

Internal Controls and Corruption: The case of Petrobras

Natália Rezende de Almeida Santos

Working Paper No. 2
December 2017

The **Sussex Centre for the Study of Corruption** publishes Working Papers to make research results, accounts of work-in-progress and background information available to those concerned with the study of corruption and anti-corruption. The Institute does not express opinions of its own; the views expressed in this publication are the responsibility of the author(s).

The **Sussex Centre for the Study of Corruption**, founded in 2011, is an interdisciplinary research and teaching centre at the University of Sussex. The Centre seeks to further understand the causes and consequences of corruption, as well as to advance policy solutions to combat corruption. The **SCSC** draws on the expertise of many faculty members from the University, especially from Politics, Law, Sociology, Anthropology, Business & Management, and Development Studies, as well as on the expertise of practitioner fellows in industry, the public sector, and civil society. In addition, the **SCSC** offers a one-year MA course in Corruption & Governance as well as opportunities for PhD research degrees.

Published in December 2017

by the **Sussex Centre for the Study of Corruption** University of Sussex, Falmer,
Brighton BN1 9QE

© **Sussex Centre for the Study of Corruption**

SCSC Working Papers are available from our website at:

<http://www.sussex.ac.uk/scsc/discussion-papers>

Abstract

Internal Controls are essential for the stability of organisations and a principle of good governance. They are often recognised as a tool for preventing and detecting fraud and corruption inside organisations; however, their effectiveness remains disputed. This study explores the relationship between internal controls and corruption through the case study of the Petrobras scandal. It applies the COSO framework to assess the company's internal controls and answer the question of how they contributed to the scandal's developing. Testing strengths and weaknesses of internal control systems in different contexts represents a valuable tool for identifying elements that may be more effective in curbing corruption.

List of Abbreviations

4EP - The four-eyes-principle

BNDES - The *National Bank* for Economic and Social *Development*

CGU - Ministry of Transparency and Office of the Comptroller General

CMN - Brazil's *National Monetary Council*

COSO - Committee of Sponsoring Organizations of the Treadway Commission

CPI - Parliamentary Commission of Inquiry

IAME - Internal Auditor Middle East

IIA Netherlands - The Institute of Internal Auditors Netherlands

MPF - Federal Public Prosecutor's Office

PCPP - Petrobras Corruption Prevention Program

Petrobras - *Petróleo Brasileiro S.A*

SEC - U.S. Securities and Exchange Commission

SOE - State-owned enterprise

SOX - The Sarbanes-Oxley Act of 2002

TCU – Brazil's Federal Court of Accounts

PREFACE

The purpose of this paper is to explore the relationship between internal controls and corruption, and the impact of internal controls on curbing the problem. This is meaningful in that a limited number of analytical debates focus on anti-corruption efforts only at the organisational level; most of them offer reflection from a macro-level perspective. This study analyses the corruption scheme at Petrobras to identify how internal controls did or did not contribute to the scandal's development. It should be of interest to all organisations, both private and public, especially to staff responsible for designing, implementing and assessing internal control systems. This paper should also be of interest to scholars in the field of corruption and anti-corruption.

The study differentiates between hard (formal) and soft (informal) controls. The main problems to be discussed involve the incongruence between the formal and informal systems at Petrobras, as well as the limitations of internal controls due to political influence, collusion and management override.

Gathering data was particularly challenging. First, internal controls refer to a wide range of organisational aspects and activities. Second, the information about Petrobras' internal controls available online started to become more detailed only after the scandal. Although some previous deficiencies can be deduced from that, it is not possible to identify exactly how the organisation applied internal controls before the corruption was revealed. Moreover, the official information online reflects the formal aspects of controls, not the informal. The study was originally designed to investigate informal lines of controls (and more specific information about the formal) through semi-structured interviews with Petrobras employees who dealt with the topic and with federal auditors of the Brazilian internal control body. In relation to the Petrobras employees, however, after I sent my questions, the company stepped back from its original decision to provide interviews. Instead, I received an official answer in writing, which mainly directed me to the company's online documents. Fortunately, I was able to carry out two interviews with federal auditors involved in some of the auditing of Petrobras, which provided valuable information. Facts reported in the media and government reports were also helpful sources. Therefore, the research relied mainly on secondary data with some supplementation from primary sources.

I wish to express my deep gratitude for the life-changing opportunity provided by the Chevening Scholarship, the UK government's global scholarship programme, funded by the Foreign and Commonwealth Office (FCO) and partner organisations, without which this study would not have been possible. I would also like to thank Dan Hough and Liz David-Barrett for their kind support, and the interviewees and other civil servants at the Ministry of Transparency and Office of the Comptroller General (CGU) in Brazil for their valuable assistance.

INTRODUCTION

Anticorruption efforts have gained prominence over the past decades in international and national agendas. Unsurprisingly, corruption influences economic and political decision-making processes, undermining development and threatening democracy. Since corruption is a complex phenomenon with social, political and economic dimensions, and is influenced by several interrelated variables, combatting the problem is not easy. Contextual circumstances matter, and there is no “one-size-fits-all” approach when proposing remedies (Hough, 2013).

Research on the causes of and solutions for corruption may be categorised into two groups of considerations: societal aspects (e.g., level of economic development, government structure and regime) and organisational aspects (e.g., salary scale, nature of business, state ownership, officials’ discretion) (Abaalkhail, 2016). One suggested organisational tool for tackling corruption is internal controls. First introduced as a term of finance and accounting, internal controls are now related to all areas of an organisation as a means of achieving its goals (Mafiana, 2013). Therefore, internal controls are important to provide effectiveness and efficiency of operations, reliability and transparency of reporting and compliance with laws and regulations (COSO, 2013).

Internal controls are essential for the stability of an organisation and, as mentioned above, are often mentioned as an important remedy against corruption. The rationale behind this is relatively simple: internal controls impose costs on corrupt practices. If the costs outweigh the benefits, rational individuals will refrain from the wrongdoing (Rose-Ackerman, 1978; della Porta and Vannucci, 2012). Moreover, the use of internal controls cannot only just prevent corruption, but can also generate information on which punitive actions can be based once corruption has occurred. Nevertheless, there is little empirical evidence on the relationship between internal controls and corruption (Abaalkhail, 2016). Actually, some scholars challenge the effectiveness of internal controls by arguing that the amount and the incorrect type of controls can create an environment that reinforces corruption (Anechiarico and Jacobs, 1996). Others suggest that, because they are costly, some controlling efforts may not be worth making (Klitgaard, 1988).

In fact, the overall standards of control have frequently proved limited, considering some highly publicized and shocking scandals, such as Enron (2001), Siemens (2006), Walmart (2012), Rolls Royce (2012) and Petrobras (2014). Assuring the quality of internal control systems is a major challenge for organisational management. Comprehending the many aspects of internal controls and evaluating them and their weaknesses allows for partially understanding the nature of corruption that may be flourishing (Chtioui and Thiéry-Dubuisson, 2011).

With this in mind, the present study aims at exploring the impact of internal controls on preventing and detecting corruption. It does so by analysing the scandal of Petrobras, and answering the question of how internal controls did or did not contribute to the scandal's developing. The data was gathered through extensive documental analyses supplemented by interviews with key actors. The research employs the COSO Internal Control–Integrated Framework to investigate what went wrong with Petrobras' internal control structures, including which components were absent, which were in place and why they were ineffective.

Petrobras is a Brazilian gas and oil company. The case is notably relevant due to the great sums of bribes involved and the uniqueness and magnitude of the corruption scheme, which encompassed a huge network of politicians, political parties, senior state executives, other public employees, large contractors and intermediaries. Moreover, Petrobras has the particularity of being both private and public, since it is a listed entity with the Brazilian government as the major investor. Its close connection with the government represents a risk of the company's being used to serve political interests rather than seeking efficiency and profitability. Finally, the Petrobras scandal denotes what is recognised to be endemic in several state-owned companies in developing countries, and reflects the need for better mechanisms of control and accountability.

Although there are several analytical debates on anti-corruption instruments, most of the research focuses on the relationship between corruption and governance on a macro-level. Only a limited portion of the research offers reflection on anti-corruption efforts at the organisational level (Monteduro, Hinna and Moi, 2016). Furthermore, the

logical link between controls and audits systems and corruption are usually explored, but not empirically tested (Malagueño et al., 2010). Hence, the research presented here attempts to add to the knowledge of the impact of internal controls on corruption by empirically analysing the internal control context of a corruption scandal. Testing strengths and weaknesses of internal control systems in different contexts represents a valuable tool for identifying elements that may be more effective in preventing and detecting corruption. Since controls entail costs, this is particularly important for guiding investments in internal control systems.

The study will be structured as follows: the next section will cover the definition of internal controls and will briefly explain the use of the COSO framework to assess the quality of an internal control system. Part 3 aims at exploring the relationship between corruption and controls as studied by different scholars. In part 4, the context of the Petrobras scandal will be explained. Part 5 briefly provides the details of the research methods, and part 6 discusses and present the findings of the case under analysis. Finally, concluding remarks will be presented in part 7, including some thoughts on the improvement of Petrobras' internal controls and areas for future research.

INTERNAL CONTROLS

Originally, the term internal controls arose in the field of accounting and auditing with respect to securing the validity and reliability of financial transactions and statements. However, Post-World War II economic growth led to an expansion of internal control and auditing activities and, consequently, new definitions of the term (Heier, Dugan and Sayers, 2005). Several episodes of corporate malfunction and management failures have pushed the demands for better governance forward, including demands for the development of internal control systems. The traditional approach that directly describes internal controls as accounting functions has been supplemented by broadened approaches in such a way that a great amount of organisational activities now fit into the scope of internal controls (Arwinge, 2012). Hence, internal controls form the overall governance system of organisations, and their effective design and implementation are crucial for organisational success.

