THE INFLUENCE OF SHAREHOLDER VOTING RIGHTS ON INTERNAL CONTROL MECHANISMS: A COMPARATIVE STUDY OF PUBLICLY TRADED FIRMS IN PORTUGAL AND UNITED KINGDOM

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Abstract

This work analyses the role of shareholder voting rights on the adoption of internal control mechanisms by firms from both a small emerging and developed economies. It also studies the influence that sector of activity and company size have on these mechanisms. The sample is comprised of publicly traded companies from Portugal and the United Kingdom. Data analysis using path analysis and multiple linear regression shows that shareholder ownership has a weak influence on control mechanisms. It also reveals that sector of activity and company size have differing influences on control mechanisms in differing contexts.

Keywords: Corporate governance, shareholder voting rights, internal control mechanisms

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1. Introduction

Governance mechanisms are tools owners use to align agents' interests with their own as well as to allow for greater oversight and control. These mechanisms are used to ensure that agents act in the best interest of their principals (Hill and Jones, 2004).

The literature relating to company boards of directors identifies two main categories of control mechanisms, internal and external. Fama (1980) and Fama and Jensen (1983) suggest that agency problems can be resolved by creating a more disperse company ownership structure. Walsh and Seward (1990) found that the board has a crucial role as an internal control mechanism.

Institutional context influences the relative importance of internal and external control mechanisms. Governance mechanisms have significant structural differences in different economic contexts due to divergent traditions and cultures. Take, for example, the duality of CEO versus chairman of the board and the executive majority versus non-executive management.

Do shareholder voting rights have an impact on internal control mechanisms? Do sector of activity and firm size have different effects on these mechanisms? To what degree do the contexts of a developing and developed economy influence the relationship between voting rights and internal control mechanisms? It is believed that board composition (Daily and Dalton, 2003) and the separation of functions (Bhagat and Black, 1999) contribute to assuring owner control over management and «good governance» (Jensen and Meckling, 1976; Fama and Jensen, 1983; Eisenhardt, 1989). Firms with poor corporate governance are incapable of developing or maintaining strategies that increase company value and create value for shareholders (Adjaoud *et al.*, 2007).

Traditionally, the literature distinguishes the Anglo-American model of corporate governance, based on shareholders, and the European Continental and Japanese model, encompassing a larger number of entities (the stakeholders) among which are the shareholders. These models are also known respectively as the outsider and insider models (Aguilera and Jackson, 2003).

Regarding the prevalence of models, different positions and evolutions can be observed. Lane (2003) identified changes in the model in force in German companies, with a convergence towards the Anglo-American model, whereas Armour *et al.* (2003) observed increased pressure on corporate

governance systems to consider the interests of stakeholders other than shareholders.

This convergence of models has, among other reasons, been influenced by globalisation movements and the diffusion of codes of good governance (Zattoni and Cuomo, 2008), and may neglect specific national legal, financial and social structures, thus leading to a potential mismatch between corporate governance practices and corporate performance.

The central argument of this study distinguishes corporate governance internal control mechanisms derived from the adoption of either a disperse ownership structure or from a more concentrated level of ownership (Liu, 2005). This essential distinction confers specific characteristics to the models, resulting from specific factors of the context in which companies operate, but also due to their sector of activity and size.

Numerous works published to date have not shown conclusive results on how the use of voting rights by shareholders affects the choice of control mechanisms adopted by firms. There is also insufficient knowledge on how sector of activity and company size affect the relationship between shareholder voting rights and internal control mechanisms. Another area lacking in information is how the economic context in which a company operates, i.e. whether they exist in an emerging or developed economy, influences control models (Lubatkin *et al.*, 2005).

The focus of this work is on understanding the role that dispersion or concentration of voting rights has on the determination and adoption of internal control mechanisms. Thus, it is fundamental to analyse whether internal control mechanisms are different when shareholder voting rights are disperse or concentrated and whether company size or sector of activity have an influence of this relationship.

The objectives are to verify the influence of voting rights on internal firm control mechanisms of companies operating in different economic contexts and to understand the additional effects of sector of activity and company size on this relationship.

The study is based on samples of companies listed on the Euronext Lisbon – Portuguese Stock Exchange – and the primary market of the London Stock Exchange (LSE).

After determining working hypotheses and an investigative model supported by the literature review, the sample was collected from which results were gathered and analysed. From the conclusions reached orientation for future research was proposed.

2. Literature review and hypotheses

Corporate governance and control mechanisms

Organisational development is uniquely influenced by corporate governance, based on the model adopted and dependent on a number of factors, reason for which the literature identifies various concepts of governance (Iskander and Chamlou, 2000; Gillan and Starks, 2003).

In the 1970s, agency theory characterised the "separation between ownership and entrepreneurial control as a central feature of modern capitalism" and has been, from the beginning, one of the main issues in corporate governance. Jensen and Meckling (1976) refer to the existence of an agency relationship between owners and managers, in which the executives act as agents of shareholders and are paid to act in the latter's best interests. However, many times managers make decisions in an attempt to maximise their personal interests rather than those of shareholders. The minimisation of harm caused by the agency problem depends on the internal and external mechanisms taken to harmonise the relationship between the managers that control the organisation and the shareholders that own it (Paterson, 2001; Learmount, 2002).

There are a variety of important internal and external control mechanisms which should be chosen based on company design and characteristics, the type of ownership, managerial factors, factors unique to the management team, social and cultural factors and given the overall interests of the firm. Internal control mechanisms are important due to their influence on financial results and also because they reflect the way power is wielded by the shareholders, management and external entities.

Gillan and Starks (2003) state that the "magnitude and nature of agency problems are directly related to ownership structures" which vary in different countries, reason why variations in the "form, consequences, and solutions for the shareholder-manager agency problem" can be expected. When there are dominant and active shareholders, the agency problem is concentrated in minority shareholders, according to La Porta *et al.* (1999).

