ARTICLES
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GOVERNMENT EFFECTIVENESS, CORRUPTION, AND DECISION-MAKING IN STATE-OWNED ENTERPRISES

Efetividade governamental, corrupção e tomada de decisões em empresas estatais
Efectividad del gobierno, corrupción y toma de decisiones en empresas estatales

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ABSTRACT
The purpose of this study is to identify if there is a difference in decision making behavior of State-Owned Enterprises (SOEs) when exposed to different scenarios of corruption and government effectiveness. The research used the difference-in-differences technique with 96,114 observations of companies from 31 countries. The results obtained in this study exposed the differences in the behavior of SOEs when facing different scenarios, as proposed in the analytical framework. Thus, it is possible to say that SOEs located in countries with high levels of corruption may work differently, considering the levels of government effectiveness. In environments of high effectiveness, SOEs increase long-term expenditures, spending more and building a context where diversion of funds is more difficult to notice. Issues of government effectiveness and corruption have been addressed, however, little attention has been paid to cross-country comparisons considering the effectiveness of governments and levels of corruption.

Keywords: government effectiveness, corruption, state-owned enterprises, corporate governance, investments.

RESUMO
O objetivo deste estudo é identificar se há diferença no comportamento de tomada de decisão das empresas estatais (SOEs) quando expostas a diferentes cenários de corrupção e efetividade governamental. A pesquisa utilizou a técnica de diferença em diferenças com 96.114 observações de empresas de 31 países. Os resultados obtidos neste estudo expuseram as diferenças de comportamento das estatais diante de cenários distintos, conforme proposto no referencial analítico. Dessa forma, é possível afirmar que as estatais localizadas em países com altos níveis de corrupção podem atuar de forma diferenciada, considerando os níveis de efetividade do governo. Em ambientes de alta eficácia, as estatais aumentam os gastos de longo prazo, gastando mais e construindo um contexto em que é mais difícil perceber o desvio de fundos. Questões de efetividade do governo e corrupção foram abordadas, no entanto pouca atenção foi dada às comparaisões entre países, levando-se em conta a efetividade dos governos e os níveis de corrupção.

Palavras-chave: efetividade do governo, corrupção, empresas estatais, governança corporativa, investimentos

RESUMEN
El propósito de este estudio es identificar si existe una diferencia en el comportamiento de toma de decisiones de las Empresas Públicas (EPE) cuando se exponen a diferentes escenarios de corrupción y efectividad del gobierno. La investigación utilizó la técnica de diferencias en diferencias con 96,114 observaciones de empresas de 31 países. Los resultados obtenidos en este estudio expusieron las diferencias en el comportamiento de las empresas públicas frente a diferentes escenarios, tal como se propone en el marco analítico. Por lo tanto, es posible decir que las empresas estatales ubicadas en países con altos niveles de corrupción pueden funcionar de manera diferente, considerando los niveles de efectividad del gobierno. En entornos de alta efectividad, las empresas públicas aumentan los gastos a largo plazo, gastan más y crean un contexto donde es más difícil percibir el desvío de fondos. Se han abordado cuestiones de la eficacia del gobierno y la corrupción; sin embargo, se ha prestado poca atención a las comparaciones entre países considerando la eficacia de los gobiernos y los niveles de corrupción.

Palabras clave: efectividad del gobierno, corrupción, empresas de propiedad estatal, gobierno corporativo, inversiones.
INTRODUCTION

Corruption is an issue addressed worldwide and studied for a long time, under various perspectives. Although part of the literature understands corruption as a general phenomenon with a common logic regarding antecedents and causes, but other studies are showing that corruption may present different characteristics according to the context. This part of the literature considers that corruption has specificities when observed in developed or developing countries, or when considering the countries’ social, cultural and economic variables (Graeff & Mehlkop, 2003; Aidt, 2011; Ambraseys & Bilham, 2011; Persson, Rothstein, & Teorell, 2013; Sønderskov, 2019; Scholl & Schermuly, 2020).

Therefore, Aidt (2011) proposes classification of causes of corruption into the following groups: (1) economic and demographic factors; (2) political institutions; (3) judicial and bureaucratic factors; (4) geographical and cultural factors. In the group of judicial and bureaucratic factors, the causes of corruption related to the way governments are conducted in different countries, and the relationship between these practices and corruption seem to appear consistently in the literature that addresses the effectiveness of government agencies and institutions.

The causes in this group are related to a type of bureaucracy that fails to serve the population. It is a bureaucracy that works based on bribery. It is characterized by poor management with lack of transparency that encourages and covers up acts of corruption (Seldadyo & Haan, 2005; Ionescu, 2010; Aidt, 2011; Mudit & Shamika, 2012; Ngatikoh, Kumorotomo, & Retnandari, 2020; Tsetsura & Luoma‐Aho, 2020).