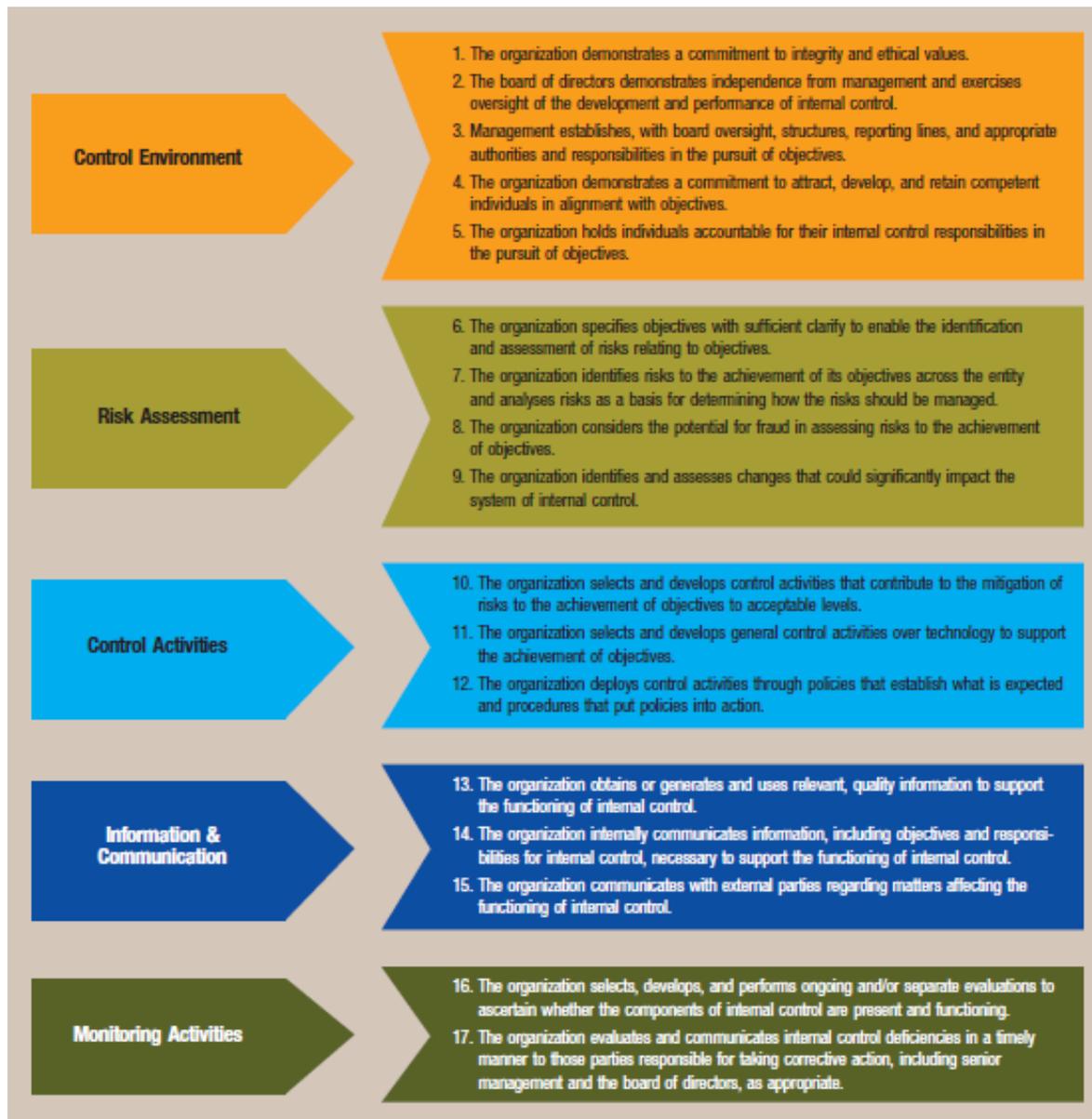
In 1992, the Committee of Sponsoring Organizations of the Treadway Commission (COSO)¹ issued the Internal Control–Integrated Framework. As reported by D’Aquila (2013, p.22), the framework was ‘revolutionary’, since it represented ‘the first major formal attempt to define internal control and provide a standard for measurement’. Due to changes in business and operating environments, the COSO updated its original framework in 2013. The core definition of internal controls and their components remain unchanged, yet the new framework provides important improvements of concepts and application (COSO, 2013).

The COSO framework (2013, p.1) describes internal control as ‘a process, effected by an entity’s board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories: [e]ffectiveness and efficiency of operations, [r]eliability of report, [c]ompliance with applicable laws and regulation’. The broad definition is designed to capture the fundamental concepts and to provide ground for application across all type of organisations. It is also suitable for subsets of internal controls (e.g., controls relating to a particular activity or unit). By providing clarity on internal control concepts and components, the framework is designed to help management and other parties implement a system of internal controls and assess its effectiveness (COSO, 2013).

The five components of internal control established by COSO are control environment, risk assessment, control activities, information and communication, and monitoring activities. One of the main enhancements of the new framework is the introduction of 17 principles around these components (COSO, 2013). See figure below:

¹The Committee of Sponsoring Organizations of the Treadway Commission (COSO) is a joint initiative comprised of 5 private-sector organisations: the American Accounting Association, the American Institute of Certified Public Accountants, the Financial Executives International, the Association of Accountants and Financial Professionals in Businesses and the Institute of Internal Auditors. For more, see <https://www.coso.org/>

Figure 1 – COSO Framework components and principles.



Source: D'Aquila (2013), based on COSO Framework.

The control environment is related to the establishment of standards, processes and structures that guide employees' behaviour and decisions at various organisational levels. It represents the foundation for carrying out the other four components. The updated COSO framework sets five principles as essential for the control environment: commitment to integrity and ethical values; independence of and oversight by the board of directors; establishment of adequate processes and responsibilities; commitment to staff competence; and accountability for the achievement of objectives.

The risk assessment component concerns the process of identifying and assessing events that may occur and negatively influence the achievement of objectives. It is impossible to reduce risk to zero, so management must settle how much risk is acceptable and how risks should be handled. Since the establishment of measurable objectives is a precondition for risk assessment, the first principle related to this component is the clarity of objectives. The other three principles are: identification of risks and how they should be managed; consideration of fraud and corruption; and recognition of internal and external changes that may impact the system of internal control.

The third component of the COSO framework is the control activities, which are the actions fixed through an organization's policies and procedures that enable management to mitigate the risks related to the achievement of objectives. Control activities are carried out at all organisational levels and processes, and range from preventive to detective and manual to automated. They can support one or more of the entity's objectives and should be built with segregation of duties. Control activities are divided into three principles: development of controls that alleviate the risks assessed; development of general controls over technology; and deployment of control activities through adequate policies and procedures.

The information and communication component feeds the functioning of the other internal control components and enables an enlightened decision-making process. Information is needed for the execution of an entity's responsibilities towards its goals and communication is necessary for sharing relevant and quality information, both internally and externally. The three principles of information and communication are: the production and use of relevant information; internal communication; and external communication.

Finally, the last component of the COSO framework deals with the evaluation of the five components of internal controls. Monitoring activities must be in place to ascertain whether controls are present and operating properly. They generate key input for assessing the effectiveness of internal control systems. This is particularly important considering internal controls are a dynamic and interactive process that changes over

time. This component has two principles: ongoing and separate evaluations of internal controls and communication of their shortcomings.

The COSO framework acknowledges limitations inherent in all internal control systems. That is why it can provide only 'reasonable assurance' regarding the achievement of objectives. These limitations include faulty judgment, human mistakes, collusion by two or more people and management override (COSO, 2013).

From the framework above it is possible to identify two groups of controls according to their tangibility: hard controls and soft controls. The first type refers to formal controls, explicit mechanisms for guiding behaviour via written rules, procedures and assignment of authority and responsibility. It includes segregation of duties, information and authorization systems, access controls, and so on (Chtioui and Thiéry-Dubuisson, 2011; IAME, 2014). On the other hand, soft controls are informal and intangible controls related to the behavioural and cultural aspects of an organisation. They control personnel behaviour through shared values and beliefs, integrity, ethical climate, motivation, loyalty and unwritten traditions learned from socialisation (IIA Netherlands, 2015; Falkenberg and Herremans, 1995). Soft controls are mainly brought up in the COSO framework through the control environment component.

Hard and soft controls coexist and constantly interact in organisational systems. To ensure the cohesion of an organisation, Guibert and Dupuy (1997) suggest that formal and informal controls must be understood in terms of complementarity; one cannot substitute for the other. Additionally, a combination of formal and informal controls is necessary, because no single method is fully effective in isolation. They must be in harmony to form a single set of balanced controls (Chtioui and Thiéry-Dubuisson, 2011). Therefore, a company's values and culture must agree with its written codes, for example.

Although the concept of internal control has been employed in corruption literature and in anti-corruption legislation, the notion of using internal control to tackle corruption was expanded on an international basis with the establishment of the United Nations Convention against Corruption in 2003 (Abaalkhail, 2016). With this instrument, the

State Parties committed to take appropriate measures to promote transparency and accountability, such as implementing 'effective and efficient systems of risk management and internal control' (article 9/2/d).

INTERNAL CONTROLS AND CORRUPTION

Internal controls are widely recognised as a principle of good governance and a tool for tackling corruption, being an organisational requirement under many laws and regulations. Notwithstanding this, the impact of different types of controls on corruption remains a matter of dispute.

Anechiarico and Jacobs (1996), in analysing contracting controls on public administration, concluded that they contribute to a system that makes it difficult to achieve the most basic procurement purposes but still enables abuse by corrupt officials and contractors. They do not advocate that controls should not be put in place, but they contend that the amount and the incorrect type of control 'can create a panopticon-like environment that reinforces all the pathologies of bureaucracy'. (p.150)

In the principal-agent logic, principals must set up mechanisms of controls to ensure that agents pursue principals' interest, not their own. To test how agents perceive principals' choice to control and how this affects agents' behaviour, Falk and Kosfeld (2004) conducted an experiment whereby a principal could decide either to control or to trust the agent. The results demonstrated that a controlling decision significantly diminishes the agent's willingness to act in accordance to the principal's interest. This is because the decision to control is a signal of distrust that lowers most agents' performance. The authors do not conclude that it is always better for principals to trust instead of control; they rather highlight that controls entail hidden costs that – coupled with its explicit costs – have to be weighted to evaluate the potential gains. Another experiment was designed by Schickora (2011), who used a standard corruption game

to test in the lab the control called the four-eyes-principle (4EP)², which is one famous policy recommendation to curb corruption. The results show that introducing the 4EP increases corrupt behaviour due to officials' higher joint cognitive capacity and mutual reciprocity. Thus, this casts doubts on the 4EP as a general recommendation.

Regarding audits and oversights, in a field experiment in Indonesia Olken (2007) revealed that increasing the probability of being audited from 4 percent to 100 percent reduced missing funds from 27.7 percent to 19.2 percent. He argues that the main reason why audits did not have a larger impact on corruption in Indonesian villages is because they essentially disclose acts of mismanagement rather than acts of malfeasance. There were very few (if any) cases in which auditors had sufficient evidence to prompt a corruption prosecution.

Neu, Everett and Rahaman (2014) argue that ethical actors are shaped and built through organisational practices, and thus internal control and monitoring activities affect moral responsiveness. Written records create visibility and the investigation of these records by auditors and the dissemination of the auditors' results 'have the potential to construct a disciplined and ethical subject whose behaviors make corrupt practices the exception rather than the norm' (p.50). These authors propose that inscriptions and inspection activities combine with and complement organisations' other ethical practices. However, this potential depends on ensuring that politicians, business actors and bureaucrats cannot block, reduce or deflect these traces. In this sense, the same authors (2013) analysed the tensions between the domain of politics and auditing activities through a major corruption case within the Canadian Sponsorship Program. The analysis shows how macro-level political interests trickle downward, entering into and interfering in audit judgments, restricting therefore the probability that auditors discover or communicate potentially corrupt activities. The case illustrates that corruption can exist side-by-side with intensive audit practices.

By assessing the internal control systems of two public organisations in Saudi Arabia (with different corruption levels), Abaalkhail (2016) concluded that the effectiveness of internal controls in tackling corruption relies on how they are introduced and enforced.

² The 4EP is 'a requirement that business has to be effectively conducted by at least two individuals (four eyes)' (Schockora, 2011, p.2).

Applying the COSO framework, he identified that the same mechanisms of anti-corruption controls are unlikely to be as effective in an organisation with a culture that appears to tolerate corruption compared to one whose culture implies ethical behaviour. Thus, the strength of each organisation's internal control system was partly responsible for its level of corruption and the effectiveness of hard controls was dependent on the quality of soft and monitoring controls.