Stewardship theory is another important consideration which focuses on the management and protection of company assets. This theory views the separation of ownership and control as a positive event rather than a problem. As a result, the concentration of the responsibilities of the CEO and chairman of the board in one individual is considered advantageous according to Learmount (2002) and Kiel and Nicholson (2003). According to this theory, managers "tend to be more motivated to act in the best interests of the corporation than in their own self-interests" and, particularly, senior managers would be "more interested in guaranteeing the company's continuity and success" in a long-term perspective. Nevertheless, the supervision and surveillance system is still necessary to assure that the company assets are managed in the company's best interest (Wheelen and Hunger, 2002; Learmount, 2002).

In the case of concentrated ownership (fewer shareholders) internal control systems are the preferred method of controlling management activities. External control systems are usually used in more disperse ownership structures (large number of shareholders) (Lane, 2003; Aguilera and Jackson, 2003; Gillan and Starks, 2003).

Baysinger and Hoskisson (1990) point out that, among internal mechanisms, the separation of the positions of CEO and chairman of the board helps to satisfy the internal and external stakeholders as well to improve board governance. Armour *et al.* (2003) refer that different mechanisms can be used, namely, supervision by non-executive directors and executive remuneration agreements. Other authors suggest different control mechanisms to improve and control the corporate governance system (Walkner, 2004; Jobome, 2006).

The board can be made up of both internal and external administrators. Internal managers, as a rule, are linked to controlling shareholders and hold high-level positions in the company. These are normally executive directors and others who possess a deep understanding of the company's business activities and without whom the board could not successfully fulfil its control function. External board members and non-executives are not employees of the company. In the United Kingdom the proportion of non-executive board members increased as a result of the Cadbury Report (Marchica and Mura, 2005).

Disperse ownership, in the United Kingdom, increases the influence of the market at the cost of large shareholders in the development and implementation of corporate governance (Liu, 2005). A large number of institutional investors are majority shareholders in many companies which are generally controlled by professional managers.

In many cases block holdings have controlling interests in firms, which can be negative, especially if it allows owners to form a pyramid control structure and/or crossed business structures. This leads to increased levels of control and opens up the possibility for expropriation of smaller shareholders. These problems can be particularly serious in emerging economies where a lack of regulation is caused by weak legal structures and inefficient application of the law. Evidence to uphold these views were provided by Lins (2003) who analysed the effects of block holdings in a wide range of countries.

To attenuate the problems of collective action, Becher *et al.* (2005) refer to the use of a variety of models, among which is the concentration of ownership, the board of directors and executive pay.

The board of directors exists, among other reasons, to hire, fire, control and compensate management in order to maximise shareholder value (Denis and McConnell, 2002). However, it has been found that larger boards, those with more than seven or eight members, are less likely to function efficiently and are more easily controlled by the CEO (Lipton and Lorsch, 1992; Jensen, 2001). Jensen (1993) found that an overpopulated board has a lower likelihood of functioning effectively and a greater probability of being controlled by the CEO. Bonn (2004) argues that the composition of the board, not its size, is the determining factor of firm performance. Garcia and Anson (2007) maintain that the characteristics of a board of directors that may influence its capability to effectively monitor and control are its size, composition and duality of leadership. The board is one one of the primary mechanisms of a firm's governance system used to align the interests of shareholders and management.

The board of directors commonly consists of the CEO and other executive management as well as non-executives. Lipton and Lorsch (1992) argue that dysfunctional is the behavioural norm of many boards, because administrators often times do not criticise the policies of executive board members, a problem that increases with the size of the board. However, Coles *et al.* (2008) challenge the notion that restricting the size and representation of the board leads to increased company value. They found that complex companies have larger boards that include more external members when compared to simpler companies.

A smaller board will find it easier to reach consensus on specific issues (Lange *et al.*, 2000). On the contrary, larger boards are more likely to seek specialists to assist in decision making (Goodstein and Boekar, 1994).

Independent board members should safeguard the interests of minority shareholders through vigilance, integrity and a thorough understanding of the business. Daily and Dalton (2003) state that board independence serves to increase control of management in an effort to increase performance. Li (1994) notes that in order for a board to govern strongly its expertise, independence and legal standing must be intrinsic parts of the company structure. In addition, independent board members should be free from relationships that might interfere with their exercise of independent judgement (Matolscy *et al.*, 2004).

Ghosh and Sirmans (2003) suggest the nomination of independent directors to the board is one of the most important methods to reduce agency problems that influence performance. Authors such as Baysinger and Butler (1985), Schellenger *et al.* (1989), Rosenstein and Wyatt (1990), Peng *et al.* (2003) and Bonn (2004) have found the inclusion of external, independent and non-executive board members contributes to increased company value. These findings are reinforced by Uzun *et al.* (2004) who reveal that a higher proportion of external and independent administrators is associated with a lower probability that illegal actions will be used to stimulate company growth. However, Hermalin and Weisbach (1991) and Bhagat and Black (2002) found

no correlation between board independence and and other measures such as board size and industry.

According to agency theorists, management are evaluated upon and receive financial compensation linked to firm performance (Beatty and Zajac, 1994; Westphal and Zajac, 1994; Daily *et al.*, 2003). The central tenet of the various control mechanisms recommended in agency theory is to increase the alignment of manager's personal interests with those of shareholders (Murphy, 1985; Eisenhardt, 1989; Jensen and Murphy, 1990; Kaplan, 1994; Daily *et al.*, 2003; Dalton *et al.*, 2003). This is verified by Ittner *et al.*, (2003) Larcker, (2003) and Ryan and Wiggins, (2004) who find evidence that board vigilance tends to reinforce the link between company performance and elements of CEO compensation.

