



Munich Personal RePEc Archive

EXECUTIVE PAY AND PERFORMANCE IN PORTUGUESE LISTED COMPANIES

Alves, Paulo and Couto, Eduardo and Francisco, Paulo

April 2014

Online at <https://mpra.ub.uni-muenchen.de/55189/>
MPRA Paper No. 55189, posted 10 Apr 2014 11:24 UTC

EXECUTIVE PAY AND PERFORMANCE IN PORTUGUESE LISTED COMPANIES

Paulo Alves^a, Eduardo Barbosa Couto^b and Paulo Morais Francisco^c

^aInstituto Superior de Contabilidade e Administração de Lisboa, Av. Miguel Bombarda, 20
1069-035 – Lisbon, Portugal and Portuguese Securities and Exchange Commission, Rua Laura Alves, 4
1050-138 Lisbon. Phone; +351 - 213 177 000. Email: pauloalves@cmvm.pt

^bInstituto Superior de Economia e Gestão; Technical University of Lisbon, Rua Miguel Lupi, 20; 1249-
078 - Lisbon, Portugal and ADVANCE. Phone: +351 - 351 213 970 264. Email: ecouto@iseg.utl.pt

^cInstituto Superior de Economia e Gestão; Technical University of Lisbon, Rua Miguel Lupi, 20; 1249-
078 - Lisbon, Portugal and ADVANCE. Phone: +351 – 351 213 970 264. Email:
paulofrancisco@iseg.utl.pt

Abstract

This essay analyses the relationship between corporate governance practices and Chief Executive Officer (CEO) wages from a sample of Portuguese listed companies over the period from 2002-2011. The relationship between CEO total compensation and shareholders return, firm characteristics, CEO characteristics, board of directors and shareholders characteristics is analysed. It is found that firm specific factors accounts for the majority of the variance in total CEO pay, while firm performance accounts for less than 5%. It is also found that the CEO characteristics, board of directors' structures, and shareholders features are related with the CEO pay. The policy implications of these results are then derived.

Keywords: Pay, performance, CEO, corporate governance, listed companies, Portugal.

JEL classification: G30, G32, J33, L22

1. Introduction

Public listed firms are characterized by the separation of ownership (the principal - shareholders) and control (the agent - management). Unless effective corporate systems of governance are in place, agency-costs caused by the different principal-agent interests are incurred and firm value reduced (Jensen and Meckling, 1976; Fama and Jensen, 1983). A particular manifestation of agency costs is excessive Chief Executive Officers (CEO) compensation. Governance practices endeavour to align the principal's (shareholders') interests with the agent's interests to maximise the shareholders' value. The natural hypothesis is therefore that a firm with more efficient governance practices in place should observe CEO compensation more aligned with firm performance. In other words, firms that follow corporate governance best practices should observe less excess CEO earnings. The question is which corporate governance devices are more efficient?

The present study analyses the relationship between corporate governance practices and CEO earnings in Portuguese companies from 2002-2011, by means of several panel data estimation models, including a dynamic micro panel data model (Arellano-Bond, 1991). Several sets of factors are analysed: firm performance, firm specific characteristics, CEO specific characteristics, board of directors and ownership structure. The results reveal that total return to shareholders is positively associated with total CEO pay; however this variable explains only a small fraction of total CEO earnings. Firm specific characteristics are found to explain a larger amount of the CEO earnings variability. Particularly, it is found that firm size and dividend yields are positively associated with higher CEO earnings. Moreover, the CEO earnings are lower in family and regulated firms. With respect to CEO specific characteristics it is found that CEO age and the fraction of the CEO earnings that are variable drive the executives' earnings up. The results also show that CEO education and stock based compensation might reduce

CEO total earnings. With respect to the board of directors' characteristics it is found that the existence of a remuneration committee does not restrict the CEO's to extract over paid earnings. On the other hand, the results support the view that a large fraction of independent directors might lower CEO excess earnings. Finally, with respect to the shareholders characteristics, the results found support the view that anti-takeover devices such as shareholders agreements and voting caps might enable CEOs to extract extra rents. On the other hand, the level of participation in the shareholders general meetings and the free float are found to be negatively associated with the CEO earnings.

The present research contributes to the corporate governance literature in several ways. First, it adds new insights as to whether a more independent board of directors' can in fact limit the ability of CEO's to earn excess earnings. Although this hypothesis has been tested empirically no consensus has yet been achieved. For instance, Chhaochharia and Grinstein (2009) provide evidence that a more independent board of directors is negatively associated with CEO compensation but Guthrie et al. (2012), using the same data sample and excluding just two outliers (from a total of 865 firms), show that there is no effect between the level of board independence and the level of CEO pay. Secondly, different corporate governance devices can have complementary or substitutive effects (Farinha, 2003). In that sense, analysing the effect of a single set of corporate governance devices on the level of CEO pay may provide biased results and misinterpretations. To address that potential problem, in addition to firm specific variables, this paper includes a larger than usual set of corporate governance variables, including ownership variables, shareholders meetings data and CEO individual characteristics. Finally, the majority of the empirical research on CEO compensation builds on either US or UK data, where financial markets are more efficient and corporate governance practices are potentially more developed when compared with small European countries such as Portugal. A

number of issues that are specific to Portugal might make unrealistic the generalization of those countries results. For instance, there are only two codes of governance in Portugal, one established by the National Securities and Markets Authority (CMVM) and other by Portuguese Corporate Governance Institute. This is uncommon when compared with the observed codes of governance worldwide; such codes are generally drawn up by governments, directors' associations, managers' associations, professional bodies and investors, and the codes are usually overseen by autonomous watch-dogs (Aguilera and Cuervo-Cazurra, 2004). Furthermore, not all of the listed companies completely respect Portugal's code. Finally, there are two types of board systems: the single-tier system that is common in Latin countries and the two-tier system that is common in countries based on the common law tradition, such as the UK (Rose, 2006). The concentration of power in a single-tier system, such as in Portugal, might restrict the impetus to adopt governance principles that are considered to be efficient in other countries. Moreover, the European Commission stresses the importance of having a non-executive chairman on the board of directors (Berglof, 1997) which is not observed in the majority of the Portuguese public firms. Taking into account this framework, one can assert that Portugal lacks the necessary governance codes of practice. Further, the high concentration of power make these firms perfect places for CEOs to receive excessive payment relative to his or her performance (Durnev and Kim, 2005; Ikaheimo, et al., 2011). These facts make it interesting to analyse pay and performance in this market.

The paper is organised as follows. In the second section, the contextual setting is presented. In the third and fourth sections, the literature survey and the theoretical framework are presented. The fifth section presents the hypotheses. The sixth section presents the data and the methodology. The seventh section discusses the results. Finally, the eighth section concludes the paper.

2. Contextual setting

Governance practices are based on codes. A governance code is a set of standards that governs the role and the composition of the board of directors, the relationships within the board, the auditing and information disclosure and the selection and dismissal of directors and senior managers (Khurshed, et al. 2011; Ammann, et al. 2011; Ozkan, 2007, 2011; Florackis and Ozkan, 2009; Richard, et al. 2009; Aguilera and Cuervo-Cazurra, 2004). Pay-performance contracts are negotiated with the purpose of aligning the principal-agent relationship, but when based on standard accounting measures, they can be manipulated to boost the executive's earnings. Monitoring the firm management is therefore crucial to aligning interests. The efficiency of the board monitoring role depends on a number of factors identified by previous research (Canyon, 1997; Benito and Canyon, 1999; Canyon and Murphy, 2000; Sawicki, 2009; and Ozkan, 2011), the most significant of which is the independence of the external directors from the CEO and the internal board members. If the CEO influences the director's election process, the independence of the board is compromised and CEO monitoring is rendered ineffective. The result is CEO entrenchment and the opportunity for him to demand earnings in excess of the market equilibrium wage.

The Portuguese corporate governance code evolved from an initial set of non-binding recommendations that were issued by the Portuguese securities and markets authority (CMVM). The first draft of this code was written in October 1999, and it suggested that listed firms should disclose information about 15 governance recommendations, such as shareholders' voting rights and proxy, conflicts of interest, the board of directors' structure, and director's functional roles. In relation to the board of directors, the code explicitly encouraged the inclusion of independent members in the managerial bodies.

During 2001, the code was revised to include the “comply or explain” principle, allowing firms to choose not to follow the code’s prescriptions, as long as they disclosed the reasons for their non-compliance. In this revision, some of the recommendations were upgraded to bidding rules, and the governance report format became mandatory. Two recommendations related to the board members’ remuneration were added. The first recommendation stressed the need for a portion of the manager’s total earnings to be linked to the company’s income and the second recommendation was that any stock option plan should be discussed and approved by the shareholders at the annual general meeting. In 2003, the code was revised again, and the recommendations related to board remuneration were restated, insisting that manager earnings “should be aligned with the company interests” and that the annual amount received by the board and key executives should be disclosed on an individual basis. The 2005 code revision added one recommendation, suggesting that boards should have a sufficient number of non-executive board members, and another suggestion restating that shareholders should approve the board remuneration policy. In 2007, the corporate governance code was completely redrafted, with the total number of recommendations increasing from 15 to 43 and many more detailed recommendations having been added. During 2009, a single piece of legislature forced all of the listed firms to disclose the annual amounts received by the board and the key executives on an individual basis. Lastly, in 2010, the corporate governance code was once again redrafted and some disclosure recommendations were changed into mandatory rules.

The present study builds on published data by Portuguese listed firms on their corporate governance annual reports. Particularly, CEO, board of directors and ownership features are analysed.

a. Literature survey

There are several strands in the governance literature. One major line of research focuses on the macroeconomic impact of governance by country (La Porta et al., 1997, 1998, 2000; Durnev and Kim, 2005) and concludes that corporate governance systems are linked to the legal traditions of the country. Countries with a civil law tradition, as opposed to a common law tradition (dominant in Anglo-Saxon countries), are the least effective at protecting shareholders rights (La Porta et al., 1998). Another line of research, more relevant to the present study, adopts a microeconomic approach and focuses on analysing pay, performance and board composition. Research on this issue by Pennathur and Shellor (2002) measured the determinants of CEO earnings as a function of the firm's performance, where performance is measured by the stock returns, investments and funds from operations. Further analyses of the relationship between firm performance and CEO earnings are provided by Gregg et al. (2005), Conyon and Murphy (2000), Ozkan (2007, 2011), Shin and Seo (2011), among others. The overall results show that firm performance does not have a significant impact on CEO compensation and where it does it explains only a small fraction of total CEOs earnings.

Core et al. (1999) analysed the relationship between the CEO's earnings and the board's composition, concluding that the board's composition explains a significant amount of cross-sectional variation in the CEO's earnings after controlling for the standard economic determinants of pay. Their result reveals that the CEO has greater earnings when the governance structures are less efficient. Gosh and Sirmans (2005) concluded that the CEO's earnings depend significantly on the usual economic measures of performance, including firm size and return on assets, as well as on the board's composition. They find that the CEO's earnings are higher in firms with weak monitoring due to either large size or elderly directors. They also find that the existence of a block

holder has an adverse impact on the CEO's earnings. More recently, Chhaochharia and Grinstein (2009) provide evidence that US listed firms with better governance present less excess CEO compensation but Guthrie et al. (2012) fail to confirm this result.