According to the environment, State-Owned Enterprises (SOEs) are susceptible to different levels of corruption in different countries, considering two main factors: a) companies may contribute to more reckless and inefficient management because of the corrupt environment; (b) SOEs may promote an already corrupt system, making less efficient decisions. The enterprise may reinforce the corrupt systems’ mechanisms and operate in a principal‐principal agency problem, i.e., in a conflict involving the government, private shareholders, and the population that the SOEs should effectively serve (Hellman, Jones, Schankerman, & Kaufmann, 1999; Hellman & Schankerman, 2000).

Some authors point to a transformation in SOEs, especially in developed countries, and in some developing countries, such as Brazil. The authors argue that SOEs in these countries are operating more efficiently and under more significant influence of the private sector (Liang, Ren, & Sun, 2015; Hoskisson, Wright, Filatotchev & Peng, 2013; Inoue, Lazzarini, & Musacchio, 2013).

Against this backdrop, this research addresses the following problem: Are the SOEs’ investment decisions different when these enterprises are subject to different levels of effectiveness and corruption? To answer the question, it is intended: i) to segment the government effectiveness and corruption indicators in different scenarios; ii) propose a framework combining general levels of corruption and effectiveness in the governments of different countries; and, iii) investigate the effectiveness of government in countries exposed to different corruption scenarios. Advancing in the understanding about the behavior of SOEs is a task that responds to a relevant research
gaps since there is literature on how SOEs relate to corruption, but there is little research on how these enterprises make decisions in different scenarios regarding government effectiveness and levels of corruption.

Articles addressing the relationship between government effectiveness in different corruption scenarios were searched in the literature. Studies on the relationship between government effectiveness and corruption addressed different perspectives, such as Accountability (Brewer, Choi, & Walker, 2007), Foreign Direct Investment (Ionescu, 2010), Culture (Mudit & Shamika, 2012), Inflation (Montes, & Paschoal, 2016), Stock market performance (Saeed Meo, 2017) and E-government system (Agbozo & Asamoah, 2019). Research seeking to understand the operations of SOEs may contribute to building public policies and mechanisms to manage these organizations and help managers guide their decisions based on different scenarios.

Therefore, the objective of this work is to identify whether there is difference in the decision-making behavior of SOEs when they are exposed to different scenarios of the government’s corruption and effectiveness. This article is organized into five sections. This introduction contextualized and presented the research problem and objective. The next section presents the theoretical framework and is followed by the methodology, which describes the study’s design and the techniques applied. The fourth section shows the results obtained, and the fifth section presents the conclusions.

LITERATURE REVIEW

Corporate Governance and SOEs

Corporate governance is considered fundamental for countries because, through it, a greater number of investments are destined to their markets. It gradually provides greater credibility and trust to these nations, considering that their economic returns will be more assured in strong governance environments (Gani, 2007).

The definitions of corporate governance generally have financial focus, addressing the mechanisms that seek to ensure access and control of resources by investors. Shleifer and Vishny (1997) define corporate governance as the way investors ensure return on their investment. Corporate governance can also be described as guiding principles for decision-making in organizations, with the main objective of avoiding agency problems that arise when the decisions of one party (called an agent) may interfere with the interests of another (called the principal).

Decisions made by the agent should benefit the principal, however, in practice, many situations occur in which conflict of interest between the two parties occurs, which may happen when the agent behaves opportunistically (referred to in the literature as moral hazard or opportunism). Therefore, corporate governance control mechanisms try to minimize opportunism,
ensuring the alignment of shareholders’ interest with the management practices adopted by the company.

Moral hazard can arise when individuals’ decisions affect the distribution of the company’s results. This situation is common in the insurance market, the hiring of labor, and the delegation of responsibility for decision making. The source of this moral hazard or incentive problem is an asymmetry of information among individuals resulting from the inability to observe individual actions. A natural remedy to address this problem may be the investment in monitoring employees’ actions and acquiring information to be used in the process of contracting employees.

The presence of an effective corporate governance system, both within a company and in an economy as a whole, helps provide a degree of confidence that is necessary for the smooth functioning of a market economy. As a result, the cost of capital is lower and companies are encouraged to use resources more efficiently, sustaining growth.

SOEs are organizations without universal structure, since belong to different countries and must meet their local specificities. However, such corporations operate in two models, in the first there is the use of exclusively governmental capital. In the second, there is the State-Owned joint-venture firms, which use external financing to fund their operations, where the government owns most of the stock and control over organizational decisions, but does not act as its only resource provider.

