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EDITORIAL

Dear readers!

We are pleased to deliver the new issue of the journal *Corporate Ownership and Control* to you. This issue of the journal is really a multi-topical. This means that the academic concern with regard to corporate governance grows remarkably.

Executive compensation has been explored by our contributors with thorough attention. Results reveal that executive compensation structure in new versus old economy firms is different and more importantly, it changes over time. Moreover, our contributors found that firms reduce their use of stock options when there are other deferred pay mechanisms in place, suggesting they act as substitutes. Authors also found that firms with defined benefit retirement plans reduce their use of stock options for non-executives to a greater extent than firms with defined contribution plans, suggesting a greater degree of substitutability between defined benefit plans and stock options than between defined contribution plans and stock options. This is very important to conclude under the public discussion of executive compensation.

One more important issue of corporate governance investigated by our contributors is corporate ownership and control. In this context the authors concluded that the free rider problem between the manager and the principal is significant in countries with small financial markets. Besides that, authors suggest that audit committees in family-controlled firms require a higher degree of external audit effort than do those in non-family-controlled firms. It was concluded that institutional investors are more common in firms with a higher dependence on long-term debt. Moreover, the combination of ownership concentration and pyramidal structure would lead to inferior firm performance and valuation, but little evidence concerning tunneling within groups.

South Frica has been chosen by us as the country to investigate corporate governance in a special manner. Authors introduce the novelties of the King III code and examine the current reporting practices of 68 companies listed on the Alt-X segment of the Johannesburg Stock Exchange. They provide valuable insights into the structure of small cap companies in South Africa and analyse which parts are used by companies to enhance their legitimacy. Besides that, it can be concluded that most of the large corporate organisations are adhering to the principles of good corporate governance, although the performance of the South African Government, measured against certain corporate governance objectives, requires attention to ensure a positive contribution to embed good corporate governance and economic growth.

We are open for your suggestions in the new fields the books could be written and hope for the new contributions to the journal!

CORPORATE OWNERSHIP & CONTROL

Volume 7, Issue 3, Spring 2010

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NEWS INSIGHTS ON EXECUTIVE COMPENSATION

João Paulo Vieito[a]

Abstract

This paper aims to examine executive compensation structure and determinants on a panel of the so-called "new economy" and "old economy" firms in the USA over the period 1992-2004. The results reveal that executive compensation structure in new versus old economy firms is different and more importantly, it changes over time. Additionally, our results document that the factors explaining executive compensation of new and old economy are different, and also that stock options, despite the problems that have been related with these compensation components in the past, are still the most important ones, both in new and old economy firms. Our results imply that different reward structures exist for different industry sectors at different stages in their development and companies must readjust compensation structures frequently to provide incentive for their top executives.

Keywords Executive Compensation; New Economy; Old Economy; NASDAQ crash; Sarbanes Oxley Act

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1. Introduction

The purpose of this study is to examine the following research questions: (1) Is the executive compensation in old versus new economy firms the same? (2) Is the composition of executive compensation in old versus new economy firms the same? (3) Did the compensation composition change after the NASDAQ Crash and Sarbanes Oxley Act? (4) Are the factors that explain executive compensation in old versus new economy firms similar?

Recent studies on executive compensation including Anderson et al. (2000), Sesil et al. (2002), Murphy (2003), Ittner et al. (2003), Stathopoulos et al. (2004), and Chen and Hung (2006) correctly observe that the new economy firms *(Murphy (2003) defines new economy firms like firms competing in the computer, software, internet, telecommunications, or networking fields)* are fundamentally different in terms of many characteristics they possess compared to the old economy firms. However, these studies have some limitations in terms of the nature and scope of their inquiry, and these limitations provide the motivation for the current research. There is only one study (Stathopoulos et. al, 2004) that analyzes the executive compensation for both the new and the old economy firms, but it focuses on a small period of 1996 through 1999 - that is economic boom period of 90s and just before the NASDAQ Crash in 2000. The findings of the study could be influenced by the chosen economic boom period and are probably difficult to replicate in other periods. The other limitation is that most studies focus on the preponderance of stock options as a form of executive compensation without analyzing the remaining components of the compensation.

Also all other studies on executive compensation, except Murphy (2003), examine small periods of time; therefore, the conclusions achieved by these studies must be validated for a longer period of time.

Our research extends the previous research on incentive contracts in several ways. First of all, we include both new as well as old economy firms in our analysis and we utilize a longer time period (1992 to 2004) that can give us a better understanding of the trends in the value and composition of executive compensation. We also extend the analysis to all the important compensation components (salary, bonus, stock options, restricted stocks and long term incentive plans), as opposed to focusing only on one component of compensation - stock options. Our selected time period enables us to gauge the impact of the economic boom period (till 2000), the NASDAQ Crash (after 2000) and the Sarbanes Oxley Act (2002) on executive compensation of old versus new economy firms. We also investigate the determinants of executive compensation for new versus old economy firms. Based on the inherent differences between new and old economy firms, we believe that executive compensation may be influenced by different factors.

Data is from the Standard and Poor's ExecuComp database[1] that collects information about the five most well paid executives from firms listed on S&P Indexes. We use Unbalanced[2] Panel Data and fixed effect regression analysis, and our final sample is composed of 67437 observations of executive compensation for the 13 year period from 1992 to 2004.

In this study we also deal with the old problem in executive compensation literature as to what is the best variable to measure the impact of the firm size: LN (assets), LN (market value), LN (sales) or these variables without a natural logarithm. Effectively, firm size is described as one of the most important variables to explain the executive compensation. Still, using only one of these variable and excluding the others creates some doubt about the quality of the results. To solve this problem, we use the Principal Component method and extract a factor that is the best combination of the three stated variables to measure the firm size.

Our results reveal that the number of executives in new economy firms is considerably smaller than the number of executives in old economy firms. Most of the new economy executives are from firms associated with *Pre-packaged Software* (26.02%), Semiconductor and Related Devices (17.29%), Computer Programming, Data Processing (9.46%) and Telecommunications (7.50%). We also find a gap between new and old economy executive compensation, but this gap decreases during the last years in our sample.

Our results also reveal that the factors that explain executive compensation in new versus old economy firms are generally different, and in the case of the variables that are the same, our tests generally rejected the hypothesis that the coefficients related to these common factors are equal.

The most important contribution of this paper is to find that the reward structures for different sectors of industry at different stages can be different, and the NASDAQ Crash and the Sarbanes Oxley act of 2002 instituted a fundamental change in the forms of executive compensation by reducing the use of stock options and increasing the use of bonuses and restricted stocks[3].

The paper is organized as follows: Section 2 discusses the literature review. Section 3 describes the research questions and hypotheses. Section 4 explains the empirical tests. Section 5 states the results, and Section 6 presents the summary and conclusions.

2. Review of Literature

The literature review most closely related to our current inquiry can be categorized into four areas: A) Executive compensation studies; B) New versus old economy firms; C) Firm size; and D) Summary of the Sarbanes-Oxley Act of 2002 (SOX).

2.1 Executive compensation studies

One limitation of the executive compensation research around the world is the fact that only a small number of the countries (ex: US and England) have legislation that obligates companies to display individually executive compensation for top executives. The display of executive compensation has been obligatory in the US for a long time, but in most other countries, such information is only given to the market aggregated by boards. Chizema (2008) identifies, for the German market, what characteristics make companies resist disclosing data about executive compensation and finds that ownership, dispersed ownership, state ownership, prior adoption of shareholder value-oriented practices, and firm size are positively and significantly related with the

[1] The ExecuComp version is from 06-2006.

[2] An Unbalanced Panel data is, in our case, a panel where some executives don't have information in all the variables to whole analyzed period (1992 to 2004). The reason why this happens is because Execucomp database only collects information related with five most well paid executives of each of the S&P1500 listed firms. Some executives can be in this top 5 ranking between1992 to 2004 and others not.

[3] Restricted stocks are stock subject to restrictions on sale and risk of forfeiture until vested by continued employment. Restricted stock typically vests in increments over a period of several years. Dividends or dividend equivalent rights may be paid, and award holders may have voting rights during the restricted period.

disclosure of individual executive compensation. The size of the supervisory board and the number of the year of the firm are negatively and significantly related with individual disclosure of executive compensation.

As discussed earlier, there is only one study that includes samples of both the new and old economy firms based on data from U.K. listed firms (Stathopoulos et. al, 2004). Results show that new economy firms pay more stock options to executives compared to old economy firms. The authors attribute the differences in payment methodologies between old versus new economy firms to differences in firm size, growth opportunities, financial leverage, ownership, and governance arrangements. Stock options are also the reason why CEOs in the US receive, on average, higher compensation than executives in the U.K. (Canyon and Murphy, 2000). Due to institutional and cultural differences between the two countries, US companies give more stock options than UK companies. Conyon et al. (2000) also complement the information that portfolio of options varies with firm wealth.

Anderson et al. (2000) produced the pioneer study on executive compensation focusing on US new economy firms. They utilize the US data from 1992 to 1996. They find that the new economy firms pay more to executives based on firm performances, essentially with stock options. Conyon and Freeman (2000) show that firms with executive compensation packages significantly based on stock options exhibit higher productivity than other firms, and Frey et al. (2006) find that the relationship between CEO compensation and firm performance is smaller for firms with Social Responsibility than for firms with no Social Responsibility. Ittner et al. (2003) demonstrate, contrary to expectations, that significant equity options grants have relatively little association with future performance, providing no support for claims that the large equity options grants by new economy firms have a substantial negative impact on shareholder value. The most important factor that explains the grant of a significant amount of stock options to executives is to retain them in the firm. Murphy (2003) extends the research by increasing the sample period (1992 to 2001), and confirms that executives from new economy firms receive more stock options relative to the old economy firms. Murphy's period of analysis is only until 2001 - one year after the NASDAQ crash, so it does not give a clear picture of the real impact of the crash on the structure of executive compensation. He only describes that the NASDAQ crash has left many employees of new economy firms with seemingly worthless underwater options but says nothing as to what happens to other compensation components such as salary, bonus, restricted stocks and long term incentive plans.

Sesil et. al (2002) find that new economy firms that pay executives compensation predominantly in the form of stock options have a greater value added per employee as a measure of performance. They also find that shareholders of new economy firms earn higher cumulative total returns.

Chen and Hung (2006) investigate the relationship between corporate governance factors and insider compensation in high technology firms and find that the existence of the founder CEO is negatively related with CEO cash compensation and positively related to CEO option compensation. Chen (2008) also analyzed S&P 1500 companies and found that CEO ownership and board independence affect, in different ways, the cash holdings in new economy and old economy firms. More precisely, higher board independence tends to increase cash holdings in new economy firms, and higher managerial cash holdings tend to reduce cash holdings in companies from the old economy.

Literature offers numerous underlying reasons to explain why new economy firms grant more stock options to executives compared to the old economy firms. Stathopoulos et. al (2004) believe that stock options are granted to the new economy executives to align the interests of shareholders with the management, reduce the agency costs, achieve beneficial tax gains, and attract and retain executives with significant knowledge of new technologies. Andersen Banker and Ravidran (2000) explain that new technology firms award stock options to executives because of cultural norm and practices in this sector of economy. Ittner et al. (2003) are of the view that new economy firms give stock options to executives because the firms have difficulty generating enough cash flow to pay high salaries. Murphy (2003) complements this information, adding that large firms compete in the market for high quality executives, and the compensation contracts that they offer to these executives force other firms to use the same structure of compensation, including stock options as a major component of compensation package. Another reason invoked is related to what the author calls the "perceived-cost-view", meaning that there is the wrong perception that executives compensated with stock options constitute a cheap form of compensation.

Essentially, new economy executive compensation research focuses basically on one component of the executive compensation - stock options - at the expense of other components of the executive compensation. It will be more comprehensive and useful to include the other components of compensation like salary, bonus, restricted stock and long term incentive plans as well. This way it will be possible to analyze the change, if any, in the composition of executive compensation over time.

2.2. Differences between new and old economy firms

New economy firms differ from old economy firms essentially because they produce higher growth of

sales and income; they spend more money for research and development; they present low ratios of book-to-market value; they offer lower dividends per share and a high volatility of share returns. They still hold a smaller number of employees, a reduced market value and smaller accounting returns than old economy firms. In addition, they provide a larger compensation relative to capital ownership, have a higher percentage of stock options and a higher percentage of the volume of stock options not exercised in relation to the total number of outstanding shares (Ittner et al., 2003; Murphy, 2003 and Stathopoulos et. al, 2004).

2.3. Firm size and executive compensation

Firm size has been presented in literature as one of the most important factors that influence executive compensation (Murphy and Conyon, 2002). It makes sense because big companies normally can pay higher remuneration whereas smaller companies can not.

When companies award top executives stock options plans, they normally expect an increase in performance (Portnot and Moltzen, 2000). Hermalin and Wallace (2001) and Aggarwall and Samwick (1999) find that the performance increases when company size also increases. In other words, there exists a positive relationship between the firm size, stock options grants and the firm performance. Canarella and Gasparyan (2008) also document that the effect of firm size on CEO compensation in new firms is more significant after the NASDAQ Crash in 2000.

An interesting finding that relates executive compensation and firm size is that mergers are motivated to increase the size of the firm so the executives of the firm may be able to demand an increase in compensation (Datta et al., 2001). Boyd (2006) also find that firm size, firm profitability, directors equity ownership, and resource richness of the board are positively and significantly related to director's compensation, but the power explanation of this variables reduced in last year.

Bushman et al. (1996) show that the firm size is positively related to salary and bonus but negatively related to long term compensation. Bertrand and Hallock (2002) find that firm size can also explain the difference in total compensation between men and women working in top positions. In other words, the gender gap is higher in bigger companies than the smaller companies.

The size of the company is also important for resetting, also called re-pricing, of stock options plans. As described above, new economy firms award more stock options to their executives. After the NASDAQ crash in 2000 the most granted options turned out to be out-of-the-money options, and the compensation based on the option incentive mechanism became ineffective (Murphy, 2003). The solution that many companies found to retain high level executives was to change the exercise price to a new price closer to the market. Some companies cancelled the old options packages and offered new compensation packages or, in some cases, gave additional compensation based on cash. The process of re-pricing of the stock options plans is more common in small firms, younger firms, new economy firms or firms with the out-of-the money stock options (Bens et al., 2003; Brenner et al., 2000; Carter and Lynch, 2003; Chance et al. 2000 and Chidambaran and Prabhala, 2003).

Despite the tremendous significance of the size variable in the executive compensation literature there is still no consensus as to what is the best empirical proxy for this variable - LN (assets), LN (market value), LN (sales) and or these variables without a natural logarithm. Ittner, Lambert and Larker (2003) also use the variable number of employees to measure the impact of firm size on executive compensation. In the mind of the researchers, however, there exists a doubt if using one of the above variables, at the exclusion of other variables, will produce inferior results. In this study we try to solve this problem using factor analysis, as discussed later.

3. Research hypotheses

As discussed earlier, Ittner et al. (2003), Murphy (2003) and Stathopoulos et. al (2004), among others, argue that the new and old economy firms differ in many important aspects including, but not limited to, growth rates, R&D budget, book-to-market ratios, dividends, volatility of share returns, number of employees, market value, accounting returns, compensation relative to capital ownership, and stock options grants. Given these inherent differences, we expect that total compensation will also be different between the executives of these two groups. To investigate this situation we use the following hypotheses:

Hypothesis 1:

H0a: Total average executive compensation is the same for new versus old economy firms.

H1a: Total average executive compensation is not the same for new versus old economy firms.

As discussed earlier, Stathopoulos et al. (2004), among others, describe that new economy executives have compensation packages with more stock options than the old economy executives, and this difference in compensation relates to firm size, growth opportunities, firm financial policies, ownership, and governance arrangements. Based on these elements, I expect that the compensation composition of executives in new versus old economy firms will be different. By compensation composition I mean the weight of each component of compensation such as salary, bonus, stock options and long term incentive

plans. For example, 15% salary weight means that the salary component represents 15% of the total compensation. Because I have a panel of data with information from 1992 until 2004, I capture the boom period between 1995 to 2000, characterized by a significant number of the companies giving executives compensation plans based on firms performances, plus the period after the crash in 2000, and a third period characterized by strong market regulations to control corporate governance problems (Sarbanes Oxley Act in 2000). Given the above, I expect that the relative weighting of components of executive compensation also changed during the analyzed period. The null hypotheses that I test is:

Hypotheses 2:

Hob: Executive compensation composition is the same for the new versus the old economy executives.
H1b: Executive compensation composition is not the same for the new versus old economy executives.

Murphy (2003) indicates that the market crash left many employees of new economy firms with out-of-the-money stock options. As a result, the surviving new economy firms tried to grant new options, reprice or reissue the existing options or replace option grants with another compensation component. But the analysis done by Murphy only encompasses one year of data after the NASDAQ crash and focuses only on stock options. Murphy's analysis is silent as to what really happens after that 2000 crash in terms of executive compensation structure. Using the longer period (as I do in this study), it is possible to expand Murphy's conclusions and extend his evolutions not only to stock options but to all the other compensation components, verifying if companies reduced the use of some components and increased the use of others. I expect that the new rules of corporate governance reduce the use of stock options and thus companies are forced to use the less risky compensation components. To analyze the situation, I test the following null hypotheses:

Hypotheses 3:

H0c: NASDAQ crash and Sarbanes Oxley Act do change the executive compensation composition.
H1c: NASDAQ crash and Sarbanes Oxley Act do not change the executive compensation composition.

If new and old economy firms are different, I also expect that the factors that influence executive compensation can also be different. This way I test the following null hypotheses:

Hypotheses 4:

H0d. The factors that explain executive compensation are the same for new and old economy executives.

H1d. The factors that explain executive compensation are not the same for new and old economy executives.

4. Empirical Tests

4.1. Sample selection

Data is from the Standard and Poor´s ExecuComp database that collects information about the five most well paid executives from firms listed on S&P Indexes. I use Unbalanced Panel Data, and our final sample is composed of 67437 observations of executive compensation for the 13 year period from 1992 to 2004[4]. I retrieve compensation package details for up to the top five executives in each firm, including salary, bonus, ex-ante value of options, restricted stock award, Long term Incentive plan (LTIP), other annual compensation, all other compensation and several variables associated with governance and finance.

To develop the sample used in this study, I apply a few restrictions. First, I remove 122 observations whose sum of salary and bonus was equal to zero, in other words, those executives who received neither salary nor bonus during the year, instead received some other remuneration types. I want to analyze only those executive that receive fixed compensation each month or week and thus pay their regular expenses like house loan, food, etc. I also exclude observations where total compensation is equal to zero that represent a total 400 exclusions.

Anderson et al. (2000), Murphy (2003), Ittner et al. (2003), Stathopoulos et al. (2004) and Chen and Hung (2006) say nothing about the exclusions that they have made in the database, but I suppose that, essentially those who work with Execucomp database, also delete cross-section where total compensation appear with zero value. It doesn't make sense to include such situations in the data.

Using the Consumer Price Index (CPI) compiled by the Bureau of Labor Statistics, with 1982 as the base year, I adjust the monetary variables for inflation.

In order to distinguish between executives from new and old economy firms, I use the methodology of Murphy (2003), who considers firms from the new economy with SIC codes 3570, 3571, 3572, 3576, 3577, 3661, 3674, 4812, 4813, 5045, 5961, 7370, 7371, 7372 and 7373 and firms from the old economy with SIC codes lower than 4000 unless categorized as new economy firms.

4.2. Measurement of dependent variable(s)

In this part I describe the methodology to test whether the executive compensation in new versus old

[4] Last year of information available from Execucomp database when I started this investigation

economy firms is influenced by the same factors, and if it is influenced by the same factors then whether the intensity of common factors is same or different.

I use Unbalanced Panel Data and the Fixed Effect Regression Model, also called within estimator or the Least Square Dummy Variable model. The dependent variables are LN (Total Compensation) and LN (Short Term Compensation) and LN (Option Ratio).

LN (Total Compensation) is the total of remunerations gained by the executives and is the sum of salary, bonus, stocks options, restricted stocks, LTIP[5], other annual compensations and all other compensations. This variable, without logarithm, is used by Aggarwal and Samwick (1999) to evaluate the contracts offered to executives in a context of strategic competition between products and evaluation of relative performance, and by Fields and Fraser (1999) to unmask the commercial banks when they attribute compensations to link executives to the performances. Chen and Hung (2006) also use this variable.

LN (Short Term Compensation) is the LN (salary+bonus). Salary and the bonus are considered short-term remunerations, and they are usually received in money. I use this variable like Stathopoulos et. al (2004) and Chen and Hung (2006).

Finally I also use LN (Option Ratio). I define option ratio as a percentage of options received by the executive relative to total compensation. This variable is also used by Chen and Hung (2006).

Each one of these dependent variables will be confronted separately against a group of independent financial and governance variables with the intention of finding, in a more trustworthy way, possible differences of compensation between new versus old economy executives.

The model is:

$$\begin{aligned} LN(Compensation) = {} & \beta_0 + \beta_1 * New\ Economy + \beta_2 * Firm\ Size\ \ Component + \\ & + \beta_3 * (New\ Economy * Firm\ \ Size\ Componet) + \beta_4 * LN(Not\ \ Exercised\ Ratio) + \\ & + \beta_5 * (New\ Economy * LN(Not\ \ Exercised\ Ratio)) + \beta_6 * LN(Number\ MTGS) + \\ & + \beta_7 * (New\ Economy * LN(Number\ MTGS)) + \beta_8 * LN(Tenure) + \\ & + \beta_9 * (New\ Economy * LN(Tenure)) + \beta_{10} * LN(Ownership) + \\ & + \beta_{11} * (New\ Economy * LN(Ownership)) + \beta_{12} * Growth\ 5Y + \\ & + \beta_{13} * (New\ Economy * Growth\ 5Y) + \beta_{14} * LN(BS\ Volatility) + \\ & + \beta_{15} * (New\ Economy * LN(BS\ Volatility)) + \beta_{16} * CEO + \\ & + \beta_{17\ldots28} * Years\ Dummy(1993\ldots2004) + f + \varepsilon \end{aligned}$$

The dependent variable LN (Compensation) can assume the values of LN (Total Compensation), LN (Option Ratio) and LN (Short Term Compensation) and f is the fixed effect.