A related stream of literature analyses the relationship between corporate governance and firm performance. In that scope, Rosenstein and Wyatt (1990) analysed the role of external directors on the governance of the firm and concluded that a greater representation of external directors enhances the firm's performance. Yermack (1996) demonstrated that bigger boards are detrimental to performance. Although Bhagat and Black (1999) failed to confirm these results, further corroboration did come from Brickley et al. (1997), who found that external directors enhance shareholder gains in tender offers. However, Agarwal and Knoeber (1996) and Mishra and Nielsen (2000) failed to confirm the positive effects of external directors. Carretta et al. (2011) studied the effect of news releases regarding the board of directors functioning and composition on stock returns in Italy.

A recent survey on the effectiveness of the different corporate governance devices can be found in Edmans and Xavier (2009) and William (2010). The current investigation takes a step forward and analyses Portuguese CEOs earnings and board composition variables, including a quantitative analysis of the individual characteristics of Portuguese listed companies. Compared with Fernandes (2008) study on Portuguese CEO's compensation, this paper adopts a larger data span, uses more variables to complement the previous research in this market and adopts innovative panel data models. Additionally, instead of looking at the executive management earnings as whole, this paper focuses specifically on the CEO earnings. This approach is more interesting when one addressing the board of directors' entrenchment hypothesis.

b. Theoretical framework

Williamson (2002) presented a theoretical framework to analyse governance issues at the firm level. Hermalin and Weisback (1998) provided a theoretical framework that related pay and performance to the board composition, and Fama and Jensen (1983) presented a related theoretical framework. These 3 models are the theoretical basis for the current research. In the Hermalin and Weisback (1998) model, board effectiveness is a function of board independence. Four elements are essential in explaining this relationship: first, management turnover is more closely linked to earnings than to stock returns; second, a board tends to become less independent over the course of a CEO's career; third, independent directors are added to the board following poor corporate performance; and fourth, CEO turnover is negatively related to performance and this relationship is stronger when the board is more independent.

In theory, the CEO's salary is fixed by the corporate board depending on supply and demand. The wage may be fixed at the optimal level if the observed board structures are conducive to CEO monitoring. If the proper board structures are in place, the pay-performance contracts are optimal and reflect the economic determinants of performance. However, if the director election process is influenced by the CEO, the independence of the board is compromised and CEO monitoring is rendered ineffective, which results in CEO entrenchment and the opportunity for the CEO to demand earnings in excess of the equilibrium wage rate. Under this scenario, the board structure variables reflect the effectiveness of the firm's governance structure and impact CEO earnings. The wage will be non-optimal in view of the performance observed.

c. Hypotheses

Four sets of factors that explain the CEO's earnings have been suggested in the literature: (1) company performance (e.g., Coughlan et al., 1985; Jensen and Murphy, 1990); (2) firm specific characteristics (e.g., Jensen and Ruback, 1983, Core et al., 1999, and Gosh and Sirmans, 2005); (3) CEO specific characteristics (e.g. Core et al., 1999; Ozkan, 2011); (4) board of directors structure and composition (e.g. Conyon et al. 1995; Conyon et al. 1997); and (5) shareholders and ownership characteristics (e.g. Shin and Seo, 2011). The hypotheses proposed in this research are derived from the abovementioned theoretical models, and from the explanatory indicators found in the empirical literature.

i. Performance hypothesis

Return to shareholders

Under the agency theory hypothesis, CEO compensation packages are designed to provide incentives for the CEO to increase the shareholders' wealth (Jensen and Murphy, 1990). If payments are designed this way, it should be observed a positive relationship between the CEO's compensation and the firm's performance. To test this relationship, this paper follows Core et al. (1999) and uses the total return to shareholders (TRS) as proxy for firm performance. TRS is defined as the market stock price annual return including any dividends paid out to shareholders.

H1: *CEO earnings are a positive function of total return to shareholders (TRS).*

ii. Firm specific characteristics

Firm size

There is a large body of evidence that connects the firm size to compensation: Jensen and Murphy (1990), Core et al. (1999), Renders, et al. (2010), and Gregorič et al. (2010),

just to name a few. The theoretical justification for this connection is that managers of larger and more complex firms must be rewarded for the greater dimension/complexity of their work. For instance, Core et al. (1999) argue that larger firms with greater growth opportunities and more complex operations will demand higher-quality managers and will provide higher equilibrium wages; therefore, it should be observed larger payments to these managers. Smith and Watts (1992) find evidence that firms that have greater investment opportunities employ executives who are more highly skilled and who must be given a higher level of pay. It is therefore expected to see a positive relationship between the CEO's pay and higher levels of the firm's complexity.

Employees

Another firm specific characteristic that might influence the level of CEO pay is the level of the firm dependability on human capital. Under the stakeholders theory (Freeman, 1984), after controlling for firm size, firms whose performance largely depends on skilled and motivated employees shall have more ethical concerns under the penalty of creating internal conflicts and thus harming the performance of the company. Within this line of thought, it is expect to see a negative relationship between the total number of employees and CEO's excess compensation.

Financing and pay-out policy

Another two specific firm features have been suggested in the literature to have an impact on CEO total earnings: the use of debt financing and the level of dividends paid out to shareholders. Jensen (1986) has provided the theoretical framework for the relationship between agency costs and debt. In his framework, debt is beneficial in that it reduces the agency costs of free cash flows. A conflict of interest between the shareholders and the managers will arise when the firm generates substantial free cash flow; the use of debt requires managers to pay out future cash flows, thereby reducing the

cash flow available for discretionary spending by the managers. This mechanism reduces the CEO's ability to extract extra rents, and a negative relationship between the use of debt financing and the CEO's earnings is expected. This hypothesis has been tested in the literature by Ryan and Wiggins (2001), Florackis and Ozkan (2009), and Shin and Seo (2011) and their results are consistent with the proposal that debt minimises agency costs. In a similar view, firms that pay out more dividends have potentially less free cash-flow available and therefore dividends may help to reduce agency problems (Farinha, 2003; Sawicki, 2009). Moreover, with less internal generated funds available those firms must raise external capital more frequently and by that means provide updated information to the market, reducing information asymmetries and therefore agency costs (Easterbrook, 1984).

Family

Literature on family owned companies (e.g. Schulze et al., 2001; Dyer, 2006; Herrero, 2011) argue that agency problems in family businesses are of different scope than of those found in widely held public firms. Anderson and Reeb (2003) provide evidence that family ownership is an effective organizational structure. Particularly, these authors find that family firms perform better than nonfamily firms and when family members serve as CEO, performance is better than with outside CEOs. This piece of evidence suggests that family owned firms face less agency costs and the ability for CEOs to extract extra rents from the firm is less likely. In that sense we expect to see lower levels of excess CEO earnings in family owned firms.

Regulated

The last firm characteristic analysed in the present study is whether the firm is a regulated firm or not. Banks and utilities have the particularity of being subject to

predetermined rules in terms of business conduction which are imposed by regulators. Further, beyond the normal monitoring devices in place for non-regulated firms, regulators provide additional monitoring and disciplining of the management (Demsetz and Lehn, 1985). Given this argument we expect to see lower levels of CEO pay in regulated firms.

In sum, it is conjectured that a set of firm specific characteristics influence the level of CEO's total earnings, specifically: firm size; firm dependability on employees; use of debt financing; dividend pay-out policy; whether the firm is family owned; and whether it is a regulated firm. The hypothesis to be tested is the following:

H2: *CEO earnings are a function of firm specific characteristics.*

iii. CEO specific characteristics

CEO age and tenure

Several CEO specific characteristics have been suggested in the literature to have impact on CEO compensation. Two of those characteristics are CEO age and tenure. The managerial entrenchment hypothesis is usually presented to explain that relationship. The rationale is that CEO age and tenure increases his level of firm specific knowledge (experience) and therefore the greater the difficulty to replace him. In other words, any CEO characteristic that enhances his entrenchment within the firm may have influence on his excess level of compensation. For that reason, pay-performance contracts are usually seen more generous for older CEOs and with a longer tenure, suggesting that there is managerial entrenchment in the company (Ryan and Wiggins, 2001; Florackis and Ozkan, 2009; 2011). Within that line of thought, Hill and Phan (1991) find that the relationship between the CEO's pay and the stock returns weakens with tenure. In light

of these results, it should be expected to find a positive relationship between the CEO's age and tenure, and the CEO's earnings.

CEO education

Another CEO specific characteristic that has recently received some attention from the corporate governance literature is the CEO education. Based on the human capital theory (Becker, 1962), executive officers with higher levels of education should correspond to managers with more abilities and consequently firms with better performance. Within that theoretical framework, Bhagat et al. (2010) find that CEOs with MBA degrees lead to short-term improvements in operating performance but fail to find a relationship between CEO education and long-term firm performance. Also, corporate governance codes around the world, including the Portuguese code often require (or recommend) firms to disclose their managers' curriculum vitae. The idea is that the shareholders have the pertinent information concerning the skills and experience of the firm's management. Nevertheless, in the Portuguese context it is not uncommon to see CEOs with no college degree (or any formal management education) and long tenure, suggesting that either education is not a determinant for Portuguese firm performance or that the shareholders appreciate other abilities beyond education. Within this line of reasoning, education can be used as an inverse proxy for CEO entrenchment. A less educated CEO should in theory provide *ex-ante* less guarantees of leading the firm successfully. But, if the manager remains in the company with a lower level of education than their peers, it may mean he has specific knowledge about the business that make his replacement be very costly, (e.g. special ties with major clients or with the government). In other words, CEOs with low levels of education may indicate entrenched managers. If that is the case then one should find a negative relationship between CEO education levels and CEO excessive earnings. On the other hand, based on the human capital theory, more

educated managers should provide better skills to the firm and therefore require higher levels of compensation. In sum, whether CEO education level is positively or negatively related with CEO compensation is an empirical question which will be tested in the present study.

Compensation structure

Beyond the CEO age, tenure and education the present study also investigates other two features related with the structure of the CEO compensation package: the fraction of the variable earnings in the total compensation package and whether or not that variable compensation is stock based. The Portuguese corporate governance code explicitly highlights the need for a part of the CEO total compensation to be variable and linked to the firm performance. In that view, CEOs with a larger fraction of variable compensation should have their total earnings more aligned with firm performance and thus less likely the ability for executives to extract extra rents from the firm. Moreover, if listed firms have compensation schemes that are not only based on cash payments but are also based on stock compensation, such as stock option grants and restricted stocks, CEOs should also observe less excessive pay. If this type of compensation structure (with variable and stock based earnings) serves as an incentive to align the executives' interests with the shareholders' interests, then after controlling for firm performance, it should be expected a negative relationship between the total cash compensation earned by the CEOs and the fraction of variable compensation. Furthermore, if the variable compensation is fully or partially stock based then those CEOs should also earn less excessive pay. Nevertheless, as shown by Bergstresser and Philippon (2006), manipulated reported earnings through discretionary accrual accounting are more pronounced at firms where the CEO's total potential compensation is more closely tied to the value of stock and option holdings.

Given the above discussion, it is conjectured that CEO age, tenure and education, and the structure of the total CEO earnings influence the level of CEO's total earnings. The hypothesis to be tested is the following:

H3: *CEO earnings are a function of CEO specific characteristics.*

iv. Board of directors characteristics

The way the board of directors is structured is a major determinant of agency costs (Hermalin and Weisback, 1998). Several features of the board of directors have been suggested in the governance literature to have impact on agency costs. The present study addresses the following board features: whether the chairman of the board is the same person as the CEO; the board size; the board activity (measured as the total number of meetings); the remuneration committee; the fiscal board and auditing committee; the size of other governance commissions; the level of board independence (from executive directors); board gender diversity; and the presence of foreign directors.