Murphy (1999) suggests that compensation should be related to performance measures because shareholders want this, but also becuase elevated returns are an indication of the actions taken by management. Normally, firms with lower book-to-market ratios pay relatively more to their management team and have positive coefficients and large t-statistics in relation to their size. These results confirm previous studies on executive compensation (Murphy, 1985; Core *et al.*, 1999; Himmelberg *et al.*, 1999).

Conyon and He (2004) believe the compensation given to CEOs is greater in cases where the owners have a larger amount of assets, implicating less power for the CEO in relative terms. Cyert *et al.* (2002) demonstrated that CEO compensation is negatively correlated with the holding of the largest external shareholder.

Hermalin and Weisbach (1991), Cho (1998), Himmelberg *et al.*, 1999), Palia (2001) and Demsetz and Villalonga (2001) used management compensation as the essential mechanism of corporate governance.

Property and voting rights

Increased concentration of voting rights serves to align the incentives of minority owners and mitigate agency problems derived from the separation of ownership and control. McDonald *et al.* (2008) argue that financial incentives given to management promote their alignment with a company's owners or shareholders with at least partial consequent effects on performance.

Franks and Meyer's (1994) study of German companies showed that large shareholders are associated with sales volume, a finding confirmed in Japanese companies by Kaplan and Minton (1994) and Kang and Shivdasani (1995). These large shareholders, in order to resolve agency problems and maximise results, internalise control costs, mitigating problems related to shareholder dispersion through strong control of a company's assets (Shleifer and Vishny, 1986). It was also found that concentrated shareholdings reduce risk, especially in the context of emerging economies (Dharwadkar *et al.*, 2000). High levels of ownership dispersion lead to atomistic investors with little desire to invest the resources necessary to adequate control due to both the *free-rider problem* and also the lack of necessary skills.

Recent studies (Wiwattanakantang, 2001; Lins, 2003; Suto, 2003) found that concentration of ownership is positively related to firm performance, especially in countries where there is little investor protection. Concentration of ownership and control lead to the entrenchment of management and subject them to the interests of shareholders (Tam and Tan, 2007).

Whether voting rights are concentrated or dispersed seems to influence internal control mechanisms, with differences affected by context, supporting the following hypotheses:

Hypothesis 1: Greater concentration or dispersion of voting rights influences a company's internal control mechanisms.

Hypothesis 2: The influence of voting rights on internal control mechanisms is different in companies operating in emerging economies than those operating in developed economies.

Sector of activity and company size

Companies operate across a wide range of activity sectors and adopt unique characteristics in order to adapt to different business environments. The type of activity seems to influence firms differently in different contexts and has a clear influence on corporate governance. Financial companies, utilities, industrial firms and others seem to adopt distinctly different control mechanisms, especially internal systems, to deal with the agency problem and the actions of *stewards*.

The literature supports that company size is the primary determinant of executive compensation. Company size influences pay incentives to management (Zattoni and Minichilli, 2009). Findings suggest a large degree of elasticity in remuneration based on company size. Large companies have a more complex operational environment which is more difficult to oversee (Demsetz and Lehn, 1985), increasing risk potential. The increased complexity of large firms requires more capable management and consequently, higher salaries (Baker and Hall, 2004).

Sector of activity and company size seem to influence internal control mechanisms, yet differently according to the context in which a company operates, supporting the following hypotheses:

Hypothesis 3: *The type of activity influences the relation between voting rights and a company's internal control mechanisms.*

Hypothesis 4: *The influence of the type of activity on the relation between voting rights and*

internal control mechanisms is different in companies from emerging and developed economies.

Hypothesis 5: *Company size influences the relation between voting rights and internal control mechanisms.*

Hypothesis 6: *The influence of company size on the relation between voting rights and internal control mechanisms is different in companies from emerging and developed economies.*

3. The conceptual model
3.1 - Research model

The research model is characterised by the relationship between shareholder voting rights, represented by an independent variable, and internal control mechanisms, represented by six dependent variables. Sector of activity and company size are considered to have an influence on this relationship and are used as control variables.

3.2 - Variables and definitions

The model is comprised of one independent variable, identified as the concentration of shareholder voting rights (CVR) as well as six dependent variables. These variables are the size of the board of directors (SBD) or number of members, the number of independent board members (PID) or board composition, the percentage of executive board members (PED) compared to the total number of members and the percentage of performance-based pay (VRM) or performance incentives. The two control variables are company sector of activity (CSA) and company size (CS).

Independent variable

A thought line associates corporate governance to a high capital dispersion pattern, leading to the existence of a high number of shareholders, whereby none of them has a dominating position over the remaining (La Porta *et al.*, 2000). In this situation a "semi-concentrated property" (Becher *et al.*, 2005) would be a solution for the collective action and agency problems (Walkner, 2004), which is concluded by several studies (Pivovarsky, 2003; Guriev and Rachinsky, 2005). In this work, information concerning the major shareholdings and their voting rights was summarized in the variable *concentration of voting rights (CVR)*.

This variable is calculated as the average of the three year sum of the three largest shareholdings.

Dependent variables

The size of the board of directors seems to influence its functionality and the quality of control it provides (Jensen, 2001). Having a larger or smaller number of members depends on the greater or lesser degree of concentration of shareholder voting rights, with consequent effects on company value (Goodstein *et al.*, 1994; Lange *et al.*, 2000).

The variable representing the size of the board of directors is calculated using the average number of members over a period of three years.