In this regard, several studies suggest that controls with a strict compliance-based approach aimed at exercising supervision and punishment have the limitation of focusing only on the avoidance of sanctions, and thus do not address state employees' behaviour through values, aspirations and social obligations. Due to rationalising frameworks, pressures and incentives, corrupt practices can become progressively entrenched in the culture of an organisation over time (Hess, 2009). Thus, corruption-prevention methods based on hard controls (e.g., rules, surveillance and sanctions) may be relatively limited in guiding behaviours, because they do not deal with the informal process that influences the internalisation of unethical actions (Weaver and Clark, 2015). A more value-based approach is needed for the internalisation of values and the promotion of ethical behaviour, and for shared accountability through the stimulation of positive behaviour (soft controls) (Paine, 1994; Treviño et al., 1999, Huberts and Hoekstra, 2016). When corruption is embedded in organisations' culture and permeates the whole government system, it is more difficult to deal with; traditional anti-corruption tools may have little impact on ensuring the integrity of government affairs.

THE CASE: PETROBRAS

Petrobras (abbreviation of *Petróleo Brasileiro S.A*) is a Brazilian state-owned enterprise (SOE), or, more precisely, a publicly-traded company with more than half of its common shares owned by the government (see Appendix 1). Thus, Petrobras is a mixed-capital company with the Brazilian Federal Government as the controlling shareholder, so is part of the Public Federal Administration³. The company operates in the oil, natural gas and energy industry, a sector that is particularly prone to

³ See Article 61, [Law 9.478/1997](#).

corruption (Mcpherson and MacSearraigh, 2007). It is responsible for oil and gas exploration, production, refining, and distribution; petrochemicals; electric energy generation; biofuel production and distribution; and transportation and trade (Petrobras, 2017a). The company was set up in 1953 under the Federal Union monopoly over the Brazilian oil industry⁴. The monopoly lasted until 1997, when Petrobras started to operate under free competition⁵. Since Petrobras can generate revenue by itself, it is considered a self-sustainable SOE. Despite the corruption scandal that engulfed the SOE and the huge debts that ensued, Petrobras is considered by revenue the biggest Latin America company and the 75th in the world (Fortune, 2017).

The Brazilian Federal Government holds the majority of Petrobras' shares with voting rights. It thus has the authority to elect the majority of the Board of Directors' members. In turn, the Board of Directors elects the Executive Board. The strong connection with the government represents a risk to the company of being used as a means to achieve political goals and interests rather than financial and operational efficiency and effectiveness. Since Petrobras is a listed entity in Brazil and abroad, it must comply with market regulations and is subject to investor scrutiny.⁶ As part of the public administration, Petrobras should be accountable to government control institutions, both external control (Federal Court of Accounts – TCU) and internal control (Ministry of Transparency and Office of the Comptroller General – CGU)⁷.

In March of 2014, corruption in Petrobras started to be uncovered by the biggest corruption and money-laundering investigation ever conducted in Brazil, Operation Car Wash (in Portuguese, *Operação Lava Jato*)⁸. Although the investigation began in

⁴ Petrobras was first established by the [Law 2004/1953](#).

⁵ The enactment of [Law 9.478/1997](#) repealed [the Law 2004/1953](#).

⁶ For instance, the company must abide by the Securities and Exchange Commission (SEC) standards, such as implementing an internal control system in line with section 404 of the Sarbanes-Oxley Act and its regulatory bodies (Public Company Accounting Oversight Board) to mitigate the risk of corporate fraud (Petrobras, 2017d).

⁷ As determined by articles 70 and 71 of the [1988 Brazilian Federal Constitution](#). For CGU's responsibilities, see Annex to the [Decree 8.910/2016](#).

⁸ The name of the investigation stems from the use of a network of gas stations and car washes to move illicit resources belonging to one of the initially-investigated criminal organisations.

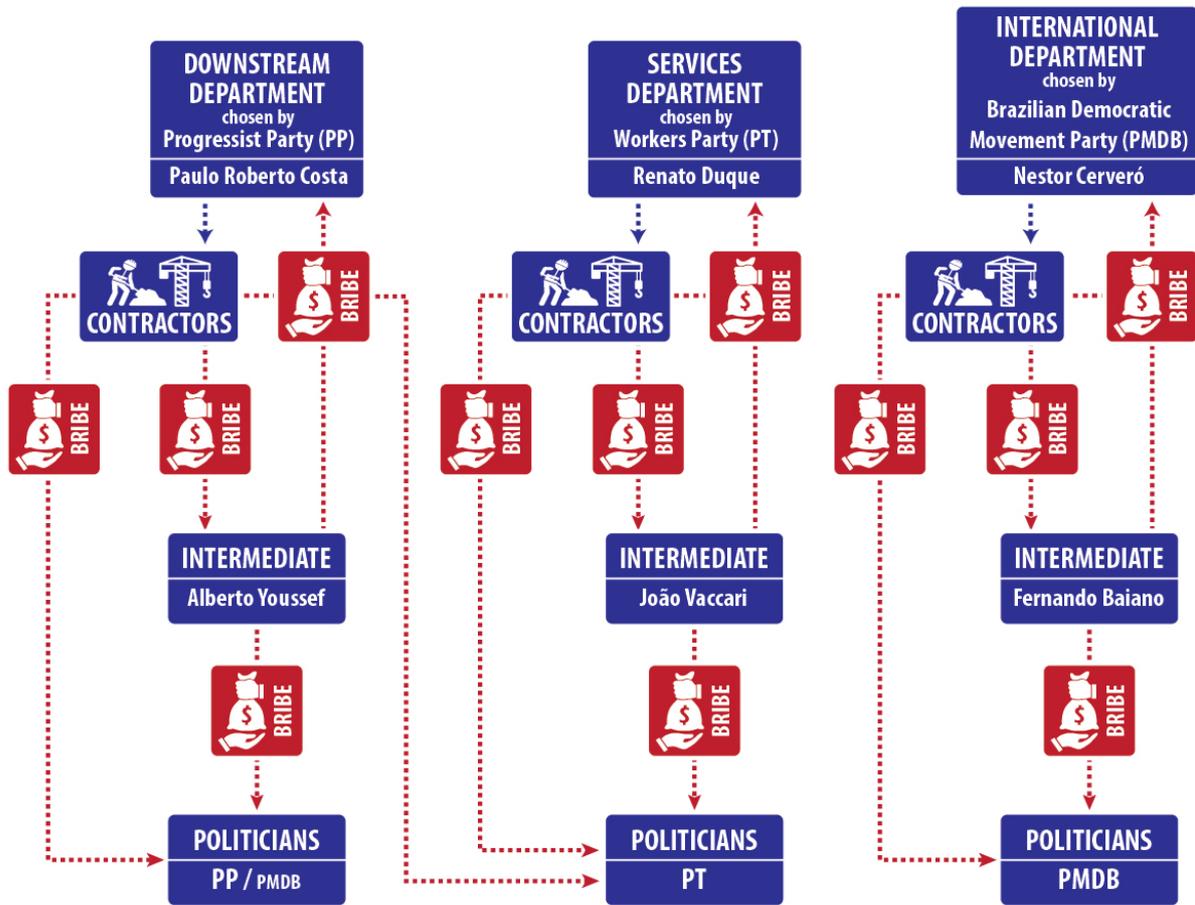
2009 over money-laundering activities, it only went public after almost 5 years with the arrest of a known money launderer (Alberto Youssef)⁹ and of Petrobras' former director of downstream operations (Paulo Roberto Costa). Today, the investigation has reached other criminal organisations and has indicted hundreds of people (MPF, 2017).

Mr. Costa was the first to make a plea bargain deal with federal prosecutors, providing important assistance in ascertaining the facts in exchange for benefits. His testimony revealed the existence of a cartel composed of large contractors and the involvement of executives at Petrobras in facilitating the overpricing of the construction of refineries and petrochemical complexes. Many other plea-bargains have followed, revealing the vast extent of the bribes' exchange network, which had been in place for over ten years and which encompassed other departments of the company.

To sum up, large constructing firms organised in cartels paid bribes to Petrobras' senior state executives, other public agents, politicians and political parties. According to the Federal Public Prosecutor's Office (MPF), bribes varied from 1% to 5% of the total amount of huge contracts, which were overpriced. In secret meetings, the cartel set up the prices offered in the bids and the choice of who would win the contract. Public agents were co-opted to facilitate the scheme. Moreover, politicians were involved by indicating directors who would accept being part of the corrupt network. Intermediates performed the link between the bribers and the bribees by being in charge of laundering the money and delivering the bribes "clean" (MPF, 2017). The involvement of the actors and the distribution of bribes were organised according to Petrobras' departments (see figure below).

Figure 2 – Simplified representation of Petrobras' corruption scheme.

⁹ Alberto Youssef had been detained at least seven times before Operation Car Wash. In 2003, Youssef was investigated, prosecuted and arrested as a result of his involvement as a black-market money dealer in the Banestado Case. At that time, he signed Brazil's first plea bargain agreement. Youssef was sentenced to seven years in prison, but he served only one year due to his collaboration, which was considered by the prosecutors to be very fruitful (Castro, 2016).



Source: Developed by the author based on the Federal Prosecutors' Office website (MPF, 2017).

The cartel comprised 16 main enterprises organised in a “club”, as well as six more companies that negotiated sporadically with the “club”, to defraud procurement processes and raise contract profits. The list of 22 companies includes some of the biggest construction and engineering firms in Brazil (*Gazeta do Povo*, 2014). The Petrobras scheme revealed that political elites alongside public employees on one side and company collusion on the other were manipulating the procurement process to obtain personal gains. This scenario makes it particularly challenging for internal controls to operate and be effective.

The role of the executives at Petrobras was to take necessary measures (either by themselves or by influencing their subordinates) to support the cartel's goals and

operations. As stated in MPF's criminal charges¹⁰, these measures included, for instance, accelerating bidding procedures and approving large works without essential steps for the correct evaluation of the work (e.g., without the basic-design phase); approving bidding committees with inexperienced employees; sharing confidential or restricted information with the cartel's companies; including or excluding the cartel's companies in the tenders, and directing them in favour of the cartel's choice; not complying with internal norms and standards for control and evaluation of the work carried out by the contractors; avoiding certain matters to be evaluated by the Legal Department or the Executive Board; directly hiring contractors in an unjustified manner; and facilitating contract amendments to benefit the cartel companies, often unnecessary and at excessive prices.

The Petrobras scandal was unique in Brazil's history for the huge sums of bribes, the extension of the corrupt network and the high-ranking politicians involved. It shocked the entire country and reinforced citizens' distrust in the political system. In the financial sphere, the Federal Police calculated the damage caused by the irregularities in Petrobras to reach R\$ 42.8 billion¹¹ (Dionísio, 2015). According to Girgenti (2016), corruption has generated economic and political uncertainty that is in large part responsible for Brazil's worst recession in two decades.

In the aftermath of the scandal, Petrobras has adopted different measures to improve controls and prevent corruption, which are going to be presented in part 7. In relation to the legal framework, since 1998 the Brazilian Federal Constitution has required the National Congress to draft a specific law to address the peculiarities of Petrobras and other SOEs. However, only in June 2016 was this gap in the legislation filled with the enactment of Law 13.303, known as the Law of State-Owned Enterprises. The new legislation covers three major issues affecting the organisation and governance of this type of public entity: societal structure; risk management and internal control; and procurement. The second issue includes transparency, compliance, and integrity policies; rules of conduct; and oversight by the State and society (Vianna, 2017).

¹⁰ To access the criminal charges, go to <http://lavajato.mpf.mp.br/atuacao-na-1a-instancia/denuncias-do-mpf>.

¹¹ This sum in Brazilian reais equals approximately 10.5 billion pounds in August 2017.