CEO/Chairman duality

The literature analysing board of directors' structures has frequently suggested that when the CEO is also the chairman of the board (CEO/Chair duality) he has significant power over the board and therefore more likely to be entrenched and able to extract extra rents (e.g. Core et al., 1999; Shin and Seo, 2011). However, Florackis and Ozkan (2009) highlights that empirical studies on UK listed firms do not support that view.

Board size

With respect to the board size, the same authors reveal that there is no consensus in the literature of whether or not bigger boards are more efficient in monitoring management. On the one hand the decision making process in bigger boards are

potentially less efficient and the monitoring role of the board compromised. Yermack (1996) provides empirical evidence supporting this argument. On the other hand it is more difficult for the CEO to negotiate generous compensation packages far beyond his ability to generate wealth for shareholders. Furthermore, having a large number of other directors in the board can mean more potential CEO substitutes which can then lead to less entrenchment in the firm. Given this discussion the board size can either be positively or negatively related with the CEO compensation.

Board activity

Another board of directors feature that can have impact on CEO compensation is the board activity, measured as the total number of board meeting held during the year. The theoretical rational behind this relationship is that boards that meet more frequently might also perform their monitoring functions more frequently. Literature on corporate governance and firm performance has documented however that board that meet more frequently is less efficient (Vafeas, 1999). Consistent with this result, Shin and Seo (2011) find a positive relationship between the total number of board meetings and the total CEO pay, suggesting that board activity is inversely related to its efficiency.

The Portuguese directors' remuneration can either be fixed directly by the shareholders within the general meeting or by a committee of shareholders elected at the general meeting¹. The Portuguese corporate governance code recommends the remuneration committee to submit to the general shareholders meeting appreciation the directors' remuneration policy. Implicitly, the corporate governance code recommends firms to elect a remuneration committee. In this study we also analyse the existence and dimension of the remuneration committee. If this committee is in fact an important

¹ Article 399 and 429 of the Portuguese Commercial Company Act.

corporate governance device one should see a negative relationship between the total number of remuneration committee members and excess CEO earnings.

Fiscal board and auditing committee

Under the current governance structures that are admissible by Portuguese law, companies can choose to have a fiscal body that is either a fiscal board (or a single person) or an auditing committee. The auditing committee is part of the board of directors, while the fiscal body is a separate entity. The latter can be composed of a single fiscal person or could be a fiscal board; a fiscal board normally consists of at least 3 persons that are proposed by the board of directors and elected in the shareholders' meeting. The fiscal board carries, among other duties, the responsibility for analysing the quality of the financial information provided by the executive board (Beasley, 1996) and guaranteeing that management is acting on behalf of the shareholders' interests. It is assumed that a larger fiscal board can more efficiently monitor the management quality and the financial information provided by the board of directors to the shareholders. Additionally, a large fiscal board is less likely to become entrenched with the board of directors and is less likely to have a conflicts of interest arising from the fact that they are recruited by the board.

One of the arguments in favour of a creating a permanent auditing body in the board of directors, instead of having a separate fiscal board, is that the members are more often present at board meetings and assess the executive director's work more closely (Bronson et al., 2006, Piot and Janin, 2007, and Brick and Chidambaran, 2010). The fiscal board meets less frequently, and their monitoring role is more limited because they do not have access to the same level of information as the auditing committee members. At the same time, by including an auditing committee within the board of directors, the potential entrenchment could become more accentuated. Nevertheless, similar to the fiscal board,

a larger auditing committee should have fewer issues around entrenchment, and a negative relationship between the CEO's pay and the total number of auditing committee members should be perceived. Piot and Janin (2007), in their own research in France have considered the effect of having an internal auditor and the relationship between the internal auditor or auditing committee and earnings management. They have also assessed the effects of different dimensions of auditing quality, such as the prestige of the accounting firm, the existence of an auditing committee and its dependence on management and how these dimensions change profits. They found that the presence of accountants from 5 famous auditing companies did not cause a reduction in earnings management. The existence of an auditing committee, however, did cause greater earnings management. They express that these results in corporate governance are related to French companies, which are different from U.S. companies. The fiscal board and auditing committee dimensions are separately analysed in the present study to see which type of fiscal structure better limits the CEO's power in negotiating a pay for performance contract.

Special governance committees

Beyond the remuneration committee and the auditing committee, Portuguese listed firms can implement in their governance structures other special committees. Examples of these special committees are the corporate governance assessment committee, a nominating committee, among others. The existence of these committees is also recommended by the Portuguese governance code. These special committees, normally composed with independent directors, are allegedly created with the aim of evaluating and enhancing corporate governance practices within the firm. As such, in firms with such committees, one should expect to see less agency problems (Brown and Caylor, 2009), and therefore less CEO excess earnings.

Independent directors

In pay-performance contracts, the CEO's earnings are determined by the board independence (Canyon et al., 1995; Canyon and Murphy, 2000). In light of the Portuguese corporate governance code and following Fama and Jensen (1983), independent directors should monitor the executive directors to ensure that they are working on behalf of the shareholders' best interests. Given the independent directors' role in the determination of pay-performance contracts, a higher number of independent directors make it less likely that the CEO will have an opportunity to successfully negotiate for an overpaid contract. Within this line of reasoning, it should be expected a negative relationship between the CEO's pay and the fraction of independent directors. However, as Jensen (1993) stresses, outside directors are likely to be aligned with management, not only because top management has a non-negligible influence on the selection of the board members but also because, normally, these directors hold the same duties at many other firms. Thus, the board members that are appointed (or whose selection is influenced) by the current CEO are more loyal and less vigilant, and therefore they are expected to be more generous when making decisions about the CEO's earnings.

Although many empirical studies have analysed the effectiveness of board independence no consistent results have been yet achieved. For instance, Chhaochharia and Grinstein (2009) provide evidence that independent boards are more likely to reduce CEO earnings suggesting that board independence is a major determinant of its efficiency. However, Guthrie et al. (2012), fail to confirm such results. Abdullah (2004) study on the effects of board independence do not provide any relation between board independence

and firm performance, suggesting that board independence is not an effective agency costs controlling device.

Gender diversity

Corporate governance codes around the world have recognised that having women on the board is beneficial in promoting ethical behaviour, including governance. For example, the Norwegian government requires that all of the boards of directors of publicly held firms be composed of at least 40% women and the Spanish government has also committed to enforce this guideline by 2015 (Hoel, 2008; De Anca, 2008). Around the world, other countries are considering legislation that recognises the importance of developing female talent at the board level (Singh, 2008). The theoretical research regarding having women on a board of directors (see Terjesen et al., 2009, for a review) argues that a board of directors with greater gender balance improves corporate governance through better use of the capital of the entire talent pool. These authors also suggest that the more diverse boards are more likely to hold the CEOs accountable for poor stock price performance. Given this line of thinking, if there are more females on a board of directors it should be less likely that the CEO will get an overvalued payment contract. As such, it would be expected to observe a negative relationship between the number of females on the board and the CEO's earnings.

Foreign directors

Another board of directors feature that might influence CEO earnings is the level of foreign directors in the board. Transnational listed corporations are the main drivers of globalisation and there is evidence that the compositions of their boards is also becoming more international (Staples, 2007). Despite this evidence, scant research has been conducted into the role played by foreign managers on national boards. An exception is

found in Lee et al. (2012) who show that the presence of foreign directors increases audit quality. This evidence might suggest that these directors enhance the firm transparency environment and as such the board effectiveness. Within this line of reasoning, boards with a larger fraction of foreign directors can limit the ability of the CEO to extract excessive earnings through a more effective monitoring role of the board. However, on the other hand, they may also support a more international remuneration policy to the CEO. Staples (2007) concludes that the trend toward more multinational boards provide a transnational social infrastructure, which may facilitate the emergence of a global business class. If this is the case and Portuguese managers are paid under the average levels of international CEO earnings the presence of managers from abroad can contribute to a higher CEO pay package.

Given the above discussion the fourth hypothesis is defined as follows:

H4: *CEO earnings are a function of board of directors' characteristics.*

v. Shareholders and ownership characteristics

Shareholders activism

The last set of factors analysed within this study is the shareholders characteristics of the Portuguese listed firms. The most simple and elderly corporate governance device is the shareholders general meetings where they can assess managers' work. It is at the general meetings that shareholders decide on fundamental matters of the firm, such as the election of the board of directors and assessment of the executive management alignment with the shareholders' interests (Easterbrook and Fischel, 1996). In that sense shareholders activism measured as the level of shareholders meeting participation can reduce agency costs and therefore CEO pay (Conyon and Sadler 2010).

Ownership dispersion

In pay-performance contracts, the CEO's earnings are also determined by the level of ownership dispersion (Cho, 1998). Manne (1965), in one of the first papers about the market for corporate control, claimed that "...only the take-over scheme provides some assurance of competitive efficiency among corporate managers and thereby affords strong protection to the interests of vast numbers of small, non-controlling shareholders". In the same line of thought, Bebchuk, et al. (2002) say that "...a company whose share price sags should become more vulnerable to a hostile takeover, which would likely cause the executives to lose their positions, pay, and perquisites". In fact, the risk of losing their positions makes the market for managers more efficient and makes it less likely that CEOs will extract extra rents from their firms. To test this hypothesis, this paper uses the level of free-float as a proxy for the market for control and also the global holdings of the three greatest shareholders as an inverse proxy of capital dispersion. Listed firms that have a more dispersed ownership are more likely to be in the market for control, and therefore it is less likely that the CEO has enough power to increase his/her wage (Core et al., 1999; Gosh and Sirmans, 2005). We then expect to see a negative relationship between CEO's earnings and the level capital dispersion.

Shareholders agreement

Whether or not some shareholders secure an agreement where, for example, large block holders agree to vote jointly and if they wish to sell their positions they give the other party the preference in that transaction might also influence the firm agency costs. Following the same rational presented above, this sort of arrangements might influence (negatively) the market for corporate control in the way that a hostile takeover is less likely to be successful when a large percentage of the firm voting rights is concentrated

under the agreement (Cronqvist and Nilsson, 2003). We therefore expect to see lower levels of CEO's earnings in firms where such shareholders agreements do not exist.

Voting cap

Voting cap restrictions included in firms' by-laws can make the market for corporate control potentially less efficient and hostile takeovers more difficult for potential bidders (Bebchuk et al., 2002). In fact, voting cap restrictions result in a supermajority vote by shareholders to approve any hostile takeover bid for control (Jensen and Ruback, 1983). The Portuguese corporate governance code has encouraged firms to withdraw this type of restriction, but firms claim that if it is true that voting caps makes hostile takeovers more difficult, it is equally true that minority shareholders believe that voting caps increase their voting power. Balancing both arguments, the effect of voting caps on pay-performance contracts is not straightforward. On the one hand, this feature can be seen as a defence measure against hostile takeovers and therefore positively related to CEO earnings. On the other hand, voting caps facilitate the participation of minority shareholders, thus diminishing the power of the major shareholders that normally select the management team. As such, whether voting caps reduce or increase CEOs earnings is an empirical question.

Given the above discussion the fifth hypothesis is defined as follows:

H5: *CEO earnings are a function of shareholders and ownership characteristics.*

3. Data and methodology

i. Data

This research study conducted on Portuguese listed companies is based on a set of hand-collected corporate governance data that was gathered from the companies' yearly

financial reports, corporate governance reports and websites for the years 2002-2011. All listed companies on the Portuguese stock exchange that have publicly available yearly financial and corporate governance reports as of the end of 2011 were selected. The data collection resulted in a sample of unbalanced panel data covering 10 years across 50 companies and 450 year/firm observations.