[5] A Long Term Incentive Plan (LTIP) is any plan that provides compensation that is intended to serve as an incentive for performance and that occurs over a period longer than one year but not including restricted stock, stock option or stock appreciation rights plans.

4.3. Measurement of independent variables

I use two sets of independent variables, financial and governance, as described below.

Financial Variables

Generally, the firm size in executive compensation literature is used as one of the following variables: LN (Mktval), that is the natural logarithm of the market value of the firm, defined as the closing price for the fiscal year multiplied by the common shares outstanding (Datta et al., 2005); LN (Sales) is the natural logarithm of net annual sales as reported by the firm, and this proxy is used by many, including Elston and Goldberg (2003) and Aggarwal and Samwick (2003); and the LN (Assets) that is the natural logarithm of the total assets as reported by the firm, and this proxy is used by many including Anderson and Bizjack (2003) and Grinstein and Hribar (2004). One of the problems in all these studies is that the researchers use one of these variables at the expense of other variables. They expect to receive better results by using one variable and ignoring the others, but there is no sound reason for ignoring one variable and selecting another.

Because these variables are highly correlated, and can not be introduced at the same time to explain executive compensation, I use Principal Component Analysis to extract a factor that contains optimal information from the three variables. Consequently, I offer a solution to this old problem of using size variable in executive compensation literature.

Table 1 describes the statistics of Principal Component Analysis. The Principal Component Analysis methodology can be described, in this case, as:

$$\begin{aligned} & y_1 = a_{11}LN(Sales) + a_{12}LN(Assets) + a_{13}LN(Mktval) \\ (1)\ & y_2 = a_{21}LN(Sales) + a_{22}LN(Assets) + a_{23}LN(Mktval) \\ & \ldots\ldots\ldots \\ & y_p = a_{p1}LN(Sales) + a_{p2}LN(Assets) + a_{p3}LN(Mktval) \end{aligned} \qquad (2)$$

Where y_1, y_2, y_p are factors and

$$\sum_{i=1}^{P} a_{ij} = 1$$

Table 1. Statistic from Principal Component Analysis

Panel A: Correlation Matrix (a)

		LN(Assets)	LN(Sales)	LN(Mktval)
Correlation	LN(Assets)	1	0.92	0.83
	LN(Sales)	0.92	1	0.75
	LN(Mktval)	0.83	0.75	1

Panel B: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.67	88.98	88.98	2.67	88.98	88.98
2	,266	8.878	97.860			
3	0.064	2.140	100.000			

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To apply the Principal Components analysis it is necessary to have a high correlation among the variables. I use the Kaiser-Meyer-Olkin (KMO) test that compares the correlation between the variables. I find in table 1 that the variables are indeed highly correlated. I find only one factor with Initial Total Eigenvalues superior to 1 that explains 88.98% of the total variance. The vector is:

$$Y_1 = a_{11}\,\mathrm{LN(Sales)} + a_{12}\,\mathrm{LN(Assets)} + a_{13}\,\mathrm{LN(Mktval)} \quad (3)$$

or

$$\text{Firm Size Component} = 0.975 * \mathrm{LN(Assets)} + 0.945 * \mathrm{LN(Sales)} + 0.909 * \mathrm{LN(Mktval)} \quad (4)$$

I will use the Firm Size Component to test the impact of firm size on total compensation, option ratio, and short term compensation of new and old economy firms. Much of literature on executive compensation shows an expectation that firm size will be one of the most important factors to explain variations in executive compensation. It makes sense because bigger companies can generally pay more to executives than the smaller companies. Thus, I expect a positive relationship between size and all the dependent variables.

I also use the variable LN(Not Exercised Ratio), which is the natural logarithm of the number of vested but unexercised options that the executive held at year end divided by the aggregate number of stock options/stock appreciation rights granted. I expect that the number of options vested but not exercised has a negative relationship with total compensation and options ratio, meaning that if the executive has stock options that are not exercised, the firm will probably give fewer stock options in the future. I expect that effect will be more pronounced in new economy firms because many researchers such as Anderson et al. (2000), Ittner et al. (2003), Murphy (2003) and Stathopoulos et al. (2004) show that new economy firms grant more stock options to the executives.

To analyze the relationship between the risk and executive compensation, I use the variable LN (Bs Vlatility), which is the natural logarithm of the standard deviation calculated over 60 months with Black and Scholes´ methodology. Chen (2004) and Palia (2001) also use the same variable but without the natural logarithm. I expect a negative relationship between firm risk and short term compensation because if the volatility is higher, the firm can reward the executives with stock options (and not salary +bonus) as the option value increases with stock return volatility.

I also use the variable LN (Ownership), which is the natural logarithm of the percentage of the company's shares owned by the named executive officer. Morck et al. (1988) separates the impact of ownership variable on executive compensation into convergence and entrenchment effects with divergent implications. When the interests are convergent, the executive stock ownership aligns the interest of the executives with the shareholders, and consequently it is not necessary to give more incentives to executives to increase firm performances. In cases where entrenchment exists (Jensen and Meckling, 1976), executives' and shareholders' objectives are different, and executives can extract high compensation based on even low firm performance. This way, I can see that the level of entrenchment increases when executive ownership also increases. Core et al. (1999), Barron and Waddell (2003), Chen (2004), among others, also use this variable to analyze the impact of ownership on executive compensation. Similar to previous research findings, I expect that the percentage of the company shares owned by the executive will have a negative relationship with the executive compensation. According to Chen and Hung (2006), higher ownership indicates that managers' interests are more aligned with shareholders. This is also true because if the executives have ownership in the firm, they are already more involved and concerned about improving the firm's stock price, and therefore it is not necessary to increase the incentives to reduce agency costs.

To measure the impact of the firm growth on executive compensation, I use the variable Growthy 5Y, which is the 5-years least square annual growth sales rate.

I expect a positive relationship between the sales growth of the firm and dependent variables, meaning that if firm sales grow executives will ask for more money.

I use New Economy dummy that is equal to 1 when company is from new economy and zero when is from old economy. The variable CEO is also a dummy that is equal to 1 when executive is a CEO and 0 when not. I expect a positive relationship between CEO dummy and all the dependent variables meaning that CEO receives more than other executives.

To control for the effect of time, I use one dummy variable for each year between 1993 and 2004, just like Barron and Waddel (2003) and Grinstein and Hribar (2004). I expect that the dummy variable will be significant in explaining executive compensation, particularly in the bubble period of 1998 to 2000.

Governance Variables

LN (Tenure) is the natural logarithm of the number of years that the executive has been on the job, for example, in the capacity of the CEO. A significant number of researchers such as Chindambaran and Prabhala (2003), Ryan Jr and Wiggins III (2004), Murphy (1986), Barro and Barro (1990), Hallock (1997) and Chen (2004) use this variable with or without the natural logarithm to explain executive compensation. I expect a positive relationship between executive compensation and tenure because I observe that more experienced executives command higher compensation in the real world.

The influence of the board and the composition of the Compensation Committee on the executive compensation is one of the most recent fields of research in the area of executive compensation. Ryan Jr and Wiggins III (2004) find that the CEO compensation is related to the power and the influence that the CEO has on the board. They also find evidence that firms with external directors in the board pay more compensation based on stock options and restricted stocks. Anderson and Bizjak (2003) analyze whether board independence promotes the shareholders' interests and if the presence of the CEO in the Compensation Committee is related to opportunist behavior. They do not find evidence that when the executive leaves the compensation committee, the remuneration decreases.

To analyze the relationship between board members and executive compensation, I use the variable LN (Number Mtgs) similar to Davidson III et al. (1998), which is the natural logarithm of the number of board meetings held during the indicated fiscal year. According the authors, board members are more aligned with shareholders´ interests when they have more meetings during the year. Because of that I expect a negative relationship between the number of meetings and executive compensation.

5. Results

5.1. Univariate tests

Table 2 presents the number of observations (compensation items) for each SIC code of new and old economy firms. For example, there are 123 compensation items from Computer and Office Equipment industry, which represent 0.77% of the total compensation items in that industry (% of the group) and 0.18% of the total sample of observations from old and new economy firms. Our sample has nearly 76% observations from old economy and 24% observations from the new economy firms. Moreover, I can see from table 2 that our sample observations are dominated by executives associated with companies from Pre-Packaged Software, Semiconductor, Related Devices and Telecommunications industries.

In Table 3, I present the results of our first hypothesis, whether or not the average executive compensation is the same for executives in new economy versus old economy firms. I also show the t-test of independence of means of executive compensation for new versus old economy firms during the period from 1992 to 2004.

Table 2. Number of items of compensation by SIC Code

SIC Code	SIC Code Description	Number of items of compensation	% of the group	% of total (old+ New economy)
PANEL A: New Economy				
3570	Computer and Office Equipment	123	0.77%	0.18%
3571	Electronic Computers	590	3.68%	0.87%
3572	Computer Storage Devices	595	3.71%	0.88%
3576	Computer Communication Equipment	981	6.12%	1.45%
3577	Computer Peripheral Equipment	412	2.57%	0.61%
3661	Telephone & Telegraph Apparatus	972	6.07%	1.44%
3674	Semiconductor and Related Devices	2770	17.29%	4.11%
4812	Wireless Telecommunication	423	2.64%	0.63%
4813	Telecommunication	1201	7.50%	1.78%
5045	Computers and Software Wholesalers	288	1.80%	0.43%
5961	Electronic Mail-Order Houses	562	3.51%	0.83%
7370	Computer Programming, Data Proces sing	1515	9.46%	2.25%
7371	Computer Programming Service	182	1.14%	0.27%
7372	Prepackaged Software	4168	26.02%	6.18%
7373	Computer Integrated Systems Design	1238	7.73%	1.84%
	Total New Economy	**16020**		
PANEL B: Old Economy				
< 4000 and not new economy		**51417**		76.24%
Total New+Old Economy		**67437**		

Notes: To distinguish between executives from new and old economy firms, I used the methodology of Murphy (2003) that considers firms from new economy those with SIC code 3570, 3571, 3572, 3576, 3577, 3661, 3674, 4812, 4813, 5045, 5961, 7370, 7371, 7372 e 7373 and firms from old economy those with SIC code less than 4000 and not yet categorized with new economy.

Table 3. Mean total executive compensation levels for new and old economy firms (1992-2004)

	New Economy		Old Economy		T test of mean		
	N	Mean	N	Mean	Mean Difference	t	Sig.
1992	485	1477.41	2412	1260.39	217.02	2.134	0.033
1993	887	1399.42	3778	1183.84	215.58	3.177	0.002
1994	958	1668.20	4058	1302.55	365.65	4.640	0.000
1995	1026	828.22	4166	1306.67	521.56	4.529	0.000
1996	1226	2339.72	4319	1542.72	797.01	5.414	0.000
1997	1398	2721.97	4335	1815.28	906.67	5.558	0.000
1998	1495	3438.06	4419	2805.12	1641.51	2.664	0.008
1999	1577	4996.27	4301	2145.37	2850.90	7.368	0.000
2000	1507	6660.90	4091	2570.57	4090.85	9.109	0.000
2001	1417	5159.96	3880	2438.90	2721.07	6.032	0.000
2002	1366	3114.48	3942	2165.15	949.34	5.283	0.000
2003	1373	2346.03	3926	2033.53	312.50	2.863	0.000
2004	1305	2618.61	3790	2420.20	208.42	1.384	0.166

Table 4. Executive components as a percentage of total compensation in new and old economy firms (1992-2004)

PANEL A: CEO´s

	N		Salary		Bonus		Stock Options		Restricted Stocks		LTIP	
Year	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
1992	27	170	37.51%	39.02%	25.00%	19.30%**	23.70%	26.28%	2.84%	4.30%	6.20%	6.02%
1993	118	537	35.50%	43.12%*	19.84%	19.80%	37.65%	22.60%*	1.10%	4.80%*	2.18%	3.47%
1994	161	701	32.55%	41.02%*	19.25%	20.91%	40.58%	26.22%*	1.80%	4.25%*	1.39%	2.77%**
1995	167	732	33.31%	40.92%*	18.87%	21.22%	39.46%	26.22%*	1.41%	4.25%*	2.48%	3.32%
1996	175	745	31.12%	37.32%*	17.01%	20.28%**	42.22%	24.65%*	3.81%	4.09%	1.52%	3.77%*
1997	201	751	30.19%	33.96%***	16.30%	20.74%*	45.67%	29.03%*	1.93%	4.36%*	1.22%	4.46%*
1998	220	761	30.23%	34.52%**	13.72%	18.50%*	49.28%	31.07%*	1.32%	4.36%*	0.76%	3.23%*
1999	278	765	28.14%	31.81%***	12.56%	18.96%*	52.87%	34.42%*	1.50%	3.77%*	0.94%	3.15%*
2000	270	757	28.09%	31.96%***	13.09%	18.56%*	53.54%	36.84%*	1.28%	4.64%*	0.39%	2.77%*
2001	**249**	**703**	**25.59%**	**32.76%***	**8.69%(*)**	**14.51%*/(*)**	**57.80%**	**36.37%*/(*)**	**2.44%(*)**	**4.70%***	**0.64%**	**2.07%***
2002	237	700	28.11%	30.99%	10.02%	17.78%*	54.95%	40.48%*	2.07%	6.06%*	0.42%	2.89%*
2003	**239**	**701**	**30.14%**	**31.83%**	**15.70% (*)**	**18.44% ****	**44.98% (*)**	**35.57% */(*)**	**5.21%(*)**	**7.85% **/(*)**	**0.29% (*)**	**3.98% */(**)**
2004	239	711	27.34%	28.03%	14.71%	22.73%**	46.83%	32.77%*	7.19%	11,07%*	0.43%	3.73%*

PANEL B: DIRECTORS

	N		Salary		Bonus		Stock Options		Restricted Stocks		LTIP	
Year	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
1992	206	1121	42.29%	46.38%**	19.77%	18.49%	29.91%	22.28%***	1.90%	3.76%***	2.88%	3.65%
1993	325	1584	41.24%	45.71%***	18.96%	19.17%	33.49%	22.06%***	1.40%	3.84%***	1.72%	3.08%***
1994	331	1594	37.47%	42.73%***	19.40%	21.03%***	35.56%	24.87%***	2.06%	3.46%***	1.55%	2.84%***
1995	349	1593	35.39%	42.86%***	19.45%	20.77%	36.32%	22.71%***	1.71%	3.95%***	2.51%	3.45%*
1996	418	1606	34.18%	39.12%***	15.90%	20.03%*	41.76%	27.81%***	2.77%	3.93%***	1.24%	3.59%***
1997	465	1618	32.58%	36.56%***	15.54%	20.57%*	43.88%	29.62%***	2.08%	3.97%**	1.20%	3.94%***
1998	478	1611	34.72%	36.54%	13.81%	18.08%*	44.17%	32.76%***	1.39%	4.03%***	0.69%	3.09%***
1999	483	1492	30.09%	34.04%***	13.10%	19.24%*	49.50%	34.36%***	1.82%	3.65%***	0.99%	2.85%***
2000	464	1362	27.97%	33.59%***	11.70%	18.83%*	53.81%	34.42%***	1.69%	4.64%***	0.43%	2.52%***
2001	**416**	**1229**	**28.07%**	**34.75% *****	**8.52% (***)**	**1.,39% ***/(***)**	**56.32%**	**37.72% ***/(***)**	**2.04% (***)**	**4.11% ***/(***)**	**0.56% (***)**	**1.99% ***/(***)**
2002	373	1180	29.70%	32.85%***	10.32%	18.32%***	52.67%	34.88%***	1.76%	5.60%***	0.58%	2.55%***
2003	**354**	**1144**	**32.15%**	**32.93%**	**15.24% (***)**	**19.51% ***/(**)**	**43.27% (***)**	**31.10% ***(***)**	**4.31% (***)**	**7.15% ***(***)**	**0.30% (***)**	**3.30% ***/(***)**
2004	343	1065	29.74%	28.92%	15.62%	22.86%***	43.75%	28.49%*	6.66%	10.31%***	0.71%	3.61% ***

***Note 1*:** Difference between old and new economy is statistically significant at 1% level ***, 5% level ** and 10% level *. In rows for years 2001 and 2003 I also describe if the differences between each component of compensation between years 2001 and 2000 (before and after Nasdaq crash) and 2003 related to 2002 (before and after Sarbanes-Oxley Act) are statistically significant. Significance is presented as ( ).

Table 3 shows, with the exception of the year 1993, that the total average compensation of executives from both new and old economy firms increases from 1992 to 2000 (NASDAQ crash), decreases until 2003, and starts to increase again, but slowly, in 2004. I can also verify that the difference in mean total compensation between the two groups of executives is high in the years 1999 and 2000 but reduces drastically after 2002 (Sarbanes Oxley Act), and it is small in 2004, closer to 1992 values.

In Table 4, I test hypothesis 2, if the composition of executive compensation is the same for new versus old economy executives. The table summarizes the evolution of the compensation components (as a percentage of total compensation) for new versus old economy firms from 1992 to 2004. I use the Independent-Samples T-test to compare the means of executive compensation components and Levene's test for equality of variances between the two sub-samples of old versus new economy firms.

In table 4, I also test hypothesis 3, whether or not the NASDAQ crash and the Sarbanes Oxley Act changed the executive compensation composition. I perform the same tests, as described above, to compare if the difference between the values of each component of compensation in the years 2001 to 2000 (before and after the NASDAQ crash) and years 2003 to 2002 (before and after the Sarbanes-Oxley act) is statistically significant.

We see from the examination of the compensation for CEO and Directors that beginning in 1992, salary is the most important component of compensation in both new and old economy firms. In the case of new economy firms, however, after 1993 stock options become the most important compensation component for CEOs.

This finding is compatible with the previous studies, including Anderson et. al (2000), Murphy (2003), Ittner et al. (2003) and Stathopoulos et al. (2004). But our results also document something new: it is not only in new economy firms that stock options represent the largest part of compensation for CEOs. After 1998, stock options are also the most important compensation component in old economy firms but in a smaller percentage. The difference between the first (stock options) and second (salary) most important compensation components, is higher in new economy firms. More importantly, I find that despite the scandals of firm bankruptcies attributed to performance based options grants, stock options continues to be the most important component compensation for CEOs until 2004 for both the new economy and the old economy firms.

In the case of Directors, salary is the most important compensation component in 1992 for new as well as old economy firms. After 1995, stock options become the most important compensation components in new economy firms and continue to be the largest compensation item until the end of our study (2004). In the case of old economy firms, the situation is different. Salary is the most important component from 1992 to 1999 and again in 2003. In the year 2004, the compensation weights of salary and stock options are practically the same for Directors of old economy firms.

In hypothesis 3, I test if the *NASDAQ* crash and the Sarbanes Oxley Act change the executive compensation composition. Rows for the years 2001 and 2003 in table 4 represent if the change between the values of each component of compensation in the years 2001 to 2000 (before and after the NASDAQ crash) and the years 2003 to 2002 (before and after the Sarbanes-Oxley act) is statistically significant. In the case of the CEOs, the changes are statistically significant for bonus and stock options. In the case of the Sarbanes Oxley Act impact, I find statistically significant changes in stock options, restricted stocks, and long term incentive plans for old economy firms. In the case of Directors, the changes related to the NASDAQ crash are statistically significant for bonus, stock options, restricted stocks, and long term incentive plans in old economy firms.

From table 4, I see that stock options for CEO and Directors continues to be the most important compensation component in new and old economy firms, but in most cases the options weight (percentage of the total compensation) decreases after the NASDAQ crash. However, restricted stock, and in some cases bonus, increases in years 2003 and 2004. In our view, the change from stock options to restricted stock may be due to the fact that both are compensation components associated with the performance of a firm, whereas salary is not dependent upon performance. More precisely, when a firm grants stock options to the executives, these options can be cashed in only after a significant number of years (generally 3 to 10 years) and only if the market price is higher than the exercise price. Thus, executives have an incentive to manipulate the firm accounting data to influence the stock price and to refrain from sending less positive information to the market about the future performances of the firm (Povel et al., 2007; Yermack, 1997 and Hu and Noe, 2001).

The main goal of the introduction of the Sarbanes-Oxley Act, as described earlier, was essentially to reduce the manipulative acts and fraudulent cases. Restricted stocks can be a safer compensation component than stock options because executives effectively receive stocks and not the possibility of buying stock in the future. And this way they assume the daily loss or gain if the stock price decreases or increases. Like restricted stocks, bonus is also a comparatively safe component of executive compensation though not totally free from possible manipulation of data by executives. On the other hand, salary is not a compensation component related to firm performance. In other words, if the firm pays more salary, this does not imply that executives will increase their efforts, to have better performances, as compared with options as incentive.

5.2 Multivariate tests

Hypothesis 4 tests whether the factors that explain executive compensation are the same or not for new and old economy firms. I first test for correlations among independent variables, as discussed above, and find that values are relatively low. This way, I don't have multicollinearity problems with independent variables. Tables 5, 6 and 7 present the results of LSDV (least squares dummy variables) regressions.[6]

The regression uses three separate dependent variables: LN (Total compensation), LN(Option ratio), and LN(Short term compensation). Each of the dependent variables is potentially explained by various independent variables as discussed earlier. I use unbalanced panel data because some executives do not necessarily stay with the same firm throughout our sample period. Standard errors are corrected using period Seemingly Unrelated Regression (SUR) Panel Corrected Standard Errors (PCSE) which corrects for both period heteroskedasticity and general correlation of observations within a given cross section (Beck and Katz, 1995).

[6] Because we are working with unbalanced panel data and also not all the variables have information for all the executives when we run the regression analyse, the number of observation reduce to 4290.