Regarding the purpose of SOEs, they are created to serve certain public services, social policies or strategic sectors of the economy, initially acting in favor of the collective interest. However, as mixed SOEs grow, there is a need to satisfy the wishes of all its shareholders, which can be configured for a twofold purpose, given that the latter do not always share the same state goals and aspirations.

**Government Effectiveness**

Several methods have been established to measure country governance, including the World Bank’s Worldwide Governance Indicators (WGI), and they are widely used in studies because of their ability to indicate stakeholder perceptions of government quality and effectiveness and enable a comparison between different countries over time. The government effectiveness indicator, which is one of the components of the WGI, is measured by the proper implementation of public policies, quality of public services offered, as well as the degree of government independence from political pressures and therefore its credibility with society (World Bank, 2014).

The indicator of WGI has been related with several perspectives. Empirical results of some studies reveal that countries with sound government effectiveness are likely to attract more FDI inflows (Mengistu & Adhikary, 2011; Bannaga, Gangi, Abdrazak, & Al-Fakhry, 2013; Kurul & Yalta, 2017; Younsi & Bechtini, 2019). In UAE, government effectiveness buoys the positive effect that entrepreneurship activities exert on economic growth (Saberi & Hamdan, 2019). Governance effectiveness also presented higher potential for poverty alleviation (Rizk, 2012; Siddique, Selvanathan, & Selvanathan, 2016; Hassan, Bukhari, & Arshed, 2020).
Some studies show that nations with strong effectiveness are experiencing a process of economic growth that is leveraged precisely by this good state efficiency (Kaufmann & Kraay, 2002; Acemoglu & Robinson, 2008; Cooray, 2009; Alam, Kitenge, & Bedane, 2017; Saad & Ayoub, 2019). However, such findings are not unanimous, considering that other studies distrust this effect (Quibria, 2006; Kurtz & Schrank, 2007), especially the work of Kurtz and Schrank (2007), who found that economic growth is not impacted by government effectiveness.

In face of this softer governance, the use of State-Owned Enterprises to serve political purposes becomes even more widespread, as the government is their majority shareholder and the protection of minority investor expropriation is reduced, making SOEs controlled by bureaucrats and politicians who privilege their interests.

Through this conjuncture, managers choose to meet the pretensions of state policy, in order to win promotions or to mitigate the risk of losing their positions (Li & Qian, 2013). Due to this context, investments of SOEs become inefficient due to the action of the political interests that affect the financial results of these firms (Shleifer & Vishny, 1994; Boubakri, Cosset, & Saffar, 2008).

Herzfeld and Weiss (2003) demonstrated the poor quality of institutions and the consequent lack of effectiveness in the government system when there are high levels of corruption. The authors emphasize particularly the judiciary and the legal system. Dreher, Kotsogiannis and McCorriston (2009) complement these findings showing a positive relation between government effectiveness and corruption mediated by the shadow economy. In the study by Manzetti and Wilson (2007), the authors searched for the reason why governments obtain support, and established a relationship between government effectiveness and corruption.

Thus, there may be an increase in investments by State-Owned Enterprises in less government-effective environments (governance), as they can be used to meet political demands, but without ensuring that their resources are allocated efficiently. It is important to consider the effectiveness of the state as one of the factors that supports and impacts the investment decision-making process by SOEs, considering the influence of the government’s political interests and their control over SOEs, where the latter’s investments may be increased for social and political gain without, however, implying a favor for organizational economic profit or the efficiency of these corporate investments.

**Corruption**

Corruption hinders the development of trade since it represents a waste of resources that could be better invested. According to Dutta and Sobel (2016), corruption’s negative effects reduce in times of crisis, but it always causes damage, regardless of the market situation.

Gray and Kaufmann (1998) argue that corruption constitutes the greatest obstacle to nations’ economic development and growth. In a complementary way, the study by Bai et al. (2013) found that economic growth causes decrease in the practice of bribery, confirming the hypothesis that economic growth reduces state corruption (particularly regarding this practice). However, the corruption practice addressed in the study is what the literature calls petty bribes,
which is different from the corruption processes that involve politicians, where values and the complexity of relations tend to develop grand corruption.

Political corruption occurs when government officials abuse public power, position, or resources for private gains (Svensson, 2005). In this context, State-Owned Enterprises (SOEs) are more conducive to such corruption, not because their employees are more corrupt than private companies’ workers are, but because SOEs offer government officials more opportunities for corruption.

Corruption in the public sphere occurs and develops when a public official (elected or not), uses their position in government to obtain private benefits. This type of corruption indicates a lack of respect for the rules and regulations of economic transactions in society since the practice implies additional and irregular payments to obtain something in return (Kaufmann, Kraay & Mastruzzi, 2011). There are several such cases in Brazil. In scenarios with conflicts of ideological positions, practices such as bribery, irregular donations to electoral campaigns, overbilling of engineering contracts and industrial subsidies are quite frequent (Lino, Azevedo, Aquino & Steccolini, 2022; Rodrigues & Barros, 2022).