Table 1 summarises the characteristics of the data that used in this paper to test the proposed hypotheses. From the remuneration section of the annual corporate governance reports for each company, the CEOs' compensation data was collected as of the end of the fiscal year during which compensation amounts were earned. The disclosure of this information became mandatory for all listed companies in 2009 and was non-compulsory in the previous years. Therefore, from 2002 to 2008, the original database lacks data for some firms on a direct measure of the CEO's earnings. However, for the entire period of the sample, companies were obliged to disclose aggregated information on the executive board members' compensation. Thus, for each company/year where the database had missing data, the aggregated executives' earnings for that year was matched with the disaggregated CEO's data for the following year and then scaled the data for the total number of executive members. By these means, the missing CEOs' earnings data was estimated. To account for skewness, the natural logarithm of the CEO's total cash earnings is used. The fundamental and the market data were extracted from Bloomberg. In appendix A, table A.1 the list of the Portuguese

Table 1 - Variable definitions and data sources

Variable	Definition and Source
<i>Dependent variable</i>	
1. CEO earnings	CEO's total earnings (€). This figure includes fixed and variable cash earnings as well as any bonuses provided by the company, such as multi-period bonuses, stock based compensation and pension fund contributions. (<i>Company corporate governance reports</i>).
<i>Performance</i>	
2. TRS	Total Return to Shareholders. This return is calculated by the end of year return, including any dividends paid during the year. (<i>Bloomberg</i>).
<i>Firm characteristics</i>	
3. Assets	The book value of total assets. (<i>Bloomberg</i>).
4. Employees	The total number of employees as reported by the firm in the yearly financial report. (<i>Bloomberg</i>).
5. Debt to assets ratio	The ratio of total debt to total assets (%). (<i>Bloomberg</i>).
6. Dividend yield	The annual dividends per share paid-out by firms divided by the end of the year stock. (<i>Bloomberg</i>).
7. Family dummy	A dummy variable which takes the value of 1 if the controlling shareholder is a family member or an unlisted company, and 0 otherwise. (<i>Company corporate governance reports</i>).
8. Regulated dummy	A dummy variable which takes the value of 1 if the firm is a regulated firm (either a bank or a utility firm), and 0 otherwise.
<i>CEO characteristics</i>	
9. CEO age	The age in years of the CEO as of the end of the fiscal year. (<i>Company corporate governance reports</i>).
10. CEO Tenure	The total number of years that the CEO is in that position in firm as of the end of the year. (<i>Company corporate governance reports</i>).
11. CEO education	An ordinary variable which takes the value of 1 if the CEO does not have any university degree; the value of 2 if holds a bachelor's degree; the value of 3 if holds a bachelor's degree and one or more post-graduation courses; the value of 4 if holds a master's degree; and 5 if it holds doctoral degree. (<i>Company corporate governance reports and web information</i>).
12. Variable earnings (%)	The percentage of all non-fixed CEO earnings compared with the total CEO earnings. (<i>Company corporate governance reports</i>).
13. Stock earnings	A dummy variable which takes the value of 1 if the CEO earns any stock-based compensation, stocks and/or options. (<i>Company corporate governance reports</i>).
<i>Board of directors characteristics</i>	
14. CEO/Chair Duality	A dummy variable that takes the value of 1 if the company's Chief Executive Officer is also Chairman of the Board and 0 otherwise. (<i>Company corporate governance reports</i>).
15. Board size	The total number of directors on the firm's board. If the company has supervisory and management boards, this is the total members of both boards. (<i>Company corporate governance reports</i>).

Table 1 (Continued).

Variable	Definition and Source
16. Board meetings	Total annual board meetings. (<i>Company corporate governance reports</i>).
17. Remuneration committee	Total number of members of the remuneration committee board. (<i>Company corporate governance reports</i>).
18. Fiscal board	Total number of members of the fiscal board. (<i>Company corporate governance reports</i>).
19. Auditing committee	Total number of members of the auditing committee. (<i>Company corporate governance reports</i>).
20. Other governance commissions	Total number of members of other corporate governance related commissions. (<i>Company corporate governance reports</i>).
21. % independent	% of independent members on the board as reported by the firm. An independent member is a non-executive director with no economic or familiar relationship with a dominant shareholder. (<i>Company corporate governance reports</i>).
22. % women	% of female members on the board. (<i>Company corporate governance reports</i>).
23. % foreign	% of foreign members on the board. (<i>Company corporate governance reports</i>).
<i>Shareholders and ownership characteristics</i>	
24. Shareholders general meeting	Percentage of the capital represented in the annual general shareholders meetings. (<i>company corporate governance reports</i>).
25. Free float	Percentage of the company's shares that are freely traded and is calculate as the total number of shares not held by shareholders with more than 5% of the capital divided by the total number of shares outstanding. (<i>Company corporate governance reports</i>).
26. Top 3	The sum of the stakes of firm's three largest investors. (<i>Company corporate governance reports</i>).
27. Shareholders agreement	A dummy variable which takes the value of 1 if the firm is aware of any major shareholders agreement and 0 otherwise. (<i>Company corporate governance reports</i>).
28. Voting cap	The inverse of the voting cap percentage (maximum percentage of capital allowed to vote in the shareholders meetings). (<i>company corporate governance reports</i>).

listed firms analysed in the present study is presented, as well as the time period considered and the number of year observations for each firm.

Table 2 presents descriptive statistics for the variables used in our analysis. The average annual CEO pay yields 722.54 thousand euros. For the period considered the average total return to shareholders was -0.4%. This negative figure is justified by the

subprime crisis and the European sovereign debt crisis that have lead listed firms stock prices to drop significantly after the year 2007. With respect to corporate governance variables it is worth noting that on average 57.6% of the firms has a Chairman of the board which is also the CEO and on average only 26.8% of the directors are considered independent. Finally, the majority of the firms are closely held by few shareholders, since the average percentage of the top three shareholders is 62.5%.

Table 2 - Descriptive statistics of the variables used in the analysis.

Variables	Number of Observations	Mean	Standard Deviation	Minimum	Maximum
1. CEO earnings	450	722.54	858.55	77.00	6,225.32
2. TRS	450	-0.004	0.491	-0.913	3.267
3. Assets	450	27,153.44	134,524.10	23.70	1,251,526.00
4. Employees	450	9,418.94	22,689.78	87.00	193,349.00
5. Debt to assets ratio	450	42.321	16.960	0.000	109.145
6. Dividend yield	450	0.027	0.085	0.000	1.468
7. Family dummy	450	0.491	0.500	0.000	1.000
8. Regulated dummy	450	0.142	0.350	0.000	1.000
9. CEO age	450	54.458	10.634	31.000	83.000
10. CEO Tenure	450	7.376	6.650	1.000	29.000
11. CEO education	450	2.613	1.085	1.000	5.000
12. Variable earnings (%)	450	0.266	0.245	0.000	1.000
13. Stock earnings	450	0.187	0.390	0.000	1.000
14. CEO/Chair Duality	450	0.576	0.495	0.000	1.000
15. Board size	450	10.156	6.220	3.000	31.000
16. Board meetings	450	12.824	8.973	3.000	67.000
17. Remuneration committee	450	2.753	1.025	0.000	6.000
18. Fiscal board	450	2.198	1.740	0.000	18.000
19. Auditing committee	450	1.229	1.696	0.000	6.000
20. Other governance commissions	450	1.538	4.289	0.000	31.000
21. % independent	450	0.268	0.231	0.000	1.000
22. % women	450	0.055	0.092	0.000	0.400
23. % foreign	450	0.107	0.152	0.000	0.714
24. Shareholders general meeting	450	0.700	0.156	0.078	0.974
25. Free float	450	0.340	0.199	0.000	1.000
26. Top 3	450	0.625	0.224	0.031	0.997
27. Shareholders agreement	450	0.144	0.352	0.000	1.000
28. Voting cap	450	2.695	4.181	1.000	20.000

Notes: Definitions for all variables are provided in Table 1.

ii. Methodology

In order to test the proposed hypotheses we rely on multivariate regression techniques. Since we have longitudinal data (10 years over 50 firms) the regressions estimated will be based on panel data models. The baseline regression model used in this study is a pooled OLS panel data model with the following form:

$$\begin{aligned}
 (CEO \text{ earnings})_{i,t} = & \beta_0 + \beta_1(performance)_{i,t} + \sum_j \beta_j(firm \text{ characteristic }_j)_{i,t} \\
 & + \sum_k \beta_k(CEO \text{ characteristic }_k)_{i,t} + \sum_l \beta_l(board \text{ characteristic }_l)_{i,t} \\
 & + \sum_m \beta_m(shareholders \text{ characteristic }_m)_{i,t} + u_{i,t}
 \end{aligned} \tag{2.1}$$

where *CEO earnings* is the dependent variable measuring total CEO pay at firm *i* during year *t*. *performance* is a covariate measured as the total return to shareholders, *firm characteristic_j* is a set of firm specific variables, *CEO characteristic_k* is a set of CEO related variables, *board characteristic_l* is a set of board of directors features and *shareholders characteristic_m* is a set of shareholders and ownership variables. The β s are the parameters to be estimated and u_{it} is the error term. The relationship between the relevant variables is evaluated based on the t-statistics which are calculated with Huber–White heteroskedasticity consistent standard errors.

Within the pooled OLS estimation technique the observable covariates are assumed to capture all the relevant heterogeneity within the individual firms. In other words, pooled OLS assume that no individual-specific unobserved effect (fixed-effect) is present, and therefore the error term is assumed to be uncorrelated with the covariates and also over time [i.e $Cov(u_{it}; X_{it})=0$, where X_{it} represent the covariates; and also that $Cov(u_{it}; u_{i,t-1})=0$]. Although the present study employees a large set of firm specific variables some firm unobserved heterogeneity may still be present. As such for robustness reasons, after estimating the pooled OLS models, and for those variables that reveal to be

statistically significant we employ a (1) random effects model (RE); (2) a fixed effects model (FE); and a (3) linear dynamic panel data model (AB) as proposed by Arellano and Bond (1991). The random effects model, though also assumes that the unobserved heterogeneity is not correlated with the covariates, it does not require that the error term to be uncorrelated over time [i.e $Cov(u_{it}; u_{i,t-1}) \neq 0$]. In the fixed effects model, each variable is subtracted by its individual average (i.e. within each firm), eliminating the unobservable time-invariant fixed effects. Finally, the Arellano and Bond (1991) linear dynamic panel data estimation procedure allows the first lag of the dependent variable (*CEO earnings_{t-1}*) as a covariate and also the unobserved fixed effects (as in the fixed-effects model). For a thorough description of these panel data models see Wooldridge (2002).

b. Results discussion

Table 3 presents the results of the estimated panel data OLS models. Five specifications are estimated, one for each set of factors presented in the hypotheses section. By these means one can assess the amount of variability explained by each set of factors. The first specification presents the results for the relationship between firm performance and CEO total pay. The coefficient of the current total return to shareholders (TRS) and the previous year TRS are both positive and statistically significant, supporting this paper first hypothesis (H1): the CEO's earnings are positively associated with the firm's performance measured as the TRS. Although it is found supporting evidence that TRS is associated with CEO earnings, the total amount of variability explained by this first specification, as measured by the R-squared yields 3.2%, which means that firm performance explains a little fraction of the total Portuguese CEO earnings.