Table 5. Fixed Effect Regression: Least Square Dummy Variables - LN (Total Compensation)

INDEPENDENT VARIABLES	LN(TOTAL COMPENSATION)	(T-STATISTIC)
Constant	5.600***	6.546
New Economy	-0.842	-0.717
Firm Size	0.209***	22.944
New Economy * Firm Size Component	0.053***	3.776
LN (Not Exercised Ratio)	-0.249***	-26.435
New Economy * LN (Not Exercised Ratio)	-0.071***	-4.201
LN (Number MTGS)	-0.037	-1.013
New Economy * LN (Number MTGS)	-0.018	-0.287
LN (Tenure)	-0.618*	-1.779
New Economy *LN (Tenure)	0.051	0.116
LN (Ownership)	0.038**	2.183
New Economy *LN (Ownership)	-0.065**	-2.062
Growth 5Y	0.000	-0.005
New Economy *Growth5Y	0.001	1.351
LN (BS Volatility)	0.148**	2.374
New Economy *LN (BS Volatility)	0.240**	2.139
CEO	0.128***	5.221
Year 1993	-0.027	-0.583
Year 1994	0.092*	1.874
Year 1995	-0.001	-0.020
Year 1996	0.128**	2.504
Year 1997	0.171***	3.296
Year 1998	0.200***	3.742
Year 1999	0.226***	4.062
Year 2000	0.343***	5.754
Year 2001	0.331***	5.543
Year 2002	0.366***	6.094
Year 2003	0.269***	4.361
Year 2004	0.465***	6.546
Nº of observations	4290	
Adjusted R-Sq	83.25%	

*** Significant at 1% level, ** significant at 5% level * significant at 10%

Note 1: Standard errors are corrected using period Seemingly Unrelated Regression (SUR) Panel Corrected Standard Errors (PCSE): correction for both period heteroskedasticity and general correlation of observations within a given cross section (Beck and Katz, 1995)

Table 6. Fixed Effect Regression: Least Square Dummy Variables – LN (Option Ratio)

INDEPENDENT VARIABLES	LN(OPTION RATIO)	(T-STATISTIC)
Constant	-0.952	-0.929
New Economy	0.306	0.229
Firm Size Component	0.080***	8.225
New Economy * Firm Size Component	-0.012	-0.797
LN (Not Exercised Ratio)	-0.320***	-31.499

Table 6 continued

New Economy * LN (Not Exercised Ratio)	0.077***	4.345
LN (Number MTGS)	-0.117***	-3.062
New Economy * LN (Number MTGS)	0.143**	2.134
LN (Tenure)	-0.375	-0.905
New Economy *LN (Tenure)	-0.100	-0.201
LN (Ownership)	-0.060***	-3.300
New Economy *LN (Ownership)	0.010	0.303
Growth 5Y	0.001	1.583
New Economy *Grwoth5Y	-0.001	-1.347
LN (BS Volatility)	0.300***	4.573
New Economy *LN (BS Volatility)	-0.074	-0.632
CEO	0.107***	4.195
Year 1993	0.049	0.928
Year 1994	0.103*	1.827
Year 1995	-0.020	-0.348
Year 1996	0.162***	3.027
Year 1997	0.146***	2.598
Year 1998	0.177***	3.146
Year 1999	0.143**	2.433
Year 2000	0.122*	1.956
Year 2001	0.214***	3.321
Year 2002	0.179**	2.786
Year 2003	0.108*	1.647
Year 2004	0.151*	2.238
Nº of observations	4290	
Adjusted R-Sq	70.44%	

*** Significant at 1% level, ** significant at 5% level * significant at 10%

Table 7. Fixed Effect Regression: Least Square Dummy Variables – LN(Short Term Compensation)

INDEPENDENT VARIABLES	LN(SHORT TERM COMPENSATION)	(T-STATISTIC)
Contant	6.750***	6.0816
New Economy	-3.352**	-2.4523
Firm Size Component	0.124***	12.5570
New Economy * Firm Size Component	-0.022	-1.4980
LN (Not Exercised Ratio)	-0.031***	-3.3200
New Economy * LN (Not Exercised Ratio)	0.036**	2.2228
LN (Number MTGS)	-0.062*	-1.7712
New Economy * LN (Number MTGS)	-0.005**	-0.0786
LN (Tenure)	-0.809**	-1.8033
New Economy *LN (Tenure)	1.031	2.0223
LN (Ownership)	0.030	1.7548
New Economy *LN (Ownership)	-0.025	-0.8204
Growth5Y	-0.001	-0.8117
New Economy *Growth5Y	0.001	1.5037
LN (BS Volatility)	-0.019	-0.2873

Table 7 continued

New Economy *LN (BS Volatility)	-0.416***	-3.6750
CEO	0.179***	7.6436
Year 1993	-0.088*	-1.8205
Year 1994	-0.071	-1.4201
Year 1995	-0.113**	-2.2220
Year 1996	-0.104*	-1.9541
Year 1997	-0.089	-1.6145
Year 1998	-0.098*	-1.7426
Year 1999	-0.082	-1.3931
Year 2000	-0.075	-1.1967
Year 2001	-0.177***	-2.6812
Year 2002	-0.032	-0.4904
Year 2003	-0.037	-0.5356
Year 2004	0.076	1.0848
Nº of observations	4290	
Adjusted R-Sq	73.89%	

*** Significant at 1% level, ** significant at 5% level * significant at 10%

Our results reveal that there are significant differences in terms of factors explaining executive compensation in new versus old economy sub-samples, and generally these differences are statistically significant.

The dummy New Economy is not statistically significant in the case of total compensation and option ratio, but is negative and statistically significant related with short terms compensation, meaning that old economy pay more in cash than new economy firms. The results are congruent with the findings of Muphy (2003) among others who argue that new economy firms pay their executives more with stock options.

As expected, the firm's size has a positive and statistically significant relationship with total executive compensation, option ratio and short term compensation, meaning that when firm size grows executive compensation also grows. From the interaction of the variable new economy with firm size component I only find a positive relationship in the case of total compensation. Option ratio and short term compensation are not statistically significant. The results suggest that as the firm size increases, new economy executives receive more compensation than executives from the old economy firms. Stathopoulos et al. (2004) only find a positive and statistically significant relationship between firm size and total compensation in the case of Other Executive and not for CEOs.

The number of vested stock options that executives have, but not exercised, affects, in negative terms, the total compensation, options ratio and short term executive compensation and this relationship is statistically significant. From the interaction of this variable with New Economy dummy I can also conclude that the relationship is negative and statistically significant in the case of total compensation and short terms compensation and positive in the case of option ratio.

The number of board meetings is negative and statistically significant only in the case of option ratio and short term compensation. The results are congruent with the findings of Ryan and Wiggins III (2001) and Chen and Hung (2006), who believe that more monitoring power can reduce the need to provide executives with incentive compensation. Davidson et al. (1998) also defend that when board meetings increase, board members are more aligned with shareholders´ interests when they have more meetings during the year, and therefore the CEOs´ compensation is more controlled. From the interaction of new economy dummy with all the dependent variables only total compensation is not statistically significant. In the case of the interaction of this dummy with option ration I find a positive, and not negative relationship meaning that when the number of board meeting increases the number of stock options that executives receives also increase.

The number of years has CEO (Tenure) as negative and statistically significant relationship with total compensation and short term compensation, meaning that experienced executives probably receive compensation in forms other than cash. In the case of new economy firms this relationship is not statistically significant. When I include the dummy variable new economy with the dependent variables I only find a positive and statistically significant relationship with option ratio, meaning that more experienced CEOs of new economy receive more option than old economy CEOs. The firm size also influences the number of options granted to the executives in new and old economy firms, but the relationship is stronger in new economy firms.

The results are congruent with the findings of Ittner et. al, (2003), Murphy (2003), Stathopoulos et al. (2004) and Anderson et al. (2000) that new economy firms grant more stock options to executives.

Contrary to our expectations, and the results of Chen and Hung (2006), I find that executive firm stock ownership has a positive influence on the total compensation. There is a negative association between executive ownership and the number of options that executives receive. From the interaction of new economy dummy with executive ownership I find a negative relationship with total compensation. The results, in the case of new economy firms are in line with Chen and Hung (2006). Executive ownership doesn't affect cash compensation.

I do not find a statistically significant relationship between firm 5 years sales growth and total compensation, option ratio or cash compensation.

Stock return volatility has positive influence on total executive compensation and this relationship is more pronounced in new economy firms. In the case of option ratio the relationship is also positive and statically significant, but not in the case of new economy firms. These results mean that if the volatility increases, firms will reward their executives with more stock. In the case of cash compensation the relationship is negative and statistically significant only for new economy firms meaning that more volatility will imply less cash compensation in new economy firms.

As expected, the relationship between CEO dummy and total compensation, option ratio and short term compensation is positive and statistically significant in all the cases meaning that CEOs are better paid than other executives. The results are in line with literature that describes CEO as receiving more than other top executives.

Finally, in most the cases, I find that time influences executive compensation.

6. Summary and conclusion

Comparative analysis of executive compensation in new and old economy firms is practically not yet investigated in the US market whereas there is rich evidence from researchers such as Ittner et al. (2003), Murphy (2003) and Stathopoulos et al. (2004) that new economy firms are different from old economy companies. Based on these differences, I analyzed the following research questions: (1) Is executive compensation in old versus new economy firms the same? (2) Is the composition of executive compensation in old versus new economy firms the same? (3) Did the compensation composition change after the NASDAQ Crash and the Sarbanes Oxley Act? (4) Are the factors that explain executive compensation in old versus new economy firms similar?

Our results show that, on average, executives from new economy firms receive more total compensation than executives from old economy firms, and these differences are statistically significant with the exception of year 2004. This gap is congruent with the findings of Stathopoulos et al. (2004). I also add the information that the gap is higher in 1999 and 2000 (boom period), and then it starts reducing significantly until 2004. This way I reject the null hypotheses that total executive compensation in new and old economy firms is the same.

In the second research question, I analyze if the composition of executive compensation in old versus new economy firms is the same. Our results reveal that, in 1992, salary is the most important component of compensation for CEOs and Directors in new as well as old economy firms. In the case of new economy firms, after 1993 stock options become the most important compensation component for CEOs. These findings are in line with Anderson et al. (2000), Murphy (2003), Ittner et al. (2003) and Stathopoulos et al. (2004) who believe that stock option is the most important compensation component in new economy firms. I confirm their findings for a longer period of time. What is new in our results is that stock options is the most important compensation component both in new and old economy firms. The difference between the first (stock options) and the second (salary) compensation component is higher in new economy firms than the old economy firms. Based on this fact, I can reject the null hypothesis that executives from old and new economy firms have the same compensation composition structure.

Another important finding of this research is that the compensation composition is not only different between new and old economy firms but also that it changes from 1992 to 2004.

In the third research question, I analyze if the NASDAQ crash and Sarbanes Oxley Act change the executive compensation composition. Overall I find evidence that the NASDAQ crash and Sarbanes Oxley do change the executive compensation structure.

Finally, I analyzed if the factors that explain executive compensation in old versus new economy firms are similar. I find that these factors normally are different, and these differences are statistically significant.

In terms of conclusion, I can say that our study complements the investigation of Ittner et al. (2003), Murphy (2003) and Stathopoulos et al. (2004) providing an analysis of executive compensation in new and old economy firms at the same time and for a period that covers a crash (NASDAQ crash) and the implementation of new rules about corporate governance (Sarbanes Oxley Act). Our study also offers an in-depth analysis of executive compensation because I examine numerous and important compensation components (salary, bonus, stock options, restricted stocks and LTIP), whereas the

other studies essentially focus on compensation based on stock options.

The paper fills an important gap in the existing literature by providing rigorous econometric evidence that the executive compensation factors and the compensation composition factors are different, and the compensation composition changes over time for new versus old economy firms. Overall, our results are consistent with the idea that there exist different reward structures for different sectors of industry at different stages in their development.

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OWNERSHIP STRUCTURE AND PERFORMANCE: EVIDENCE FROM PORTUGAL

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Abstract

This paper provides new evidence on the impact of ownership over performance in small dimension markets. Analyzing the Portuguese firms we confirm the monitoring effect. Unlike previous studies, we also confirm the expropriation effect to low levels of ownership concentration. These results suggest that the free rider problem between the manager and the principal is significant in countries with small financial markets.

Keywords: Corporate Governance, Ownership Structure, Firm Performance, Portugal

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1. Introduction

Corporate governance issues have been recently highlighted either by researchers and investors. Topics as ownership structure and control are important to determine corporate performance, especially when other mechanisms to prevent both managers and major shareholders from expropriating the firm' wealth are weak (Westphal, 1999). Indeed, several studies have been carried out to measure the impact of ownership on performance. These studies are often headquartered in English speaking countries, special the U.S., and the U.K., and lately to the major European and Asian countries, neglecting other regions.

This study attempts to fill previous gaps in the empirical literature in corporate governance. Portugal, as a developed country with small dimension, with predominance of concentrate ownership, is an interesting research to expand international evidence, to compare with existent results to major countries and to extrapolate to countries with similar characteristics.

The main aims are three: 1) understand how ownership structure influences performance in Portugal; 2) verify if there are significant differences between market and accounting measures of performance; 3) determine which firm's characteristics are more relevant to explain the performance.

Relying on theoretical arguments we develop two models: one pointing the linear relationship between performance and ownership structure and other the nonlinearity of the relationship. Our results confirm the monitoring effect of the major shareholder. Using an accounting measure of performance, namely ROA, we find also the expropriation effect to low levels of ownership concentration, contrary to the results found to countries with large financial market. This suggests that to Portugal agency costs between the principal and the agent are more relevant than those between groups of investors.

The rest of the paper is organized as follows. Section 2 briefly reviews prior literature on this issue and outlines the hypotheses of this study. Section 3 describes the sample structure, the dataset and methodology. Section 4 presents the empirical results. Finally, the main conclusions are evident in section 6.

2. Theoretical Background

The debate of the importance of ownership structure on performance is not new. It is based on Jensen and Meckling (1976) who suggest that the separation of ownership and control lead to potential agency conflicts which in turn affect the firm performance. Managers can act differently from shareholder's interests, performing opportunistically. They can use their power and private information to satisfy their self-interests (Agrawal and Knoeber, 1996, Burkart *et al*., 1997).

The free-rider problems arise more often in case of dispersed ownership since individual shareholders ought no substantial portion of the firm to take effective decisions. Therefore concentration of ownership is a way to mitigate it as it reflects the influence of shareholders (Demsetz, 1983). The larger shareholder either maintains the management of the company, or has the power and the incentive to monitor manager's action in order to protect the firm and his-self interests (Shleifer and Vishny, 1986 and 1997). As a result of the monitoring effect, information asymmetries decrease, leading to better performance (Leech and Leahy, 1991). This positive and linear relationship between ownership structure and performance was found by Morck *et al.* (1988), Shleifer and Vishny (1986), Wruck (1988), Hermalin and Weissbach (1991), Galve and Salas (1993), Agrawal and Knoeber (1996), Morck *et al.* (2000), Gedajilovic and Shapiro (2002), Anderson and Reeb (2003), Barontini and Caprio (2006) and Martínez *et al*. (2007).

Likewise, our first hypothesis supports the existence of a linear relationship.

Hypothesis 1a: Ownership concentration increases performance.

Nevertheless, at higher levels of concentration the performance may decline due to expropriation. The major shareholder may try to satisfy his self-interests at the expense of the value maximizing approach. This leads to minorities' wealth expropriation (Hart, 1995, Shleifer and Vishny, 1997). Such divergence of interests between majority and minority shareholders is another source of agency costs (Faccio *et al.*, 2001, Vilallonga and Amit, 2008), which is more often when investors are poorly protected by law from expropriation.

A non linear relationship between ownership structure and performance was found by Claessens *et al*. (2002), Thomsen and Pedersen (2000), Anderson and Reeb (2003), and Miguel *et al*. (2004), to East Asia, Europe, E.U.A. and Spain.

This leads to our second hypothesis: the monitor effect prevails as ownership concentration increases, but at higher levels of concentration the expropriation effect overcomes.

Hypothesis 1b: Ownership concentration first increases performance, but at higher levels of ownership concentration the performance declines.

The magnitude of both types of agency costs is limited by how well the shareholders monitor managers and other investors (Ang *et al*., 2000). Therefore the relationship between ownership and performance can be regional affected.

For the U.K. for example, the agency costs between investors is more relevant. Leech and Leahy (1991) and Mudambi and Nicosia (1998) only found the expropriation effect to the U.K. firms. The concentration of ownership leads to worse performance as the market discipline has a weaker effect on monitoring managers.

3. Empirical Analysis

3.1 Sample Selection

The sample includes all companies of Euronext Lisbon from 2002 to 2008. On average we have 54 firms, ranging from a maximum of 61 in 2002 to a minimum of 47 in 2008.

Our research focuses on Portugal, a country excluded for the majority of studies about corporate governance, which pay greater attention to Anglo-Saxon countries and large financial markets. Portugal is a European country, with small dimension market and scarcely information about its firms. However, is important to analyze it, not only because of its importance to Europe, but also because the majority of the Portuguese firms have concentrated ownership differing from the main financial markets already investigated.

We start on the year of 2002 because it was when Portugal joined to Euronext. Before this date, there was more companies presented on the Portuguese financial market, but many of them were very illiquid.

3.2 Construction of the Dataset

Our first concern is ownership structure. We measure the presence of large shareholders – the proportion of shares held by the major (S1) and the three largest shareholders (S3), using CMVM's database (The Portuguese Securities Market Commission).

Ownership structure is the focus instead of insider ownership because it's the major problem in European companies. Large shareholders have both the power and the incentive to fire managers if they do not perform well. Moreover, the controlling shareholder is often involved in the firm's management.

The remain data was collected in DataStream database. Two performance measures are used: a market and an accounting measure, since there is no consensus about the optimal performance ratio. The proxy of Tobin's Q (Q) – market proxy of performance, is the market-to-book value (Thomsen and Pedersen, 2000, Demsetz and Villalonga, 2001, Claessens *et al*., 2002, Barontini and Caprio, 2006, Villalonga and Amit, 2006). The Return on Assets

ratio (ROA) – accounting measure of performance is the ratio of net income to total assets (Gedajlovic and Shapiro, 1998 and 2002, Thomsen and Pedersen, 2000, Demsetz and Villalonga, 2001, Anderson and Reeb, 2003, Barontini and Caprio, 2006).

We introduce five control variables into our analysis to control for firm characteristics. The firm' size (size) is the natural logarithm of the company's assets (Gedajlovic and Shapiro, 1998 and 2002, Himmelberg *et al*., 1999, Claessens *et al*., 2002, Anderson and Reeb, 2003, Miguel *et al*., 2004). It may have an ambiguous effect on performance; on one hand, large firms may have worse performance due to the difficulty to monitor managers, but on the other hand those firms can also have greater performance due to economies of scale, better knowledge of markets and the ability to hire more informed managers. The firm's age (age) is the difference between the firm's foundation and the year in analysis. According to Leech and Leahy (1991), Anderson and Reeb (2003), and others older firms can benefit from economies of scale, accumulated knowledge about the market, experience, and reputation, but can also be more inflexible and bureaucratic. Sales growth (SG) variable is the year-over-year sales (Gedajlovic and Shapiro, 1998 and 2002). A growing business may have more investment opportunities that can generate innovation and improve the firm's efficiency. Capital Intensity (CI) is measured by capital-to-sales ratio, and analyzes the importance of installed capital in the firm's technology (Demsetz and Lehn, 1985). Finally, debt intensity (debt) is the ratio of debt over total assets (Demsetz and Villalonga, 2001, Cui and Mak, 2002, Anderson and Reeb, 2003, Miguel *et al*., 2004). Firms with higher levels of debt tend to have better performance not only because of higher control from the debt holders, but also because managers have to pay the cost of capital.

3.3 Descriptive Statistics

Table 1 presents the principal descriptive statistics: mean, maximum, minimum and standard variation of the variables used in the estimation.

Descriptive statistics, namely mean, maximum, minimum and standard deviation for Q: Tobin's Q proxy, ROA: return on assets, S1: ownership' percentage of the major shareholder, S3: ownership' percentage of the three largest shareholders, age: firm age, size: logarithm of the firm' assets, SG: sales growth, CI: capital intensity, Debt: debt intensity.

It is important to point out that the major shareholder owns, on average, roughly half of the firm's ownership, and the three major shareholders own more than 60%. Therefore we confirm the predominance of ownership concentration in Portugal, already state by La Porta *et al.* (1999).

Attending to the firm's financial performance, measure by the proxy Q and ROA is on average positive, but some Portuguese firms present a negative performance. The differences are higher when we look for the ROA ratio, since the results range from a negative performance of 48.65 to a positive performance of 67.99. Comparing with the results obtained to the U.S. (Adams *et al.*, 2009) and the major European firms (Thomsen and Pedersen, 2000), we conclude that proxy Q is similar, but the accounting measure of performance is inferior to Portugal.

The Portuguese firms are older than the U.S. firms, but their size is on average higher (Adams *et al*., 2009). This situation was expected since the dimension of the Portuguese financial market is too small compared with the U.S. market and so there are less variations among the firms included in our sample, inferring the results.

The firm' sales growth is on average only 7% and in some cases is negative, confirming the recent market recession. It is important to point out that this growth is on average higher than those of the major European firms (Thomsen and Pedersen, 2000). The importance of the capital installed is quite different from firm to firm. Finally, on average the Portuguese companies use debt in order to grow and sustain their activity, but there are some exceptions.

The correlation matrix is exhibit on table 2.

Table 1. Descriptive Statistics

	S1	S3	Q	ROA	Age	Size	SG	CI	Debt
Mean	43.64	63.38	2.09	2.50	12.35	12.99	0.07	4.36	38.02
Maximum	94.79	99.99	37.19	67.99	20	18.36	4.67	39.45	167.78
Minimum	5.69	14.49	-4.42	-48.65	1	7.95	-0.83	0	0
Std. Dev.	22.96	20.27	3.15	8.78	4.98	2.18	0.34	5.14	20.72
N. Obs	360	360	360	360	360	360	360	360	360

Table 2. Correlation Coefficients

	S1	S3	Q	ROA	Age	Size	SG	CI	Debt
S1	1								
S3	0.829	1							
Q	-0.037	-0.064	1						
ROA	0.051	0.031	0.072	1					
Age	0.015	0.091	-0.116	-0.089	1				
Size	-0.095	-0.226	0.086	0.175	-0.227	1			
SG	-0.002	0.018	0.091	0.159	-0.053	0.070	1		
CI	0.214	0.131	0.085	0.207	-0.184	0.188	-0.016	1	
Debt	-0.119	-0.113	0.026	-0.194	0.065	0.241	-0.059	0.093	1

Correlation coefficient between Q: Tobin's Q proxy, ROA: return on assets, S1: ownership' percentage of the major shareholder, S3: ownership' percentage of the three largest shareholders, age: firm age, size: logarithm of the firm' assets, SG: sales growth, CI: capital intensity, Debt: debt intensity.