In environments of high levels of corruption, public officials are more likely to make private gains. This condition leads governments to use SOEs to obtain political support from these officials. Corruption, therefore, facilitates the exchange of benefits between government and public officials, an exchange that would not occur in other contexts (Aidt, 2009). These exchanges offer conditions for public officials to direct SOEs’ spending to please voters and facilitate re-election, while gaining support to pass bills to change policies in order to satisfy hidden interests. According to Shleifer and Vishny (1994), this influence takes place due to the SOEs lack of effectiveness, which is consequence of the political pressures they are exposed to. The pressures aim to achieve objectives such as allocation of production in strategic regions from the political point of view, instead of allocating production in regions that are more economically attractive. This phenomenon is not observed when the state is a minority agent and does not exercise control over the SOE (Inoue et al., 2013).

It is common to see public officials using SOEs as a means of income transfer, especially in highly unequal environments (Avsar, Karayalcin, & Ulubasoglu, 2013). Moreover, it is evident the lack of effectiveness of SOEs’ short-term expenditures – often used by public officials for personal gains (Campos & Pereira, 2016) covered by the state’s control over the enterprises (Musacchio & Lazzarini, 2012) – and the creation of pathological corruption. The problem aggravates because SOEs have to deal with capital market investors, as the state’s chronic interference hampers the capitalization of the company due to the low protection offered to minority shareholders.

For La Porta, Lopez-De-Silanes, Shleifer and Vishny (2000), there is an agency problem between managers and shareholders when the company fails to protect the rights of minority shareholders. Therefore, in an environment of weak corporate governance, SOEs lack transparency, and the government easily influences the company’s spending regardless of the economic attractiveness and shareholders interests. Transparency is essential to building trust and confidence in the political system, but the language and complexity of political issues can be a constraint (Sønderkov, 2019, p. 327).
Companies more engaged with Corporate Social Responsibility (CSR) practices are associated with lower levels of corruption because CSR practices create a positive image of the company, while the link with corruption (when discovered) creates a negative image (Ucar & Staer, 2020). Lopatta, Jaeschke, Tchikov & Lodhia (2017) confirmed this relationship in their study, showing that CSR performance is negatively related to the risk of corporate corruption.

However, companies with high CSR good practices do not necessarily have the best anti-corruption practices (Carr & Outhwaite, 2011). In some situations this relationship is not well established, such as when companies believe that bribery is a cost for doing business, that is, that bribes need to be paid to have the work done (Wong & Conroy, 2009) or when the environment in which companies are inserted does not promote strong pressure to comply with anti-corruption practices, which is more likely to occur in emerging markets (Krishnamurti, Shams, & Velayutham, 2018). In Brazil, Operação Lava Jato (Car wash operation) stood out in the fight against corruption. Lava Jato began in March 2014 and revealed criminal business practices, a system for paying bribes to public agents to obtain advantages, money laundering and access to overpriced contracts (Freitas, 2020).

The literature indicates that the scenario of corruption and government effectiveness may influence SOEs. This evidence led us to propose a framework for scenario analysis combining the levels of corruption and government effectiveness in different countries. The framework considers four possible scenarios, as shown in Figure 1.

Figure 1. Framework combining scenarios of corruption vs. government effectiveness
In Figure 1, the combinations (scenarios) were divided into quadrants and called: i) Contained Corruption: since the highest efficiency of the government can be related to low corruption and curb levels of corruption. More effective processes, among other things, inhibit requests for facilities through bribes (Deniozos, Vlados, & Chatzinikolaou, 2019; Shan, Le, Chan, & Hu, 2020); ii) Punctual Corruption: since even with low levels of government effectiveness, other factors can lead to low corruption and make it punctual in the country. In this case, the literature has raised other factors that prevent high corruption, such as the presence of dictators who have ineffective and less democratic governments, but who manage to impose high punishment policies on corrupt people or hide facts from the population, creating a false scenario of low perception of corruption (Brol, 2016; Doorenspleet, 2019); iii) Resilient corruption: in this scenario, even with the effectiveness of the government, corruption is still high, making it resilient to the effectiveness of the government. Other factors are more relevant to corruption than government effectiveness, such as the culture of its people and institutions (Al-Jundi, Shuhaiber, Al-Emara, & Augustine, 2019; Scholl & Schermuly, 2020); and iv) Systemic corruption: a scenario in which the Government’s effectiveness is low, contributing to high levels of corruption, characterizing it as a corruption that survives from this ineffectiveness and its structure of facilities that can be bought by bribery, by encouraging earnings, high and low risk of punishment and also by the ineffectiveness of justice (Deniozos, Vlados, & Chatzinikolaou, 2019; Shan, Le, Chan, & Hu, 2020; Lopes Júnior, Câmara, Rocha, & Brasil, 2018; Lopes Júnior, Damasceno & Lôbo, 2019).