Table 3 - OLS regressions of CEO earnings

Independent variables	Return (1)	Firm (2)	CEO (3)	Board (4)	Ownership (5)
TRS	0.220*** (2.624)	0.148*** (3.169)	0.045 (0.994)	0.060 (1.358)	0.075* (1.681)
TRS _{t-1}	0.250*** (2.947)	0.158*** (3.761)	0.076* (1.759)	0.088** (2.126)	0.099** (2.384)
Log(assets)		0.372*** (12.831)	0.279*** (9.687)	0.272*** (8.824)	0.274*** (9.011)
Log(employees)		-0.069* (-1.905)	-0.029 (-0.869)	-0.032 (-0.941)	-0.039 (-1.162)
Debt to assets ratio		-0.003* (-1.881)	-0.002 (-1.252)	-0.000 (-0.183)	0.001 (0.518)
Dividend yield		0.511*** (3.050)	0.235** (2.142)	0.269** (2.581)	0.262** (2.469)
Family dummy		-0.069 (-1.200)	-0.199*** (-3.884)	-0.231*** (-3.601)	-0.162** (-2.439)
Regulated dummy		-0.616*** (-5.917)	-0.575*** (-6.576)	-0.532*** (-5.661)	-0.585*** (-6.040)
CEO age			0.004 (1.513)	0.005* (1.700)	0.005* (1.855)
CEO Tenure			0.003 (0.538)	0.004 (0.790)	0.007 (1.327)
CEO education			-0.067** (-2.418)	-0.066** (-2.383)	-0.080*** (-2.952)
Variable earnings (%)			1.200*** (8.391)	1.064*** (7.693)	1.013*** (7.475)
Stock earnings			-0.125* (-1.896)	-0.100 (-1.590)	-0.116* (-1.858)
CEO/Chair Duality				-0.122* (-1.814)	-0.154** (-2.366)
Log(board size)				-0.143 (-1.641)	-0.166* (-1.839)
Board meetings				-0.006 (-1.439)	-0.004 (-1.079)
Remuneration committee				0.063** (2.053)	0.076** (2.545)
Fiscal board				-0.018 (-1.017)	-0.009 (-0.538)
Auditing committee				0.019 (0.876)	0.034 (1.532)
Other governance commissions				0.026*** (4.236)	0.028*** (4.185)
% independent				-0.356*** (-2.833)	-0.302** (-2.457)
% women				0.118 (0.382)	-0.010 (-0.033)
% foreign				0.279 (1.476)	0.338* (1.698)
Shareholders general meeting					-0.733*** (-2.724)
Free float					-0.641** (-2.014)
Top 3					-0.234 (-0.860)

Table 3 (Continued)

Independent variables	Return (1)	Firm (2)	CEO (3)	Board (4)	Ownership (5)
Shareholders agreement					0.188*** (2.989)
Voting cap					0.012* (1.751)
Constant	6.184*** (143.137)	4.314*** (26.553)	4.308*** (19.085)	4.605*** (18.435)	5.364*** (12.652)
Observations	400	400	400	400	400
R-squared	0.032	0.623	0.706	0.739	0.752
Adj. R ²	0.027	0.616	0.696	0.723	0.733
F statistic	6.841	96.666	88.049	60.053	61.843
(p-value)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)

Notes: The dependent variable is log(CEO earnings). Definitions for all variables are provided in Table 1. Heteroskedastic robust *t* statistics in parentheses below the parameters. *, ** and *** refer to significance at 10%, 5% and 1% levels respectively.

In specification (2) we added the firm specific factors to the model as proposed in hypothesis 2. As can be seen, the R-squared increases to 62.3% which reveals that these factors explain a large fraction of the total CEO earnings. Particularly it is found that firm dimension, as measured by the book value of assets, and dividend yield are positively associated with higher levels of CEO pay. Consistent with previous empirical studies (e.g. Fernandes, 2008) the present results corroborate that firm size drives chief executives' earnings up. The results do not provide evidence that dividends can help reduce CEO's earnings. Actually, the results reveal that, after controlling for the TRS, firms with higher levels of dividend yields pay more to their CEO's and that relationship is economically and statistically significant ($t=3.05$). This result is consistent with the view of La Porta et al. (2000) where firms that need to come to the external market for funds, must establish *ex ant* a good reputation. One way to establish such a reputation is by paying out more dividends. Shareholders are willing to pay more to managers who have better reputation, i.e. pay-out more dividends. This result is also consistent with the theory that firms link executives' compensation to dividend payments to reduce conflicts between shareholders and management (White, 1996). As predicted in the firm specific hypothesis, the

variables: *number of employees*; *debt to assets ratio*; *family dummy*; and *regulated dummy*; are negatively associated with the CEO total pay. Particularly relevant is the association between the variable *regulated dummy* and CEO earnings where the coefficient is the highest among the variables used in this specification and the *t* statistic yields -5.917. This result suggests that *ceteris paribus* Portuguese regulated listed firms pay less to their CEOs.

In specification (3) we include in the model the CEO specific characteristics. After doing so the R-square increases to 0.706 (which represents an absolute increase of 8.3%). Although not statistically different from zero, the coefficients of the variables CEO age and tenure are both positive. This positive association is consistent the entrenchment hypothesis where older and more experienced CEO are more difficult to replace and therefore more able to negotiate an above average pay package. An interesting result is the negative the coefficient of the education variable. Contrary to what we expected, the results reveal that the higher the CEO education level the less is his total pay. An interpretation of this result may be that CEOs who have more education degrees are also the ones who are more sensitive to the labour market for CEOs. In other words, the less educated CEOs might possess more business specific knowledge and therefore will be more entrenched and overpaid. Overall, the human capital variables are in line with the entrenchment hypothesis and with previous empirical studies, in the way that human capital variables generally have weak effects on CEO wages (Wade et al. 2006).

An interesting result within the CEO specific characteristics is the positive association between the fraction of variable earnings paid to the chief executives (*variable earnings %*) and the total CEO earnings. Further, this relationship is found to be economically and statistically relevant ($t=8.391$). Therefore, having a large fraction of non-fixed earnings does not necessarily mean that the total CEO earnings will be more aligned with the firm

performance. In fact, the results reveal that CEOs who receive more non-fixed earnings are also receiving more excess earnings (i.e. above what would be expected after controlling for the total return for shareholders). There is also some evidence that stock-based compensation limits the opportunity for the CEOs to extract cash payments. Overall, these results reveal that having a large fraction of non-fixed CEO compensation does not necessarily mean more alignment with firm performance. Actually, the results support the design of a remuneration package structured to have more equity based compensation rather than cash based bonuses.

In specification (4) the model adds the board of directors' specific characteristics. The R-square in this specification yields 0.739 (which represents an absolute increase of 3.3%). This increase in the R-square is much lower than the increase observed when the CEO specific factors are added into the model. This difference indicates that the board characteristics are less economically important to explain CEO total compensation when compared with firm performance, firm characteristics and CEO characteristics. With respect to the variables it is found that when the CEO is also the chairman of the board the total CEO earnings are lower. This negative relationship is statistically significant at a 10% level ($t = 1.814$) and contrary to what was expected and to the recent empirical findings (Shin and Seo, 2011). This result might be related to the sample used in this study. As already mentioned, the Portuguese listed firms are characterized by being small firms with simple governance structures (in 57.6% of the firms the CEO is also the chairman of the board). This result might therefore mean that the relationship is rather connected with the fact that these firms have simple governance structures and, as such, pay less to their CEOs. Nevertheless, no favourable evidence is provided as that having a non-executive chairman mitigates the CEO ability to extract extra earnings. Although not statistically significant, the results of the *board size* variable reveal a negative relationship

between the size of the board and the total CEO earnings, consistent with the view that a larger board is less efficient. Similar results are found with respect to the board activity as measured by the total number of annual board meetings.

With respect to the board committees (remuneration committee, fiscal board, auditing committee and other governance commissions) the results are quite surprising. The existence and dimension of the remuneration committee is positively related with the CEO earnings and this relationship is statistically significant ($t = 2.053$). This result reveals that firms with no remuneration committee pay less to their CEOs, suggesting that this type of governance device (in Portugal) does not lead to a reduction in the CEOs ability to extract extra rents from the firm. This result is also consistent with the chairman/CEO duality variable which provide evidence that simple governance structures have less agency costs when measured by the ability of CEOs to earn excess wages. The result for the *other governance committees* variable provide similar results and the relationship is also positive and statistically significant, providing further evidence of the uncertainty of the efficiency of these corporate governance devices. With respect to the auditing committee and the fiscal board no statistical significant relationship with CEO earnings is found.

Regarding the effect of the fraction of independent members on the board (*% independent*) a negative and statistically significant (at the 1% level) relationship between this variable and the dependent variable is found, which provides support for the hypothesis that independent directors are more likely to provide proper monitoring. No statistically significant relationship is found between the board gender diversity and also the level of foreign directors in the board.

Turning now to the shareholders characteristics, in specification 5 of table 3, the R-square is 0.752 which reveals that these characteristics explain a further 1.3% of the CEO

total earnings. The first characteristic analysed is the shareholders activism measured by the percentage of voting rights present in the ordinary general shareholders meetings (*shareholders general meeting*). The results strongly support the hypothesis that this high-level decision-making body is an important determinant of CEO earnings. The coefficient of the shareholders general meeting variable is negative (-0.733) and statistically different from zero ($t = -2.724$) which leads to the interpretation that these meetings are an important agency costs control mechanism and may promote a reduction of CEO excess earnings. The *free float* variable results reveal a negative sign for the parameter. A statistically significant t statistic (-2.014) for this variable is recognized. It was hypothesised that the CEO's earnings are a negative function of the free float. Thus, the results provide supporting evidence that the market for corporate control is an effective governance device in the sense that it potentially reduces CEOs excess earnings. With respect to the *top 3* variable, which aims to capture ownership concentration, it is not found a statistically relevant relationship with CEO earnings. Finally, with respect to the variables *shareholders agreement* and *voting cap* the results reveal a positive relationship between these variables and CEO earnings. These results are consistent with the market for corporate control hypothesis which predicts that any anti-takeover device increases the difficulty of an acquisition and therefore increases the CEO entrenchment. The results are particularly significant with respect to the *shareholders agreement* variable where the t statistic is 2.989, signifying that when large shareholders enter into an agreement the market for control might be less efficient and CEOs more able to extract extra rents. The coefficient of the voting cap variable is also positive and statistically significant (at a 10% level), signifying that companies with more voting rights restrictions have a higher level of payments to their CEOs. Hence, these results suggest that withdrawing these anti-takeover devices may limit CEOs earnings.

In sum, with respect to the proposed hypotheses, the statistically significant results from the full model (specification 5 of table 3) reveal that CEO earnings are a positive function of firm performance as measured by the current and previous year' *total return to shareholders*, as proposed in H1. In relation to firm specific factors (H2), the results reveal that CEO earnings are a positive function of the firm dimension and the firm dividend yield and are lower in family and regulated firms. CEO specific characteristics that drive CEO earnings up (H3) are CEO age and the fraction of the CEO earnings that are variable. The results also show that more educated CEOs have lower earnings. Further, CEO pay packages that include stock based compensation might reduce CEO total earnings. The board of directors' characteristics (H4) that are positively and statistically related with the CEO earnings are the size of the remuneration committee and other governance commissions and the level of foreign directors within the board. The variables that restrict CEO earnings are the *CEO/Chair Duality* dummy variable, the board size and the percentage of independent directors within the board. Finally, the shareholders characteristics (H5) that have a positive influence on the level of CEO total earnings are the shareholders agreements and the voting cap. The level of participation in the shareholders general meeting and the free float are negatively associated with the CEO earnings.