The independent members of the board of directors are considered to contribute an impartial evaluation of top managers' activity, enrich the board with added experience, and help to raise the quality of the board of directors (Wood and Patrick, 2003; Bhojraj and Sengupta, 2003). For this purpose, the *percentage of independent directors on the board of directors (PID)* was calculated based on the information provided by the companies in their reports. Note that this information, though the concepts of independence derive from specific regulations in each country, can also depend on the interpretation made by each company of those regulations. A three year average of the number of independent directors (as a percentage of the total) was used to calculate this variable.

The percentage of executive board members is associated with the type of corporate governance models used, which in turn depends on the influence of shareholder voting rights and their level of concentration or dispersion. The existence of independent board members and the separation of power are particularly associated with the choice of control mechanisms (Hermalin and Weisbach, 1991; Bhagat and Black, 2002).

The percentage of executive board members is calculated based on a three year average of the percentage of these members compared to the total number of members of the board.

According to several authors, a properly designed remuneration plan (in view of performance) will align managers' and shareholders' interests, minimising the agency problem (Becher *et al.*, 2005; Walkner, 2004). The variable used in this work was the *variable remuneration of managers (VRM)*, calculated using the disclosed yearly remuneration of the executive members of the board. The final value is based on a three year average of the total remuneration of the executive members of the board of directors.

Control variables

The variable representing company sector of activity is a dummy variable that distinguishes financial activity from other activities over a three year period.

The company size variable corresponds to the neparian logarithm of assets over a three year period.

4. Research methods
4.1- Instruments (statistical techniques)

Path analysis was used to verify the cause-effect relationships between model variables. Based on the

result of this analysis, multiple linear regression was used to predict the relationship of dependent variables to the independent variables. Applicability was verified using the Durbin-Watson statistic, residual analysis and the variance inflation factor (VIF) statistic for each variable.

Variable selection for the multiple linear regression model was based on the "enter" method, analysing the explanatory capacity through the adjusted R^2 and the significance given by *p-value* of the different models. The analysis of the contribution of each of the variables was performed using the respective standardised coefficient, signal and significance.

4.2 - Data collection/sample

The "reports and accounts" and the "report on corporate governance" of the 46 corporations listed on December, 2004, 2005, 2006 (coinciding with the year's closing) at the main market of Euronext Lisbon, are the universe, and were obtained at the website of CMVM – Portuguese Stock Market Supervisory Authority – www.cmvm.pt.

In those cases where information was insufficient, supplementary information was taken from institutional websites. Market prices of shares were obtained from the website "Yahoo Finance" (finance.yahoo.com).

The main market and the professional securities market of the London Stock Exchange (LSE) – www.londonstockexchange.com, with 1.285 corporations listed, is quite larger than the Portuguese market.

From the universe, 100 British companies were randomly selected and their respective reports and results obtained from institutional websites over approximately the same period as Portuguese companies (2004, 2005 and 2006).

Stock quotations coinciding with the closing of the fiscal year (not necessarily coinciding with the end of the civil year) were obtained from the *website* "Yahoo Finance" (finance.yahoo.com).

The total sample is comprised of 142 companies, 46 from Portugal and 96 from the United Kingdom.

5. Analyse and results

5.1- Descriptive analysis

In order to characterise the two samples, the main descriptive statistics were calculated for Portuguese and UK companies (Annex, Table 1).The average size of Portuguese companies in the sample was seven times greater than that of their UK counterparts. However, the median value for UK companies was approximately 16% higher than that of the Portuguese firms. A comparative lack of maturity of the Portuguese financial market is one reason why only large firms are listed. This is not the case in the UK. Despite the much larger average size of Portuguese companies, this difference is diminished when the median is taken into account. 51% of the firms in the British sample belong to the financial sector compared to 17,4% of Portuguese firms. Concentration of voting rights of Portuguese firms, at 61,03% is far greater than the value found for British firms of 28,11%, clearly differentiating the two samples.

The practice of separation of management roles is much more common in the United Kingdom than in Portugal. 88,5% of UK companies practice this as compared to 35,7% of their Portuguese counterparts. Portuguese companies have an average of nine members on their boards of directors whereas British firms average 7,6 members. Regarding the percentage of independent members on the board, 30% of Portuguese board members were considered as such, compared with 56% of British board members. In Portugal, 63,5% of board members were company executives, whereas only 30,5% held this status in the UK. 54,5% of companies listed on the Portuguese stock exchange had an executive commission composed of executive board members compared to a lower percentage of 22% of British firms. Finally, the percentage of performance-based pay packages for executive members of the board of directors is similar in both samples. 28% of their total remuneration in Portugal is variable compared to 26% in British companies.

In accordance with expectations, companies listed in Portugal showed a much higher concentration of shareholder voting rights than those listed in the UK. This fact, in the context of agency theory, could lead to the expropriation of minority shareholders. In contrast, the more disperse holdings of British firms could lead to problems of collective action. In accordance with theory, it is to be expected that corporations from both countries will use different internal control mechanisms to govern themselves.

5.2- Exploratory analysis

a) Path analysis

The trajectories and type of effects that explain the association between variables are explained by the data and the path analysis causal model. 'Causality' implies 'correlation' whereas the reverse may not be true.

There was a statistically significant relationship between company size (CS) (independent variable) and concentration of voting rights (CVR) (mediating variable) (δ = -0,392; p = 0,005) for Portuguese companies. UK firms, on the other hand, showed no statistically significant relationship between the independent variable and the mediating variable (δ = -0,081; p = 0,237) (Annex, Tables 2 and 3).

The trajectory analysis of firms from both countries, considering only relevant models for the significance test (*) $p < 0,05$; (**), $p < 0,01$ and (***) $p < 0,001$, verified the existence of a relationship

between company size (CS) and the size of the board of directors (SBD). The SBD of companies from the UK are also positively influenced by CVR (Charts 1 and 2).