RESEARCH METHODOLOGY

This study aims to identify whether there is difference in the behavior of State-Owned Enterprises (SOEs) when exposed to different scenarios of government effectiveness and corruption. The study selected data from SOEs listed in the stock market, in which the government owns the majority of stocks (more than 50% of the shares). Because of the government’s participation, these enterprises may present other drives, rather than economic profit, guiding the business.

This study may be considered as non-experimental research since there was no data manipulation. However, it is a quasi-experiment, and uses the difference-in-differences (diff-in-diff) technique. Quasi-experiment occurs when an exogenous event affects the explanatory variable. The diff-in-diff technique was used to identify the government’s decision regarding the SOEs’ investments after the 2008 crisis.

The data was retrieved from the Compustat Global database (2014) and refer to the period from 2002 to 2011. The research captured the period until 2011, understanding that it would be enough to reveal the effects of the 2008 global economic crisis. According to Pagot and Jardim (2014), countries started to recover from the global crisis in 2011, led by the growth of
the BRICS countries (Brazil, Russia, India, China, and South Africa). The choice to collect data starting from 2002 is to verify if the results of the diff-in-diff were specific for the 2008 global economic crisis. Therefore, the period after 2005 was used to capture the influence of a placebo for comparison.

According to Meyer (1995), the diff-in-diff method is suitable for conducting experiments because it enables the identification of the influence of an exogenous source on the explanatory variables, using a change in policy or similar event. In the implementation of the diff-in-diff model, the study adopted a regression with panel data with double fixed effect.

The fixed effect in cross-sectional data is used to capture non-observable characteristics that do not vary over time, while the time fixed effect captures elements that are common to all firms that do not vary over time (Meyer, 1995). The study applied descriptive and multivariate statistic techniques, using the software STATA.

The research included 96,114 observations of companies from 31 countries. Compustat Global offers financial and market data from more than 13,000 companies in more than 80 countries. The variables used in this study were ‘increase in investments,’ ‘employees,’ ‘intangible assets,’ ‘short-term investments,’ and ‘sale of investments,’ according to Exhibit 1. The database does not include companies in the financial industry. The comparison of financial companies with companies from other segments could be a significant limitation, given the specifics of the financial industry.

The variable ‘government effectiveness’ was obtained through the World Bank’s Worldwide Governance Indicators (WGI) database (2019). The WGI comprises six large composite indicators, covering more than 200 countries, since 1996. The indicator used in this research was ‘government effectiveness.’ The values of the indicator range from -2.5 to 2.5, and the lower the value, the lower the quality of services, and the credibility of the government.

The variable ‘corruption’ was obtained from the Country Risk Guide database, and it refers to an assessment of corruption within the political system. This corruption distorts the economic and financial context of the countries and reduces government effectiveness by allowing people to take positions of power through patronage rather than capacity. The indicator ranges from zero (most corrupt environments) to six (less corrupt environments).

Another database used was Mergers & Acquisitions (M&A), developed by Thomson Reuters. It was useful to identify the SOEs since M&A has presented a set of data on the activity of public and private companies since the late 1970s in all major types of business. In addition, the official websites of the companies were consulted, as well as their activity reports.

Four different scenarios were created to analyze the data: 1) Low Corruption vs. Low Effectiveness; 2) Low Corruption vs. High Effectiveness; 3) High Corruption vs. High Effectiveness; and 4) High Corruption vs. Low Effectiveness. The median was used to characterize the scenarios. Thus, in the scenario of low government effectiveness and low corruption, the study selected only private and State-Owned Enterprises with median lower than 0.76 and 0.45, respectively (for the variable ‘government effectiveness’), and median lower than 3.10 and 2.75, respectively (for the variable ‘corruption’). Consequently, private and state enterprises
presenting median equal to or higher than 0.76 or 0.45, respectively (for the variable ‘government effectiveness’), and median equal to or higher than 3.10 and 2.75, respectively (for the variable ‘corruption’), were considered to belong to environments with high government effectiveness and high corruption.