Based on the statistically significant results achieved in table 3, we further analyse the robustness of these associations in table 4. In the first specification (column 1) we provide results from the full set of variables that were statistically significant in specification 5 of table 3. All variables remain statistically significant, except for the

Table 4 - Robustness checks.

Independent variables	(1) OLS	(2) OLS	(3) RE	(4) FE	(5) AB
Log(CEO earnings) _{t-1}	-	-	-	-	-0.050* (-1.731)
TRS	0.062 (1.391)	-	-	-	-
TRS _{t-1}	0.089** (2.121)	0.085** (2.137)	0.045* (1.721)	0.041* (1.723)	0.042*** (7.432)
Log(assets)	0.259*** (13.214)	0.238*** (15.264)	0.185*** (6.537)	0.012 (0.132)	0.032 (1.368)
Dividend yield	0.258** (2.350)	0.246** (2.274)	0.020 (0.269)	0.024 (0.196)	0.389*** (5.851)
Family dummy	-0.192*** (-3.628)	-0.159*** (-3.007)	-0.202* (-1.813)	-	-
Regulated dummy	-0.579*** (-8.280)	-0.593*** (-8.238)	-0.379*** (-2.586)	-	-
CEO age	0.008*** (2.951)	0.008*** (3.024)	0.007* (1.906)	0.010** (2.482)	0.004*** (3.328)
CEO education	-0.085*** (-3.334)	-0.086*** (-3.418)	-0.056* (-1.797)	-0.029 (-0.852)	-0.020 (-1.636)
Variable earnings (%)	1.079*** (8.344)	1.064*** (8.761)	1.206*** (7.146)	1.212*** (7.185)	1.335*** (34.563)
Stock earnings	-0.056 (-0.974)	-	-	-	-
CEO/Chair Duality	-0.124** (-1.973)	-0.094* (-1.660)	-0.191*** (-3.012)	-0.273*** (-3.972)	-0.162*** (-4.580)
Log(board size)	-0.127 (-1.516)	-	-	-	-
Remuneration committee	0.076*** (2.651)	0.068** (2.344)	0.057* (1.690)	0.042 (1.150)	0.057*** (4.870)
Other governance commissions	0.021*** (3.512)	0.022*** (3.693)	0.013** (2.468)	0.012* (1.787)	0.001 (0.607)
% independent	-0.308** (-2.543)	-0.299** (-2.485)	-0.354** (-2.099)	-0.411** (-2.210)	-0.008 (-0.283)
% foreign	0.380** (2.145)	0.321* (1.767)	0.433 (0.927)	0.460 (0.532)	0.473*** (3.324)
Shareholders general meeting	-0.748*** (-2.701)	-0.762*** (-2.810)	-0.417 (-1.239)	-0.403 (-1.108)	-0.164** (-2.306)
Free float	-0.472** (-2.062)	-0.495** (-2.211)	0.185 (0.751)	0.225 (0.832)	-0.030 (-0.232)
Shareholders agreement	0.160** (2.559)	0.149** (2.395)	0.264*** (3.139)	0.320*** (2.856)	0.231*** (10.566)
Voting cap	0.014** (2.095)	0.013** (2.002)	-0.007 (-0.718)	-0.017 (-1.339)	-0.008*** (-4.208)
Constant	4.775*** (16.904)	4.648*** (16.944)	4.633*** (11.687)	5.599*** (7.077)	5.755*** (34.993)
Observations (firms)	400 (50)	400 (50)	400 (50)	400 (50)	350 (50)
Adj. R ²	0.728	0.727	0.716	0.524	-
F statistic	70.797	82.021	-	-	-
(p-value)	(0.000)	(0.000)			
Wald χ^2			633.190	14.162	47522.449
(p-value)			(0.000)	(0.000)	(0.000)

Table 2.4. (Continued).

Independent variables	(1) OLS	(2) OLS	(3) RE	(4) FE	(5) AB
AR(1) test (p-value)					-1.8983 (0.0577)
AR(2) test (p-value)					-0.15877 (0.8739)
Sargan χ^2 (p-value)					38.09287 (0.3305)

Notes: The dependent variable is log(CEO earnings). Definitions for all variables are provided in Table 1. Column (1) and (2) provide parameters estimates using OLS models, column (3) provides a random effects (RE) model, column (5) a fixed effects model and column (6) the Arellano-Bond (1991) linear dynamic panel-data model. Sargan test of overidentifying restrictions (H0: overidentifying restrictions are valid). AR(1) and AR(2) Arellano-Bond test for first- and second-order autocorrelation in first-differenced errors. (t or z -statistics) in parentheses are below the parameters. *, ** and *** refer to significance at 10%, 5% and 1% levels respectively.

current year total return to shareholders (TRS) and the dummy variable *stock earnings*. Based on this evidence we run a new OLS regression dropping these two variables (specification 2). These results remain statistically significant for all the variables. In specification 3 we run a random effects (RE) regression, which controls for autocorrelation within firms. The results remain qualitatively identic, even though some variables lose their statistical significance. In the fourth specification a fixed effects model is employed to control for possible endogeneity in the model. Since this model requires variability in the independent variables, all the time invariant dummy variables such as the regulated and family dummy variables are dropped from the model. The results obtained remain qualitatively similar. Nevertheless, the statistical significance of the coefficients decreases in several variables. This should be expected, since the fixed effects model subtracts the variables average which in turn significantly reduces the cross section variability of the covariates. Finally, the Arellano and Bond (AB) linear dynamic panel data estimation procedure is assessed. Within this model the first lag of the dependent variable is considered as an independent variable. The coefficients reveal similar figures

to those found on the previous specifications. Moreover, the AB model reveals that CEO earnings present a negative and statistically significant autocorrelation (at 10% level of significance). The Sargan χ^2 test cannot be rejected at any conventional level of significance, meaning that we cannot reject that the AB instruments are valid.

c. Conclusion

This paper empirically analyses the relationship between corporate governance practices and Chief Executive Officers' (CEO) wages among listed companies in Portugal using panel data from 2002-2011. The relationship between CEO total compensation and shareholders return, firm characteristics, CEO characteristics, board of directors and shareholders characteristics is analysed. Several OLS specifications are adopted, one for each set of factors. For robustness purposes a random effects model, a fixed effects model and the Arellano and Bond (1991) model are also adopted.

With respect to the determinants of the Portuguese CEO earnings the results reported in the present study are generally consistent with other countries' findings. Particularly, that firm specific factors accounts for the majority of the variance in total CEO pay, while firm performance accounts for less than 5% (Tosi et al., 2000). Moreover, it is found that CEO earnings are higher in larger firms and in firms that have higher levels of dividend yields. Further, the CEO earnings are lower in family and regulated firms. It is also found that CEO age and the fraction of the CEO earnings that are variable drive the executives' earnings up. The results also show that more educated CEOs have lower earnings. There is also some evidence that CEO pay packages that include stock based compensation might reduce CEO total earnings. With respect to the board of directors' characteristics it is found that the size of the remuneration committee and other governance commissions and the level of foreign directors within the board are positively associated with the CEOs earnings. On the other hand when the CEO is the same person as the chairman of the

board, when the board is large and the percentage of independent directors within the board is also large the CEO receives lower total earnings. With respect to the shareholders characteristics the results found support a positive influence of the shareholders agreements and the voting caps on the level of CEO pay. Finally, the level of participation in the shareholders general meeting and the free float are found to be negatively associated with the CEO earnings.

The overall conclusion is that the CEO's earnings are driven by firm performance, CEO and board characteristics and also shareholders characteristics, providing new insights to the determinants of executives' earnings and validating some of the previous research in this field (e.g. Ozkan 2011). Therefore the overall conclusion is that there are persistent effects on governance in distinct markets as well as aspects specific to each market.

It is recognised that a Portuguese CEO earns on average less than a CEO in Europe as a whole (Heidrick and Struggles, 2009). This income difference is expected when taking into account the lower GDP per capita in Portugal. However, governance principles are needed for Portuguese companies to restrict the ability of uncompetitive CEOs (AdCapita and Cranfield University, 2003) to extract rents from their companies. The policy implications of the present research are therefore as follows. First, the adoption of the governance code by all listed and non-listed companies should be promoted in an effort to advance the progress of Portugal in terms of governance best practices. Second, the effective roles of the remuneration committee and other governance commissions should be screened; as it is not clear that they properly monitor and limit the CEO's earnings. Third, minimum requirements for percentages of independent members on boards should be instituted, as result of the positive effect found on restricting the CEO's earnings. Fourth, the inclusion of stock-based compensation as a part of the CEO's

earnings should be promoted because stock-based compensation limits excessive earnings for CEOs. Fifth, variable cash based bonuses should be rethought as this sort of payment is driving upwards CEOs earnings. Sixth, CEO education should be disclosed as it seems that a lack of education might reveal some entrenchment and the ability for executives to earn excess earnings. Finally, anti-takeover devices such as shareholders agreements or voting caps should be discouraged and the shareholder participation on general meetings promoted.

This essay presents several limitations. First, because the Portuguese stock market is quite small the total sample used (50 firms) limits the ability to generalize these results to other realities. Secondly, the relative recent adoption of the sole code of governance code in Portugal also limits the assessment of the corporate governance devices effectiveness. Finally, the necessity of having to estimate the value of total CEO earnings for some firms and years also results in a limitation of the present study, in sense that it translates into potential measurement errors in the analysis. For these reasons, more research is needed to confirm these results. Thus, it would be interesting for us to further investigate the relationship between the CEOs earnings and corporate governance in Portugal using different techniques and time spans.

References

- Abdullah, S.N. (2004). Board composition, CEO duality and performance among Malaysian listed companies. *Corporate Governance* 4(4), pp. 47-6.
- AdCapita and Cranfield University (2003). Can Portuguese Managers Compete? Mimeo, available online: <http://www.adcapita.com>.
- Agarwal, A. and Knoeber, C. R. (1996). Performance and mechanisms to control agency problems between managers and shareholders *Journal of Financial and Quantitative Analysis* 21(3), pp. 377-397.
- Aguilera, R. V. and Cuervo-Cazurra, A. (2004). Codes of governance worldwide: what are the triggers? *Organization Studies* 25(3), pp. 415-443.
- Ammann, M., Oesch, D. and Schmid, M. M. (2011). Corporate governance and firm value: International evidence. *Journal of Empirical Finance* 18(1), pp. 36-55.
- Anderson, R. C. and Reeb, D. M. (2003). Founding-Family Ownership and Firm Performance: Evidence from the S&P 500. *The Journal of Finance*, 58: 1301–1327.
- Arellano, M. and Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies* 58. pp. 277-297.
- Beasley, M. (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review* 71, pp. 443-465.
- Bebchuk, L., Fried, J. and Walker, D. (2002). Managerial power and rent extraction in the design of executive compensation. *University of Chicago Law Review* 69, pp. 751-846.
- Becker, G., (1962). Investment in Human Capital: A Theoretical Analysis. *Journal of Political Economy*, 70, 5, Part 2: Investment in Human Beings, pp. 9-49.
- Benito, A. and Conyon, M. (1999). The governance of directors' pay from UK companies', *Journal of Management and Governance* 3(2), pp. 117-136.
- Berglof, E. (1997). Reforming corporate governance: redirecting the European agenda, *Economic Policy* 12, pp. 91-123.
- Bergstresser, D. and Philippon, T. (2006). CEO Incentives and Earnings Management. *The Journal of Financial Economics* 80(3), pp. 511-509.
- Bhagat, S. and Black, B. (1999). The uncertain relationship between board composition and firm performance. *Business Lawyer* 54, pp. 921-963.
- Bhagat, S., Bolton, B.J. and Subramanian, A. (2010). CEO Education, CEO Turnover, and Firm Performance. Available at SSRN: <http://ssrn.com/abstract=1670219>.
- Brick, I.E., Chidambaran, N.K. (2010). Board meetings, committee structure, and firm value. *Journal of Corporate Finance* 16, pp. 533-553.