METHODOLOGY

The analysis of the selected case aims at developing a better understanding of the relationship between internal controls and corruption. The purpose of this study is to answer how Petrobras' internal controls contributed to the development of the corruption scheme. According to Arwinge (2012), the use of a qualitative approach is recommended for understanding how organisations design, implement and monitor their internal control systems. Furthermore, applying a case study is appropriate for a comprehensive account of an event because it enables a qualitative analysis of the multiple dimensions of a problem, allowing for the identification of several processes that interact in the studied context and contributing to their better understanding (Peters, 1998). Considering this, exploring how the problem came to be was deemed more suitable to answer the research question rather than testing an existing theory.

The study applies the COSO's Internal Control – Integrated Framework for assessing Petrobras' internal control system prior to the revelation of the corruption scandal. The use of such frameworks is appropriate for three reasons. First, it is considered a leading methodology for designing and evaluating internal control systems and the only one systematised into principles and attributes, which facilitates the assessment (D'Aquila, 2013); second, it allows for use in all types of organisations and is suitable for subsets of internal controls (COSO, 2013); and third, it is the framework utilised by Petrobras (Petrobras, 2016b). Due to the nature of the corruption scheme here described and the broad nature of the internal control concept, this study will focus on evaluating the company's internal controls related to the integrity of the procurement process.

The data were generated through an extensive analysis of documents available online (from CGU¹², Petrobras¹³, and Petrobras' CPI¹⁴) and information in the media, and

¹² The audits report from CGU can be found at <https://auditoria.cgu.gov.br/>.

¹³ The documents were mainly the Report of the Administration, Form 20F, Sustainability Report, and *Formulário de Referência*. They can be retrieved at <http://www.investidorpetrobras.com.br/en>.

¹⁴ The final report of Petrobras' Parliamentary Commission of Inquiry drafted by the Chamber of Deputies. Available at <http://www2.camara.leg.br/atividade-legislativa/comissoes/comissoes-temporarias/parlamentar-de-inquerito/55a-legislatura/cpi-petrobras/documentos/outros-documentos/relatorio-final-da-cpi-petrobras>

supplemented by two semi-structured interviews via Skype with federal auditors from CGU involved in some of the auditing of Petrobras. The questions followed the structured of COSO components (see Appendix 2), and were designed to be applied to employees of Petrobras' Internal Audit Unit. At the beginning, the unit had agreed to participate in the research. However, after my sending the questions via e-mail, they suggested another department would be more suitable for answering them. Instead of interviews, the department preferred to answer the questions in writing. The reply arrived only six days prior to the deadline of this paper, and mainly pointed to documents online where the answers were supposedly available. The documents, however, referred to information about changes undertaken after the scandal, not about precisely how the organisation worked prior to that.

RESULTS AND ANALYSIS

Part 2 briefly explained COSO internal control's components and principles. With those in mind, this part seeks to evaluate each COSO component of Petrobras' internal controls before the disclosure of the scandal in 2014. Given the analysis was limited to the information available online and to two interviews, a comprehensive evaluation of each principle was not possible, yet some crucial deficiencies were identified.

Control environment

The first COSO principle for a strong control environment is the organisation's commitment to integrity and ethical values. Management and the Board of Directors must lead by example and demonstrate the importance of integrity and ethics in their directives, actions and behaviour, thereby influencing employees and the different stakeholders. The extent to which these expectations of ethical values are communicated and applied by leadership at all levels within the organisation characterises the tone at the top. Although the company had formal controls expressing expectations regarding integrity (e.g., code of ethics, an ethics committee, establishment of mission and values such as ethics and transparency), it lacked the soft controls necessary to communicate and reinforce them. Considering that the corrupt scheme was mainly carried out on the level of senior management and the

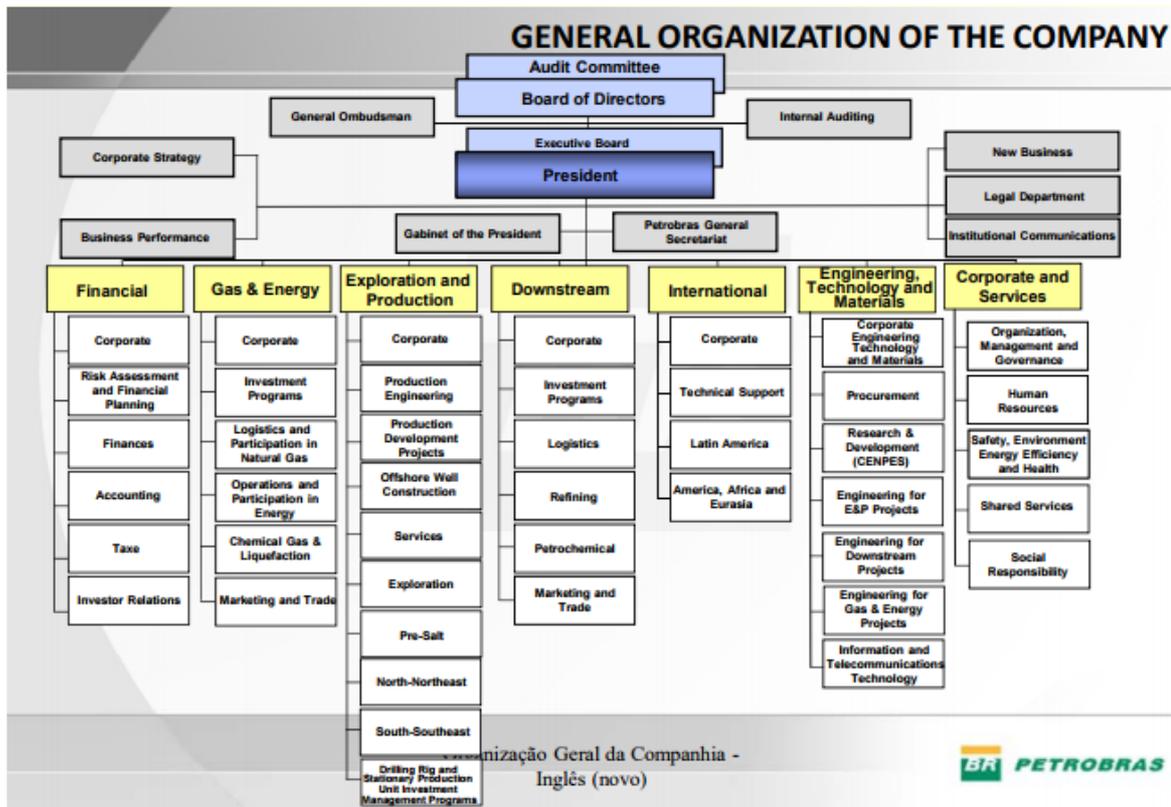
Executive Board, the ethical commitment was not incorporated into top management's personal conduct and decision-making, which fact informally conveyed the message to employees that corruption and other unethical behaviours were accepted.

With respect to this, in the Form 20F 2015 (Petrobras, 2016a, p.180), the company reported:

'In some of our contracting processes, one or more senior managers, together with third parties [...], colluded to eliminate, infringe upon, override or circumvent these controls, which resulted in the commission of wrongful acts contrary to our interests and policies. Our management identified the following internal control deficiencies related to the failure to detect these acts that together constitute a material weakness in our control environment: (i) inadequate "tone at the top" regarding internal controls; (ii) failure to communicate the ethical values prescribed in our Code of Conduct; and (iii) lack of an effective whistleblower program.'

Related to the governance structure of the company for the establishment of responsibilities, Petrobras had defined standards, processes and structures. The corporate governance structure was composed of the Board of Directors and its Committees, Executive Board, Fiscal Council, Internal Audit, Ombudsman, Business Committee and Integration Committee. The Committees of the Board of Directors, responsible for advising and supporting decision-making, were three: Audit, Environment, and Compensation and Succession. Petrobras' Corporate Governance Guidelines, as well as internal regulations of each structure, provided mechanisms for evaluating the performance of members of the Board of Directors, Committees and Executive Board. The company's by-laws set clear definitions of the form of convocation of the General Meeting of Shareholders, and of the form of election, removal and term of office of the Board of Directors' and Executive Board's members (Petrobras, 2013b).

Figure 3 – General organisation of Petrobras in 2012.



Source: Operating Report 2012 (Petrobras, 2013d).

Therefore, formally, the Board of Directors demonstrated independence from management and means to exercise oversight and control. According to a former member of the Petrobras' Audit Committee¹⁵ (*Câmara dos Deputados*, 2015, my translation):

'Petrobras has one of the most detailed and complete governance systems I have ever seen. Upon being elected, I received a document called the Corporate Governance Manual, with statutes, internal regulations, norms and procedures, which suggest a fantastic governance. Unfortunately, it's just fantastic on paper. Many provisions were not fulfilled. And some loopholes were used mischievously; so that the system stopped working on what was relevant.' (p.464)

Although the organisation had the means to exercise oversight and hold individuals accountable for their responsibilities for internal controls, it did not used to happen in

¹⁵ According to his testimony, he was dismissed from the Committee after only one year, which he attributed to the fact that he voted against the approval of the 2013 financial statements and he demanded more information about investments in two refineries.

practice. The fact that the Board of Directors was composed in part by important actors of Brazilian politics and that the executive board and senior managers were involved in the scheme prevented the enforcement of such mechanisms of control. This is also relevant to the reinforcement of an organisational culture of corruption. Both interviewees said a key problem of the company was the lack of a culture of integrity. As stated by interviewee B (my translation):

'The executive board was totally involved in the corruption scheme, and the board of directors to say the least was alienated, unable to make any minimal criticism; it was a potentially catastrophic scenario. When this has been stretching for many years, with the executive board, executive management and even middle management of Petrobras very involved, each within their microcosm of corruption, from small to large corruption, this develops a culture of corruption. Petrobras has always tried to alleviate the damage, "it's half a dozen of rotten apples", it is not! Not half a dozen! This toxic scenario has stretched for many years within the company and in fact this has become a culture.'

In relation to the commitment to attract, develop and retain competent individuals, to hire its permanent personnel, the company has to promote public selections, which is usually a tough, objective and competitive process. Public employees at SOE are subject to the labour law for the private sector; however, in practice dismissal regarding poor performance is difficult to happen (Vianna, 2014). In the Reports of Administration, Petrobras is always proud of its human resource management, which values its employees and invests in training¹⁶. However, none of the training seemed to address ethical issues and interviewee A pointed out that the human resources management of Petrobras did not develop policies of appreciation of and rewards for ethical values and attitudes.

With respect to the members of the Board of Directors and Executive Board, it is possible to identify by looking at Petrobras' reports that they offered relevant competence to the company; they were mostly engineers, administrators, economists. For instance, Mr. Costa, a key actor of the scheme, was an experienced engineer who served the company for more than 20 years before being appointed a director.

¹⁶ For instance, in 2012, the company was elected, for the fifth consecutive year, one of the most desired companies to work for according to a survey conducted by the consulting firm Aon Hewitt. Petrobras was also recognised in top positions by the Young People's Dream Company survey. In 2012, it promoted an average of 96.3 hours of training per employee and 226 thousand activities in Brazil and abroad, including training programs of corporate governance best practices for executive officers (Petrobras, 2013d).