The correlation between the ownership percentage of the major and the three largest shareholders is high, but as these are alternative variables it is not significant. There is also a relevant correlation between the firm size and debt intensity, inferring that to grow the Portuguese companies have to look for external capital, mainly debt. None of the remaining variables is highly correlated, at least not to an extend which merits noting.

Contrary to our expectations, the alternative measures of the firm's performance: proxy Q and TOA are not correlated. Although the value to both variables is on average similar, the differences between the maximum and the minimum are huge. This situation means that the market perspective and the accounting values are quite different. Investors may highly valuate the firm's intangible assets and its future performance prospects, which are ignored by accounting measures.

3.4 Methodology

We use panel data to confirm if ownership structure influences performance. We also use fixed and random effects. Fixed effects may cause inferences in results when the variables are stable over the time, but random effects should only be used when strictly necessary (Adams *et al*., 2009). The Hausman test is also used to analyze which methodology is more accurate in our case (Himmelberg *et al*., 1999).

To validate hypothesis 1a we regress performance against ownership concentration.

$$Performance_{it} = c + \beta_1 S_{it} + \beta_2 Size_{it} + \beta_3 Age_{it} + \beta_4 SG_{it} + \beta_5 CI_{it} + \beta_6 Debt_{it} \quad \textbf{(1)}$$

Performance is measured using two proxies: Q and ROA. S represents ownership percentage of the major (S1) or the three largest shareholders (S3). The firm size (size), age (age), sales growth (SG), capital intensity (CI) and debt intensity (debt) are five control variables.

We introduce ownership concentration square in order to analyze the existence of a nonlinear relationship.

$$Performance_{it} = c + \beta_1 S_{it} + \beta_2 S_{it}^2 + \beta_3 Size_{it} + \beta_4 Age_{it} + \beta_5 SG_{it} + \beta_6 CI_{it} + \beta_7 Debt_{it} \quad \textbf{(1)}$$

This model presents one breakpoint which can be determined by differentiating performance with respect to ownership concentration. When the derivative equals to zero the breakpoint is $S_{it} = -\frac{\beta_1}{2\beta_2}$.

We also include industry dummies in order to measure the specific impact of industry.

4. Results

4.1 Univariate Analysis

Table 3 presents the medium value of the performance proxy: Q and ROA for the major (S1) and the three largest (S3) shareholders that have at least and more than 25%, 50% and 80% of the firm ownership. The idea is to compare if there are significant differences between owners with a small percentage of ownership and those with ownership concentration.

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Table 3. Differences in Performance

	S1		S3	
	ROA	Q	ROA	Q
S < 25%	3.608	2.578	0.587	1.937
S > 25%	2.227	1.943	2.632	2.133
Difference	-1.381	-0.636 **	2.044	0.196
S < 50%	1.801	2.204	2.005	2.456
S > 50%	3.312	2.048	2.686	2.017
Difference	1.511 *	-0.156	0.681	-0.439 **
S1 < 80%	2.587	2.098	2.455	2.219
S1 > 80%	1.782	2.352	2.655	1.806
Difference	-0.805	0.254	0.200	-0.413 *

Medium value (per year and type of group) of the performance proxy: Q and ROA for the major (S1) and the three largest (S3) shareholders that have at least and more than 25%, 50% and 80% of the firm ownership, and the differences between them.
*, **, *** Significant at the 10%, 5% and 1% levels, respectively.

We choose 3 breakpoints: 25%, 50% and 80%. For some researchers, the firm' owner must have at least 25% of its ownership to have effective control. 50% is the medium value of ownership and 80% represents a high control of the firm, more than 80% seems that the firm is not quoted one.

In a first analyze it seems that using the major or the three largest shareholders to measure the firm' ownership is not indifferent. The performance proxy used also cause variations in results.

The major shareholder must have at least 50% ownership in order to increase the firm ROA. There are not significant differences in performance using the breakpoints of 25% and 80% ownership, maybe due to small number of firms included when ownership is less than 25% or more than 80%. Using the proxy Q to measure the firm' performance it seems that when the firm owner owns more than 25% ownership the performance decrease. We cannot forget that while ROA is an accounting measure, the proxy Q shows the market perception. When a major shareholder controls the firm, investors may have afraid to acquire some ownership since the controller has more information about it – information asymmetry.

The firm performance measure by ROA increases when the percentage of ownership of the three largest shareholders increases. One more time, different results are found when we use the market measure. As we explain before, when the three largest shareholders detains more than 50% ownership (this percentage is smaller when we only consider on shareholder) the proxy Q decreases.

4.2 Multivariate Analysis

The results of the estimation of models 1 (1) and 2 (2) are present in tables 4 and 5. In the first table ownership concentration is the ownership of the major shareholder (S1), while in the second table is the ownership of the three largest shareholders (S3). Each table presents the results of the estimations using fixed and random effects, and for the two performance proxies: Q and ROA.

Analyzing table 4, the monitoring effect is confirmed when we use the proxy Q. These suggest that the market' investors predict higher performance as ownership concentration rises. This conclusion is different from the one found in the univariate analysis, which we were aware that is a limitative investigation. The estimation using fixed effects is more accurate. Moreover, none of the control variables are significant to explain performance, explaining the value of R^2. This insignificance suggest that investors may be more concerned with the firm' intangible assets and external factors which directly or indirectly affect the Portuguese market than the firm' characteristics. Analyzing the ROA ratio the conclusions are different. In this case, the estimation using random effects is more accurate. At low levels of ownership performance decreases and then rises after 56.25% ownership. These results differ from the ones obtained to the U.S. and the major European countries, suggesting that when the major shareholder owns a small percentage of ownership there are various shareholders in the firm with different interests, which make it easier to expropriate rents (Shleifer and Vishny, 1997). The degree of legal enforcement in Portugal is smaller than to the U.S. and some European countries (La Porta *et al*., 1998). Consequently investors are less protected, special from the expropriation of managers. We do not confirm the expropriation of minorities' wealth, implying that agency problems between the principal and the agent are more relevant in small financial markets. Moreover, the firm size, sales growth and capital intensity are important to explain performance in a positive way, while debt is relevant to explain it in a negative way. This means that higher firms with more backward and forward growth opportunities have more experience in generating higher results. Using debt in excess may increase the firm' probability of failure, which is translate in worse performance.

Table 4. Influence of the Major Shareholder in Performance

	Fixed Effects				Random Effects			
	Q		ROA		Q		ROA	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
C	2.525	2.917	-20.371	-22.766	1.925	-	-	0.165
S1	0.030 *	0.101 *	0.049	-0.381 **	0.010	0.008	0.004	-0.225 **
S1²	-	-0.001	-	0.004 ***	-	0.000	-	0.002 **
Age	0.103	0.114	0.227	0.160	0.031	0.031	0.088	0.100
Size	-0.277	-0.424	1.904	2.796 *	0.201	0.200	1.282 ***	1.254 ***
SG	0.414	0.423	1.687	1.636	0.506	0.505	2.753 **	2.810 **
CI	-0.024	-0.021	0.250 *	0.229 *	0.014	0.013	0.276 ***	0.256 **
Debt	0.174	0.016	-0.208 ***	-0.202 ***	0.006	0.007	-0.140 ***	-0.141
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	1.13%	1.24%	11.43%	9.90%	12.53%	12.53%	16.06%	16.20%
H. Test	-	-	-	-	9.81	12.46 *	141.21 ***	15.08 **

Regression of performance (measure by proxy Q and ROA) and the ownership percentage of the major shareholder (S1), its square ($S1^2$), and some control variables (the firm' age, size, sales growth (SG), capital intensity (CI), and debt intensity (debt)). Dummy variables of industry are also included. We use fixed and random effects of the panel data analyzed. H. Test: chi^2 of Hausman test.
*, **, *** Significant at the 10%, 5% and 1% levels, respectively.

Table 5. Influence of the Three Largest Shareholders in Performance

	Fixed Effects				Random Effects			
	Q		ROA		Q		ROA	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
C	3.995	1.038	-17.741	-12.043	-0.641	-1.193	-5.213	-
S3	-0.000	-0.000	0.000	0.000	-0.000	-0.000	0.000	0.000
S3²	-	0.000 *	-	-0.001	-	0.000	-	-0.000
Age	0.132	0.094	0.277	0.350	0.031	0.029	0.088	0.093
Size	-0.309	-0.158	1.827	1.536	0.195	0.211	1.280 ***	1.267 ***
SG	0.480	0.415	1.794	1.921	0.533	0.505	2.763 **	2.779 **
CI	-0.026	-0.017	0.252 *	0.236 *	0.020	0.017	0.280 ***	0.283 ***
Debt	0.016	0.018	-0.213 ***	-0.217 ***	0.005	0.006	-0.141 ***	-0.143 ***
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	1.18%	1.26%	11.34%	9.47%	12.74%	12.44%	16.14%	16.11%
H. Test	-	-	-	-	6.74	11.75 *	180.54 ***	675.25 **

Regression of performance (measure by proxy Q and ROA) and the ownership percentage of the three largest shareholders (S3), its square ($S3^2$), and some control variables (the firm' age, size, sales growth (SG), capital intensity (CI), and debt intensity (debt)). Dummy variables of industry are also included. We use fixed and random effects of the panel data analyzed. H. Test: chi^2 of Hausman test.
*, **, *** Significant at the 10%, 5% and 1% levels, respectively.

When we focus on the ownership of the three largest shareholders, the ownership structure is not a relevant variable to explain performance. The ownership value may increase, but the difference of interests between shareholders also rises, leading to insignificance impact on performance. The control variables included in the models have the same significance.

5. Summary and Conclusions

In this paper we provide new evidence on the relationship between performance and ownership structure of the Portuguese firms. We confirm the monitoring effect as Morck *et al.* (1988 and 2000), Anderson and Reeb (2003), Barontini and Caprio (2006), among others. Using proxy Q, a market measure of performance found a linear relationship. Using the ROA ratio, an accounting measure of performance, we found a nonlinear relationship but different from the one found to the largest financial markets. The free rider problem between the manager and the principal is significant in countries with small dimension, and so to low levels of ownership the performance decrease. Ownership concentration leads to higher performance.

Using the ownership of the three largest shareholders, ownership structure does not seem relevant to explain performance, since there are different interests about how to redistribute wealth.

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CORPORATE GOVERNANCE AT WORK: THE ATTRIBUTES AND ROLES OF BOARDS IN BRAZILIAN COMPANIES

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Abstract

The board of directors is seen as the central governance instrument, promoting interaction between stakeholders and promoting high performance, organization sustainability and return to investors. The practices and strategic definitions of corporative governance are considered of great importance today for corporations, due to the size and to the complexity of their structures (like *M _ Forms* structures) and the different forms in which they are presented: in networks, associations, partnerships, mergers and acquisitions. The aim of this article is to analyze the constitution of boards of directors, based on their attributes, and the impacts of this classification on the roles and responsibilities of the directors in Brazilian companies. For this, a quantitative survey was performed in the 300 largest companies in Brazil listed in BOVESPA - stock exchange in capital market. The results found point to a strong correlation of some attributes of the directors of the researched firms with the roles and responsibilities of the board, in relation to strategic, control, and institutional dimensions.

Keywords: Corporate Governance, Board, roles and responsibilities

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1. Introduction

Corporate Governance (CG) is seen as a system, principles, and processes, by which the companies are controlled and administrated, and which classifies the board of directors as the central reference of the system. As well as the board of directors, the stakeholders (majority and minority) are part of the corporative governance structure; the chief executive of the corporation – CEO (Chief Executive Officer); the independent control mechanism, and the stakeholders – associations, creditors, labor unions, suppliers, and public opinion, who have influence in the administration of the company (IBGC – Brazilian Institute of Corporate Governance:2007).

A CG becomes daily more important for the corporations to gain access to external capital and to competitive costs. It also becomes crucial in support to the private sector, in relation to economic growth and in the canalizing of savings for new investments. Apart from this, the recent ethical and financial scandals in American corporations, like Enron, Worldcom, and Imclone Systems, have put in doubt the roles of the boards of directors, the bookkeeping of the corporations, and the external control mechanisms, motivating discussions about Corporate Governance in the companies and its importance in the construction of a new international financing framework.

Movements of corporate governance first appeared because of privatizations, mergers, and acquisitions and due to the international dependence of investment stocks. But actually, the importance of corporate governance became evident as from the professionalizing of family companies, as well as from the dismissing of presidents from large North American corporations like General Motors, IBM, and Kodak.

In Brazil, with the beginning of economic and social reforms at the beginning of the 90s by the federal government, which promoted changes in the national context – like the opening of markets and the structural modifications of the country – foreign institutional investors started to invest in Brazil, a movement of alterations having also occurred in the social control of Brazilian firms and in their governance structures.

In the 60s and 70s, it was the executives who had the power to make strategic decisions in Brazilian corporations. The board of directors only needed to meet to obey the law and confirm the decisions taken by the executive management. The 80's were impelled by the indirect influence of great alterations in the national economy, such as commercial opening, so it was in the 90s that great part of the structural transformations in the economy of the country occurred, in which groups of corporations suffered and continue suffering significant modifications in terms of the structure of *societarian control*. It was at this same time, that people began to associate economic transactions with governance structures and the importance of the institutions (IBGC:2007).

The Boards of Directors then started to exercise a new strategic role faced with internationalized markets, to maximize the profit of the shareholder and to mediate conflicts existing among those who associate with the organization, such as stakeholders, outside auditors, managers, and fiscal boards. From one point of view, it can be asserted that the boards of directors have three key-roles: strategic – responsibilities for monitoring and influencing the strategy; control – maintenance of control of the manager and of the funds of the company; service or institutional – counseling managers and providing an institutional face to the corporation in its own community (ZAHRA and PEARCE II, 1989; DEMB and NEUBAUER, 1992; JOHNSON et al, 1996; STILES and TAYLOR, 2001). On the other hand, there are four main attributes in the constitution and work of the boards, that affect their roles and the acting of this instance of power in the companies and that contributes indirectly to the performance of the firm. They are: composition, characteristics, structure, and process (ZAHRA and PEARCE II, 1989; PEARCE II and ZAHRA, 1992).

Composition refers specifically to the size of boards and types of members who constitute the board of directors of the corporation (PFEFFER, 1972; CASTALDI and WORTMAN, 1984). Size is in relation to the amount of existing members on the board and type refers to the recognized dichotomy existing between insiders (who possess an executive role in the company) or outsiders (who do not possess any executive role, do not possess shares in the company or its subsidiaries, and have not worked directly with the principal executive in other companies) (JONES and GOLDBERG, 1982; COCHRAN et al, 1985). The characteristics of the board refer to the experience and qualifications of the members of the board, to the independence for work on the boards, if they are owners or not of shares in the company, and other variables that influence the interests and performance of the members of the board in their activities and assignments (KESNER et al, 1986). Basically, the analysis of the characteristics of the board can be developed from two components: 1) qualification and experience of the members of the board reflected on their age, academic qualifications, and values, which will directly influence their choices (ZAHRA and PEARCE II,1989) and 2) their working style, which will show the disposition for an internal or external focus (LYNCH, 1979, cited by ZAHRA and PEARCE II,1989), an independence to influence directors (PEARCE II and ZAHRA, 1992) and their interest in the company as representatives of the shareholders or other stakeholders (DALTON and KESNER, 1987; KER and BETTIS, 1987).

The attribute *structure* refers to the organization of the board, the division of the work, the forming of committees, and the efficiency of their operations. These attributes specifically materialize in the number and kinds of committees, which the boards put together in the companies, how the flow of information happens among board members, committees, executive directors, shareholders, and the environment, and mainly how leadership of the board is formed (ZAHRA and PEARCE II,1989; VANCE, 1983; PEARCE II and ZAHRA, 1992).

Finally, the process refers mainly to the activities of decision making, based on five elements: frequency and length of meetings; interface of the board with the chief executive of the company; level of consensus among the members of the board; conventionality of the processes, and extension by which the board of directors is involved in their own self-evaluation (VANCE, 1983; ZAHRA and PEARCE II).

In this way, the aim of this article is to analyze the constitution of the boards of directors, based on their attributes, and the impact of this configuration on the roles and responsibilities of the members of boards in Brazilian corporations. For this, a quantitative survey was performed in the 300 largest companies in Brazil listed in the stock exchange, by means of a perception of members of the board and/or directors, who, within the company, interact with, influence or condition attributes, roles, and responsibilities of the board.

This research becomes important for the (re) configuration of the boards, through the choice of members, who satisfy a certain profile, so that the board, as a whole, can have a better performance in strategic or control or institutional roles, in accordance with the prerogatives of the shareholders of the company.

2. The Board of Directors: Theoretical Perspectives

The board of directors and the group of directors, including the CEO or president, are composed of units of CG more largely discussed in the literature, mainly because of the direct performance of these two units in defining policies, strategies, and administration of the firm. The attributions of the board of directors in the companies can generally be defined from a theoretical point of view, and these assignments are well accepted by the majority of specialists on the subject (CONGER at al: 2001).

In Brazil, there is a Law of Public Companies (or Public Limited Companies) under the number of 6.404 of December 15, 1976, which has established the parameters for the functioning of public companies and the competencies of boards of directors as a deliberative body of companies with open capital. However, on the other hand, the role of boards of directors, as well as the chief executives of the companies have been reported based on the Code of Best Practices (CBP) in several countries in the world. In this country, the CBP was developed by the IBGC (Brazilian Institute of Corporate Governance), which has described the main competencies of a board of directors (IBGC:2007).

But a company has a strong board when its members are outsiders to the firm; it is sufficiently small and, because of this, can act as a united group; it is represented by the leaders of the field; its members communicate freely with each other and receive adequate information, which helps them to understand the company in comparison to its main competitors (LORSCH, 2001).

Research on the role of boards of directors and the extension to which these power groups in corporations perform each one of their roles has been led by six theoretical perspectives: the *Agency Theory* and the *Theory of Transaction Costs*; *Stewardship Theory*; the *Theory of Resource Dependence*; the *Theory of Class Hegemony*; the *Theory of Management Hegemony*, and the perspective defined by law – *Legalistic* (ZAHRA and PEARCE II, 1989; STILES and TAYLOR, 2001). The differences in these perspectives can be found exactly in what the boards of directors should do, how they should be constituted, how they affect performance in the company, and which criteria ought to be used to evaluate their contributions to the corporation.

For Jensen and Meckling (1976), the key idea of the *Agency Theory (AT)* is that there is an *agency* relationship (or contracts), in which one or more people (the principal) contract another person (the agent) to execute a service that involves the delegation of decision making and authority to the agent. If both parts of the relationship have different motives, there then exist good reasons to believe that the agents do not always act in accordance with the interests of the principal. The principal can then limit the discrepancy of interests between them, establishing appropriate incentives for the agent and, by means of a monitoring cost, appoint the limits of the activities of the agents. Like this, the principal and the agent will incur in monitoring costs and costs in entailment, and will have discrepancies in some decisions of the agent.

The foundation of the *Theory of Transaction Costs* (TTC) is related to the discussion of the firms about whether they should produce their own necessities or if they ought to buy from the market, so as to reduce the *transaction cost.* The more economical situation, market or internal production should prevail in the decisions of the company. The objective of the firm is to guarantee good operations through governance mechanisms. Governance is then thought of as an institutional structure in which the integrity of the transaction or the relation of the group of transactions is decided (WILLIAMSON, 1996).

According to Williamson (1996), both TTC and AT argue that the board emerges internally as a control instrument. *The board is the principal instrument in which managers control other managers, or shareholders control the managers* (p.393). The role of the board in governance structures is then to provide a relative mechanism of low monitoring cost for the companies, reinstatement or rearrangement of the managers.

The S*tewardship* Theory goes directly against the arguments of *opportunism* of the managers (agents) proposed by the *Agency Theory*. In this point of view, the managers are motivated by other reasons, not exclusively financial ones, and because of this, they represent well the company's interests (DONALDON e DAVIS, 1991; DAVIS et al 1997). Donaldson and Davis (1991) state that managers are also motivated by the necessity to reach and earn intrinsic satisfaction in the realization of challenging work, exercise authority and responsibility, and like this earn recognition from the boss. It can be concluded then that there are non-financial motivating factors. The manager subjacent to this proposition is far from being opportunistic and tries to do a good job and be a good *steward* in the corporative assets. For the *Stewardship Theory*, the problem of motivation of managers is inherent to the work of executives and the performance of the company increases when the governance structure makes their work easier (DONALDSON and DAVIS,1991).

This is because when the manager in the corporation is also the chief executive on the board of directors, his/her performance improves, seeing as power and authority will be concentrated on one person and the expectations about leadership will be better defined and more consistent. The corporation will then benefit from the advantages of the unity of leadership, as well as from strong command and control. And this produces a much larger return for the shareholder than when there is a separation of the executive and the president of the board.

According to Pfeffer and Salancik (1978), in the approach of the *Theory of Resource Dependence*, the central question of the corporation is management for survival, which is seen as problematic. The company survives in proportion to its effectiveness, and organizational effectiveness depends principally on the managing skills or on interest groups in the capturing of external resources. This way, the principal way for the survival of the corporation is its capacity to acquire and maintain resources. But this problem can be minimized if the company has control of all the components necessary for its operations, which in practice is not possible, considering that no corporation is self-sufficient. With environmental change, corporations and their managers face the dilemma of not surviving or of changing their activities to adjust to these new environmental factors. This said, the companies have started searching for solutions to decrease environmental uncertainties and the dependency on scarce external resources.