Exhibit 1. Variables of the study

<table>
<thead>
<tr>
<th>DEPENDENT VARIABLES</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intangible Assets – Total</td>
<td>This item represents the net value of intangible assets. Intangibles are assets that do not exist physically, but they represent the rights of enjoying some privilege.</td>
</tr>
<tr>
<td>Increase in Investments</td>
<td>This item represents funds used to increase investments in a company in the long term.</td>
</tr>
<tr>
<td>Short-Term Investments – Total</td>
<td>This item represents investments that are currently transactional, such as presented in the section “Current Asset” in the financial statement. These investments must be converted in cash in a relatively short term.</td>
</tr>
<tr>
<td>Sale of Investments</td>
<td>This item represents receivables of long-term investments.</td>
</tr>
<tr>
<td>Employees</td>
<td>This item represents the real number of people employed by the company and its subsidiaries.</td>
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<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLES</th>
<th>DESCRIPTION</th>
</tr>
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<tbody>
<tr>
<td>Government Effectiveness</td>
<td>The perception of the quality of public services, quality of the policies’ formulation and implementation, as well as the credibility of the government’s commitment toward these policies.</td>
</tr>
<tr>
<td>Corruption</td>
<td>It refers to an evaluation of the corruption within the political system.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>CONTROL VARIABLES</th>
<th>DESCRIPTION</th>
</tr>
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<tbody>
<tr>
<td>Country</td>
<td>Series of dummy variables, each related to one country, in which 1 means that the company operates in the country and 0 if it does not operate in the country.</td>
</tr>
<tr>
<td>Year</td>
<td>Series of dummy variables, each related to one year.</td>
</tr>
<tr>
<td>Enterprise</td>
<td>Series of dummy variables, each related to one company.</td>
</tr>
<tr>
<td>Type</td>
<td>Dummy variable related to one type of company, in which 1 means that the company is a SOE, and 0 if it is a private company.</td>
</tr>
</tbody>
</table>

(continues)
Crisis | Dummy variable related to the 2008 global crisis, in which 1 is the value attributed to the years from 2008 onwards, and 0 for the previous years.

TypexCrisis | Dummy variable in which the interaction between two previous dummies captures the company (i) in the year (t) when the company is a SOE and faces the crisis, the value attributed is 1. Otherwise, the value attributed is 0.

Crisis (2006) | Dummy variable related to the placebo effect for the crisis, in which the value 1 was attributed for the years 2006 onwards, and 0 for the previous years.

TypexCrisis (2006) | Dummy variable in which the interaction between the dummies Type and Crisis (2006) captures the company (i) in the year (t) when the company is a SOE operating from the year 2006 onwards it is classified as value 1. Otherwise, the value attributed is 0.

Source: Authors

In an attempt to find similar studies addressing the relationship between government effectiveness and corruption, papers were searched in CAPES, EBSCO HOST and SPELL databases. The search was carried out until the month of September 2021 and no studies were found that addressed the relationship between government effectiveness in different countries’ corruption scenarios.

RESULTS

Framework dynamic

The framework proposed (Figure 1) allows to present the classification of groups of countries in a dynamic way, where the same country can appear in more than one group in the period studied (Figure 2).

Figure 2 shows that most of the countries in the typologies of ‘rare corruption’ or ‘systemic corruption’ are considered emerging economies. The typologies of these cases represent low government effectiveness, probably caused by institutional problems that can influence strategic actions.
On the other hand, in the typology ‘contained corruption’ most of the countries are from the group of the so-called developed countries, except Chile in a short period in 2002. It is possible to say that some countries are less stable in the typologies, revealing the capacity of mobility in the proposed framework. This aspect indicates that the framework is useful to elaborate policies and actions to change from less desirable typologies such as rare and systemic corruption to contained corruption.

SOEs Behavior

Before analyzing the variables of the State-Owned Enterprises (SOEs), tests for multivariate normality were conducted, as well as tests to establish the correlation between independent and dependent variables. These tests are crucial to verify if the assumptions of statistical tests are partially met. The findings indicated that interventions in the database were not necessary.
Table 1 shows the diff-in-diff results for the first scenario (environments with low corruption and low government effectiveness). The results demonstrated that there are no differences regarding the investments of SOEs and private companies after the 2008 crisis. This conclusion is observed by the fact that the levels of significance (column P>|z|) of all variables have exceeded the limit of 10%. The same occurred in the placebo period.

Table 1. Diff-in-diff results – SOEs in countries with rare corruption

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Increase in Investments</td>
<td>174,616.70</td>
<td>0.620</td>
<td>1,187,397.00</td>
<td>0.431</td>
</tr>
<tr>
<td>Employees</td>
<td>6,341.60</td>
<td>0.156</td>
<td>10,964.06</td>
<td>0.752</td>
</tr>
<tr>
<td>Short-Term Investments</td>
<td>2,185,569.00</td>
<td>0.319</td>
<td>2,289,657.00</td>
<td>0.294</td>
</tr>
<tr>
<td>Sale of Investments</td>
<td>-588,274.40</td>
<td>0.363</td>
<td>2,491,372.00</td>
<td>0.739</td>
</tr>
<tr>
<td>Intangible</td>
<td>-2,120,918.00</td>
<td>0.278</td>
<td>-2,168,923.00</td>
<td>0.239</td>
</tr>
</tbody>
</table>

Source: Authors

Table 2 shows the diff-in-diff results for the second scenario (environments with low corruption and high government effectiveness). In this case, there were no differences between State-Owned Enterprises and private companies regarding investments made after the 2008 crisis and after the placebo period.