Specifically to the process of procurement, the Decree 2.745/98 – which approves the Regulation of the Simplified Bidding Procedure of Petrobras – provided the basis for the control environment. Petrobras’ regulatory requirements did not follow the law for the Brazilian public sector (Law 8.666/93); the company had its own specific norm. The main argument for the introduction of a less strict procedure was that, in order to be able to compete with other private companies in Brazil and abroad, the company could not comply with the excessive bureaucracy of the Law 8.666/93. The Decree does not establish monetary thresholds for applying different types of procurement modalities, which authorises the company to use the “invitation to bid” modality for any type of contract and value. In fact, the majority of procurement processed used this modality, which does not promote competition. Moreover, the Decree established new hypotheses of waiver and non-requirement to bid, redefined ways to publicize the bidding events, and authorised the integrated contracting model when economically recommendable – which allowed for the possibility of the contractor to develop the constructive solution and the final basic project¹⁷. Only in May 2013, a few months before the scandal came to light, did the company develop the Petrobras Contracting Handbook (*Manual da Petrobras para Contratação*) as a part of its internal control over procurement.

During the hearing of the Petrobras Parliamentary Commissions of Inquiry (CPI), the Congress discussed the issue of whether or not the more flexible procurement rules established by the Decree 2.745/98 contributed to the scheme. Although some of the deponents believed that, the majority of them pointed that more strict rules would have made no difference for curbing the scheme. Even the ones who pointed to the decree as one of the causes defended the idea that the flexibility in procurement is necessary for the company – which does not mean that the Decree cannot be improved. The CPI concluded that the issue was the misuse of discretion and not the essence of Decree No. 2.745/98 in providing flexibility to Petrobras (*Câmara dos Deputados*, 2015).

Therefore, the organisational culture seemed to be the most prominent aspect of the control environment, which expressed itself in the lack of commitment to integrity and

¹⁷ There is a lot of disagreement on the constitutionality of the Decree 2.745/98. In spite of that, the Decree was the norm in force. For discussions about the constitutionally and unconstitutionality of the Decree, see [Petrobras CPI report](#).

to ethical values at all levels. Through an analysis of the measures adopted by the company after the scandal, it is possible to identify some efforts in bridging the gaps in the Petrobras control environment, including an attempt to improve the organisational culture. Some of the efforts to strengthen controls are: the creation of a department of Governance, Risk and Compliance¹⁸; changing and strengthening the criteria for the inclusion of members in the top management; the modification of the company's by-laws to create new committees and to allow the participation of external members on the Board of Directors; review of the rules and procedures for the management of investment projects and goods and services contracting; and strengthening the communication of ethical values through trainings and internal communication media. The company has launched the Petrobras Corruption Prevention Programme, which includes, among other measures, the creation of a Correction Committee; improvement of the performance of the Internal Inquiry Commissions; a review and adaptation of internal regulations; inclusion of the "Compliance" criterion as part of the evaluation of the performance and results of Petrobras' employees; anti-corruption trainings; and establishment of compliance officers (Petrobras, 2016b and 2016c).

Risk assessment

Petrobras had specific policies and guidelines for risk management, which were handled by the Executive Board. The risk management strategy did not focus on individual risks (e.g., particular units or operations), but rather took a broader and more consolidated approach (Petrobras, 2013d). Through the analyses of Petrobras' annual reports, it is possible to see that the company considered mainly market and financial risks. There was no mention of fraud and corruption-related risks.

According to COSO (2013), a precondition to the risk assessment component is the establishment of clear objectives. Moreover, the risk assessment should consider not only risks within the overall organisation, but also in its subunits (such as human resources, purchasing) and in the relationships with key providers and partners,

¹⁸ Nowadays, it is the Governance and Compliance Department. For Petrobras' current organizational chart see <http://www.investidorpetrobras.com.br/en/corporate-governance/organization-chart>.

including transactional-level risks. The documents analysed did not allow for the identification of how, what and if procurement objectives were well established. And, as stated, the approach did not consider risks in particular units and operations, or risks related to corruption and fraud. The interviewees confirmed that the company did not have proper risk assessment regarding integrity in the procurement process. Therefore, this component had great deficiency and all of its principles were compromised.

In June 2015, the company approved its Corporate Risk Management Policy, establishing guidelines for corporate risk management. The policy identifies 21 business risk categories (including non-compliance with the conduct guide and the code of ethics), specifies rules and procedures for each risk, and has specific managers responsible for its implementation. (Petrobras, 2016b).

Control activities

Control activities are those actions put in place to help ensure that responses to risks, as well as management standards and directives, are carried out properly and effectively. Either preventive or detective, control activities are taken to avoid or to correct an undesirable or unexpected outcome (COSO, 2013). As indicated in the control environment component section of this paper, the procurement process of Petrobras follows the rules established by the Decree 2.745/98. Thus, control activities should be developed to make sure that the company complies with the Decree and other relevant internal directives, as well as meets procurement objectives. Due to the size and complexity of the company and the limited access to internal information, it was not possible to assess the whole procurement chain and identify how the enterprise applied control activities throughout the many steps of contracting. Despite that, some important deficiencies in this component can be pinpointed.

From 2011 to 2014, there was a volume of purchases around R\$ 369 billion, of which R\$ 167 billion (45%) were not preceded by a bidding procedure; they were contracted

directly. Moreover, 99% of the remaining R\$ 202 billion¹⁹ – the portion in which there was a bid – occurred through the modality “invitation to bid”. This modality displays less transparency and gives great freedom to the manager in the choice of inviting companies, which do not need to be registered in the Petrobras’ list of suppliers (TCU, 2016). The high amount of money and the greater flexibility in the procurement process entail high risks, and the lack of proper risk assessment (as seen above) prevented Petrobras from developing control activities focusing on reducing or sharing risks in the procurement processes, including the risks of corruption.

Petrobras counts on an electronic system to support its e-procurement activities, called Petronect. The Petronect portal has several functions, such as supplier registration and purchasing and contracting. The procurement processes were carried out by different units in Petrobras and this technological solution was to facilitate and provide better control activities. However, its use was not mandatory. According to an audit carried out by CGU (2016b), the rate of utilisation of the portal during the 5-year period before the audit represented 70% of the acquisitions, but only 30% of the financial amount of transactions. This means that the system was mainly used for small and medium contracts. The report points to the lack of corporate orientation on the use of Petronect; the decision whether or not to use the system was left to each manager of the company's purchasing and contracting areas. There was no policy to establish the use of the system. Moreover, the audit identified six companies that were under investigation in Operation Car Wash with an active registration in the list of suppliers, as well as many vulnerabilities related to the security of information, mainly in the management of access, users and traceability of transactions.

Transparency is also important to enable control and monitoring activities. In relation to transparency, some important gaps were found. Since 2004, the Federal Executive Branch has had a website, called Transparency Portal²⁰, to provide information about revenue and expenses of the public administration on a daily basis. Because Petrobras is a self-sustainable SOE, its information is not displayed in the Portal.

¹⁹ In August 2017, these amounts equal around GBP 90.5 billion, GBP 41.0 billion and GBP 49.5 billion, respectively.

²⁰ In Portuguese, *Portal da Transparência*. To access the portal <http://www.transparencia.gov.br/>

Instead, the Decree 5.482/2005 requires it to publish information about their expenditures, such as budgetary execution, tenders, contracts, and so on, on their own website. However, an audit performed by CGU identified in 2012 that the information on Petrobras' website was not sufficient and did not fully comply with the decree (CGU, 2015).

Moreover, control bodies only have access to the procurement budget made by Petrobras after the result of the bidding process. Additionally, as a self-sustainable SOE, Petrobras does not use the managerial systems from the federal government, such as the procurement and the financial execution systems. Their systems are privately owned, and auditors from CGU do not access them (*Câmara dos Deputados*, 2015). Interviewee A reported that sometimes the company obstructed the auditing processes. For instance, the company used to deny access to the meeting minutes of the Board of Directors. Only after a lot of tension, did it allow access through the company's computer – without letting the auditors have a hard copy of the document²¹. This lack of transparency prevented detective control activities from being carried out effectively.

Specifically about activities to detect corruption, Interview A highlighted that, when planning an audit, the auditor should consider the possibility of fraud; however, he/she is not responsible for detecting fraud due to the lack of suitable methods and procedures, such as access to tax and fiscal information of the companies being audited. Accordingly, the Internal Audit Unit of Petrobras stated that their auditors do not have tools and resources for carrying out investigations; hence, despite the relevance of many of the nonconformities pointed out, there were no elements that allowed for linking their occurrence with the existence of corruption schemes²².

The segregation of duties is always pointed to as an important tool in the control activity component (COSO, 2013). Although it was not possible to identify exactly how the duties were segregated in the procurement process of Petrobras, some facts

²¹ The company denied the meeting minutes even without legal authority (the § 2º, Article 1º, Law 9292/96 establishes that the Board of Directors should provide the meeting minutes in its annual accountability process).

²²Communication via e-mail with Petrobras in response to the questions of the semi-structured interview.

indicate that the top management was able to undermine or circumvent the segregation - for instance, by nominating members with little or no professional experience to the Tender Committee and avoiding certain matters to be evaluated by the Legal Department or the Board of Directors (*Câmara dos Deputados*, 2015). Furthermore, there were some cases whereby the opinion of the technical area was to discourage the business, but the executive board distorted the recommendation and even asked the technical area to redo the calculations using other parameters that were completely unreasonable. They would arrive at the result they wanted, and so they made the decision. A decision that was already born jeopardised in the Executive Board was very difficult for the technical area, even if the technical area was not involved', said interviewee B (my translation)²³.

In some cases, due to recommendations of control bodies and complaints of irregularities, Petrobras did establish internal audit committees to investigate and detect the occurrence of such irregularities; however, in practice, the results for the correction of irregularities were almost non-existent. Other deficiencies in control activities were the absence of the basic-design phase and planning of the engineering projects. Moreover, Petrobras did not demand the specification and quantification of services and the respective specific costs of the work (*Câmara dos Deputados*, 2015). These facts increased the opportunities for contract amendments and made it difficult to oversee the contracts due to the absence of specific parameters.

In order to strengthen its control activities after the scandal, Petrobras implemented a process of due diligence regarding its suppliers. To be registered in the list of suppliers, companies should provide detailed information about their mechanisms to curb corruption (Petrobras, 2015b). However, even *after the scandal*, Petrobras itself identified deficiencies in the control activities regarding the issuance of purchase orders and quotation in the system to suppliers that should have been blocked. Another step taken was the establishment of a sharing model of decision-making within the Administration (*Petrobras*, 2016b). Additionally, Petrobras has centralised good and service procurement activities at the new Human Resource, SMS, and

²³ Sometimes even the technical area was involved in the corrupt scheme, which made it easier for corruption exchanges to be accomplished.

Services Department; has strengthened the enforcement of disciplinary measures; and has precautionarily blocked the cartel's companies from participating in bids and contracting with Petrobras. The company established investigations by two hired Independent Internal Investigation Offices, as well as by its Internal Inquiry Committees (Petrobras, 2015b).

Information and Communication

The Information and Communication COSO component stresses that organisations must obtain and use information from both internal and external sources to support the performance of other components of internal control. Moreover, organisations must communicate relevant information to enable a shared understanding of its objectives and of the importance of control activities. Through some examples, it is possible to conclude that these aspects had important deficiencies.