Chart 1. Size of the board of directors (SBD) – Portugal

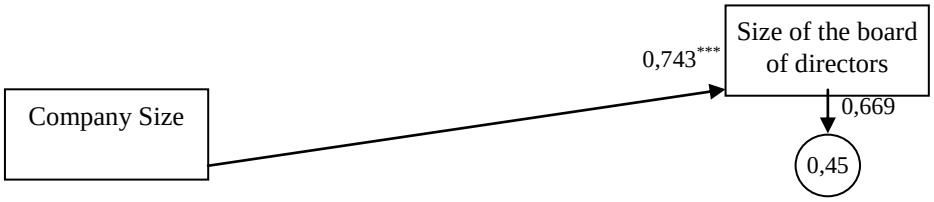
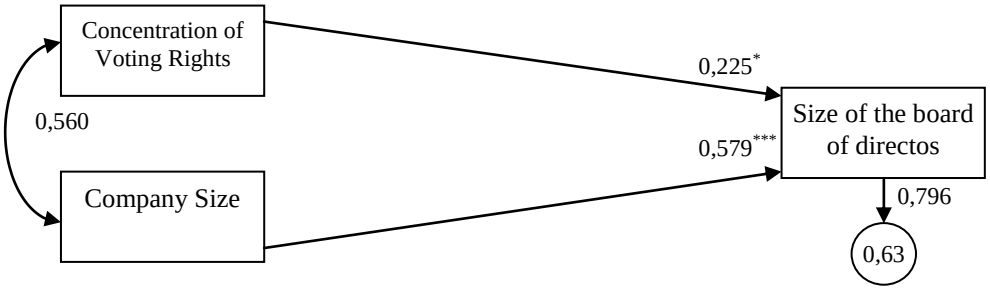
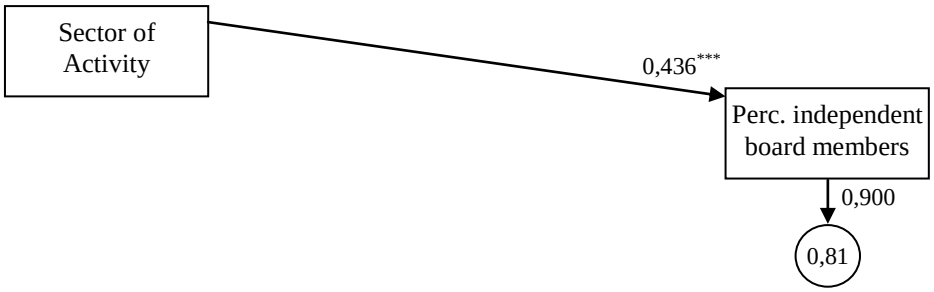


Chart 2. Size of the board of directors (SBD) – United Kingdom



The percentage of independent board members (PID) in companies from the UK is positively influenced by sector of activity. Companies from the financial sector have a higher PID. There is no significant relationship between the two for Portuguese companies (Chart 3).

Chart 3. Percentage of independent board members (PID) – United Kingdom

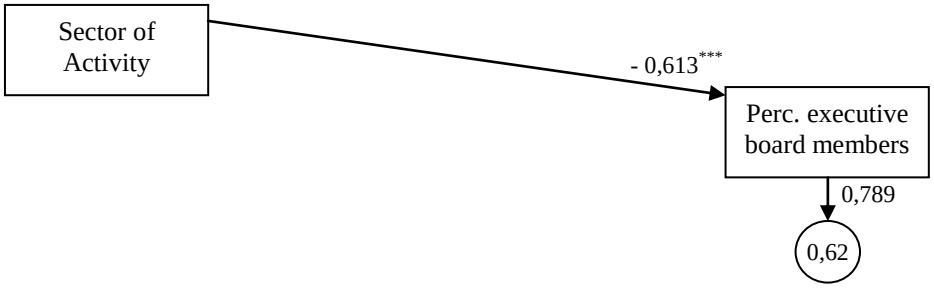


The percentage of executive board members (PED) is influenced positively by sector of activity (CSA) in Portugal and negatively in the UK.

In the case of Portuguese firms, the financial sector has a positive relationship with PED, whereas British financial sector firms show a more accentuated negative relationship to PED. In Portugal, the CS has a negative influence on PED meaning that larger companies have a larger SBD but a lower percentage of which are company executives (Charts 4 and 5).

Chart 4. Percentage of executive board members (PED) – Portugal

Chart 5. Percentage of executive board members (PED) – United Kingdom



In both countries, company size is the primary factor influencing the percentage of variable remuneration (VRM) paid to management. In the UK, an increase in CVR also seems to positively influence VRM. It seems that greater shareholder control has an influence on the amount of performance-based pay attributed to management, whereas greater shareholder dispersion leads to management set pay structures (Charts 6 and 7).

Chart 6. Percentage of performance-based pay (VRM) – Portugal

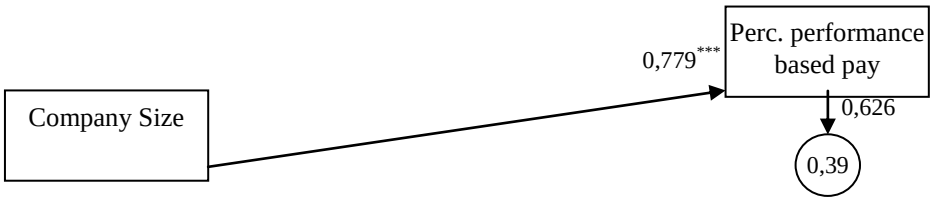
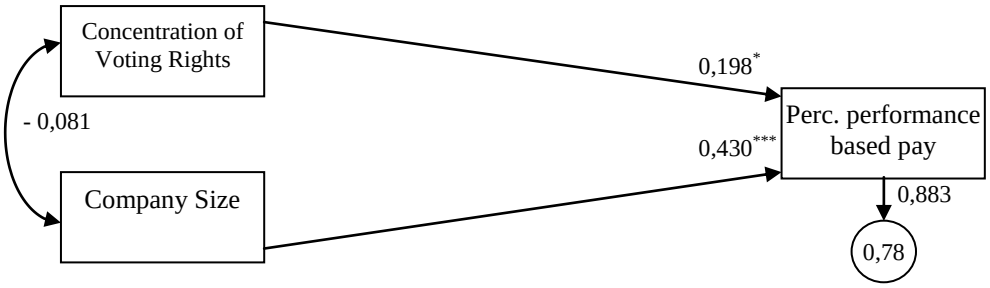