- Brickley, J., Coles, J. and Jarrell, G. (1997). Leadership structure: separating the MD and chairman of the board. *Journal of Corporate Finance* 3, pp. 189-220.
- Brown, L.D. and M.L. Caylor. (2009). Corporate Governance and Firm Operating Performance. *Review of Quantitative Finance and Accounting* 32, pp. 129-144.
- Bronson, S.N., Carcello, J.V. and Raghunandan, K. (2006). Firm characteristics and voluntary management reports on internal control', *Auditing: A Journal of Practice and Theory* 25, pp. 25-39.
- Carretta, A., Fiordelisi, F. and Schwizer (2011). The Impact of Corporate Governance Press News on Stock Market Returns. *European Financial Management* 17(1), pp. 100–119.
- Chhaochharia, V. and Grinstein, Y. (2009). CEO Compensation and Board Structure. *The Journal of Finance* 64, pp. 231-261.
- Cho, M-H. (1998). Ownership structure, investment and the corporate value: An empirical analysis. *Journal of Financial Economics* 47, pp. 103-121.
- Conyon, M. (1997). Corporate governance and executive earnings. *International Journal of Industrial Organization* 15, pp. 493-509.
- Conyon, M., Gregg, P. and Machin, S. (1995). Taking care of business executive earnings in the United Kingdom. *Economic Journal* 105, pp. 704-714.
- Conyon, M. and Murphy, K. (2000). The Prince and the Pauper? CEO pay in the United States and United Kingdom. *Economic Journal* 110, pp. 640-671.
- Conyon, M. and Sadler, G. (2010). Shareholder Voting and Directors' Remuneration Report Legislation: Say on Pay in the UK. *Corporate Governance: An International Review* 18, pp. 296–312.
- Core, J., Holthansen, R. and Larcker, D. (1999). Corporate governance, chief executive earnings and firm performance. *Journal of Financial Economics* 51, pp. 371-406.
- Coughlan, A. T. and Schmidt, R. M. (1985). Executive earnings, management turnover, and firm performance: An empirical investigation. *Journal of Accounting and Economics* 7(1-3), pp. 43-66.
- Cronqvist, H. and Nilsson, M. (2003). Agency Costs of Controlling Minority Shareholders. *The Journal of Financial and Quantitative Analysis* 38(4), pp. 695-719.
- De Anca, C. (2008). Women on corporate boards of directors in Spanish listed companies', In: Vinnicombe, S., Singh, V., Burke, R., Bilimoria, D. and Huse, M. (eds.). *Women on Corporate Boards of Directors: International Research and Practice*, pp. 96–107. Edward Elgar, Cheltenham.
- Demsetz, H. and Lehn, K. (1985). The Structure of Corporate Ownership: Causes and Consequences. *Journal of Political Economy* 93(6), pp. 1155-1177.

- Dyer, W. G. (2006). Examining the “family effect” on firm performance. *Family Business Review* 19, pp. 253-273.
- Durnev, A. and Han Kim, E. (2005). To steal or not to steal: firm attribute, legal environment and valuation. *The Journal of Finance* 60(3), pp. 1461-1493.
- Easterbrook, F. (1984). Two Agency Cost Explanations of Dividends. *American Economic Review* 74, pp. 650-659.
- Easterbrook, F. and Fischel, D. (1996). *The Economic Structure of Corporate Law*, Harvard University Press, Cambridge.
- Edmans, A. and Xavier, G. (2009). Is CEO Pay Really Inefficient? A Survey of New Optimal Contracting Theories. *European Financial Management* 15(3), pp. 486-496.
- Fama, E. and Jensen, M. (1983). Separation of ownership and control. *Journal of Law and Economics* 26, pp. 301-325.
- Farinha, J. (2003), *Corporate Governance: A Survey of the Literature*. Universidade do Porto. Discussion Paper No. 2003-06.
- Fernandes, N. (2008). EC: Board earnings and firm performance: The role of independent board members. *Journal of Multinational Financial Management* 18, pp. 30-44.
- Florackis, C. and Ozkan, A. (2009). The impact of managerial entrenchment on agency costs: An empirical investigation using UK panel data. *European Financial Management* 15(3), pp. 497-528.
- Freeman, R.E (1984). “Strategic Management: A stakeholder Approach”. Boston, MA: Pitman.
- Gosh, C. and Sirmans, C. F. (2005). On REIT MD earnings: does board structure matter? *The Journal of Real Estate Finance and Economics* 30(4), pp. 397-428.
- Gregg, P., Jewell, S. and Tonks, I. (2005). Executive pay and performance in the UK 1994-2002. CMPO Working Paper Series No. 05/122.
- Gregorič, A., Polanec, S. and Slapničar, S. (2010). Pay me Right: Reference Values and Executive Compensation. *European Financial Management* 16, pp. 778–804.
- Guthrie, K., Sokolowsky, J., and Wan, K. (2012). CEO Compensation and Board Structure Revisited. *Journal of Finance* 67(3), pp. 1149-1168.
- Heidrick & Struggles consulting company (2009). *Corporate Governance Report 2009: Boards in turbulent times*, Mimeo.
- Hermalin, B. and Weisbach, M. S. (1998). Endogenously chosen board of directors and their monitoring of the CEO. *American Economic Review* 88, pp. 98-118.
- Herrero, I. (2011). Agency Costs, Family Ties and Firm Efficiency. *Journal of Management* 37(3), pp. 887-904.

- Hill, C. W. L. and Phan, P. (1991). CEO Tenure as a Determinant of CEO Pay. *The Academy of Management Journal* 34(3), pp. 707-717.
- Hoel, M. (2008). The quota story: Five years of change in Norway' In: Vinnicombe, S., Singh, V., Burke, R., Bilimoria, D. and Huse, M. (eds.). *Women on Corporate Boards of Directors: International Research and Practice*, pp. 79–87. Edward Elgar, Cheltenham.
- Ikaheimo, S., Puttonen, V. and Ratilainen, T. (2011). External corporate governance and performance: evidence from the Nordic countries. *European Journal of Finance* 17(5-6), pp. 427-450.
- Jensen, M. C. (1986). Agency Cost Of Free Cash Flow, Corporate Finance, and Takeovers. *American Economic Review* 76(2), pp. 323-329.
- Jensen, M. C. (1993). The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems. *The Journal of Finance* 48(3), pp. 831-880.
- Jensen, M. C. and Meckling, W. (1976). Theory of the firm: managerial behaviour, agency costs and capital structure. *Journal of Financial Economics* 3, pp. 305-360.
- Jensen, M.C. and Murphy, K. J. (1990). Performance Pay and Top Management Incentives. *Journal of Political Economy* 98(2), pp. 225-264.
- Jensen, M.C. and R.S. Ruback (1983). The market for corporate control: The scientific evidence. *Journal of Financial Economics* 11, pp. 5-50.
- Khurshed, A., Lin, S. and Wang, M. (2011). Institutional block-holding of UK firms: do corporate governance mechanism matter? *European Journal of Finance* 17(2), pp. 133-152.
- La Porta, R., Silanes, F. L., Shleifer, A. and Vishny, R. W. (1997). Legal determinants of external finance. *The Journal of Finance* 52, pp. 1131-1150.
- La Porta, R., Silanes, F. L., Shleifer, A. and Vishny, R. W. (1998). Law and finance. *Journal of Political Economy* 106, pp. 1113-1155.
- La Porta, R., Silanes, F. L., Shleifer, A. and Vishny, R. W. (2000). Agency problems and dividend policies around the world. *The Journal of Finance* 55, pp. 1-33.
- Lee, S. C., Rhee, M., and Yoon, J. (2012). The Effects of Foreign Monitoring on Audit Quality: Evidence from Korea. Available at SSRN: <http://ssrn.com/abstract=2001782>.
- Manne, H. G. (1965). Mergers and the Market for Corporate Control. *The Journal of Political Economy* 73(2), pp. 110-120.
- Mishra, C. S. and Nielsen, J. F. (2000). Board independence and earnings policies in large bank holding companies. *Financial Management* 29(3), pp. 51-70.
- Ozkan, N. (2007). Do corporate governance mechanisms influence CEO earnings? An empirical investigation of UK companies. *Journal of Multinational Financial management* 17, pp. 349-364.

- Ozkan, N. (2011). CEO earnings and firm performance: An empirical investigation of UK panel data. *European Financial Management* 17(2), pp. 260-285.
- Pennathur, A. K. and Shellor, R. (2002). The determinants of REIT CEO earnings. *Journal of Real Estate Finance and Economics* 26, pp. 175-191.
- Piot, C. and Janin, R. (2007). External auditors, audit committees and earnings management in France. *European Accounting Review* 16, pp. 429-454.
- Renders, A., Gaeremynck, A. and Sercu, P. (2010). Corporate governance ratings and company performance: A cross-european study. *Corporate Governance: An international review* 18(2), pp. 87-106.
- Ryan, H. E. and Wiggins, R. A. (2001). The influence of firm- and manager-specific characteristics on the structure of executive compensation. *Journal of Corporate Finance* 7, pp. 101-23.
- Richard, P., Devinney, T., Yip, G., and Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. *Journal of Management* 35, pp. 718-804.
- Rose, C. (2006). Board composition and corporate governance: a multivariate analysis of listed Danish firms. *European Journal of Law Economics* 21, pp. 113-127.
- Rosenstein, S. and Wyatt, J. G. (1990). Outside directors, board independence, and shareholder wealth', *Journal of Financial Economics* 26, pp. 175-191.
- Sawicki, J. (2009). Corporate governance and dividend policy in southeast Asia pre- and post-crisis', *European Journal of Finance* 15(2), pp. 211-230.
- Shin, J. Y. and Seo, J. (2011). Less Pay and More Sensitivity? Institutional Investor Heterogeneity and CEO Pay. *Journal of Management* 37(6), pp. 1719-1746.
- Singh, V. (2008). Contrasting positions of women directors in Jordan and Tunisia. In: Vinnicombe, S., Singh, V., Burke, R., Bilimoria, D. and Huse, M. (eds.) *Women on Corporate Boards of Directors: International Research and Practice*, pp. 165-85. Edward Elgar, Cheltenham.
- Schulze, W. S., Lubatkin, M. H., Dino, R. N. and Buchholtz, A. K. (2001). Agency relationships in family firms: Theory and evidence. *Organization Science* 12, pp. 99-116.
- Smith, C. W. and Watts, R. L. (1992). The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Financial Economics* 32(3), pp. 263-292.
- Staples, (2007). Board Globalisation in the World's Largest TNCs 1993-2005. *Corporate Governance: An International Review* 15(2), pp. 311-321.
- Terjesen, S., Sealy, R. and Singh, V. (2009). Women Directors on Corporate Boards: A Review and Research Agenda. *Corporate Governance: An International Review*, 17(3), pp. 320-337.