Although the company had an Ombudsman, a channel for communication of denunciations, complaints, suggestions and compliments, it did not work properly. Before Operation Car Wash, a member of the Board of Directors went to the Ombudsman's Office to make a complaint against Mr. Paulo Roberto Costa (the director involved in the scheme). According to the member, he spoke to a girl and she said: "For God's sake, go away" (Sassine and de Carvalho, 2015). The Ombudsman also did not communicate with external parties; it received only internal complaints. Another case refers to a former manager who was subordinate to Mr. Costa. In her testimony to Petrobras' CPI, Venina Fonseca confirmed that she warned the Board of Directors in face-to-face meetings about corruption in the Downstream Department. *Venina claimed* she was transferred to Asia after alerting Petrobras' Board of Directors about the irregularities and was later removed from any position. She also stated that she received telephone threats (Calgaro, 2015). Moreover, there was a lack of *follow-up by higher levels of corporate governance of the employees' disciplinary measures, which prevented the generation of information about misconduct.*²⁴

²⁴ Communication with interviewee A

The information generated by audits was also not used in any meaningful way. The report of CPI describes several instances when control bodies, including from Petrobras, pinpointed irregularities, but there were little practical consequences. For instance, in 2009, the Federal Court of Accounts found signs of overpricing in 19 contracts related to the Getúlio Vargas Refinery; nonetheless, the conclusion regarding possible losses was impaired due to the difficulty in obtaining the necessary information from Petrobras (Câmara dos Deputados, 2015). That is, instead of using the information provided and seeking explanations and corrections, the company contradictorily did not present the relevant information to the auditors for a better result from the audit.

Therefore, the company deliberately ignored information that suggested something was amiss. This inaction does not communicate, either internally or externally, the importance of internal controls. Additionally, the lack of information management in combating corruption reinforced a culture of tolerance of misconducts.

For this reason, one of the main actions undertaken by Petrobras after the scandal was to reformulate the Ombudsman Policy and Guidelines and restructure the Ombudsman's Office. Moreover, since November 2015, the whistle-blower channel has been operated by an external company²⁵, and informs the whistle-blower of the whole processing of treatment, giving the whistle-blower the possibility of monitoring the process (CGU, 2016a). See table 1 for a comparison of the previous channel to the new one.

Table 1 – Comparison between the previous whistle-blower channel and the new one

<i>Previous channel</i>	<i>New whistle-blower channel</i>
Receiving process: by Petrobras' Ombudsman only.	Receiving process: by independent external company specialized in

²⁵ The Channel is operated 24h with assistance in Portuguese, English and Spanish.

	receiving, collecting and listening to denouncements from Petrobras.
Channel limited to complaints regarding accounting, financial, internal controls and audits (Sarbanes-Oxley Act)	Channel open to any denouncement of Petrobras
Channel limited to the internal staff	Channel open to everyone
Anonymity restricted to denunciations under the Sarbanes-Oxley Act.	Anonymous whistleblowing guaranteed for any denunciation, except those involving behavioral issues (moral and sexual harassment, physical and psychological violence).

Source: based on CGU, 2016a.

Monitoring activities

For an effective internal control system, organisations must carry out evaluations to ascertain whether each component is present and functioning. Because it is necessary to consider underlying details to conclude whether an activity is a control activity or a monitoring activity (COSO, 2013), a clear differentiation of both components was difficult to draw when it comes to audits and oversights. Thus, this assessment focused on the general analyses of internal control instances.

Petrobras underwent annually an internal control certification process in order to assess entity-level controls and evaluate the corporate governance environment, as well as assess business processes and internal controls and test them. The company also hired an independent audit firm²⁶ for the evaluation and approval of its financial statements (Petrobras, 2013d). Furthermore, Petrobras rendered accounts annually to be checked and analysed by CGU, which gave its opinion about the management acts, and then judged by TCU.

The Audit Committee was responsible for advising the Board of Directors and company management upon assessing the adequacy and effectiveness of internal controls.²⁷ According to a former member of the Board of Directors, the chairman of the Board proposed a policy of rotation of members and used it to withdraw this

²⁶ Which is usually one of the “Big Four”. For instance, from 2012 to 2016, it was PricewaterhouseCoopers.

²⁷ This was done with the support of the Internal Audit and independent auditors, as well as the units involved in risk management and internal controls of the company (Petrobras, 2013e)

member from the Committee because he had voted against some matters and was questioning some investments. 'The Committee was then formed by [...] controller's employees. Therefore, the independence of the body disappears precisely at the moment when this independence was most important for Petrobras. The Committee was rigged.' (*Câmara dos Deputados*, 2015, p.465, my translation).

Regarding Petrobras' internal audit, interviewee B stated that the unit was very large with a big output of auditing work, and had many competent and experienced auditors. Nevertheless, apart from some exceptions, the work did not indicate great structuring problems. It was only from a certain point around 2012 that the issues identified began to become more important, and the results showed problems in relevant areas. However, the results of the audits lacked proper consequences.²⁸ Another weakness relates to the long tenure of the Chief Audit Executive, who stayed in the same position for around 30 years²⁹.

The same problems resulting from the lack of transparency that were mentioned above are a factor in this component, too. In the case of CGU, the absence of access to corporate systems and to crucial information of the company curtailed the possibility of its monitoring in a preventive manner. As stated by a former Minister of CGU, 'it is only after the problem occurs that the control bodies act, in the repressive phase' (*Câmara dos Deputados*, 2015, p.438, my translation). He added that although state-owned companies have their internal audits, they do not respond to the central body of the internal control system (which is CGU); they only follow technical and normative guidelines, 'which are very little'. Moreover, without the access to systems, the audits were dependent on a demand from CGU and a response from Petrobras, which meant that relevant information could be framed and omitted. Add to that the fact that Petrobras was not a priority among the audits carried out by CGU.³⁰

²⁸ The interviewee had no evidence to confirm if the lack of consequences was due to superior interference in the work of the internal audit.

²⁹ Both interviewees highlighted this weakness.

³⁰ Interviewee B related that this lack of prioritization of CGU's leaders bothered him/her, but it was justified by the fact Petrobras already had a large internal audit unit and more developed internal controls compared to other organisations of public administration. Considering CGU did not have sufficient resources to intensively audit all federal bodies, a greater focus was put on the social area.

As seen, despite Petrobras' formally having structures for the development of monitoring activities, it is possible to identify some weakness in this component, as well as possible management overriding. Moreover, the internal control body of the federal public administration, also responsible for the prevention of and fight against corruption, lacked means to better carry out its duties. Table 2 summarises the main changes for the improvement of internal controls, according to Petrobras.

Table 2 – Improvements of internal controls after the scandal

Before	After
Government members nominated to the Board of Directors	Appointment of neither government members nor union leaders for the Board of Directors is allowed anymore (Law 13.303)
No threshold of independent members of the Council	Bylaw requires a 25% threshold of independent members of the Board of Directors.
Simple integrity verification	Strict integrity assessment of the nominees for the Board of Directors, members of Fiscal Council and the Executive Board
Members became leaders without a solid selection process	Succession plan for executives Launching of Talent Bank of Executives Transparent selection process for holding manager positions
No specific committee to analyse transactions with related parties prior to Board's decision	Minority Statutory Committee to evaluate relevant transactions between Petrobras and related parties within Board's scope
Executive Managers were not held accountable based on the statute	Launching of Statutory Committees to reinforce commitment and accountability of executive managers in the decision-making process
Bylaws concentrated powers on the Executive Board Directors acted by delegation	Bylaw revision deconcentrated powers between the Executive Board and the Board of Directors and redefined individual responsibilities of directors
Directors could decide monocratically	Launching authorisation-shared process for some decisions
Internal reporting channel	Launching of anonymous independent Whistleblower Channel

Simple verification of suppliers' integrity	Integrity Due Diligence Process during registration and selection of suppliers and counterparties
No systematic training in ethics	Reinforcement of the Code of Ethics and permanent workforce training in ethics

Source: based on Petrobras' website (Petrobras, 2017b)

The use of the COSO framework shows that Petrobras did not have an effective internal control system, which suggests that the lack thereof contributed to the scandal's development. Although many elements were present, they were not functioning. Considering the company is a listed entity in Brazil and abroad (and so must comply with Brazilian and foreign internal control regulations), it is reasonable to conclude that Petrobras had mechanisms and capacity for quality internal controls. The company had written rules, procedures, and standards; organisational structure for accountability and control; technological infrastructure; competent employees and so on, but did not properly enforce controls. The main deficiency seemed to rest in the control environment component, mainly with respect to Petrobras' organisational culture and the absence of commitment to integrity and ethical values. Unethical organisational culture not only encourages but "legitimizes" corrupt behaviour (Ashforth et al., 2008). Consequently, this deficiency compromised the functioning of all other components.

The findings confirm that the control environment is indeed the foundation of an internal control system and indicates that COSO components have an intertwined relationship; problems in one component trickle down to others. The findings also contribute to demonstrating the limitations of internal controls; controls can be frustrated and circumvented by collusion and management override. Boards of directors and top management are the ones responsible for design and implementation of internal controls, so their lack of commitment impairs the purpose of developing effective controls.

Although both hard and soft controls presented a combination of deficiencies, the lack of adequate soft controls seemed to have more influence in contributing to corruption, because it also affected the functioning of hard controls. The findings of this study are

in line with Abaalkhail's research (2016), which identified that effectiveness of hard controls was dependent on the quality of soft and monitoring controls, and the same mechanisms of anti-corruption controls are unlikely to be as effective in an organisation with a culture that appears to tolerate corruption.

Since the scandal, Petrobras has been taking important and positive steps to improve organisational controls for preventing corruption. However, many concerns can still be raised. Although some efforts aim at improving organisational culture and creating a zero tolerance to corruption (such as the creation of the Corruption Prevention Programme), they cannot be a box-ticking exercise. These efforts require more than establishing standards and procedures and making sure that employees comply with them; they must aim at guiding staff behaviour through values and social aspirations. Ethical behaviour must be integrated into the daily attitude of management and into the lines of informal influence, rather than only serving as formal rules and procedures. Recently, the news increased this concern in that Aldemir Bendine, president of Petrobras from 2015 to 2016, was arrested in Operation Car Wash. 'While receiving bribes, Bendine defended zero tolerance to corruption', stated one headline (Braga, 2017). This shows how incongruent Petrobras' formal and informal systems are. Strengthening criteria for the nomination of strategic positions can help to attract actors who act with integrity and set the right tone at the top, but in practice it may not interfere in the underlying motivation for nomination. The board of directors has just suspended Petrobras's compliance chief due to a conflict of interest in contracting Deloitte on a no-bid contract while the firm was in the process of hiring his daughter (Cassin, 2017). Facts like this convey an unclear and inconsistent message as to whether corruption is indeed not tolerated. Integrity must be embedded into the decision-making process and the attitudes of leaders play a big part in building an enabling environment for ethical behaviour. The tacit norms propagated by the informal system produce an implicit knowledge as to how the organisation really works in practice (Falkenberg and Herremans, 1995).

Some hard controls can entail new risks of corruption, especially in a culture where corruption is tolerated. Petrobras implemented the 4EP through a model of sharing decision-making; however, as demonstrated in part 3, the effectiveness of 4EP has been challenged. Moreover, the re-registration process for suppliers can open new

opportunities for bribe-taking. Although a stricter due diligence is a good practice, interviewee B pointed that there is some discretion on the requirements for joining the registration and the level of requirement differs from one situation to the next. This can represent an opportunity to demand bribes in exchange for acceptance in the registration process. Hard controls must be supplemented with strong soft controls as the first can be impaired and circumvented. Hard controls based on surveillance and punishment may lead to a culture of distrust that undermines cooperative activities, and may lessen morality in favour of conformity to rules (Dubink, 2015). Although surveillance and punishment are important, hard controls and soft controls must be balanced and built towards raising moral awareness and strengthening accountability through internalised norms and peer pressure.