Chart 7. Percentage of performance-based pay (VRM) – United Kingdom



In general, models related to Portuguese-listed companies demonstrate a poor adjustment with RMSR (Root Mean Square Residual) > 0,1, whereas the same models for companies listed in the United Kingdom demonstrate a good adjustment, with RMSR < 0,1 (Annex, Tables 4, 5, 6 and 7).

b) Multiple linear regression

The multiple linear regression model serves to predict the value of each dependent variable based on groups of independent variables. The model for the size of the board (SBD) of Portuguese companies showed high significance (p = 0,000). 49,4% of its total variability is explained by the independent variables present in the adjusted linear regression model. The variable CS (p = 0,000; beta = 0,676) had the greatest relative contribution to the explanation of the behaviour of SBD. A problem was found, however, with the DW statistic. The model has high significance for British companies (p = 0,000), explaining 34,2% of total variability. The variables CS (p = 0,000; beta = 0,574) and CDV (p = 0,017; beta = 0,224) have the greatest relative explanatory power for SBD (Annex, Table 8).

Adjusted regression models for Portuguese companies

SBD = -11,639 – 0,008CSA + 1,624CS – 2,733CVR

PID = 0,308 – 0,018CSA + 0,004CS – 0,088CVR

PED = 1,093 + 0,320CSA – 0,046CS + 0,216CVR

VRM = -0,900 – 0,054CSA + 0,085CS + 0,027CVR

Adjusted regression models for British companies

SBD = -5,993 – 0,268CSA + 0,942CS + 4,412CVR

PID = 0,715 + 0,216CSA – 0,014CS – 0,227CVR

PED = 0,317 – 0,234CSA + 0,006CS + 0,065CVR

VRM = -0,526 – 0,042CSA + 0,054CS + 0,301CVR

The model for the percentage of independent board members (PID) showed no significance for Portuguese companies (p = 0,939), but was highly significant for British firms (p = 0,000), explaining 30% of total variability. The variable CSA (p = 0,000; beta = 0,532) had the highest relative contribution.

The percentage of executive board members (PED) showed good significance for Portuguese companies (p = 0,027). The model explained only 14,6% of total variability. The variables CSA (p = 0,018; beta = 0,450) and CS (p = 0,036; beta = -0,419) showed the greatest contribution. It was found that the greater the contribution of CS, the lower was PED. The analysis of British firms demonstrated the high significance of the model (p = 0,000), explaining 35,6% of total variability. As with the Portuguese, the variable CSA (p = 0,000; beta = -0,608) was the major relative contributor but with opposite implications. Greater CSA led to less PED.

The model has high significance for the percentage of variable remuneration (VRM) in Portuguese firms (p = 0,000), explaining 58,2% of its total variability. The variable CS (p = 0,000; beta = 0,841) contributes the most to the model. The model is also highly significant for British firms (p = 0,000). 20,1% of total variability is explained by the independent variables in the model. The variables CS (p = 0,000; beta = 0,430) and CVR (p = 0,054; beta = 0,198) contribute the most explanatory power.

c) Summary of the statistical models

Path analysis, an extension of the multiple linear regression model, was used due to its ability to dissect associations between variables in their different components (Everitt and Dunn, 1991) and because causal relationships can lead to better results for analysing and understanding the investigative model. Because the relationship of the endogenous mediator variable (CDV) and the endogenous dependent variables were not clear in many cases, multiple linear regression analysis was applied to model the relationships between variables and predict values.

The values obtained through the application of the path analysis were confirmed by the multiple linear regression model. It was found that the independent variable representing the concentration of shareholder voting rights (CVR) does not have an influence on the internal control mechanisms of Portuguese companies but does weakly influence the size of the board of directors (SBD) (p = 0,225) and the percentage of variable remuneration (VRM) (p = 0,198) of British firms. In both the Portuguese and British samples, sector of activity (CSA) and company size (CS) influence internal control mechanisms in different ways.

6. Discussion

The study found that the level of concentration of shareholder voting rights does not influence the internal control mechanisms of Portuguese firms but has a statistical significant influence on the size of the board of directors and the percentage of variable compensation based on performance attributed to managers of British companies. Literature referring to the United Kingdom (Aguilera and Jackson, 2003) indicates shareholder dispersion as a characteristic of the company ownership model, which, although creating agency (Gillan and Starks, 2003) and collective action problems (Becht *et al.*, 2003) imparts importance to control mechanisms. Shareholders wish to maintain control in order to maximise the value of the company, resorting mainly to board size (Lange *et al.*, 2000; Goodstein and Boekar, 1994) and remuneration incentives or other compensation (Dalton *et al.*, 2003) in order to align the interests of management with their own. Conyon and He (2004) make an interesting point by considering that these compensations increase in proportion to the assets of the owners, signifying less power for management and contradicting the argument of Cyert *et al.* (2002). This position seems to be in greater consonance with the literature and with the results of this study in which no relationship is found between the concentration of voting rights of Portuguese companies (companies from an emerging economy with concentrated shareholdings) and control mechanisms. Hypothesis 1 is confirmed, due to a weak influence in the British sample, but is not confirmed at all in Portuguese companies since there were no evident relational influences. Hypothesis 2 is confirmed because the type of relationship is different for Portuguese and British firms.