The empirical support for this perspective then emerges from the research done about the interlocking of the board. In this perspective, the contribution of the board to the corporation is the decrease in the environmental impacts, through the creation and increase of mutual benefits in the interorganizational relationships (PFEFFER and SALANCIK, 1978; ZAHRA and PEARCE II, 1989). The sharing occurs when a group of members of the board of directors is

shared by two or more companies (MILLS, 1956). For Zahra and Pearce II (1989), this sharing can be direct, when one or more directors serve on the board of a second specific company. It is indirect when directors of different companies serve on the board of a third one.

The sharing of boards is a more extensive and general way to administer an environment, through the designation of outsiders for important positions in the organizations. Known as *co-optation*, this is the strategy for access to new resources, information, development of interorganizational committees, and establishment of the legitimacy of the market. Apart from this, it is a more flexible and easier form of implementation. *Co-optation* describes a situation in which a person, or group of persons, is designated by the board of directors or the committee, with the mission of defining policies, and who have the capacity to make and influence decisions (PFEFFER and SALANCIK, 1978). The role of the board in this perspective is to strengthen friendships, exchange of information, and identification of promptness to establish relationships with other corporations, public institutions, governments, clients, and communities, decreasing the environmental uncertainties and extracting resources for the operations of the firm.

For the Theory of *Class Hegemony*, the power of society is shared by the leading circles, who administer the large companies and who have similar views about reality (MILLS, 1956). In this context, the board of directors is seen as the agent that seeks to perpetuate this governing leadership and encourages the strengthening of it through the sharing of directors (GLASBERG and SCHWARTZ, 1983; BAZERMAN and SHOORMAN, 1983).

According to Pfeffer and Salancik (1978), while the Theory of Resource Dependence is characterized by the emphasis on the actions that serve the organizational interests instead of those of the families, individuals or a social class, the hegemonic class adopts the view in which the organizations are the agents of the families, of the individuals or a specific social class, instead of being the agents of the institutions. That is, it adopts an individualistic view of the company's interests.

The business structure that emerges from this dynamic is a dense network of interaction among the interdependent firms, which seeks advantages in the environment in which they are inserted, as well as in relation to each other. The result of this is that the firms have temporary (or permanent) control over certain resources and can substantially influence suppliers and clients (DOMHOFF, 1969; GLASBERG and SCHWARTZ, 1983). Hence, the board of directors should be emphatic in the selection of executive directors so as to choose the right people in terms of status and social influence. These, in turn, must also represent the capitalist leading circles and promote favorable business to all the companies. Strong competition in this context is totally discouraged, and there are non-written rules for corporative behavior (STILES and TAYLOR, 2001).

The theory of *Management Hegemony* comes from the work of Berle and Means (1932) under the argument that the accelerated increase in the size of the companies led to the separation of ownership and control by means of capital dispersion. This proliferation of shareholders also led to the attenuation of the power of corporative control, exercised previously by the owners or majority shareholders. The diffusion of the power of the owners together with the dependency on outside capital, put power of decision making into the hands of the chief executive of the firm, who has little or no participation in the corporation (GLASBERG and SCHWARTZ, 1983).

From this basic proposition, the theory of *Management Hegemony* builds suppositions about the inside operations in the corporations and about the relations among the companies. Internally speaking, the expectancy of management control is efficient production of profit, and the executive role is treated under the view of a search for results that are sufficiently satisfying to passive and disperse shareholders, without the pressure of maximum profit, because it could involve a risk of financial disaster. And this change in expectancy brought forth large implications and alterations in the internal processes of the company. On the other hand, the corporative interrelations became the greatest focus of the analysis of management theory, because the large autonomy given to the executives and the low pressure for maximum profit produced an era of *laissez faire* amongst the companies, in which relations became sporadic, non-coercitive and highly equal. The arena of conflicts only exists in relations between owners and managers, and this conflict was widely solved in favor of the managers. The unity of action among the companies materialized in the non-financial relations amongst firms, in the sharing among directors, in the connections between suppliers and clients, and in the coordination of prices among competitors (GLASBERG and SCHWARTZ, 1989).

According to the same authors, the theory of *Management Hegemony* traditionally produces a picture of a new class of corporative leaders, who have worked regardless to outside pressure. This freedom produced enormous power for managers, but produced weak connections and relative disorganization of business structures. In this context, the board is seen as *legal fiction* and is dominated by the manager, becoming ineffective in the potential reduction of the problem of agency between managers and shareholders (MACE, 1971; VANCE, 1983). The responsibility of management and control of the firm is completely taken over by the corporative manager.

Lastly, the legalistic perspective includes a set of laws that define, amongst other things, mandatory existence, roles, and responsibilities of the board of directors. The function of the boards are described by the legislation of each country, but actually, there are

variations of how these roles are interpreted and how power has been delegated and distributed between boards and directors.

Parkinson (1993) states that the legislation has usually emphasized the shareholders' interests, which can be understood in the return of capital invested by the enhancement of the company shares, and that the main point in the studies on corporative legislation is in the role and principles which watch over the interests of the members of the company and their creditors.

The legalistic approach suggests that the boards contribute to the accomplishment of the firms when they really perform the responsibilities designated by legal mandate (ZAHRA and PEARCE II, 1989). According to this view, the boards are responsible for corporative leadership, but without interfering in the day to day operations of the firm, which are activities designated to the chief executive. In the majority of pertinent legislations on the subject, the roles of the board are related to the selection and dismissing of the chief executive of the company, representation of the shareholders' interests, provision of counseling for the chief executive, and monitoring of the management actions and the performance of the firm (VANCE, 1983; DEMB and NEUBAUER, 1992; BOWEN, 1994).

3. Theoretical Perspectives and the Attributes, Roles, and Responsibilities of the Board

The theoretical perspectives which approach the roles of the board – strategic, control, and institutional – show the main attributes to these roles, strengthening some in detriment of others, or underlining all or none of them.

The research that supports the central argument in the Resource Dependency perspective recognizes the three roles of the board (strategic, institutional, and control) and shows that they are impacted by two specific attributes: composition and characteristics. The view of resource dependency recognizes that the board should involve itself actively in the strategic arena, through deliberations and counseling for the chief executive of the firm, by personal initiative or suggested alternatives. However, the members of the board do not develop or execute the strategies, as this is an inherent activity of the operational executive. (ZAHRA and PEARCE II, 1989; STILES and TAYLOR, 2001).

The Theory of Class Hegemony argues that the role of the board is to coordinate the actions of the companies of which it serves, and more importantly, to assure the capitalistic control of social institutions. This view results in that the institutional and control roles are the only ones emphasized, and which are impacted by the attributes: composition, characteristics, and processes (ZAHRA and PEARCE II, 1989). The consideration of the process attribute in this perspective becomes a paradox, as the role of the board is merely imaginary, whereas the research does not operationally define this domain. The performance of the board depends on the concentration of ownership and power and working style of the chief executive of the firm. In this aspect, the executive can reduce or increase the involvement of the board, depending on his/her form of action and power in the company.

The studies, according to the legalistic perspective, show that the four attributes of the board – composition, characteristics, structure, and process – affect the performance of the board, based on two primary roles: institutional or service and control. The performance of the board, however, depends first on the concentration of ownership and second on the size of the firm. In the companies in which the concentration of ownership is large, the members of the board have a much more active role in control and service, differently to firms with an ample dispersion of shareholders (ZAHRA and PEARCE II, 1989). Yet in small companies, research shows that the board is more active in the institutional role to legitimize the firm, while in bigger ones, the control function becomes vital, considering that these are associated to more complex operations (JONES and GOLDBERG, 1982; CASTALDI and WORTMAN, 1984).

The Theory of Management Hegemony sees the board as a *jure* and not as an instance that effectively affects the organization. This brings the result in which the strategic and control roles of the board are extremely passive, projecting only the institutional role. In this way, just composition and characteristics as attributes will have impact on their activities, seeing as the process and structure will serve triflingly as organizational input (STILES and TAYLOR, 2001).

The economic perspectives – Agency Theory and Theory of Transaction Costs – establish the roles of the board based on the influence of the four attributes – composition, characteristics, process, and structure, similar to the legalistic approach. The big difference, however, is that the economic perspectives destine more attention to the process attribute (principally in decision making) than the legalistic view. The emphasis of this is in the interest of how the boards execute their work, how they monitor the actions of the executive, and principally how these attitudes lead to the reduction of agency and transaction costs (ZAHRA and PEARCE II, 1989). In this view, control, institutional and strategic roles are executed by the board, but control becomes the most important, followed by institutional and strategic roles. For the evaluation of corporative performance, this perspective primarily uses market based gauges, for instance, the market value of the firm.

Finally, the joining of the roles of the chief executive and the president of the board of directors, according to the Representative perspective, strengthens the institutional and strategic roles, but weakens the control role. As the executive of the company is also the president of the board, the

attributes of composition, characteristics, and structure are of little importance, but the process attribute takes on relevance, mainly in the consensus aspect. According to Stiles and Taylor (2001), empirical research based on this view and the Management Hegemony, are limited, principally by the fact that these perspectives do not see the board of directors as an independent and strong body within the corporation.

4. Research Methodology

The universe of the research was the group of companies listed in the stock exchange. The 300 largest companies listed in BOVESPA were selected as units of analysis. The reason for this selection was mainly due to representation, influence, and importance of these firms for the country. The subjects of the survey, or unit of observation, were the board of directors and/or executives who form the corporative governance of these companies, using an individual level for the analysis, that is, the perception of the answerer (member of the board or executive) in relation to the roles of the board of directors.

This study is characterized as a gathering of facts of the survey kind, in an intersectional design, in which a semi-structured (open ended and closed questions) questionnaire was used. The object of this article was to establish the influence (correlations) of the independent variables (attributes) over the dependent ones (roles and responsibilities of the boards), and for this, Kendall and *Chi-squared* tests were used (WALSH, 1962; KOOSIS, 1997). For the first test, an ordinal correlation coefficient was used, with the aim of establishing the correlations among the big groups of attributes with the roles of the board, like sex, academic qualification, professional experience, ideal number of components on a board, among others. And, to better detail and explain these large groups of attributes of the board, a second test (*Chi-squared*) was used, with the intention of measuring the incidence of association among the variables researched.

According to Fonseca, Martins and Toledo (1980), Kendall's coefficient of correlation, normally symbolized by the letter τ (tau), "supplies a more satisfactory dimension of correlation among the classifications, mainly when the amount of relations is very big" (p.94). The coefficients of correlation can assume values between -1,00 and +1,00. In terms of the degree of association, the nearer to -1,00, in both senses, the larger is the strength of the correlation (LEVIN, 1987).

The second tool used was *Chi-squared* (HOGG and CRAIG, 1995). This test is a technique which has as its objective the extent of the incidence of association existing between two variables (questions) in the qualitative scale of a questionnaire, based on absolute variables. The decision on the association strength is most of the time measured by statistics known as *value-p* (or descriptive level of the test). Whilst probability, the nearer to zero is the significance of the test (*value-p)*, the more the evidence of association becomes plausible.

In the same way as in the *Kendall* test, the computer program SPSS 11 was also used for the expected frequencies and for the level of significance calculated in the test *Chi-squared.*

5. The results of the Research: Boards at work

The subjects were asked to classify, in increasing order, the roles and responsibilities of the board of directors in their companies (table 01), so as to evaluate which roles are more enhanced by the boards in detriment to others. It is important to point out here that for the boards, among the five more important roles three represent the strategic dimension and two, the control dimension.

Table 01 presents the role "involvement in the strategy" as being the most important for the subjects questioned, followed by "development of corporate view". Third and fourth in the control category, "determine a position of risk" and "monitor the health of the firm". And a fifth role, again in the strategic group, "control the strategic changes of the firm". The group of the institutional role appears in the sixth place with the responsibility of "contacts with shareholders and stakeholders", followed in eighth place, tenth, eleventh, and twelfth, by a total of thirteen roles presented. Still enhanced, is the fact that the role that was considered less important "guarantee of the corporative return", belonging to the control group, could have been equaled to those that were placed in second and third positions.

Once having established the classification of roles and responsibilities of the board, evaluation of the impacts or influences of the variables or constant factors of the attributes of the board were explored – 1) composition and characteristics; 2) structure; 3) processes – for roles and responsibilities of this instance in the corporations.

While analyzing the attribute "composition and characteristics" in Brazilian companies, it was found that sex, professional experience, ideal number of components on the board, and length of adequate mandate variables influence the roles and responsibilities of the boards, as can be seen in table 02. In relation to the items academic qualification, ideal number of components on the board, and ideal number of outsiders on the board no correlations were found with the roles of the boards.

Table 1. Responsibilities, commitments and involvements of the board

Responsibilities of the Board	Order of Preference (%)	*Dimensions*
Involvement in the strategy	30,87	Strategic
Develop a corporative view	11,22	Strategic
Determine a position of risk	10,29	Control
Monitor the health of the firm	10,44	Control
Control the strategic change in the firm	8,54	Strategic
Contacts with shareholders and *stakeholders*	6,64	Institutional
Contract, evaluate and dismiss executives	5,70	Control
Review of the social responsibilities of the firm	3,91	Institutional
Guarantee the survival of the corporation	3,74	Control
Guarantee the ethical structure of the firm	2,89	Institutional
Understand and keep up with the present legislation	2,87	Institutional
Act as ambassadors of the firm	1,90	Institutional
Guarantee corporative return	1,01	Control

Source: Research data

Table 2. Index of correlation of *Kendall* between the attribute of composition and characteristics and the roles of the board

COMPOSITION AND CHARACTERISTICS

	Institutional		Strategic		Control	
Variables	Value p	Índex of Correlation	Value p	Índex of Correlation	Value p	Índex of Correlation
Sex	0,001	0,400	0,500	0,079	0,306	0,122
Professional experience	0,060	0,217	0,021	0,268	0,610	0,059
Ideal number of components on the board	0,050	0,215	0,687	-0,046	0,563	0,066
Length of adequate mandate	0,608	0,065	0,149	0,184	0,042	0,259

Source: Research data

The sex variable presented a significant index of correlation of Kendall with the institutional role of the board (value p 0,001). A bigger index of relation in males (54,17%) with the institutional role was found in the *Chi-squared* test, than in females (44,90%). So, it is worth considering that in those boards where male presence is dominant, the institutional role will tend to be stronger than in boards in which a female presence prevails. However, this does not mean that the other roles are not considered, but shows that there will not be a gender influence in the performance of the board.

Professional experience also presented statistic relations with the institutional (value p 0,06) and strategic (value p 0,021) roles of the board, by means of the index of correlation of Kendall. In relation to the institutional role, the *Chi-squared* test shows that professional experience as a board member and/or executive for more than five years (36,00%) is more relevant than the experience as a board member (32,70%) or as an executive (31,30%) up to five years. Now, for the strategic role, the strongest association was for professional experience as executives up to five years (34,25%), followed by the experience of being a board member up to five years (33,87%), and as board members and/or executives for more than five years (31,88%). Practically speaking, the data show that executives and board members with more professional experience give more value to the institutional role, while executives with less professional experience tend to strengthen the strategic role.

However, this does not mean that more experienced board members ignore strategic and control roles, but they recognize that, in an ever increasing competitive market, the institutional role becomes extremely relevant, so that the firm can improve its institutional relations, decrease the dependence on resources, and ease the exchange of information and assets with the external environment.

The number of members of the board also presented a significant correlation with the institutional role (value p 0,05). The configuration analyzed by the *Chi-squared* test reveals that the strongest association belongs to the boards that have nine to eleven members (35,00%), followed by three to nine members (31,85%), and from 5 to 7 members (31,85%). Based on these data one can infer that the larger the composition of the board, the more relevant will be the institutional role for the board members of the corporations. This is because the more members that a board may have, more possibilities of having outside relations with the environment exist, as well as participation in other firms, influence on the community and government.

The last variable of the attribute "composition and characteristics" that presented a significant relation with the roles of the board was the length of the mandate of board members. The correlation of this attribute through the Kendall test presented a value p of 0,042 for the control role. On analyzing the length of the mandate of the board members with the *Chi-squared* test, it was observed that a mandate of a four year influences the control role (32%) less than a mandate of three years (33,44%) or of two years (34,56%). In this aspect, it is worth pointing out that the shorter the mandate of the board member, the stronger will the control role be in the corporations. This is because more frequent renewals of board members provides a more careful analysis of the data and of the following up of the performance of the company.

For the attribute **"structure",** the following variables were analyzed: hierarchic structure, forming of committees within the board, information flow between board members and directors, and the presence of a board that polarizes discussions. The result presents an index of correlation of Kendall which is significant for hierarchic structure, forming of committees, and information flow between board members and directors (table 07).

The independent hierarchic structure variable presented an index of correlation of Kendall that was significant to the strategic role of the board (value p 0,09). On analyzing this variable with the *Chi-squared* test, the formal structure, composed mainly of president and vice-president, secretary and other posts, showed a more significant relation to the strategic role (56,89%), than the informal structure (43,11%). An informal structure is characterized in a board by the presence of a president, but by the absence of any other post. In this case the work is frequently divided in task-force or committees. The data presented suggest that the more formal the structure of the board, the stronger the action of the board members will be in the firm's strategic role.

The forming of committees also presented a significant index of correlation of Kendall in relation to the institutional role (value p 0,022). About this aspect and using the *Chi-squared* test, the presence of permanent committees presented, a more significant association with the institutional role (56,41%), than the constitution of task-force or sporadic committees (43,59%). Practically speaking, this means that the bigger the amount of permanent and formal committees presented by the board for specific subjects, the more important will be the institutional role in the firm. This is because committees make exchange of information easier with the external environment and are important for the establishment of internal and external policies, which guarantee the continuity of the processes, of the strengthening of institutional and social relations, including the relations with minority and majority shareholders (ZAHRA and PEARCE II, 1989). The task-force and committees, in turn are organized for specific and sporadic work and do not perpetuate relations and exchanges, seeing as at each summons new members are designated, depending on the subject.

Lastly, the information flow between the board members and the directors presented an index of correlation of Kendall which was significant with strategic (value p 0,032) and control (0,062) roles. From the analysis of the *Chi-squared* test, informal conversations between board members and directors (25,54%) and informal communications between them (25,06%) strengthen the strategic role more than the formal correspondence (24,84%). It is important to point out, based on the data, that the more informal the exchange of information between board members and directors in the firm, the larger the propositions made about strategic questions. That is, informal discussions between them encourage a strategic debate in the corporation.

Differently from the control role, the ordinary formal meetings (25,45%) and the formal corresponding elements (25,11%) are more relevant in the performance of the board, than informal communications (25%) and informal conversations (24,44%). This, in practice, means that the formality of the meetings between board members and directors and the exchange of information through specific reports give priority and favor the control role in corporations.

Table 3. Index of correlation of *Kendall* between the structure attribute and the roles of the board

STRUCTURE						
	Institutional		Strategic		Control	
Variables	Value p	Índex of Correlation	Value p	Índex of Correlation	Valr p	Índex of Correlation
Hierarchic structure	0,070	-0,214	0,009	0,312	0,168	-0,165
Forming of Committees within the Board	0,022	0,274	0,593	0,064	0,232	-0,143
Information flow between the board members and the directors	0,106	0,178	0,032	0,236	0,062	0,205

Source: Research data

Table 4. Índex of correlation of *Kendall* between the process attribute and the roles of the board

PROCESSES						
	Institutional		Strategic		Control	
Variables	Value p	Índex of Correlation	Value p	Índex of Correlation	Value p	Índex of Correlation
Involvement of the board in the selection of the Executive Director	0,015	0,288	0,979	0,003	0,048	0,235
Involvement in decision making in board meetings	0,272	-0,128	0,060	0,216	0,050	0,227
Independence in evaluation of the work of board members	0,894	-0,016	0,055	0,228	0,162	-0,167

Source: Research data

In relation to the **process attribute** and the roles of the board, periodicity and duration of board meetings were analyzed as variables, as well as the preparation of the minutes of the meetings, the way decisions are made in these meetings, the involvement of the board in the selection of the executive director, the involvement of the members in decision making in these instances of the corporation, the frequency of frank discussions about certain subjects and work, the discrepancy of opinion among themselves, the influence on the work of outside board members vs insiders, and the independence in the evaluation of the work of board members.

However, the result presented a significant index of correlation of Kendall with the roles and responsibilities of the board only for the involvement of the board members in the selection of directors, involvement of the members in decision making in board meetings, and independence in the evaluation of the work of board members (table 04).

The form of involvement of the board in the selection of the director presented an index of correlation of Kendall which was significant for institutional (value p 0,015) and control (value p 0,048) roles. From the analysis of the *Chi-squared* test, the institutional role is influenced more when the board sanctions the new director (52,85%), than when the board actually chooses the executive (44,28%), or when the board only indicates the director (1,45%). However, the control role becomes more significant when the board chooses the new executive director (54,55%), instead of only sanctioning him/her (40,30%) or of indicating the chief executive (3%).

Practically speaking, the data indicate that when the board chooses the new executive, its responsibility for the actions of the new director increase and the board members exert a larger control on the actions of the chosen executive, strengthening like this the control role. In opposition, when the board just sanctions the director, who was indicated by another stakeholder in the firm, the institutional role is strongly given more priority, principally taking into account the exchange of information and relations that are undertaken with whom by right indicated the executive who was sanctioned by the board.

The involvement of the board in decision making in the firm also presented a significant index of correlation of Kendall with the strategic (value p 0,06) and control (value p 0,05) roles. With the *Chi-squared* test, the involvement of the board in decision making in the firm has a more significant influence on the institutional role when the whole board makes the decision (34,50%), that is, the decisions are made together without the dominance of one group of specific board members. However, the institutional role suffers a lesser influence when one dominant group of board members is the one to make the decision in the firm (33,52%), or when the board of directors makes the decision (31,98%).

In relation to the control role, it can be observed that this responsibility becomes much more important for the board members when the decisions are made by the executive director or the board of directors (34,65%). But when the board or a dominant group makes the decisions in the company, the control role becomes less relevant for this attribute.

When the decisions are made by the board, the institutional role is strengthened, taking into account the relations and accountability of the members of the board with shareholders and other stakeholders of the corporation, who are consulted or are informed of the decisions taken. Because of this, the institutional role tends to be preferred in these companies. But when the decision is made by the directors, it is up to the board to verify the performance of the action taken and, as a consequence, there is a strengthening of the control role in the firms.