CONCLUSION

Broadly, internal control is nothing more than influencing and guiding behaviour so that an organisation achieves its objectives. Thus, it is as much a function of standards and procedures as it is of internalised values and beliefs. That is why it is necessary that hard and soft controls systems work in the same direction, resulting in an overall system that is balanced and in harmony.

By analysing the Petrobras case, this study shows that the lack of an effective internal control system facilitated the development of the corruption scheme. The main deficiency seemed to rest in the control environment component with respect to organisational culture and the absence of commitment to integrity and ethical values. Following from this situation, there was room for a series of other deficiencies in the other components of internal controls. Many factors, such as the political criterion in the process of indicating actors to key positions, the flexibility of bidding and contracting rules, and the lack of necessary support for state control bodies to act, seem to have affected the development of better control mechanisms. Although there were loopholes in internal control practices and they may have contributed to corruption exchanges, top management intentionally undermined the internal control system to allow for corruption perpetuation. This indicates that the same institutional anti-corruption mechanisms are not likely to be effective within an organisational culture that appears to tolerate corruption.

In the aftermath of the scandal, Brazilian legislation and Petrobras internal arrangements have closed many of the loopholes. However, considering a scenario of systemic political corruption as exists in Brazil, informal corrupt networks are able to adapt to formal laws and procedures and recycle themselves over time. It is not possible to conclude to what extent the measures are going to affect the company's level of corruption going forward. Implementing rigid hard control mechanisms should be considered, but they should be designed in terms of their explicit and hidden costs, especially when dynamism is needed to perform in a competitive environment. Such mechanisms may cause distrust and negatively affect efficiency without curtailing the problem.

Therefore, this study suggests that, more than reducing opportunities for corruption through hard controls, anti-corruption reforms should focus on strengthening institutional culture by building an ethical environment through encouragement of exemplary behaviour. Setting the right tone at the top is fundamental, because persons in key posts have a powerful informal influence over others. Thus, organisational restructuring should devote greater attention to informal controls that affect personnel's behaviour and motivation. As Weaver and Clark (2015, p.136) argue, 'to understand the nature of corruption and the prospects for its remediation, it is important to consider how individuals think and act vis-à-vis corruption in the context of their work organizations'. Implementing audits of soft controls, for instance, can be a valuable tool for assessing underlying assumptions and behavioural aspects of an organisation.

Nonetheless, this study comes with some limitations. First, it deals with only one case, which prevents the generalization of the findings. Second, assessing internal controls is a subjective judgment; the same framework of assessment applied by a different person could result in differences in the evaluation. Third, the analysis relied mainly on online information, which mostly revealed the formal system of controls, not the informal. Moreover, communication online about internal controls started to be more detailed only after the scandal. Although it was possible to carry out two interviews, neither of the interviewees were from within the company. Finally, the study considered only internal factors. The control environment, including organisational

culture, is also influenced by external elements, such as politics and characteristics of the market.

Even though some lessons can be drawn from the case and the literature on corruption, more research is required to evaluate the interplay between hard and soft controls, especially how the first can contribute to strengthen the latter - that is, how informal controls can be developed on the basis of formal controls. This is particularly important to uncover how top managers themselves can be stimulated toward more ethical behaviour, if they have no previous commitment to high ethical standards. For the prevention of and fight against corruption, beyond oversight and punishment, organisations should strive for control and compliance through internalised values and personal morality, self-conscious professionalism, peer pressure and shared accountability. Furthermore, we need a more holistic awareness of the interaction among societal, organisational and individual factors to help us better understand and tackle corruption.

Appendix 1 – Petrobras' shareholding position – December 31, 2016.

Chart 1: Voting Capital - Common Shares

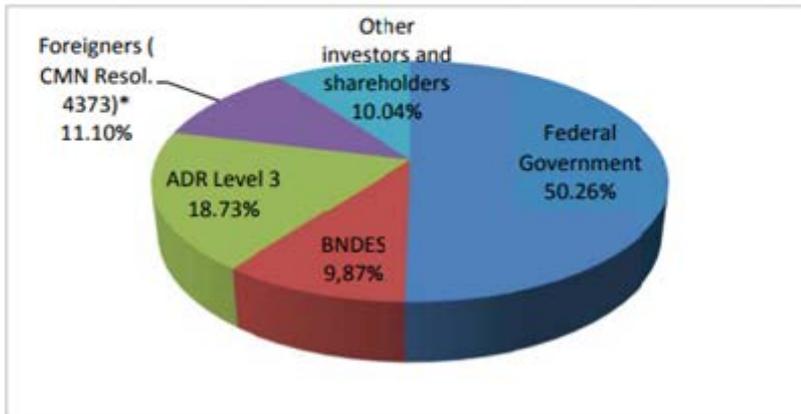


Chart 2: Non-Voting Capital - Preferred Shares

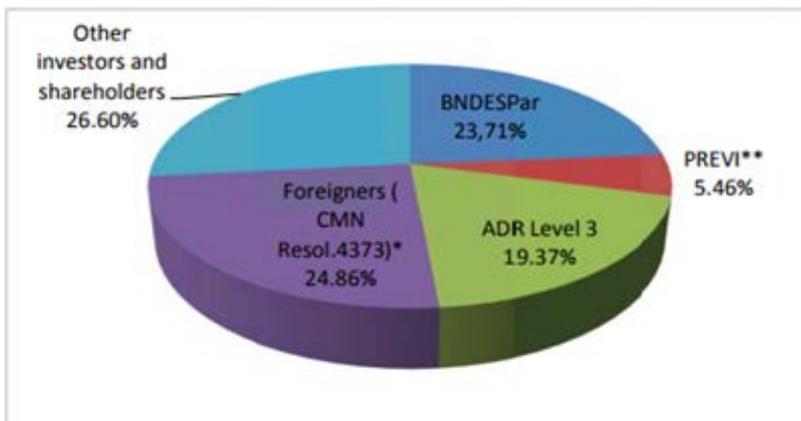
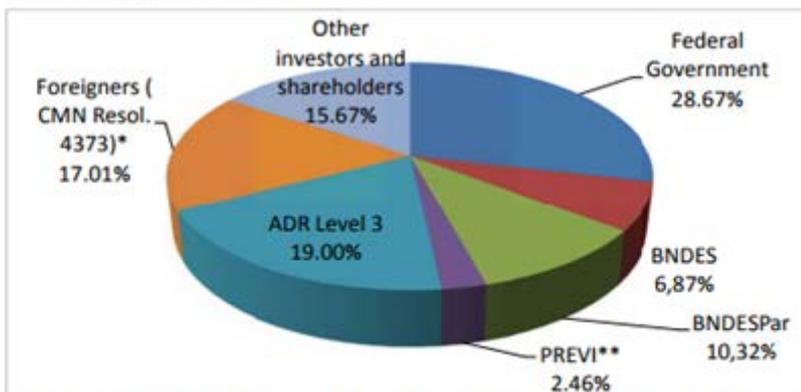


Chart 3: Capital Stock



* CMN Resolution No. 4373: governs investments by non-resident foreign investors in the Brazilian financial and capital markets, and includes other provisions. ** PREVI: Pension Fund of Banco do Brasil Employees.

Source: Report of the Administration 2016 (Petrobras, 2017d)

Appendix 2 – Semi-structured interview

The study aims to identify how Petrobras' internal controls did or did not contribute to the scandal's development. All information collected will be solely used for research purposes and identification kept strictly confidential. Being precise and accurate will enrich the literature on corruption prevention mechanisms. You have the right to withdraw from the interview at any time without any justification.

The questions will follow the logic of the five components of internal controls described by the COSO framework. To answer them, please consider all internal controls that may have affected the integrity of the procurement process.

1. Can you please brief me on your job assignments related to Petrobras?
2. Based on your job experience, besides the lack of the "tone at the top", what were the main deficiencies of the control environment that may have contributed to the scandal?
3. Did the company have an assessment of corruption risks? Did it address the risks in the procurement process? If so, how?
4. How do you evaluate Petrobras' control activities in the procurement process? How was technology used?
5. With regard to procurement control's objectives, responsibilities, and challenges, what information did Petrobras communicate to all related parties (internal and external), and how? Do you think the information was sufficient? What were the problems related to whistle-blower policies and channel?
6. How was the monitoring of the procurement process? Was Petrobras' internal audit able to identify any signs that procurement objectives were being diverted for personal gains? Was internal control effectiveness assessed and deficiencies identified?
7. How did the absence of the tone at the top influence the functioning of other controls? For example, which control do you consider was in place, but didn't work due to the involvement of top management in the scheme?
8. Do you have any other comments or anything to add about Petrobras' internal controls in relation to the scandal?

REFERENCES

Abaalkhail, N. (2016). *The Effectiveness of Internal Control in Tackling Corruption*. Ph.D. University of Sussex.

Anechiarico, F. and Jacobs, J. (1996). *The pursuit of absolute integrity: how corruption control makes government ineffective*. London: University of Chicago Press.

Arwinge, O. (2012). *Internal control: a study of concept and themes*. Heidelberg: Springer.

Ashforth, B., Gioia, D., Robinson, S. and Trevino, L. (2008). Re-Viewing Organizational Corruption. *Academy of Management Review*, 33(3), pp.670-684.

Braga, J. (2017). *Enquanto recebia propina, Bendine defendia "tolerância zero" à corrupção | Lauro Jardim - O Globo*. [online] O Globo. Available at: <http://blogs.oglobo.globo.com/lauro-jardim/post/enquanto-recebia-propina-bendine-defendia-tolerancia-zero-corrupcao.html> [Accessed 23 Aug. 2017].

Calgaro, F. (2015). *Venina diz não se arrepender de denúncias feitas contra Petrobras*. [online] G1. Available at: <http://g1.globo.com/politica/operacao-lava-jato/noticia/2015/09/cpi-venina-diz-que-nao-se-arrepente-de-denuncias-contrapetrobras.html> [Accessed 16 Aug. 2017].

Câmara dos Deputados (2015). *Comissão Parlamentar de Inquérito - Petrobras*. [online] Available at: <http://www2.camara.leg.br/atividade-legislativa/comissoes/comissoes-temporarias/parlamentar-de-inquerito/55a-legislatura/cpi-petrobras/documentos/outros-documentos/relatorio-final-da-cpi-petrobras> [Accessed 3 Jul. 2017].

Cassin, R. (2017). *Petrobras suspends compliance chief for conflict of interest*. [online] The FCPA Blog. Available at: <http://www.fcpcbog.com/blog/2017/8/24/petrobras-suspends-compliance-chief-for-conflict-of-interest.html> [Accessed 24 Aug. 2017].

Castro, J. (2016). *Alberto Youssef, o doleiro que Moro perdoou duas vezes*. [online] Nexo Jornal. Available at:

<https://www.nexojournal.com.br/expresso/2016/11/16/Alberto-Youssef-o-doleiro-que-Moro-perdoou-duas-vezes> [Accessed 22 Jul. 2017].

CGU (2015). *Relatório AAC Petrobras exercício de 2011*. Auditoria Anual de Contas. [online] Available at: <https://auditoria.cgu.gov.br/download/3304.pdf> [Accessed 14 Aug. 2017].

CGU (2016a). *Ficha de Inscrição Petrobras*. Concurso de Boas Práticas da CGU. [online] Available at: <http://www.cgu.gov.br/sobre/institucional/concursos/concurso-de-boas-praticas/praticas/og-04-petrobras.pdf> [Accessed 18 Aug. 2017].