- Tosi, H. L., Werner, S., Katz, J. P., and Gomez-Mejia, L. R. (2000). How much does performance matter? A meta-analysis of CEO pays studies. *Journal of Management*, 26(2), pp. 301-339.
- Vafeas N. (1999). Board meeting frequency and firm performance. *Journal of Financial Economics* 53, pp.113-142.
- Williamson, O. E. (2002). The theory of the firm as governance structure: from choice to contract. *Journal of Economic Perspectives* 16(3), pp. 171-195.
- Wade, J., O'Reilly, C., and Pollock, T. (2006). Fairness and Executive Compensation. *Organization Science* 17(5), pp. 527–544.
- Wooldridge, J.M. (2002). *Econometric Analysis of Cross Section and Panel Data*, Cambridge, MA, MIT Press.
- William, J. (2010). Corporate governance mechanisms throughout the world. *Corporate governance: An International Review* 18(3), pp. 159-160.
- White, L. F. (1996). Executive compensation and dividend policy. *Journal of Corporate Finance* 2(4), pp. 335-358.
- Yermack, D. (1996). Higher market valuation for firms with a small board of directors', *Journal of Financial Economics* 40, pp. 185-211.

Appendix A

Table A.1. List of Portuguese listed firms and sample observations.

Ticker	Firm name	N	Period
ALTR	Altri, SGPS, S.A.	7	2005-2011
BCP	Banco Comercial Português, S.A.	10	2002-2011
BES	Banco Espírito Santo, S.A.	10	2002-2011
BNF	Banif - SGPS, S.A.	10	2002-2011
POP	Banco Popular Español, SA	5	2007-2011
BPI	Banco BPI, S.A.	10	2002-2011
BRI	Brisa - Auto Estradas de Portugal, SA	10	2002-2011
CFN	Cofina - SGPS, SA	10	2002-2011
COMAE	Compta - Equipamento e Serviços de Informática, SA	10	2002-2011
COR	Corticeira Amorim - SGPS, SA	10	2002-2011
CPR	Cimpor - Cimentos de Portugal, SGPS, SA	10	2002-2011
EDP	EDP - Energias de Portugal, SA	10	2002-2011
EDPR	EDP Renováveis, SA	4	2008-2011
EGL	Mota-Engil, SGPS, SA	10	2002-2011
ESO	Estoril Sol - SGPS, SA	10	2002-2011
FCP	Futebol Clube do Porto - Futebol, SAD	10	2002-2011
FSP	Fisipe - Fibras Sintéticas de Portugal, SA	10	2002-2011
GALP	Galp Energia, SGPS, SA	6	2006-2011
GLINT	Glintt - Global Intelligent Technologies, SGPS, S.A.	10	2002-2011
GPA	Imobiliária Construtora Grão Pará, SA	10	2002-2011
IBS	Ibersol - SGPS, SA	10	2002-2011
INA	Inapa - Investimentos, Participações e Gestão, SA	10	2002-2011
IPR	Impresa - SGPS, SA	10	2002-2011
JMT	Jeronimo Martins - SGPS, SA	10	2002-2011
LIG	Lisgráfica - Impressão e Artes Gráficas, SA	10	2002-2011
MAR	Martifer - SGPS, SA	5	2007-2011
MCP	Grupo Media Capital SGPS, SA	8	2004-2011
NBA	Novabase - SGPS, SA	10	2002-2011
ORE	Sociedade Comercial Orey Antunes, SA	10	2002-2011
PTC	Portugal Telecom, SGPS, SA	10	2002-2011
PTI	Portucel - Empresa Produtora de Pasta e Papel, SA	10	2002-2011
RAM	F. Ramada - Investimentos, SGPS, S.A.	4	2008-2011
RED	Reditus - SGPS, SA	10	2002-2011
RENE	REN - Redes Energéticas Nacionais, SGPS, SA	5	2007-2011
SVA	SAG Gest - Soluções Automóvel Globais, SGPS, SA	10	2002-2011
SAN	Banco Santander, SA	10	2002-2011
SCOAE	Grupo Soares da Costa, SGPS, SA	10	2002-2011
SCP	Sporting - Sociedade Desportiva de Futebol, SAD	10	2002-2011
SCT	Toyota Caetano Portugal, SA	10	2002-2011
SYV	Sacyr Vallehermoso, SA	8	2004-2011
SEM	Semapa - Sociedade Investimento e Gestão, SGPS, SA	10	2002-2011
SLBEN	Sport Lisboa e Benfica - Futebol SAD	3	2009-2011

Table A.1. (Continued).

Ticker	Firm name	N	Period
SNC	SONAECOM - SGPS, SA	10	2002-2011
SON	Sonae - SGPS, SA	10	2002-2011
SONC	Sonae Capital, SGPS, SA	5	2007-2011
SONI	Sonae Indústria - SGPS, SA	10	2002-2011
SUCO	SUMOL+COMPAL, S.A.	10	2002-2011
TDU	Teixeira Duarte - Engenharia e Construções, SA	10	2002-2011
VAF	VAA - Vista Alegre Atlantis - SGPS, SA	10	2002-2011
ZON	ZON MULTIMÉDIA - Serviços de Telecomunicações e Multimédia - SGPS, S.A (former PT Multimedia)	10	2002-2011

Table A.2. Pearson correlation matrix of the variables used in the analysis.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1.Log(CEO earnings)	1											
2.TRS	0.0986*	1										
3.Log(assets)	0.742***	0.0161	1									
4.Log(employees)	0.629***	0.0675	0.820***	1								
5.Debt to assets ratio	-0.00595	-0.0774	0.0438	-0.0559	1							
6.Dividend yield	0.135**	0.000962	0.104*	0.0958*	0.000658	1						
7.Family dummy	-0.134**	0.0544	-0.127**	0.0463	-0.0621	0.0472	1					
8.Regulated dummy	0.281***	-0.0546	0.570***	0.245***	-0.0304	0.0334	-0.145**	1				
9.CEO age	0.176***	0.00745	0.185***	0.111*	0.0498	-0.0816	0.125**	0.0999*	1			
10.CEO Tenure	0.154**	-0.0132	0.115*	0.0304	0.0794	0.0108	0.193***	0.0392	0.591***	1		
11.CEO education	-0.139**	0.0429	-0.0810	0.0677	-0.125**	-0.0761	-0.00634	-0.213***	-0.376***	-0.303***	1	
12.Variable earnings (%)	0.653***	0.174***	0.518***	0.461***	-0.0837	0.146**	0.0723	0.220***	-0.00356	0.108*	-0.0569	1
13.Stock earnings	0.319***	-0.0128	0.375***	0.281***	-0.0887	0.0331	-0.220***	0.131**	-0.0502	0.0322	0.0867	0.345***
14.CEO/Chair Duality	-0.293***	0.00473	-0.294***	-0.287***	0.0957*	-0.0461	0.0522	-0.178***	0.252***	0.264***	-0.103*	-0.273***
15.Log(board size)	0.625***	-0.000318	0.794***	0.654***	-0.0313	0.103*	-0.294***	0.513***	0.0210	0.0327	-0.0196	0.474***
16.Board meetings	-0.0220	-0.0666	0.0544	0.0167	0.0637	-0.00385	-0.119*	0.142**	-0.110*	-0.0321	-0.0104	-0.0537
17.Remuneration committee	0.347***	0.0141	0.307***	0.313***	-0.0323	0.0779	-0.193***	0.0173	-0.120*	0.0169	0.0602	0.181***
18.Fiscal board	-0.125**	-0.0839	-0.0419	-0.0856	0.0334	-0.0125	0.00330	0.115*	0.0227	-0.0495	0.000488	-0.124**
19.Auditing committee	0.546***	0.00777	0.621***	0.535***	-0.0806	0.0558	-0.196***	0.287***	0.0462	-0.0311	0.0434	0.399***
20.Other governance commissions	0.359***	-0.0480	0.335***	0.270***	-0.0629	0.0339	-0.177***	0.356***	-0.0373	-0.0828	-0.0854	0.256***
21.% independent	0.0556	-0.0383	0.178***	0.186***	0.0309	0.0447	-0.248***	0.0828	-0.129**	-0.234***	-0.00778	0.0717
22.% women	-0.0837	0.0288	-0.0954*	-0.0495	0.0998*	-0.00384	0.294***	-0.136**	0.209***	0.168***	-0.162***	-0.107*
23.% foreign	0.213***	0.0129	0.162***	0.208***	-0.222***	0.0897	0.122**	0.0660	0.0824	0.0178	0.0815	0.186***
24.Shareholders general meeting	-0.172***	-0.0521	-0.156***	-0.163***	0.0252	-0.000665	0.0704	-0.0437	0.0482	0.0684	-0.142**	-0.194***
25.Free float	0.370***	0.0522	0.475***	0.420***	0.0874	0.0339	-0.259***	0.291***	0.0337	-0.0211	0.0867	0.291***

Table A.2. (Continued).

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
26.Top 3	-0.355***	-0.0306	-0.432***	-0.370***	-0.136**	-0.0211	0.349***	-0.241***	-0.0115	0.0537	-0.108*	-0.247***
27.Shareholders agreement	0.0870	-0.00168	0.0839	0.0572	-0.171***	-0.0232	-0.214***	0.104*	0.0674	-0.0366	0.117*	-0.0373
28.Voting cap	0.210***	-0.0266	0.274***	0.170***	0.0494	0.0506	-0.399***	0.429***	-0.135**	-0.198***	-0.0949*	0.118*

Variable	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
13.Stock earnings	1											
14.CEO/Chair Duality	-0.177***	1										
15.Log(board size)	0.393***	-0.471***	1									
16.Board meetings	-0.156***	0.00325	0.00541	1								
17.Remuneration committee	0.199***	-0.150**	0.338***	0.0696	1							
18.Fiscal board	-0.0840	-0.0808	-0.0262	0.382***	-0.0850	1						
19.Auditing committee	0.420***	-0.293***	0.591***	-0.228***	0.350***	-0.379***	1					
20.Other governance commissions	0.0224	-0.298***	0.374***	0.308***	0.0460	0.187***	0.152**	1				
21.% independent	0.237***	-0.130**	0.153**	-0.163***	0.0252	-0.0624	0.247***	0.00193	1			
22.% women	-0.141**	0.146**	-0.125**	-0.0264	-0.231***	0.00422	-0.115*	-0.104*	-0.177***	1		
23. % foreign	0.190***	-0.368***	0.247***	-0.172***	0.153**	-0.0322	0.318***	0.122**	0.0630	-0.170***	1	
24.Shareholders general meeting	-0.212***	-0.112*	-0.0577	0.0565	-0.00770	-0.0211	-0.0990*	-0.0110	-0.0850	0.0372	0.208***	1
25.Free float	0.287***	-0.0145	0.396***	0.115*	0.146**	0.0413	0.327***	0.254***	0.173***	-0.131**	-0.162***	-0.719***
26.Top 3	-0.332***	-0.0255	-0.398***	-0.0653	-0.171***	0.00304	-0.316***	-0.237***	-0.147**	0.113*	0.195***	0.674***
27.Shareholders agreement	0.0465	0.0715	0.140**	0.0370	0.0126	-0.127**	0.0228	-0.00731	-0.0746	0.0443	0.0378	0.111*
28.Voting cap	0.0752	-0.200***	0.390***	0.0827	0.0422	-0.0229	0.213***	0.272***	0.222***	-0.161***	-0.0781	-0.125**

Table A.2. (Continued).

Variable	(25)	(26)	(27)	(28)
25.Free float	1			
26.Top 3	-0.909***	1		
27.Shareholders agreement	0.00451	-0.0831	1	
28.Voting cap	0.325***	-0.341***	0.153**	1

Notes: This table reports Pearson correlations between the variables used in the analysis. Significance levels are computed as two tailed p-values: * p<0.05, ** p<0.01, *** p<0.001.