Table 2. Diff-in-diff results – SOEs in countries with contained corruption

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in Investments</td>
<td>-511.34</td>
<td>0.180</td>
<td>2,911.98</td>
<td>0.837</td>
</tr>
<tr>
<td>Employees</td>
<td>132.28</td>
<td>0.211</td>
<td>2,007.65</td>
<td>0.258</td>
</tr>
<tr>
<td>Short-Term Investments</td>
<td>470.34</td>
<td>0.305</td>
<td>19,360.69</td>
<td>0.520</td>
</tr>
<tr>
<td>Sale of Investments</td>
<td>-122,522.40</td>
<td>0.381</td>
<td>-50,590.19</td>
<td>0.660</td>
</tr>
<tr>
<td>Intangible</td>
<td>42.29</td>
<td>0.895</td>
<td>57,433.62</td>
<td>0.110</td>
</tr>
</tbody>
</table>

Source: Authors

Regarding the results of the third scenario (environments with high corruption and high government effectiveness), two variables were significant for the period after the crisis of 2008: increase in investments, and employees (Table 3). When analyzing if the variables are positive or negative (column TypeXcrisis), it is possible to say that the SOEs invested more than private companies after the 2008 crisis. For the non-significant results of placebos, the SOEs invested more than private companies only after the crisis of 2008.
Table 3. Diff-in-diff results – SOEs in countries with resilient corruption

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in Investments</td>
<td>689,304.90</td>
<td>0.000</td>
<td>263,636.70</td>
<td>0.214</td>
</tr>
<tr>
<td>Employees</td>
<td>9,494.95</td>
<td>0.018</td>
<td>13,323.17</td>
<td>0.193</td>
</tr>
<tr>
<td>Short-Term Investments</td>
<td>-39,158.47</td>
<td>0.362</td>
<td>-36,759.65</td>
<td>0.373</td>
</tr>
<tr>
<td>Sale of Investments</td>
<td>745,731.20</td>
<td>0.170</td>
<td>444,256.30</td>
<td>0.297</td>
</tr>
<tr>
<td>Intangible</td>
<td>-20,366.34</td>
<td>0.733</td>
<td>-30,256.11</td>
<td>0.620</td>
</tr>
</tbody>
</table>

Source: Authors

According to Table 4, SOEs invested more in employees, short-term investments, and intangible assets only after the 2008 crisis. The analysis of the placebo period did not show significant results.

Table 4. Diff-in-diff results – SOEs in countries with systemic corruption

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in Investments</td>
<td>-87,379.86</td>
<td>0.211</td>
<td>112,416.4</td>
<td>0.151</td>
</tr>
<tr>
<td>Employees</td>
<td>7,404.08</td>
<td>0.039</td>
<td>4,370.29</td>
<td>0.163</td>
</tr>
<tr>
<td>Short-Term Investments</td>
<td>8,82e+08</td>
<td>0.067</td>
<td>-603,074.80</td>
<td>0.231</td>
</tr>
<tr>
<td>Sale of Investments</td>
<td>61,607.19</td>
<td>0.940</td>
<td>-797,546.10</td>
<td>0.536</td>
</tr>
<tr>
<td>Intangible</td>
<td>3,26e+08</td>
<td>0.079</td>
<td>-76,633.75</td>
<td>0.915</td>
</tr>
</tbody>
</table>

Source: Authors

The results are consolidated in Figure 3. The behavior of State-Owned Enterprises does not differ when they are in the presence of relevant economic crisis in countries with contained and rare corruption. However, the behavior of SOEs located in countries with resilient and systemic corruption changes with crises. In countries with low corruption, regardless of the government’s effectiveness, SOEs do not change their behavior when impacted by crises, probably revealing that in these conditions these companies are not mechanisms and tools for corruption practices.
The general idea is that corruption facilitates the exchange of benefits, which would not occur in other contexts (Aidt, 2009). When the SOE is in a less corrupt environment, there is more information on how efficient it is compared to its competitors. As its performance becomes transparent, it is more difficult to use the company’s resources for personal gain (Steensma & Yang, 2013).