CGU (2016b). *Sistema Petronec*. Auditoria dos Resultados da Gestão - Petrobras. [online] Available at: <https://auditoria.cgu.gov.br/download/8926.pdf> [Accessed 14 Aug. 2017].

Chtioui, T. and Thiéry-Dubuisson, S. (2011). Hard and Soft Controls: Mind the Gap!. *International Journal of Business*, 16(3).

COSO - Committee of Sponsoring Organizations of the Treadway Commission (2013). *Internal Control-Integrated Framework..* Durham, NC: The American Institute of Certified Public Accountants (AICPA).

D'Aquila, J. (2013). COSO's Internal Control Integrated Framework Updating the Original Concepts for Today's Environment. *The CPA Journal*, 83(10), pp.22-29.

della Porta, D. and Vannucci, A. (2012). *The Hidden Order of Corruption: an institucional approach*. Farnham: Ashgate.

Dionísio, B. (2015). *PF estima que prejuízo da Petrobras com corrupção pode ser de R\$ 42 bi.* [online] G1 Globo. Available at: <http://g1.globo.com/pr/parana/noticia/2015/11/pf-estima-que-prejuizo-da-petrobras-com-corrupcao-pode-ser-de-r-42-bi.html> [Accessed 23 Jul. 2017].

- Dubbink, W. (2015). Organizational Integrity and Human Maliciousness. In: D. Torsello, P. Heywood and P. Hardi, ed., *Debates of corruption and Integrity*, 1st ed. Palgrave Macmillan UK.
- Falk, A. and Kosfeld, M. (2004). Distrust - The Hidden Costs of Control. *IZA Discussion Paper No. 1203*.
- Falkenberg, L. and Herremans, I. (1995). Ethical behaviours in organizations: Directed by the formal or informal systems?. *Journal of Business Ethics*, 14(2), pp.133-143.
- Fortune. (2017). *Global 500*. [online] Available at: <http://fortune.com/global500/> [Accessed 19 Jul. 2017].
- Gazeta do Povo. (2014). *MPF lista 22 empresas de cartel*. [online] Available at: <http://www.gazetadopovo.com.br/vida-publica/mpf-lista-22-empresas-de-cartel-ehdc6pwfcqmspgionoslts9a#ancora> [Accessed 21 Jul. 2017].
- Girgenti, R. (2016). *Brazil: A Study on the Impact of Corruption - Corporate Compliance Insights*. [online] Corporate Compliance Insights. Available at: <http://www.corporatecomplianceinsights.com/brazil-a-study-on-the-impact-of-corruption/> [Accessed 23 Jul. 2017].
- Guibert, N. and Dupuy, Y. (1997). La complémentarité entre le contrôle formel et le contrôle informel. *Comptabilité-contrôle-Audit*, 3(1), pp.39-52.
- Heier, J., Dugan, M. and Sayers, D. (2005). A century of debate for internal controls and their assessment: a study of reactive evolution. *Accounting History*, 10(3), pp.39-70.
- Hess, D. (2009). Catalyzing Corporate Commitment to Combating Corruption. *Journal of Business Ethics*, 88(S4), pp.781-790.
- Hough, D. (2013). *Corruption, anti-corruption and governance*. Basingstoke: Palgrave Macmillan.

- Huberts, L. and Hoekstra, A. (2016). *Integrity management in the public sector. The Dutch approach*. Dutch National Integrity Office (BIOS). The Hague.
- IAME - Internal Auditor Middle East. (2014). *Are Soft Controls Better Than Hard Controls?*. [online] Available at: <http://www.internalauditor.me/article/are-soft-controls-better-than-hard-controls/> [Accessed 29 Jun. 2017].
- IIA Netherlands - The Institute of Internal Auditors Netherlands (2015). *Soft controls. What are the starting points for the internal auditor?*. Discussion paper. [online] Available at: https://www.iaa.nl/SiteFiles/Publicaties/IIA_Bro%20A4%20Soft%20Controls%20Engels%2002.pdf [Accessed 23 Jun. 2017].
- Klitgaard, R. (1988). *Controlling corruption*. Berkeley: Univ. of California Press.
- Mafiana, E. (2013). *Examining the Relationships between Internal Control Effectiveness and Financial Performance in the Nigerian Banking Industry*. Ph.D. Walden University.
- Malagueño, R., Albrecht, C., Ainge, C. and Stephens, N. (2010). Accounting and corruption: a cross-country analysis. *Journal of Money Laundering Control*, 13(4), pp.372-393.
- McPherson, C. and MacSearraigh, S. (2007). Corruption in the Petroleum Sector. In: E. Campos and S. Pradhan, ed., *The many faces of corruption. Tracking Vulnerabilities at the Sector Level*. Washington DC: The World Bank.
- Monteduro, F., Hinna, A. and Moi, S. (2016). Governance and Corruption in the Public Sector: An Extended Literature Review. In: F. Monteduro, A. Hinna and S. Moi, ed., *Governance and Performance in Public and Non-Profit Organizations*. Emerald Group Publishing Limited, pp.31-51.
- MPF - Ministério Público Federal. (2017). *Entenda o caso — Caso Lava Jato*. [online] Available at: <http://lavajato.mpf.mp.br/entenda-o-caso> [Accessed 20 Jul. 2017].

- Neu, D., Everett, J. and Rahaman, A. (2014). Preventing corruption within government procurement: Constructing the disciplined and ethical subject. *Critical Perspectives on Accounting*, 28, pp.49-61.
- Olken, B. (2007). Monitoring Corruption: Evidence from a Field Experiment in Indonesia. *Journal of Political Economy*, 115(2), pp.200-249.
- Paine, L. (1994). Managing for Organizational Integrity. *Harvard Business Review*, 72(2), pp.106-117.
- Peters, B. (1998). The Case Study. In: *Comparative Politics: Theory & Methods*. Macmillan, pp.137-155.
- Petrobras (2013a). *Form 20F 2012*. [online] Available at: <http://www.investidorpetrobras.com.br/en/annual-reports/form-20f> [Accessed 8 Aug. 2017].
- Petrobras (2013b). *Formulário de Referência 2012*. [online] Available at: <http://www.investidorpetrobras.com.br/pt/relatorios-anuais/formulario-de-referencia-0> [Accessed 6 Aug. 2017].
- Petrobras (2013c). *Manual da Petrobras para Contratação*. [online] Available at: http://sites.petrobras.com.br/CANALFORNECEDOR/PORTUGUES/pdf/MPC_rev01_10022015.pdf [Accessed 14 Aug. 2017].
- Petrobras (2013d). *Operating Report 2012*. [online] Available at: <http://www.investidorpetrobras.com.br/en/annual-reports/report-administration> [Accessed 7 Aug. 2017].
- Petrobras (2013e). *Relatório de Gestão 2012*. [online] Available at: <http://transparencia.petrobras.com.br/auditoria> [Accessed 19 Aug. 2017].
- Petrobras (2015a). *Executivos fazem balanço sobre nossas ações de combate à fraude e à corrupção*. [online] Available at: <http://www.petrobras.com.br/fatos-e->

dados/diretores-fazem-balanco-sobre-nossas-aco-es-de-combate-a-fraude-e-a-corrupcao.htm [Accessed 16 Aug. 2017].

Petrobras (2015b). *Operation Car Wash: Information and Documents | Petrobras*. [online] Available at: <http://lavajato.hotsitespetrobras.com.br/en/> [Accessed 21 Jul. 2017].

Petrobras (2015c). *Petrobras Corruption Prevention Program*. [online] Available at: <http://www.investidorpetrobras.com.br/en/corporate-governance/governance-instruments/petrobras-corruption-prevention-program> [Accessed 21 Jul. 2017].

Petrobras (2016a). *Form 20F 2015*. [online] Available at: <http://www.investidorpetrobras.com.br/en/annual-reports/form-20f> [Accessed 9 Aug. 2017].

Petrobras (2016b). *Formulário de Referência 2015*. [online] Available at: <http://www.investidorpetrobras.com.br/pt/relatorios-anuais/formulario-de-referencia-0> [Accessed 27 Jul. 2017].

Petrobras (2016c). *Sustainability Report 2015*. [online] Available at: <http://www.investidorpetrobras.com.br/en/annual-reports/sustainability-report> [Accessed 20 Aug. 2017].

Petrobras (2017a). *Performance Areas: Check out the Company's Activities - Petrobras*. [online] Available at: <http://www.petrobras.com.br/en/our-activities/performance-areas/> [Accessed 19 Jul. 2017].

Petrobras (2017b). *Petrobras: estamos mudando para seguir em frente*. [online] Available at: <http://seguindoemfrente.hotsitespetrobras.com.br/index.htm#buscamos-mais-seguranca-e-controle-na-tomada-de-decisao> [Accessed 23 Aug. 2017].

Petrobras (2017c). *Relacionamento com Investidor - Guidelines*. [online] Available at: <http://www.investidorpetrobras.com.br/en/corporate-governance/governance-instruments/guidelines> [Accessed 19 Jul. 2017].

Petrobras (2017d). *Report of the Administration 2016*. [online] Available at: <http://www.investidorpetrobras.com.br/en/annual-reports/report-administration> [Accessed 30 Jul. 2017].

Rose-Ackerman, S. (1978). *Corruption. A Study in Political Economy*. 1st ed. New York: Academic Press.

Sassine, V. and de Carvalho, J. (2015). *Em reunião de abril, auditoria alertou Petrobras sobre brechas nas medidas contra desvios*. [online] O Globo. Available at: <https://oglobo.globo.com/economia/petroleo-e-energia/2015/05/13/615843-em-reuniao-de-abril-auditoria-alertou-petrobras-sobre-brechas-nas-medidas-contradesvios> [Accessed 17 Aug. 2017].

Schickora, J. (2011). Bringing the Four-Eyes-Principle to the Lab. *Munich Discussion Paper No. 2011-3*.

TCU. (2016). *TCU analisa sistema de contratações da Petrobras*. [online] Available at: <http://portal.tcu.gov.br/imprensa/noticias/tcu-analisa-sistema-de-contratacoes-da-petrobras.htm> [Accessed 13 Aug. 2017].

Treviño, L., Weaver, G., Gibson, D. and Toffler, B. (1999). Managing Ethics and Legal Compliance: What Works and What Hurts. *California Management Review*, 41(2), pp.131-151.

United Nations Office on Drugs and Crime (2004). *United Nations Convention Against Corruption*. [online] Available at: https://www.unodc.org/documents/brussels/UN_Convention_Against_Corruption.pdf [Accessed 24 Jul. 2017].

Vianna, M. (2014). *Brazilian State Owned Enterprises: A Corruption Analysis*. The George Washington University.

Vianna, M. (2017). *O Novo Estatuto das Empresas Estatais: o que muda realmente? - Compliance Review*. [online] Compliance Review. Available at:

<http://complianceview.com.br/novo-estatuto-das-empresas-estatais/> [Accessed 23 Jul. 2017].

Weaver, G. and Clark, C. (2015). Behavioral Ethics, Behavioral Governance, and Corruption in and by Organizations. In: D. Torsello, P. Heywood and P. Hardi, ed., *Debates of Corruption and Integrity*, 1st ed. Palgrave Macmillan UK.

All Working Papers are downloadable free of charge from the SCSC website:

<http://www.sussex.ac.uk/scsc/discussion-papers>