Lastly, the independence variable in the evaluation of the work of board members presented an index of correlation of Kendall, which was significant for the strategic role (value p 0,005). According to the *Chi-squared* test, the strategic role of the board is more outstanding in the firm when the work of the members of the board is evaluated by shareholders (22,31%), followed by the evaluation undertaken by the society (20,24%), by the members themselves (20%), by the government (19,21%), and by the board of directors of the firm (18,24%). In general, it can be said that when the board of directors of the companies is evaluated, there is a tendency to privilege the strategic role in the firm, mainly when this evaluation is undertaken by the shareholders.

6. Final Considerations

On evaluating the roles and responsibilities of the boards it was observed that in 79% of the cases, the board believes that the mixture of tasks given is adequate. In relation to roles and responsibilities, the ranking found reveals that "involvement in the strategy" is the most important role for board members. Immediately the responsibilities "develop corporative view", "determine the position of risks", "monitor the health of the firm", and "control the change of strategy" appear. Three of these roles belong to the strategic domain and two to the control domain.

On analyzing the influence of the attributes – composition and characteristics, structure and processes – over the roles of the board, some variables were found that influence the roles of the board more than others.

Based on the elements of the attributes of composition and characteristics with the roles of the board, it was discovered by the index of correlation of Kendall, that sex, professional experience, number of components on the board, and length of adequate mandate variables are strongly related to the roles of the board. For this attribute, it was possible to verify that the institutional role predominated over the control and strategic roles. The structure attribute presented an index of correlation of Kendall, which was significant for the roles of the board, based on the elements of hierarchic structure, forming of committees, and information flow between the members of the board and the directors of the firm, with the predominance of the strategic role over the control and institutional one. For the last attribute analyzed – process – an index of correlation of Kendall was found, which was significant for the roles of the board in the variables of involvement of the board in decision making and independence of evaluation of the work of board members. However, there was no predominance of one role in relation to another.

On analyzing the data of this article, it was possible to define the board of directors of Brazilian companies in some parts of this research related to economic and legalistic theoretical perspectives, which strengthen mainly the control role and with a greater purpose of monitoring the actions of the executive in favor of the controlling shareholder. Few characteristics of the boards were found, such as *decision maker*, that are those which are involved in the definition of corporative policies, determination of managerial objectives, and authorization of their implementation.

From this, the conclusions reached are that the relative power of the boards of Brazilian corporations and their pending to the role of control comes from the evaluation of the following factors: (1) the personal influence of board members, in this case, of how they were chosen and by whom. The nearer they are related to the controlling shareholders or to a member of the controlling family, the larger is the power, influence, and control that they will have on the business of the firm; (2) skill to model the strategy, mainly based on their academic qualifications, specialty or knowledge and experience acquired in the same sector of action in the firms worked in – that is, less knowledge of the business, less involvement in the strategy and vice-versa; and (3) effective participation in the selection of the main administrator and, based on this, of the capacity to monitor the progress obtained in management through proposed objectives.

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INSTITUTIONAL INVESTORS AND R & D INVESTMENT: AN INTERNATIONAL COMPARISON

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Abstract

This article examines the involvement of institutional investors, as a heterogeneous entity in the management of the firm. Knowing the identity of these institutions (banks, pension funds and mutual funds) may be useful because of its different influences on the behavior of managers in R & D investment. In conducting a comparative study between different national systems of governance, we seek to identify the type of institution that can foster R & D investment. The empirical study is based on a sample of 531 U.S., Japanese and French firms for the period 2003-2007. The results of canonical analysis conducted show that investors have different effects on R & D investment according to the institutional context.

Keywords: R&D investment, institutional investors, banks, pension funds, mutual funds

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1. Introduction

In recent decades, ownership of large firms is increasingly dominated by institutions. The importance of investors shows the volume of their equity in the firm capital. In 2008, institutional ownership is very unequally distributed between countries: it is 53% for the United States, against only 14% and 7% for Japan and France, respectively (OECD, 2008).

An abundant literature, mainly Anglo-Saxon, was interested in the effects of the rise of institutional shareholders on firm activities. The theoretical contributions concerning the role of institutional investors and their impact on the general policy of firms have led to many controversies. The theory of "short termism" shows that institutional investors are short term oriented (Drucker 1986, Graves 1988, Hill et al. 1988). In responding to a desire for advancement and job security, they are trying to encourage managers to forego the increase in risky and long term investments, especially for R & D investment, in order to increase the short-term financial profitability. As for the theory of "efficiency", it postulates that institutional shareholders opt for rational strategic choices that increase future profits of the firm (Jarrell et al. 1985, Jensen 1988). Therefore, no relationship should exist between the proportion of institutional shareholding in the firms' capital and R & D investment. A third stream, "the theory of activism," shows that institutional investors are long term oriented, which incites managers to make investment decisions that increase the long-term value of the firm, as the R & D investment (Heiner 1983, Aoki 1984).

Empirically, there is no consensus on the impact of institutional ownership on R & D investment. While some works lead to a positive relationship (Jarrell et al. 1985, Hill and Hansen 1989, Hansen and Hill 1991, Baysinger et al. 1991, Kochlar and David 1996, Wahal and McConnell 2000, Eng and Shackell 2001, Aghion et al. 2008), others reinforce a negative relationship (Graves 1988, Samuel 1996) or mixed (Graves 1990, Bushee 1998, 2001) or even neutral (Majamda and Nagarajan 1997, Chung et al. 2003).

Despite their differences, these works consider the institutional investors as a homogeneous entity. However, the term "institutional investor" includes a variety of organizations such as pension funds, banks and mutual funds (Roe, 1990). This variety may explain differences in their voting behavior and their relationship with the firm (Brickley et al. 1988) (Brickley et al. (1988) have divided the institutional investors into three categories according to their sensitivity to the influence of managers: institutions sensitive to the pressures of managers, institutions resistant to pressure from managers and institutions whose attitudes towards the pressures of managers are indeterminate), in their preferences for investment horizons in their trading behavior (Bushee 1998, 2001) (Bushee (1998, 2001) has classified the institutional investors into three groups, based on past behaviour, on investment given the nature of portfolio diversification and trading behavior: dedicated investors, transient investors and quasi-indexer investors) and therefore, in their attitudes towards R & D investment.

The organization of the functioning of these institutions and their control practices is different from one country to another, hence the interest to study and compare the impact of the nature of these international institutions on R & D investment.

Under this section, our research will be organized around two fundamental questions: to what extent is R & D investment explained by the nature of institutional who control managers' opportunism to create value? And according to what systems of governance?

These questions are part of a theoretical debate on corporate governance. An international comparison of governance, especially institutional investors and their impact on R & D investment may be interesting. Interest in American, Japanese and French contexts is justified by the observation that each experimental field has a different tradition. The choice of the United States is marked by its economy of financial market. In contrast, the Japanese economy appears much like intermediation. Furthermore, analysis of the French situation is relevant because it represents a hybrid economy between the intermediation and the financial market.

This article is organized as follows: In the first section on theoretical exposure, we present the hypotheses underlying the impact of the nature of institutional on the R & D investment in different financial systems. The second section relates to the presentation of methodological aspects and interpretation of empirical results.

2. Theoretical Foundations and Hypotheses

The investment decision is separated from the value creation and realization of performance. And since the shareholder delegates investment decision rights to manager, it creates agency relationships, sources of interest conflicts and agency costs (Jensen and Meckling, 1976). These agency problems are more pronounced than the investment concerns of activities in R & D (Baysinger et al. 1991, Lee 2005, Tihanyi et al. 2003) because they are riskier (Baysinger et al. 1991, Finkelstein and Boyd 1998, Barker and Mueller 2002), have a long horizon performance (Laverty 1996, Ryan and Wiggins 2002), and are highly specific to the firm (Goel and Ram, 2001). These characteristics are all factors that allow managers to have behaviors that maximize their wealth at the expense of stakeholders. To control managerial opportunism and encourage R & D investment, creator of value, it is necessary to create levers for aligning the behavior of managers, represented mainly by institutional investors.

Demonstrating a capacity of processing information and special skills, investors are able to make rational decisions and to constrain the strategic conduct of managers, including R & D investment. Knowing the identity of these institutions is useful because of the different implications for the management of the firm. The functioning of these institutions and their control practices are different from one country to another. The policy of R & D investment via the appropriate mode of governance will be explained as an efficient organizational solution to maximize firm value. This maximization occurs through the establishment of governance mechanisms, represented by the nature of the institutional order to reduce agency problems.

2.1. The impact of banks on R & D investment

The legal and regulatory environment has important implications on the role played by banks in financing systems and corporate governance of a country.

In the U.S., banks are subject to the most stringent fiduciary standards. The restrictions imposed on their mode of operation make it difficult to establish close and lasting relations with firms. Indeed, the Bank Holding Act of 1956 prohibits U.S. banks from holding more than 5% of the same firm and the shares they hold do not allow them to control the client firm (Morck and Nakamura, 1999). The practice of rigid rules that hinder their development clearly explains the existence of dispersed ownership in this country. Banks do not have significant shareholdings in the capital of American firms. They have a diversified portfolio of small holdings and a high turnover ratio of the portfolio because they regularly trade securities. These institutions are considered as dedicated institutional owners (Porter, 1992). They choose the outflow of capital rather than intervene to restructure and correct management practices of firms in difficulty. These institutional feel their duty, towards their own corporate customers, is to meet their demands by providing continuous liquidity. For this, they do not have enough power to control the firm management.

In these circumstances, the manager is freed of all constraints and promotes the achievement of personal investments. He/she is therefore encouraged to undertake low levels of R & D investment. Hill et al. (1991) suggest that a dispersed ownership structure implies low control on the part of shareholders, which allows managers to implement their diversification strategies. Bushee (1998) also finds that the predominant ownership by dedicated' institutions (banks) significantly increases the probability of reduced R & D investment. Similarly, Berger et al. (2005) find a negative relationship between the participation of banks in capital and the intensity of R & D investment.

In contrast, in Japan, banks play a crucial role, especially for growing firms[7]. They are both shareholders and creditors. They benefit from a bigger

[7] Once the large Japanese firms have reached maturity, they try to disengage from the grip of banks or their main banks, reduce their debt and use the capital markets (Abegglen and Stalk, 1985, Hoshi et al. 1990).

liberty of involvement in the firms' capital (Prowse, 1990). Despite the fact that antitrust law limits the participation of banks in firms to 5%, this regulation is not enforced by the authorities due to the cooperative banking practices leading to a real capacity to intervene. Most Japanese banks delegate their decision-making power to the principal bank which holds the majority shares and / or credits. With a vantage point as the principal lender, the principal bank shareholder and cash manager, the principal bank has a controlling power over the managers.

The means of pressure available to major banks[8] and their informational advantages lead the Japanese manager away from conduct destructive of value. Indeed, Hoshi et al. (1990, 1991) and Morck et al. (2000) show that the most efficient Japanese firms are those whose capital share held by banks is high. Therefore, the significant weight of banks in corporate capital and their privileged position in terms of gathering information to enable them to encourage the managers to increase R & D investment create value. By studying the link between institutional ownership and the behavior of managers towards expenditure on R & D, Bushee (1998) found a negative relationship between the transient owners (banks) and reducing expenditure on R & D. Lee and O'Neill (2003) and Hosono et al. (2004) also show that participation of banks in the capital of Japanese firms increased the R & D intensity.

In France, the participation of banks in corporate capital does not exceed an average limit of 5%. The strong relationship between the bank and the firm is not as strong as in Japan. This can be explained by the long separation between investment banks and deposit banks, which has limited the development of banks, industries, and by the willingness of governments to develop financial markets and thus reduce the influence of banks. Even if we should not neglect the role of banks in corporate control, particularly through the shares they hold in their name or their customers', their principal preoccupation is to safeguard their financial interests.

The low participation of French banks in the capital, compared to the amounts they lend to the firm, encourages them to behave primarily as creditors. Gains on capital loans are more than sufficient to offset capital losses caused by a policy of non-maximizing stock price. The debt requires the manager of the firm to pay periodic interests. To cope, they are forced to adopt a policy of diversification to have stable cash flows. They prefer, in this context, the safest investment strategies to reduce fluctuations in their profits. This argument shows a negative relationship was established between the banks' participation in capital and R & D investment.

In conclusion, the restrictions on modes of operation of banks that characterized the American and French firms create conditions that are less conducive to the achievement of R & D investment than their Japanese counterparts. We deduce the following hypothesis:

H1: Participation of banks in the capital of French and American firms (Japanese) was negatively (positively) associated with the R & D investment.

2.2. The impact of pension fund on R & D investment

In the U.S., the increase in institutional ownership over Japan and France is largely due to the increased presence of pension funds in the capital market. These institutions, whose responsibility is to raise funds on behalf of investors[9], are subject to strict fiduciary constraints. The adoption in 1974 of ERISA (Employees Retirement Income Security Act) sensitizes managers to exercise their fiduciary duties. These include the obligation to exercise the voting rights attached to shares held by these institutions.

Attention to the exercise of voting rights by these fund managers varies from one fund to another. In the literature, we note that pension funds are not a homogeneous whole. Some are public sector including regime under public management, others are private sector administered for employees by corporations or other nongovernmental entities.

The public pension funds, in the United States, have substantial assets and have a large number of shares of listed firms. The importance of assets to be managed confers significant economic importance. This presence constraint has caused them to get involved and influence the strategies of firms to meet their interests. These institutions are resistant to pressure managers (Brickley et al. 1988). They do not engage in business relationships with firms and therefore have no conflict of interest. In case of dissatisfaction with managers, public pension funds tend to exercise their voice through their activism (Davis and Thompson, 1994). In a context of declining firm performance, Bushee (1998) shows that when institutions are present significantly in the capital of the firm, managers are less likely to decrease spending on R & D. These institutions have a strong motivation to exercise explicit control and ensure that the leader does not reduce R & D investment.

On the contrary, pension funds of private regime are far less active than their public counterparts (Gillan and Starks, 2001). The main reason is fear that their activism could lead to trade retaliation. Because of business relationships with corporate customers, private pension funds may

[8] Kang and Shivdasani (1999, 1995) found that firms affiliated with main banks are more encouraged to replace their managers for poor performance than independent firms.

[9] These entrust pension funds a significant portion of their savings and want to finance their retirement benefits from their investment.

refrain from criticizing the management of their firms for fear of becoming suspicious of their own management or offending firms that depend on their business (Bies 2003; Ingley and Van der Walt 2004). The desire to preserve their business relationships places them in conflict of interest in the monitoring of the corporate management (Brickley et al. 1988). This encourages them to act in a spirit of collaboration with firms and intervene discreetly. To exercise their voting rights[10] and avoid the pressures of the firm management, private pension funds prefer to remain anonymous and contact the intermediary organisms (mutual fund managers or independent managers) if they deem it appropriate to interfere with firms. These organisms have a more aggressive behavior than public funds and seek high returns in order to "perform on the index" (Baudru and Kechidi, 1999). Their mode of control encourages managers to adopt strategies for investments in R&D to achieve high profitability.

Although the use of their vote power differs, pension funds (public or private) are involved in the management of the firm and are able to reduce agency costs. They influence the American managers to undertake more R & D investment to improve the level of future performance of the firm and stop sub-optimal investment. In this context, Hoskisson et al. (2002) and Hall (2002) find that pension funds which have long-term investment policies encourage strategic investments and innovations more.

In France, pension funds are not subject to the same fiduciary constraints as their U.S. counterparts. The low participation of these institutions in the capital of client firms does not allow them to exert direct influence on corporate governance (Blesson and Clerwall, 2003). They are regarded as passive shareholders because they can sell their shares at any time they need cash. These institutions simply seek to maximally exploit their portfolio. Portfolio diversification, which is a strategic investment of pension funds, aims to improve performance against risk. They prefer to take profits from elusive portfolios through valuation or devaluation of stock prices, although these changes are temporary (Loescher, 1984). Such a view causes institutions to attach disproportionate importance to success in investment and neglect long-term commitment to innovation and growth. An important consequence of this behavior is that managers of firms focus less on R & D investment.

In Japan, pension funds have no legal restrictions (Xu and Wang 1997), which favors holding a large equity position in firms and encourages them to actively vote shares they hold (Prowse, 1990). These institutions have direct control over the management of their firm by occupying seats on the Board of Directors and investing in research and information treatment to protect their investments. This control cannot theoretically be against their interests. According to Opler and Sokobin (1998), when pension funds organize their activism in the firm by engaging in relationships characterized by an exchange of information, the result may only be the improvement of the performance of the firm. Therefore, a positive relationship is established between the participation of pension funds in capital and R & D investment. In this context, Hosono et al. (2004) found that the share of capital held by large shareholders is positively related to R & D investment.

In summary, the presence of pension funds in the capital of American and Japanese firms, as opposed to their French counterparts, encourages R & D investment, hence the following hypothesis:

H2: A significant participation of pension funds in the capital of American and Japanese firms (French) is positively (negatively) associated with the R & D investment.

2.3. The impact of mutual funds on R & D investment

While pension funds are committed to finance the long-term retirement, mutual funds manage securities and attract others to increase their fees. Blesson and Clerwall (2003) find that one of the most important functions of investment funds is to be providers of management services to pension funds and insurance through mandates.

In France, the first place is for OCPSV institutional investors (Organisms for the Collective Placement in Stock Value) and more specifically for variable capital funds called ISVC (Investment Societies with Variable Capital) or mutual funds. These managers manage one (or several) portfolio (s) of stock on behalf of their customers[11]. They sell and redeem shares on investor demand. They are financial intermediaries that sell shares to the public and invest the funds they receive. They offer their customers the shares of several mutual funds.

To the extent that these investors manage the assets of investors, it is difficult for them to oppose the decisions of the firms delegating the management of their funds to them. The desire to preserve their business relations places them in a situation of interest conflicts (Davis, 1996). Mutual funds do not want to take initiatives that give them a bad image among firm managers. The latter are, after all, potential customers and any activist attitude from these institutions encourages corporate management to deprive them of their investment assets. These institutions therefore tend to vote for firm directors or sell their shares. As managers prefer to protect their personal capital against risk and maximize their personal interests, they have an interest in

[10] The Ministry of Labor has imposed guidelines for the exercise of voting rights that is part of the fiduciary duties of private pension funds.

[11] Pension funds or insurers.

implementing diversification strategies, and thereby avoid R & D investment (Tosi and al. 1997). Taking into account the interests of beneficiaries for whom they manage the assets, mutual funds favor less activities in R & D.

In the United States, the closed-end funds or mutual funds are predominant. They sell the shares, but unlike mutual funds, do not buy. These managers are organized by a sponsor. Unlike in France, the organization of funds in the United States is not controlled by banks[12], but split into several trades. In other words, it is not often the same firms that manage funds, distribution, administration and conservation. These fund managers must meet the thresholds established by regulation. Indeed, they should not have more than 5% of their assets invested in stock issued by the same entity. This constraint related maximum percentage of stock of one issuer has its basis in the 1988 Act which requires the exercise of fiduciary duties. Fund managers are advised to take necessary measures to exercise voting rights with special attention to increasing shareholder value.

Borokhovich et al. (2000) found that when shareholders are not affiliated institutions, abnormal income and percentage of shares held by these institutions are positively related. Their results show that, given their share in the capital, fund managers are encouraged to carefully monitor the decisions of managers in order to promote long-term performance of the firm and pursue strategies of R & D investment. Similarly, Wahal and McConnell (2000) found a positive relationship between participation of mutual funds and the level of expenditure on R & D. The authors show that these institutions act as intermediaries between the impatient individual investors and firms. As these fund managers have inside information on firms, they can be more patient with firms and allow, in this regard, for increase in the level of expenditure on R & D.

In Japan, the legislation does not impose any restriction on mutual funds. While often associated with major financial institutions, these funds are totally unregulated. They hold a large stock position in the firm capital. Given the high level of participation, mutual funds have a strong motivation to control and influence managers to promote long-term performance of the firm (Alchian and Demsetz, 1972). Brickley et al. (1988) argue that mutual funds are better able to effectively monitor managers than other shareholders. The managers cannot take advantage of the presence of these institutions in the capital of the firm to maintain or increase their managerial discretion. Duggal and Millar (1998) also found that it is more difficult for managers to adopt anti-takeover mechanisms that are harmful to the interests of shareholders who are active investors such as mutual funds. By using their voting power, these institutions encourage managers to undertake investments in R & D that create value. So the generally important activism of mutual fund managers, characteristic of American and Japanese firms, creates more favorable conditions for investment in R & D, than the passivity of these institutions with French firms. We deduce the following hypothesis:

H3: A significant participation of mutual funds in the capital of American and Japanese firms (French) is positively (negatively) associated with the R & D investment.

As in the foregoing, we consider in the context of this study three variables that determine R&D investment: shareholding banks, shareholding pension funds and shareholding mutual funds. The theoretical predictions are presented in table 1.

3. Empirical analysis

This section aims to test the effect of institutional investors on R & D investment. Initially, we present our sample, the explained and explanatory variables and the method of multivariate analysis (canonical analysis). The presentation and interpretation of results of this study will be a second section.

3.1. Presentation of data and variables measurements

Although many studies have addressed the impact of institutional investors as a homogeneous group on R & D investment (measured by the intensity of R & D), only a few have studied the influence of different types of institutional investors on R & D investment (Kochlar and David 1996, Bushee 1998, 2001). The majority of existing works in literature analyze a sample by the administration of questionnaires or gathering information from databases. And since a lot of information needed to test our hypotheses is public, including that relating to institutional investors and R & D investment, we chose the second empirical approach with a sample of U.S., Japanese and French firms. This will allow us to test our hypotheses in a theoretical context of international comparison of corporate behavior in R & D investment.

[12] This is a consequence of legislation of the 30s (especially the Glass Steagall Act).