According to Nguyen and Van Dijk (2012), politicians tend to be more concerned about their chances of re-election than with monitoring the activities of SOEs. In general, there is a relationship between SOEs’ managers and government authorities who, acting as SOEs ‘owners,’ usually take advantage of the allocation of SOEs resources.

On the other hand, in environments of high corruption, SOEs change their behavior but do so differently as regards the effectiveness of government in their countries. When there is high corruption, SOEs raise their spending on employees, regardless of effectiveness levels, which is a behavior typical of more corrupt companies. The study by Avsar, Karayalcin, and Ulubasoglu (2013) revealed the political use of State-Owned Enterprises as vehicles for income transfer in which SOEs pay higher wages or hire more employees than necessary.
However, SOEs in countries with higher corruption and higher government effectiveness (resilient corruption) increase long-term investments. Greater effectiveness leads to increased long-term investments, probably because they have higher values and higher possibility of hiding the gains from corruption based on these decisions. One possible explanation is that, according to Steensma and Yang (2013), SOEs usually have flexible budgets and available resources, so they may be more susceptible to accepting the risk associated with the search for new solutions. In this way, they encourage their managers to accept the risk inherent in R&D, considered an investment that can generate long-term gains (David, Hitt, & Gimeno, 2001).

In countries presenting high corruption and less government effectiveness (systemic corruption), SOEs increased short-term investment and investment in intangible assets. These differences in SOEs behavior may imply short-term distortions for faster gains for corruption and for intangibles, which are easier to misappropriate. As managing intangible assets is more complex than managing tangible assets (Lev, 2001), managers can take advantage of and promote an increase in investments in intangible assets.

CONCLUSION

The relevance of this study is that it focuses on the importance of fighting corruption to improve government efficiency, mainly because the investments made by SOEs result in significant economic, environmental and social impacts. The results obtained in this study exposed the differences in the behavior of State-Owned Enterprises (SOEs) when facing different scenarios, as proposed in the analytical framework. The countries were divided according to types of corruption as ‘contained,’ ‘rare,’ ‘resilient,’ and ‘systemic.’

It is possible to say that SOEs do not behave differently when impacted by economic crises in low-corruption countries, regardless of the level of government effectiveness (contained and rare corruption). When SOEs are in countries with low corruption (resilient and systemic corruption), the enterprises have higher employee expenses, a characteristic that is typical of companies used by their leaders as mechanisms for corruption.

Thus, it is possible to say that SOEs located in countries with high levels of corruption may work differently, considering the levels of government effectiveness. In environments of high effectiveness, SOEs increase long-term expenditures, spending more, and building a context where it is more difficult to perceive the diversion of funds. It is possible to conclude that SOEs in countries of high corruption and low government effectiveness increase short-term and intangible expenditures, which indicates the use of these enterprises as mechanisms for corruption.

Based on the findings, it is suggested that anti-corruption institutions in countries of resilient corruption focus their actions on long-term investments, unlike countries with systemic corruption that should be conducting investments in intangible assets and the short-term. Thus, this study brings contributions to public policies, since it can help in the construction of management mechanisms that guide the measures that can be adopted, having as parameter
the current corruption scenario in the country. In theoretical terms, the study contributed to the advancement of the analysis of the relationship between government effectiveness and corruption, adding an approach to the impact of different scenarios of government effectiveness and corruption on investments made by SOEs.

The database adopted in this study also represents a possible research limitation since the variables of corporate governance (corruption and government effectiveness) were used at a macroeconomic level, i.e., may be considered as generic. Also, corporate governance indicators are measures of perception and, although widely used in research and other academic work, are subject to distortions. To give more robustness to the results, the research could have used the sectoral variable. However, this variable was excluded as there are many missing values referring to this variable in the database.

As a suggestion for future research, it would be interesting to explore the use of the classification proposed by Musacchio and Lazzarini (2012) for minority SOEs. This suggestion would require other databases since this study tried to adopt the authors’ classification but obtained only two types of SOEs where the government is the minority shareholder: the partially privatized companies and holding companies. Another possibility would be the use of the classification of the level of development of the countries, identifying the impact of this classification on the amount invested by the SOEs.

REFERENCES


**AUTHOR’S CONTRIBUTION**

Elias Pereira: Project administration; Formal Analysis; Conceptualization; Data curation; Writing – original draft; Writing – review & editing; Investigation; Methodology; Software; Supervision; Validation; Visualization.

Samuel Façanha: Project administration; Formal Analysis; Conceptualization; Writing – original draft; Writing – review & editing; Investigation; Methodology; Supervision; Validation; Visualization.

Francisco Roberto Pinto: Project administration; Formal Analysis; Conceptualization; Writing – original draft; Writing – review & editing; Investigation; Methodology; Supervision; Validation; Visualization.