The financial sector has a positive influence on the percentage of executive board members in Portuguese companies whereas the influence is negative in the case of the companies located in the UK, where there is also a positive influence on the percentage of independent board members. Executive board members are, in general, linked to major shareholders with high levels of influence. A characteristic of emerging economies verified in Portuguese companies is that the percentage of executive board members is positively related to the sector of activity. This means that executive board members are privileged in the financial sector. British firms, on the contrary, have a greater dispersion of voting rights and also a tendency to favour non-executive board members as a means of exerting more control over company executives and safeguard the interests of minority shareholders, due to agency problems, in line with theory (Marchica and Mura, 2005). This seems to be the reason why the

percentage of executive board members is negatively correlated with the British financial sector. In Portugal there is no relation between the percentage in independent board members and sector of activity, either because of the diverse number of sectors in the sample or because the greater level of concentration of shareholdings reduces the desire for non-executive members. The percentage of independent board members in Portuguese companies does not demonstrate a relationship with sector of activity, contrary to the strong, positive finding in their British counterparts. This is undoubtedly due to the greater concentration of ownership in Portuguese firms and the greater shareholder dispersion of firms in the UK, in line with the literature (Ghosh and Sirmans, 2003; Bonn, 2004; Uzun *et al.*, 2004). Hypotheses 3 and 4 are partially confirmed. There is no evidence of a relationship between activity and ownership, but there is evidence of a relationship between activity and internal control mechanisms. There is no difference in these findings between companies in Portugal (an emerging market) and the United Kingdom (a developed economy).

Company size has a negative influence on shareholder ownership in Portugal and also a very slight negative influence without significance in Britain as well. Yet size has a strong, positive influence on both the size of the board of directors and the percentage of variable remuneration in both Portuguese and British firms. The size of Portuguese companies has a negative relationship to the percentage of executive board members.

There is some proofs (independent of economic context) that the larger the size of a company, the less concentrated are shareholder voting rights. However, this relationship is more accentuated in contexts that are already more likely to have more disperse shareholding structures. Company size influences internal control mechanisms for both Portuguese and British firms but in different ways. For example, it has a different effect on the percentage of variable remuneration. In the case of an emerging economy, i.e. Portuguese companies, where there is already a more concentrated ownership structure, an increase in company size has a negative influence on the number of executive board members. As a company grows more non-executive board members are taken on at the cost of executive members. In the context of a developed economy, as is the case of Britain, with a tendency for a more disperse ownership structure, no evidence was found of an influence on the percentage of executive board members, perhaps because by default they rely more on independent members. These findings are in harmony with Coles *et al.* (2008) who found that complex companies have larger boards with more external members.

The size of a company is related to the size of its board of directors, focusing the discussion on whether a larger board of directors is efficient and positive for the company. The literature (Lipton and Lorsh, 1992; Jensen, 2001) posits a limit to the size of the board even stating (Lange *et al.*, 2000) that a board with fewer members is better since it facilitates reaching consensus. One must also distinguish the board of directors from the executive committee led by the CEO and the separation of roles of president of the board and CEO (Baysinger and Hoskinson, 2003). There is evidence of a positive correlation between company size and an increased percentage of variable remuneration to management in accordance with the literature (Murphy, 1999; Core *et al.*, 1999; Conyon and He, 2004), although it is also indexed to performance.

Hypothesis 5 is partially confirmed because company size has a similar influence on the concentration of shareholder voting rights and one control mechanisms yet influences various other internal control mechanisms in different ways. Hypothesis 6 is not confirmed because the influence that company size has on shareholder concentration and internal control mechanisms is similar for companies from both emerging and developed economies.

The degree of concentration of ownership influences internal control mechanisms. However this influence varies between emerging and developed economies. The business activity a company engages in and its size influence internal control mechanisms, yet the influence is different depending on whether the company is from an emerging or developed economy.

7. Conclusions

In the context of a developed economy and shareholder dispersion, companies adopt board size and management performance-based pay incentives as internal control mechanisms. There was no clear evidence of influence on internal control mechanisms in companies from an emerging economy with concentrated shareholdings.

Sector of activity and company size seem to influence internal control mechanisms in companies from both developed and emerging economies but in different ways. Companies in developed economies and characterised by disperse ownership structures, especially in the finance sector, show a clear preference for boards populated with independent directors. Companies operating in small, emerging economies from a variety of sectors prefer to choose executive board members in order to prevent agency problems.

In companies from small, emerging economies with concentrated stockholdings, there is an inverse relationship between company size and the number of executive board members. As a company grows in size, its board will integrate a larger percentage of non-executive members.

Implications for Management

This research paper contributes knowledge to management by reinforcing the idea that different internal control mechanisms are adopted by companies from diverse economic contexts, based on whether shareholder ownership is disperse or concentrated. It also contributes to understanding the impact that sector of activity and company size have on internal control mechanisms.

Directions for Future Research

Work should continue in an effort to further explore the implications of greater concentration or dispersion of shareholdings on the type of internal control mechanisms adopted by firms, in different economic contexts. Performance measures should be considered. The effects of company size and sector of activity on control mechanisms should be further explored. Different variables should be included in the research, such as financial structure, sector of activity, size and composition of the board of directors, as well as exploration of the relationship between corporate governance and company size. The existence of such a relationship could help explain differences found in the relation between corporate governance and performance in Portuguese and British companies.