Table 1. Summary of main explanatory variables of R&D investment and the signs predicted by theories of reference

Hypotheses	Explained variables	Explanatory variables	Expected signs		
			U.S.	JP	FR
H1	R&D Investment	Ownership of Banks	-	+	-
H2	R&D Investment	Ownership of pension funds	+	+	-
H3	R&D Investment	Ownership of mutual funds	+	+	-

The study data from two databases (Worldscope and Osiris) and annual reports of publicly traded U.S. (NYSE), Japanese (Nikkei 225) and French (CAC40) firms over the period 2003-2007. These firms belong to the industrial, commercial, tourism, technology and service sectors. The sectional heterogeneity can establish the external validity and generality of results (Lee, 2005). Financial institutions were excluded because of their atypical behavior in financial policy. Firms whose number of employees was less than 500 were also removed to make the most interesting theoretical plausibility. We selected all firms for which we have data on resident institutional investors and the determinants of R & D investment (risk, horizon), that is 531 firms (178 French, 174 American and 179 Japanese) for comparative statistical analysis.

To find the indicators for measuring study variables, we relied on key indicators encountered in the literature to identify the most frequently used and widely available. These measurements are contained in Table No. 2 of the Appendix. Only the variable "R & D investment" has resulted in purification work done during an iterative process. We will recall here the retained measurements for the explained and explanatory variables.

The indicators often used in literature to measure R&D investment are R&D intensity, amount not communicable by firms. In the setting of our survey, R&D investment is considered like a risky and long term investment. Firms engaged in R&D have a high level of risk and a long-term return.

We use three measurements to assess the risk of R&D investment. Similar to Jensen et al. (1992), Bah and Dumontier (1996, 1998), the first measurement is the standard deviation ratio of return to total assets σ (ROA). The second is the standard deviation ratio of return to sales σ (ROS). The last measurement is the standard deviation ratio of return to equity σ (ROE).

As for the long-horizon R&D investments, Balakrishnan and Fox (1993), Gaver and Gaver (1993) and Bah and Dumontier (1996, 1998) found that firms engaged in R&D activities have a strong growth opportunity. As for these studies, we use three measurements specified by the growth opportunities to assess the investment horizon. The first measurement is the ratio of tangible assets expenditure to profit before interest, depreciation and tax (Balakrishnan and Fox 1993). The second and third are, respectively, the PER and the ratio of the market to book value of equity (MBVE) (Bah and Dumontier 1996; Gaver and Gaver 1993).

These measurements have made for us, alongside the theoretical literature, a framework to create our own measure of R&D investment. We have thus developed a set of 6 items. After iterations made on the basis of Principal Components Analysis (PCA and Varimax rotation, See table 3 in Appendix) and reliability testing, these 6 items were reduced to 4 items and summarized in 2 factors measuring R&D investment: 1) Risk of R & D investment and 2) Horizon of R&D investment.

Regarding the nature of institutional investors, we used the following indicators:

- Ownership of banks: the percentage of equity held by resident banks;
- Ownership of pension funds: the percentage of equity held by public and private residents' pension funds;
- Ownership of mutual funds: the percentage of equity held by resident mutual funds;

The explanatory and control variables influence the realization of R&D investment and verify its multidimensionality. They are also distinct from each other and present, as shown in Tables 4, 4.1 and 4.2 in appendix, a low and/or not significant correlation between them.

To test the model, we use STATISTICA 1994-2000, which is the most common program among the known methods of multivariate analysis. Every relationship has been tested independently by using a canonical analysis (when the relationship is composed of several variables to explain, see Zouari 2008). This "second generation approach" enables us to determine whether there was a significant relationship between R&D investment and the nature of institutional investors.

3.2. Presentation and interpretation of results

This section aims to present the test results of the three assumptions underlying the explanatory model of R&D investment. The model will estimate the total sample which includes 178 French, 174 American and 179 Japanese firms. This distinction helps to disclose further explanation of the determinants of R&D investment.

The values of Table 5 are indicators of the overall link between R&D investment and independent variables (determinants). Calculations for specific cases in the United States, Japan and France have given only one significant canonical pair at 5% and 10%.

Information on the correlation coefficients of significant canonical axis pairs appears in Table 6. This table replicates the factor structure of significant canonical pairs, that is to say, the correlations between synthetic variables from PCA and canonical axes. We indicated in bold weights with a value significantly greater than 0.5 (generally accepted threshold, Evrard et al. 2003), and we highlighted those with a value between 0.2 and 0.5 for further interpretation (see Fahmi 1999; Zouari 2008).

3.2.1. Interpretation of results for U.S. firms

For the relationship between R & D investments and its determinants, the calculations have revealed one significant canonical pair at 5% (see Table 5). The first canonical correlation coefficient (R Canonical) is about 0.36. It expresses the maximum correlation between the two groups of variables (measurements of R & D investment and the nature of institutional investors) and reflects the existence of a linear relationship between them. This correlation significantly, expresses by itself more than 13% of common variance (R^2), that is to say of the variance of R & D investment explained by its determinants.

Moreover, the index of total redundancy[13] in all measurements of R & D investment is 6.82%. Fornell and Larcker (1980) considers that redundancy is important when it exceeds 10%, average when it is located between 5 and 10%, and weak when its value is less than 5%. We can therefore conclude that the two sets of variables share a middle portion of the total variance (Fornell and Larcker, 1980) and therefore our explanation of R & D investment determinants is moderately reliable (Thompson, 1990).

The factor structure of the significant canonical axis can retain one significant variable measuring R & D investment ("Horizon" where the canonical coefficient, that is to say, **r = 0.98**) and two institutional variables ("Ownership of Pension Funds" **r = 0.93** and "Ownership of Mutual Funds" r = 0.42, see Table 6). The sign of these correlation coefficients allows us to confirm two of the three hypotheses tested. Indeed, when managers invest in R & D (long term), we are witnessing an ownership structure characterized by:

- A strong participation of pension funds (hypothesis **H2 is validated**), which is consistent with studies by Bushee (1998), Hoskisson et al. (2002) and Hall (2002);
- A strong ownership of mutual funds (hypothesis **H3 is validated**), in accordance with the work of Wahal and McConnell (2000).

We therefore conclude that the ownership structure of American firms characterized by a high share of pension funds and mutual funds influences managerial discretion and encourages R & D investment.

These results show the existence of interrelationships between R & D investment and the variables related to the nature of institutional investors. It is likely that the model underlying these relationships is accepted in Americans firms.

3.2.2. Interpretation of results for Japanese firms

The calculations have revealed one significant canonical pair at 10% (see Table 5). The first canonical correlation coefficient is about 0.86 and reflects the existence of a linear relationship between the two groups of variables. This correlation significantly expressed 74% of the common variance, which is to say of the variance of R & D investment explained by the nature of institutional investors.

Moreover, the total redundancy index is 53.79%. We can therefore conclude that the two sets of variables share a portion of the total variance described as high (above 10% criterion Fornell and Larcker 1980), and that the explanatory power of institutional variables is strong and appropriate (Thompson, 1990).

As summarized in Table 6, the two variables relating to R & D investment ("Risk" and "Horizon") (**r = -0.99** and r = -0.26, respectively), and those measuring the nature of Institutional investors ("Ownership of Banks," "Ownership of pension funds" and "Ownership of Mutual Funds") are negatively related to the canonical axis (**r = -0.88**, **r = -0.82** and r = -0.31, respectively).

Examination of these correlation coefficients allows us to **validate hypothesis H1**. Indeed, when the participation of banks in the capital is high, managers of Japanese firms choose risky investments (high canonical coefficient in absolute value of about 0.99), and to a lesser extent, long-term ones (r = 0.26). Studies by Bushee (1998), Lee and O'Neill (2003) and Hosono et al. (2004) also found a positive relationship between the transient owners (banks) and the intensity of expenditure on R & D. Similarly, Chevallier-Farat (1993) found that the ability of banks to diversify internally enables them to withstand the volatility of corporate profits.

Moreover, when the share of pension funds and mutual funds is high, Japanese managers are motivated to invest in R & D (**hypotheses H2 and H3 are validated**). This result is consistent with the findings of Brickley et al. (1988), Duggal and Millar (1994), Opler and Sokobin (1998) and Hosono et al. (2004). Indeed, managers cannot take advantage of the presence of these institutions in capital to maintain or increase their managerial discretion. The fear of being dismissed is an incentive to satisfy the interests

[13] The indicator of redundancy enables us to appreciate the part of the variance of each set of variables explained by canonical axes.

of pension funds and mutual funds by adopting risky projects.

In conclusion, the canonical results prove the existence of interdependence between the R & D investment and institutional variables. It seems, therefore, that the Japanese model can be rejected.

3.2.3. Interpretation of the results for French firms

The calculations gave a single canonical significant pair at 10% (see Table 5). The canonical correlation coefficient is about 0.23 and represents almost 6% of the common variance. And, as the total redundancy index is about 2% (less than 5%, test of Fornell and Larcker 1980), our explanation of R & D investment by institutional variables is weakly adequate (Thompson, 1990).

The analysis of canonical coefficients can retain two significant measurements of R & D investment ("Horizon" and "Risk"). They are negatively related to the canonical axis (**r = -0.98** and **r = -0.97**, respectively). The variables explaining the R & D investment ("Ownership of pension funds", "Ownership of banks" and "Ownership of Mutual Funds") is negatively and positively related (**r = -0.75**, **r = -0.68** and r = 0.46, respectively, see Table 6).

The signs of these correlation coefficients allow us to confirm two hypotheses and disprove one among the three tested. Thus, a comprehensive overview of these results is presented as follows: strong ownership of banks and pension funds and low participation of mutual funds in the capital of French firms promote the achievement of long-term and risky investment.

We can deduce that the more French managers invest in R & D:

- The higher the percentage of capital held by French banks (hypothesis **H1 is invalidated**). This result leads to questioning the reflection produced by Bushee (1998). The author notes that the predominant ownership by banks significantly increased the likelihood of reducing R&D investment. So we see that the means of pressure available to major banks and their informational advantages prevent managers from deviating toward a behavior destructive of value:
- The lower the involvement of pension funds (hypothesis **H2 is validated**), according to findings of Loescher (1984) and Blesson and Clerwall (2003);
- The lower the participation of mutual funds (hypothesis **H3 is validated**), which joins the results of Davis (1996) and Tosi et al. (1997).

These results show the existence of linear relationships between R & D investment and institutional variables. It seems, therefore, that the model specific to the French case, which underlies these relationships, cannot be entirely dismissed.

In summary, the tests results of theoretical models allowed us to explain the managers' behavior in American, Japanese and French firms in the case of R & D investment (risky and long-term approach) through the nature of institutional investors.

Conclusion and future research

The aim of this paper is to investigate the power exercised by the different types of institutional investors (banks, pension funds and mutual funds) on the behavior of managers to encourage R & D investment. This study seems interesting because it allows us to better understand the mechanisms of value creation. Taking into account the characteristics of this investment (long-term return and high risk) and the agency and transaction costs that result, enables us to explain the behavior of firms for R & D investment.

On the theoretical level, we constructed a model explaining the adoption and effectiveness of R & D investment through national systems of governance (Anglo-Saxon, Germano-Nippon and hybrid), construed mainly by the nature of institutional investors (bank ownership, pension funds ownership and mutual funds ownership). The choice of the United States is justified by the financial market economy. In contrast, the Japanese economy appears much like intermediation. Furthermore, analysis of the French situation is relevant because it represents a hybrid economy between intermediation and financial markets.

Empirically, the canonical analysis conducted on samples of firms proves the existence of a linear association between R & D investments, which create value, and ownership of institutional investors.

In the U.S., we found that low bank ownership and a strong participation of pension funds and mutual funds in corporate capital are accompanied by a realization of R & D investment. These results clearly confirm the assumptions of the theory of corporate governance and are in line with those obtained by Hill et al. (1991), Bushee (1998), Wahal and McConnell (2000), Hoskisson et al. (2002), Hall (2002) and Berger et al. (2005).

In Japan, R & D investment is positively related to the participation of banks, pension funds and mutual funds in corporate capital. These institutions mitigate pressures on myopic behavior because of their large and long term portfolios (Porter, 1992). They have a power of strict control of the managers to make the best investment decision for the proper conduct of firms. These results then confirm those found by Brickley et al. (1988), Duggal and Millar (1994), Bushee (1998), Opler and Sokobin (1998), Lee and O'Neill (2003) and Hosono et al. (2004). In France, we found a strong ownership of banks and a low participation of pension funds and mutual funds in firm capital promote investment in R & D. The bank is considered an active shareholder which influences the management and control of the firm. It causes managers to favor this type of investment to increase the firm value. On the contrary, pension funds and mutual funds are short-term oriented

institutions. Subject to performance and prudence constraints, they certainly result in restriction of investment in R & D.

If this research provides contributions to the understanding of the determinants of investment in R & D, it has, however, as all confirmative studies, limits and still leaves many questions open about the issue of investment. In addition to the ownership of institutional investors, the model should incorporate other internal and external control mechanisms to represent a more complete reality. These mechanisms include managerial ownership, the Board of Directors and the financial market, etc, which have an impact on managerial discretion, and therefore on the choice of investment in R & D.

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Appendices

Table 2. Measurements of Explanatory Variables in the Model of Investment in R & D

Initial variable	Measurements or Factors extracted
- R&D Investment	Six items; after PCA with Varimax rotation: Two factors: - Risk of Investment in R & D - Horizon Investment in R & D
- Ownership of Banks	One measure: the percentage of equity held by resident banks
- Ownership of pension funds	One measure: the percentage of equity held by public and private residents' pension funds
- Ownership of mutual funds	One measure: the percentage of equity held by resident mutual funds

Table 3. Summary: Results of PCA

PCA N°	Initial variable	Factors extracted	r	σ^2 (en %)	p value	α	Items deleted
1.1	R&D investment (USA)	Factor 1 : Risk of R&D investment Item 1 : Standard deviation ROA Item 2 : Standard deviation ROS Factor 2 : Horizon of R&D investment Item 1 : Tangible Assets /NOPBT Item 2 : PER *Total*	 0,898 0,894 0,801 0,792 	40,610 32,322 72,932	1,624 1,293	0,737 0,631	- "Standard deviation ROE" (r < 0,5 in factors extracted). - "MBVE" to increase the reliability of the 2nd factor.
1.2	R&D investment (Japan)	Factor 1 : Risk of R&D investment Item 1 : Standard deviation ROE Item 2 : Standard deviation ROA Factor 2 : Horizon of R&D investment Item 1 : Tangible Assets / NOPBT Item 2 : PER *Total*	 0,951 0,938 0,797 0,757 	44,754 31,064 75,817	1,790 1,243	0,871 0,555	- "Standard deviation ROS" (r < 0,5 in factors extracted). - "MBVE" to facilitate the interpretation of Factor 1.
1.3	R&D investment (French)	Factor 1 : Risk of R&D investment Item 1 : Standard deviation ROE Item 2 : Standard deviation ROA Factor 2 : Horizon of R&D investment Item 1 : PER Item 2 : Tangible Assets / NOPBT *Total*	 0,852 0,847 0,856 0,773 	40,354 26,665 67,020	1,614 1,067	0,695 0,637	- "MBVE" (r < 0,5 in factors extracted). - "Standard deviation ROS" to facilitate the interpretation of Factor 2.

Table 4. Correlations matrix (U.S. Firms)[1]

	Activity sector	Ownership of Banks	Ownership of pension funds	Ownership of mutual funds
Activity sector	1,000			
Ownership of Banks	0,136	1,000		
Ownership of pension funds	0,006	0,165	1,000	
Ownership of mutual funds	0,035	0,283	0,293	1,000

Table 4.1. Correlations matrix (Japanese Firms)[1]

	Activity sector	Ownership of Banks	Ownership of pension funds	Ownership of mutual funds
Activity sector	1,000			
Ownership of Banks	-0,058	1,000		
Ownership of pension funds	0,001	0,263	1,000	
Ownership of mutual funds	0,196	0,070	-0,061	1,000

Table 4.2. Correlations matrix (French Firms)[1]

	Activity sector	Ownership of Banks	Ownership of pension funds	Ownership of mutual funds
Activity sector	1,000			
Ownership of Banks	-0,117	1,000		
Ownership of pension funds	-0,052	-0,070	1,000	
Ownership of mutual funds	-0,105	0,065	-0,007	1,000

1) Note that all correlations between variables are significantly smaller than 0.6 (threshold at which we begin to experience serious problems of multi-colinearity). In the Pearson test and the index of conditioning we have found that these variables are distinct from each other and are not significant (correlation thresholds above 10% and the packaging is less than 1000).

Table 5. Canonical Correlations for heterogeneous samples

Hypotheses	Pairs of canonical axes	R canonical	R^2	Chi^2	Threshold significance	Index of redundancy
U.S.	1	0,3650	0,1332	18,690**	0,0166	0,0670
	2	0,0491	0,0024	0,310	0,9579	0,0012
						0,0682
JAPAN	1	0,8627	0,7444	13,862*	0 ,0958	0,3953
	2	0,5516	0,3042	2,176	0,3367	0,1426
						0,5379
FRENCH	1	0,2378	0,0565	13,353*	0,0998	0,0182
	2	0,1378	0,0190	3,311	0,3460	0,0021
						0,0203

(Thresholds: *** significant at 1 %, ** significant at 5 %, * significant at 10 %)

Table 6. Factor structure of significant canonical pairs

Hypotheses	**Variables**		**Axis 1**
U.S.	Explained variables	- Risk of R&D investment	-0,1985
		- Horizon of R&D investment	**0,9831**
	Explanatory variables	- Ownership of banks	-0,1026
		- Ownership of pension funds	**0,9398**
		- Ownership of mutual funds	0,4287
JAPAN	Explained variables	- Risk of R&D investment	**-0,9964**
		- Horizon of R&D investment	-0,2630
	Explanatory variables	- Ownership of banks	**-0,8850**
		- Ownership of pension funds	**-0,8202**
		- Ownership of mutual funds	-0,3187
FRENCH	Explained variables	- Risk of R&D investment	**-0,9730**
		- Horizon of R&D investment	**-0,9888**
	Explanatory variables	- Ownership of banks	**-0,6807**
		- Ownership of pension funds	**0,7590**
		- Ownership of mutual funds	0,4652

THE USE OF STOCK OPTIONS AND RETIREMENT PLANS TO RETAIN NON-EXECUTIVE EMPLOYEES

Kathleen M. Weiden*, Jane Mooney**

Abstract

Firms expend significant resources to retain employees. In this paper, we examine how firms that use stock options grant them differently when they also utilize retirement plans in non-executive employee compensation contracts. Using a large sample of US firms, we examine the relation between the stock option proportion of pay of non-executive employees and firms' use of a retirement plan of any type. We then examine how firms' use of stock options is affected by the type of plan (defined benefit or defined contribution) used by the firm. We find that firms reduce their use of stock options when there are other deferred pay mechanisms in place, suggesting they act as substitutes. We also find that firms with defined benefit retirement plans reduce their use of stock options for non-executives to a greater extent than firms with defined contribution plans, suggesting a greater degree of substitutability between defined benefit plans and stock options than between defined contribution plans and stock options.

Keywords: non-executives, retention, stock options, retirement plans

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I. Introduction

Economic models of long-term labor contracts suggest two mechanisms for engendering long-term employment: pay employees more than they can earn elsewhere, and/or structure compensation contracts to include incentives for employees to stay with the firm (Ippolito 1991; Allen *et al*. 1993). Deferred pay types with tenure related provisions provide retention benefits to firms since employees may forfeit a significant portion of total career earnings by not staying with the firm for the period contemplated by the deferred pay type.

The accounting and economics literature suggests that firms' use of stock options for retention of non-executive employees is related to significant investment opportunity sets (Core and Guay, 2001; Ittner *et al*., 2003) and competitive labor markets (Oyer and Schaefer, 2005). Balsam *et al*. (2007) provide evidence that stock options provide retention benefits to the firm for the duration of the option-vesting period. Although these papers consider retention to be a motivating factor for option granting, they do not consider how this behavior is affected by firms' contemporaneous use of other retention mechanisms.

The pension related labor economics literature examines the role of retirement plans in retaining employees. This literature finds that firms with retirement plans have lower quit rates and higher employee tenure than firms without (Gustman and Steinmeier 1993; Even and MacPherson 1996). A subset of this pension literature also finds that while defined benefit plans (DBPs) and defined contribution plans (DCPs) are both useful for retaining employees, DBPs provide more significant retention benefits than DCPs (Ippolito 1985, 1987, 1994; Allen *et al*. 1993).

Different forms of deferred pay may function as substitutes or complements with respect to employee incentives and firm retention benefits. When constructing and negotiating employee compensation contracts, rational managers likely prefer to minimize the inclusion of pay types with substitute, or redundant, benefits.

While the "perfect" compensation contract would contain only complementary pay types, it is unlikely that this is achieved in practice. This suggests that we should observe differences across employee compensation contracts as a function of the extent to which pay types with redundant retention benefits are included in those contracts.

While stock options and retirement plans both have features that make them useful for retaining employees, structural differences, as well as differential financial reporting and tax reporting consequences, may limit the extent to which firms view them as substitutes. If stock options and retirement plans effectively are not substitutes, then we should observe no differences in option granting behavior between firms with retirement plans and those without. However, if stock options and retirement plans function as even partial substitutes, we should observe differences in option granting behavior when comparing firms with and without retirement plans. Furthermore, if DBPs have employee retention effects that are significant relative to DCPs, then we should observe differences in option granting behavior as a function of the type of retirement plan in use.

This paper examines the extent to which firms' use of stock options for non-executive employees is related to the use of other forms of deferred pay that also provide retention benefits to firms.[14] Section II contains the hypothesis development. We hypothesize that the granting of stock options to non-executive employees is affected by both the existence and type of retirement plans provided as well as the level of compensation provided by retirement plans.

Section III describes the model development and variables. We first examine the relation between the stock option proportion of pay of non-executives and the use of a retirement plan of any type. We then examine whether the type of retirement plan *per se* has an impact on firms' option granting behavior. Sample selection and data are described in Section IV. We use a large sample of US firms granting options to non-executive employees.

