDA	MDIC	MTUR	MF	MPOG	MRE	Former Territories	Total
Corruption- related	45	57	19	1	255	44	14	6	441
Other reasons	41	12	4	1	78	30	15	65	246
Total	86	69	23	2	333	74	29	71	687

Source: Federal Official Gazette.

Table 6 – Legal Grounds for Public Servants Dismissals (July, 2001 to June, 2009)

Legal grounds (Law 8.112/90)	Corruption Link	Reason	Prior to the Disciplinary System (%)	After the Disciplinary System (%)
117 - IX	Strong	Take advantage of position	30,5	37,0
132 - IV	Strong	Administrative improbity	25,5	18,8
132 - X	Strong	Injury to the public patrimony	9,8	3,9
117 - XI	Strong	Act of receiving gifts	3,2	7,1
132 - XI	Strong	Corruption	0,2	2,8
117 - XI	Strong	Performance as solicitor	0,8	2,1
Total of penalties with STRONG linking with the corruption			70,0	71,7
132 - II	Weak	Dereliction of duty	11,3	9,8
132 - III	Weak	Usual absence	3,2	2,1
117 - XV	Weak	Laziness	8,7	6,1
117 - X	Weak	Management of private societies	1,3	1,5
Total of penalties with WEAK linking with the corruption			24,5	19,5
Others			5,5	8,8

Source: ROCK & ALENCAR (2009).

Note: averages before and after the creation of the Disciplinary System of the Federal Executive Branch.

Table 7 – Dismissed Civil Servants and Criminal Actions (1993-2005)

1993 - 2005	**MAP**	**MDA**	**MDIC**	**MTUR**	**MF**	**MPOG**	**MRE**	**Former Territories**	**TOTAL**
Dismissed Servants	45	57	19	1	255	44	14	6	441
Filed Criminal Actions	13	28	3	1	165	9	4	1	224

Servants Criminally Prosecuted	12	26	2	1	97	8	3	1	150
Convictions Pending Appeal	0	4	0	1	39	1	0	0	45
Definitive Convictions (*res judicata*)	2	2	0	0	8	0	2	0	14
Dismissals Pending Appeal	0	0	0	0	8	2	1	0	11
Definitive Dismissals (*res judicata*)	2	3	0	0	17	2	0	0	24

Source: Federal Official Gazette and Judicial Databases.

Table 8 – Dismissed Civil Servants and Civil Actions of Improbity (1993-2005)

	MAP	**MDA**	**MDIC**	**MTUR**	**MF**	**MPOG**	**MRE**	**Former-territories**	**TOTAL**
Dismissed Servants	45	57	19	1	255	44	14	6	441
Filed Civil Actions	11	22	3	2	72	10	2	0	122
Servants Sued for Improbity	10	19	3	1	64	8	2	0	107
Positive Rulings Pending Appeal	0	5	0	0	6	1	1	0	13
Definite Positive Rulings	0	0	0	0	7	0	0	0	7
Dismissed Actions	0	1	0	0	4	1	0	0	6
Definite Dismissed Actions	0	2	0	0	3	2	0	0	7

Source: Federal Official Gazette and Judicial Databases.