Future research should also include remuneration values in order to verify whether companies with concentrated shareholdings pay better or worse than companies with a more disperse number of shareholders, testing agency and stewardship theory against each other.

Limitations

The statistical techniques used have limitations and other regression models should be used. Optimal levels for variables should be identified in order to determine inflection points. Although the developed models have a high level of significance, they have a general lack of explanatory capacity.

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Appendices

Table 1. Descriptive statistics. Portugal and United Kingdom

	Portugal	**United Kingdom**
Company size (euro) - Average - Median	 17 422 160,53 692 231,00	 2 524 720,10 801 670,10
Financial sector	17.4 %	51,0 %
Concentration of voting rights	61,03 %	28,11 %
Duties separation	35,70 %	88,50 %
Size of the board of directors	9,09	7,58
Perc. independent board members	30,45 %	56,16 %

Perc. independent board members	63,56 %	30,50 %
Executive commitee	54,50 %	21,90 %
Perc. performance-based pay	28,11 %	26,04 %

Table 2. Correlations – Portugal

		CVR	CSA	CS
Pearson Correlation	CVR	1,000	-,223	-,392
	CSA	-,223	1,000	,621
	CS	-,392	,621	1,000
Sig. (1-tailed)	CVR	.	,075	,005
	CSA	,075	.	,000
	CS	,005	,000	.
N	CVR	43	43	43
	CSA	43	43	43
	CS	43	43	43

Table 3. Correlations – United Kingdom

		CVR	CSA	CS
Pearson Correlation	CVR	1,000	-,025	-,081
	CSA	-,025	1,000	-,092
	CS	-,081	-,092	1,000
Sig. (1-tailed)	CVR	.	,412	,237
	CSA	,412	.	,210
	CS	,237	,210	.
N	CVR	80	80	80
	CSA	80	80	80
	CS	80	80	80

Table 4. RMSR – Size of the board of directors

	Portugal			**United Kingdom**		
Association	r (observed)	ρ (forecast)	$(r - \rho)^2$	r (observed)	ρ (forecast)	$(r - \rho)^2$
SBD – CSA	0,445	0,000	0,198	-0,111	0,000	0,012
SBD – CS	0,720	0,743	0,000	0,560	0,560	0,000
SBD – CVR	-0,379	0,000	0,143	0,178	0,178	0,000
CVR – CSA	-0,223	0,000	0,050	-0,025	0,000	0,001
CVR – CS	-0,392	0,000	0,154	-0,081	0,000	0,007
CS – CS	0,621	0,000	0,386	-0,092	0,000	0,008
Average			0,155			0,005
RMSR			**0,394**			**0,068**

Table 5. RMSR – Perc. independent board members

	Portugal			United Kingdom		
Association	r (observed)	ρ (forecast)	$(r - \rho)^2$	r (observed)	ρ (forecast)	$(r - \rho)^2$
PAI – CSA	0,016	0,000	0,000	0,545	0,436	0,012
PAI – CS	0,056	0,000	0,003	-0,145	0,000	0,021
PAI – CVR	-0,097	0,000	0,009	-0,148	0,000	0,022
CVR – CSA	-0,223	0,000	0,050	-0,025	0,000	0,001
CVR – CS	-0,392	0,000	0,154	-0,081	0,000	0,007
CS – CS	0,621	0,000	0,386	-0,092	0,000	0,008
Average			0,100			0,012
RMSR			**0,317**			**0,108**

Table 6. RMSR – Percentage of executive board members

	Portugal			United Kingdom		
Association	r (observed)	ρ (forecast)	$(r - \rho)^2$	r (observed)	ρ (forecast)	$(r - \rho)^2$
PAE – CSA	0,146	0,052	0,009	-0,614	-0,613	0,000
PAE – CS	-0,216	-0,284	0,005	0,104	0,000	0,011
PAE – CVR	0,260	0,000	0,068	0,055	0,000	0,003
CVR – CSA	-0,223	0,000	0,050	-0,025	0,000	0,001
CVR – CS	-0,392	0,000	0,154	-0,081	0,000	0,007
CS – CS	0,621	0,000	0,386	-0,092	0,000	0,008
CS			0,112			0,005
RMSR			**0,334**			**0,070**

Table 7. RMSR – Percentage of performance-based pay

	Portugal			United Kingdom		
Association	r (observed)	ρ (forecast)	$(r - \rho)^2$	r (observed)	ρ (forecast)	$(r - \rho)^2$
PRV – CSA	0,434	0,000	0,189	-0,153	0,000	0,023
PRV – CS	0,779	0,361	0,175	0,424	0,424	0,000
PRV – CVR	-0,285	0,029	0,098	0,166	0,166	0,000
CVR – CSA	-0,223	0,000	0,050	-0,025	0,000	0,001
CVR – CS	-0,392	0,000	0,154	-0,081	0,000	0,007
sector – CS	0,621	0,000	0,386	-0,092	0,000	0,008
Average			0,175			0,007
RMSR			**0,419**			**0,081**

Table 8. Multiple linear regressions standardized coefficients and adjusted R^2 – companies from Portugal and the United Kingdom

	Portugal				United Kingdom			
	SBD	**PID**	**PED**	**VRM**	**SBD**	**PID**	**PED**	**VRM**
CSA	0,000	-0,028	0,450*	-0,082	-0,053	0,532***	-0,608***	-0,109
CS	0,676***	0,039	-0,419*	0,841***	0,574***	-0,108	0,052	0,430***
CVR	-0,113	-0,088	0,196	0,027	0,224*	-0,143	0,044	0,198*
Adj. R^2	49,4%***	-0,066	14,6%*	58,2%***	34,2%***	30%***	35,6%***	20,1%***

Significance: (*) $p < 0,05$; (**), $p < 0,01$ and (***) $p < 0,001$