Results are discussed in detail in Section V and summarized in Section VI. Our initial cross-sectional results indicate that the stock option proportion of pay is lower for firms with a retirement plan than for firms without. We find that for firms with a retirement plan, the stock option proportion of pay is negatively related to the level of annual plan related compensation. Results from additional cross-sectional tests indicate that the use of DBPs *and* DCPs are both negatively related to firms' use of stock options for non-executive employees, but that the negative relation between the stock option proportion of pay and the use of a DBP is significantly larger than that for DCPs. We also find a significantly negative relation between the annual plan level of the DBP and the stock option proportion of pay, while the relation between the annual plan level for the DCP and the stock option proportion of pay is insignificant. These results provide evidence that firms' stock option granting behavior is impacted by the use of retirement plans, and more specifically, by the type of retirement plan used by the firm.

A negative relation between firms' stock option grants to non-executives and the level of the annual plan related compensation is not surprising, in that we expect firms to be concerned about overall levels of pay. More significant is the finding that firms' option granting behaviors are negatively impacted by the use of a retirement plan, independent of the level of the plan, and differentially so, when considering the type of plan in use. This provides new insights into how firms view the function of stock options and retirement plans in the compensation contracts of non-executive employees. Simply put, it is not *just* that more of one pay type leads to less of another.

II. Hypothesis Development

The differences between defined benefit and defined contribution type retirement plans, and between these plans and stock options, are complex and multifaceted. Exhibit 1 summarizes these differences on a number of relevant dimensions.

Typically, option contracts grant employees an opportunity to purchase stock at an advantageous price after a 3 to 5 year vesting period; however, if the employee remains with the firm option exercise may be deferred which provides significant tax advantages for the employee. If the employee leaves the firm, option contracts generally require the forfeiture of non-vested options and the immediate exercise of vested options. Forfeiture is costly for employees with significant financial capital accumulated in non-vested options. In addition, because the exercise of stock options generates taxable income to the employee on the exercise date, a forced early exercise of vested stock options may be quite suboptimal for the employee from a tax planning perspective. Options typically cannot be transferred, which means that the employee must remain with the firm to retain the right to exercise the options at vesting or later. Rational employees should consider the early departure costs associated with forfeiture (of non-vested) or forced exercise of (vested) options when they evaluate compensation contracts offered by potential employers.

Retirement plans provide retention incentives as a function of the way in which retirement benefits accrue. Although DBPs and DCPs accrue benefits very differently, both types of plans generate higher retirement distributions from longer employee tenure. Under a DCP, higher retirement distributions result from greater employer contributions over time and a longer period for (tax-free) investment gains. Under a DBP, the employer promises a specific monthly benefit at retirement, typically determined by a formula that defines the retirement benefit as a percentage of the worker's final five years' wages and total years of service, with the percentage increasing as years of service increase. The combination of increasing percentage and increasing wages over time

[14] This paper does not discuss the decision to establish different types of deferred pay schemes, which are assumed here to be already in place.

translates to greater increases in DBP type retirement distributions as employee tenure lengthens.

A small body of literature directly examines firms' use of options for retention of non-executives, and provides mixed results. Ittner *et al*. (2003) suggest that competition by new economy firms for specialized labor should lead to greater use of stock options for non-executives, but do not find evidence in support of this hypothesis. Conversely, Balsam *et al*. (2007) examine non-executive employee turnover at a Fortune 100 firm during the 1990s, and find significant differences in employee turnover rates in the six months prior and subsequent to the option vesting date, regardless of non-executive employees' reasons for voluntary departure (i.e., retirement or to change employers). Other literature *infers* firms use stock options for short-term retention of non-executives, largely as a function of the innovation opportunity set (Core and Guay, 2001; Ittner *et al*., 2003; Oyer and Schaefer, 2005).

Firms' use of retirement plans to minimize employee turnover has also been examined in the labor economics literature.[15] Gustman and Steinmeier (1993) find that individuals with employer retirement plans are significantly less likely to change jobs than those without, while Even and MacPherson (1996) find the use of a retirement plan is significantly associated with longer employee tenure. Other researchers have examined the *differential* role of DBPs and DCPs in retaining employees. When examining employees' projected and accrued pensions under DBPs, labor economists find that longer tenure (Ippolito 1985, 1987, 1991) and smaller probabilities of turnover (Allen *et al*. 1993) are associated with greater expected reductions in DBP retirement payouts resulting from early departure. Despite early literature characterization of DCPs as portable, tax-free savings accounts, which do not impose early departure costs on employees, more recent labor economics literature suggests otherwise, providing evidence that DCPs, like DBPs, can reduce labor mobility, although not nearly to the extent of DBPs (Gustman and Steinmeier, 1993; Even and MacPherson, 1996). Intervening factors in these relationships include firm size, cash flow constraints, labor market aspects and the firm's innovative opportunity set.

If, as the previous research on the use of stock options and retirement plans suggests,

stock options are useful for short-term retention (i.e., through the vesting period), while retirement plans are useful for long-term retention (i.e., the employee's career), then stock options and retirement plans may function more like complements than like substitutes in employees' compensation contracts. Complementarity between retirement plans and stock options implies no relation between the use of a retirement plan and the use of stock options, while substitutability between retirement plans and stock options implies a negative relation. If stock options and retirement plans are not substitutes, or are substitutes but not significantly so, then we should observe no differences in option granting behavior between firms using a retirement plan and firms not using a retirement plan. However, if stock options and retirement plans are substitutes and significantly so, then we should observe differences in option granting behavior between firms using a retirement plan and firms not using a retirement plan. Our first set of tests examines the relation between firms' stock option grants and the contemporaneous use of a *retirement plan of any type.*

If, as the previous research on the use of particular types of retirement plans suggests, DBPs provide retention effects over employees' careers (i.e., long-term) and DCPs provide retention effects at least through, and perhaps beyond the regulatory vesting period (i.e., short-term), then stock options and DBPs may function more like complements, while stock options and DCPs may function more like substitutes. Complementarity between DBP plans and stock options implies no relation between the presence of a DBP plan and the use of stock options, while substitutability between DCP plans and stock options implies a negative relation between DCP plans and the use of stock options. Our second set of tests considers whether the *type of retirement plan* used by the firm matters when firms grant stock options to non-executives.

Regardless of whether these plans are substitutes or complements, the *amounts* of compensation provided by different types of pay should be negatively related. If employees' total compensation is bounded at the appropriate competitive level, an increase in the amount of one type of compensation should lead to a decrease in the amount of other types of compensation (though not necessarily on a dollar-per-dollar basis). In order to examine complementarity versus substitutability of pay types, it is important to separate *pay levels* from *pay types*. Separating pay levels from pay types in both sets of tests enables us to examine the impact of retirement plans on option granting, independent of plan levels.

We hypothesize that the stock option proportion of pay is negatively affected by the existence of any type of retirement plan and by the level of compensation provided by these plans. We then consider differential effects of the type of retirement plan in place. We hypothesize that defined benefit plans will have a greater negative effect on the stock option proportion of pay than defined contribution plans.

III. Model Development and Variables

To examine how firms' use of stock options for employee retention is affected by the presence of retirement plans, we modify and extend the model

[15] See Gustman, Mitchell and Steinmeier (1994) for a survey of the literature on the role of pensions in the labor market.

used by Ittner *et al*. (2003).[16] To assess complementarity and/or substitutability between stock options and retirement plans, we include a variable to indicate the firm's use of a retirement plan of any type. To examine differential effects of DBPs relative to DCPs, we include variables to indicate the retirement plan type(s) used. In all tests, we include retirement plan levels to separate out the extent to which firms view stock options and retirement plans as substitute forms of pay in terms of levels. Finally, we control for the factors found in the prior literature to be significantly associated with firms' option grants to non-executives for retention purposes or other reasons (e.g., the firm's innovation opportunity set, wage levels and wage changes, size, and cash constraints).

We expect stock options and retirements plans to be substitutes as well as complements. Therefore, we expect that the proportion of total compensation provided by stock options will be lower for firms with retirement plans than for firms without, and that DBPs will have a greater dampening impact on this relation than DCPs. We also expect that the stock option proportion of pay will be inversely related to the level of compensation provided by these plans.

The stock option proportion of pay is calculated as the value of options granted to non-executive employees divided by total employee compensation. The level of stock option grants to non-executive employees is calculated from information contained in firms' annual proxy statements. SEC rules (item 402 of Regulation S-K), adopted in 1992, require detailed disclosure of the components of executive compensation (including information on stock option awards) for the chief executive officer and the other four most highly compensated executive officers whose compensation for the previous fiscal year exceeds $100,000 (base salary and bonus only). We classify these officers as "tier 1 employees." Disclosure rules require that the firm report the number of stock options awarded to these employees, the percent such awards represent of the total stock option grants to *all employees*, and the value of the options granted.

Data on option grants are obtained from Standard and Poor's ExecuComp database, collected from information disclosed in firms' annual proxy statements. We use the total number of options granted to the tier 1 employees and the total percent they represent to gross up and determine the total number of options granted to all employees.[17] We also assume that there is another tier of executives (we classify these as "tier 2 employees"), not reported on in the proxy statement, who receive, in the aggregate, the same number of options as received by the tier 1 employees. From the firm total options granted to all employees, we subtract the number granted to the tier 1 and tier 2 employees, resulting in the number of options granted to non-executive employees. The value of non-executive options granted is calculated as the number of options granted to these employees multiplied by the average Black-Scholes value of an option granted to the tier 1 employees. We use ExecuComp's modified Black-Scholes value of options granted to tier 1 employees

Total non-executive employee compensation is the sum of the value of options granted to non-executives plus total wages paid to non-executive employees plus total pension and retirement expense. Total wages paid to non-executive employees are calculated using wage data for production workers obtained from the U.S. Bureau of Labor Statistics and firms' disclosures about the number of employees, obtained from Compustat. We use firms' financial statement disclosures about retirement plans, obtained from Compustat, to identify the plan types utilized by firms as well as to calculate compensation provided by these plans.

Base on the previously cited research, we have included variables to control for the firm's innovation opportunity set and firm size. Since option grants require no cash, firms which are more cash constrained should substitute options for deferred compensation which requires cash (as do both DCPs and DBPs). Cash constraints are also included as a control variable. All of these variables are calculated using data obtained from Compustat. Two other control variables are included for wage levels and one-year change in wages, with data obtained from the U.S. Bureau of Labor Statistics. All variables, their data sources, construction, and the sign of their predicted coefficients are summarized in Exhibit 2.

To capture the extent to which firms' option granting behavior is related to the use of a *retirement plan of any type*, we test the following model ("the aggregated model"):

$$OPTPAY = \beta 0 + \beta 1PLAN\_YN + \beta 2PLAN\_LEVEL + \beta 3IOS + \beta 4SIZE + \beta 5CASHCON + \beta 6WAGE + \beta 7DWAGE + e \quad (1)$$

To capture the extent to which firms' option granting behavior is related to the *type of retirement plan in use,* we test the following model ("the disaggregated model"):

$$OPTPAY = \beta 0 + \beta 1PLAN\_TYPE\_DBP + \beta 2PLAN\_TYPE\_DCP + \beta 3PLAN\_LEVEL\_DBP \beta 4PLAN\_LEVEL\_DCP + \beta 5IOS + \beta 6SIZE + \beta 7CASHCON + \beta 8WAGE + \beta 9DWAGE + e \quad (2)$$

[16] This study includes restricted stock grants that are not available through public sources; we look only at option grants.

[17] We assume that options are granted to non-executive employees at the same time and under the same terms as they are granted to the top five employees.

IV. Sample Selection and Data

Sample selection

The firms in the ExecuComp (version 2003) database are used to identify all firms granting options during the five-year period from 1997 to 2002. Our rationale for this sample selection period is two-fold. First, SFAS 123, *Accounting for Stock-Based Compensation*, adopted in October 1995, was effective for years beginning after December 31, 1996. Thus, we exclude 1996 since it was the transition year to a new accounting standard for stock-based compensation, and begin our sample period in 1997. Second, in 2003, largely in response to well-publicized accounting scandals, FASB reopened deliberations on accounting for equity-based pay. The resulting uncertainty about the outcome of the deliberations, which took place over 2003 and 2004, complicated firms' incentives with respect to option granting. In addition, SFAS 123R, *Share-Based Payment,* adopted in December 2004, changed accounting for stock-based pay for years beginning after December 31, 2005. Thus, we end our sample period in 2002 to exclude the confounding effects of regulatory deliberations and the resulting change in the accounting rules applicable to stock options.

Financial statement data (from the Compustat Industrial database) and share price information (from the Compustat Price and Earnings database), for all years must be available for the firm to be retained in the study. In addition, reported SIC and NAICS (6 digit) codes must be available for matching hourly wages of production workers. Because we are interested in the use of stock options to compensate non-executives, firms are eliminated from the sample if the options granted to tier 1 and tier 2 employees are more than 50% of the options granted to all employees. This yields a final sample of 1,229 firms and 4,350 firm-years. Table 1 reports summary data the sample by year, one-digit industry class, and type(s) of retirement plan in use.

Data

Table 2, Panel A, presents descriptive statistics for the sample firms' economic characteristics as well as the model variables used in the analysis. All model variables (except indicators) were winsorized at 98% to reduce the effect of extreme values.

The economic variables (assets, sales, net income, and market capitalization) are reported for descriptive purposes only, and are not winsorized. The mean (median) value of options granted to non-executives is $113 ($14) million, indicating considerable skewness. The mean and median percent of total options granted by firms to non-executives are virtually the same, 72.3% and 72.0%. Non-executive employees receive, at the mean (median), 14.9% (4.8%) of their total compensation in the form of option grants. On average, 86.8% of firm-year observations reflect a retirement plan of some type. Approximately 51% of firm-year observations indicate use of a DBP and approximately 75%, use of a DCP. On average firms spend 17.3% of beginning of year assets on their innovation opportunity set and are cash constrained. Mean (median) hourly wage change is 3.8% (3.6%) of prior year's hourly wage, and non-executive employees receive a mean (median) hourly wage of $16.58 ($16.39).

Table 2, Panel B, summarizes the Pearson (Spearman) correlation coefficients for the variables in the aggregated model (those in bold are correlated at the 1% level). OPTPAY is significantly negatively correlated with PLAN_YN, suggesting that the stock option proportion of pay of non-executives is lower for firms using a retirement plan than for firms not using a retirement plan. OPTPAY is significantly positively correlated with IOS**,** suggesting that the stock option proportion of pay of non-executives is higher at firms facing higher innovation opportunity sets. OPTPAY is also significantly negatively correlated with CASHCON, suggesting that firms that are more cash constrained use options more to compensate non-executives. These relationships are all consistent with the effects hypothesized.

PLAN_YN and PLAN_LEVEL are both significantly negatively correlated with IOS, suggesting that firms using retirement plans have smaller innovation opportunity sets. The significantly positive correlation between PLAN_YN and CASHCON suggests that firms using retirement plans are less cash constrained than firms not using retirement plans. PLAN_LEVEL is significantly positively correlated with SIZE, suggesting that larger firms with retirement plans have higher retirement plan levels. PLAN_LEVEL is significantly positively correlated with CASHCON, suggesting that firms that are less cash constrained have higher retirement plan levels.

V. Results

Aggregated Model

Table 3 reports results of the cross-sectional OLS regression for the aggregated model. The main coefficient of interest, on PLAN_YN, is significantly negative, indicating that the stock option proportion of pay of non-executive employees is lower for firms with a retirement plan than for firms without a retirement plan. This finding supports the notion that the employee retention benefits of stock options and retirement plans are, to some extent, substitutes.

As hypothesized, for firms with retirement plans, the level of compensation provided by the plan has an impact on firms' option granting behavior as well. The coefficient on PLAN_LEVEL is negative and significant, indicating that the stock option proportion of pay of non-executives is lower for retirement plan firms with higher levels of compensation provided by the plans.

Coefficients on control variables are consistent with the findings of previous researchers. We find a significantly positive association between the stock option proportion of pay and our proxy for the innovation opportunity set, IOS. This supports the argument that firms facing a significant innovation opportunity set use options as a retention mechanism for non-executives. Consistent with the idea that monitoring of employee actions becomes more difficult as firm size increases, resulting in greater use of options, we find that the coefficient on SIZE is significantly positive. While previous researchers (Core and Guay 2001; Ittner *et al*. 2003) have argued that cash constrained firms will use stock options more to compensate non-executives, substituting options for cash wages, their findings are mixed (supported by the former but not by the latter). We find that the coefficient on CASHCON is statistically significantly negative, providing additional evidence that firms that are more (less) cash constrained use options more (less).

In terms of the wage related control variables, the coefficient on WAGE is positive and significant, suggesting that firms paying higher hourly wages grant higher levels of options as well. The coefficient on DWAGE is negative but not significant.

Disaggregated Model

It is interesting to examine economic characteristics as well as model variables for sample firms, stratified by type of retirement plan(s) maintained; these are presented in Table 4, Panel A. Firms using only DBPs are the largest firms, followed by the firms using both DBPs and DCPs. Firms without any type of retirement plan are the smallest. The stock option proportion of pay for firms without any type of retirement plan is highest, followed by firms using only a DCP. Firms with only a DBP grant the lowest stock option proportion of pay of any of the four groups. This supports our conjecture that stock options and DBPs provide the most directly complementary retention benefits. Firms without a retirement plan and firms using only a DCP tend to have larger innovation opportunity sets and are more cash constrained that the other two groups of firms. While hourly wage levels are highest for firms using only a DBP, wage changes are largest for firms without a retirement plan of any type and for firms using only a DCP. This indicates that firms without additional retention mechanisms must rely on wage adjustments to retain employees as market conditions change. Table 4, Panel B, summarizes the Pearson (Spearman) correlation coefficients for the for the disaggregated model variables. OPTPAY is significantly negatively correlated with PLAN_TYPE_DBP and PLAN_LEVEL_DBP, suggesting that the stock option proportion of pay is lower for firms using a DBP plan, and that for firms with a DBP, higher levels of compensation through DBPs accentuate this further. OPTPAY is significantly negatively correlated with PLAN_TYPE_DCP but not with PLAN_LEVEL_DCP, suggesting that the stock option proportion of pay is lower for firms using a DCP plan, but that DCP retirement costs have no impact on the stock option proportion of pay of non-executives.

Table 5 reports results of the cross-sectional OLS regression for the disaggregated model. The coefficients on both PLAN_TYPE_DBP and PLAN_TYPE_DCP are negative at significant levels, indicating that the presence of both types of plans reduces the stock option proportion of pay of non-executives. An *F*-test of the equality of the coefficients on PLAN_TYPE_DBP and PLAN_TYPE_DCP rejects the null hypothesis of equality. The negative impact of DBPs on the stock option proportion of pay is significantly larger than the negative impact of DCPs. We interpret these findings as evidence that both plans serve as substitutes and that DBP plans provide retention benefits incremental to those afforded by DCP plans, even in the presence of other forms of compensation that offer retention mechanisms (e.g. stock options).

The coefficient on PLAN_LEVEL_DBP is also significantly negative, while the coefficient on PLAN_LEVEL_DCP is insignificant, suggesting that compensation provided by DBPs but not DCPs, is considered when firms grant options to non-executives. This provides additional evidence that DBP plans provide retention benefits over and above those provided by DCP plans, though it calls into question the idea that stock options and DCPs are direct substitutes.

VI. Summary

Increased employee tenure is beneficial for firms for many reasons. It can improve returns on training costs and reduce monitoring costs by emphasizing long-term performance. In addition, repetition over time increases worker accuracy or proficiency, and efficiency is higher for teams that have worked together longer.[18] Orazem, Bouillon and Doran (2004) find a positive association between return on assets and employee tenure, and suggest that firm investments in firm-specific training, pension or benefit policies, deferred pay policies and human resources practices should be associated with higher firm value. Thus, it appears firms have incentives to provide compensation in ways that enhance employee retention.

If stock options and retirement plans, and DBP type plans, in particular, have features that make them useful for employee retention, then firms' option granting behaviors are likely impacted by firms' use of a retirement plan, as well as by the specific type of plan in use.

[18] See Ippolito (1991) for a summary of the prior literature on how long-term commitments enhance productivity.

We examine a sample of firms issuing more than 50% of their stock options to non-executives and find a negative relation between the stock option proportion of pay and the use of a retirement plan. This is consistent with the hypothesis that firms reduce their use of options for non-executive employees in the presence of alternative retention mechanisms. We also find a negative relation between the stock option proportion of pay, pension, and retirement plan levels. We conduct further tests to examine whether the specific type of plan used by the firm is related to the firm's stock option granting behavior. We find a negative relation between the use of both DBP and DCP plans, but that the negative relation between the stock option proportion of pay is larger for DBPs than for DCPs. Further, DBP plan levels, but not DCP plan levels, play a role in the extent to which employees receive stock option compensation.

Our research provides evidence on the impact of alternative retention mechanisms on firms' use of stock options for non-executives; further research could improve our understanding of the relationship between retirement plans and stock options for this group of employees. Ippolito (1991) suggests that the retention effects of DBPs are strongest during midstream of the tenure cycle. This in turn suggests that firms' option granting behavior with respect to employees will be a function of their tenure cycle. Research examining the relation between firms' option granting behaviors and employees' tenure characteristics could be a worthwhile expansion of this work. Ittner *et al*. (2003), Anderson et al. (2000) and Murphy (2003) suggest that the economic characteristics and pay practices of new economy firms differ significantly from those of old economy firms. Research examining new and old economy firms' use of stock options in conjunction with the contemporaneous use of other forms of deferred pay could also be a worthwhile expansion of this work.

This research presents substantial evidence that the use of stock options to compensate non-executives is significantly impacted by other forms of compensation that provide retention benefits for the employer. In particular, the existence of DPB and DCP plans, as well as the amounts of compensation they provide, appears to affect option granting behavior. Results of tests indicate that they do so differently, with DBPs dampening the use of options more than DCPs.

Our findings, as well as those of previous researchers whose works we discuss, suggest many remaining opportunities to expand on our understanding of firms' pay practices, and in particular, option granting behaviors.

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Exhibit 1. Comparison of Features of Defined Contribution Plans, Defined Benefit Plans and Nonqualified Stock Options

FEATURE	DEFINED CONTRIBUTION PLAN ("DCP")	DEFINED BENEFIT PLAN ("DBP")	NONQUALIFIED STOCK OPTIONS
Pay deferred until:	Retirement, but may be paid out earlier with payment of 10% early distribution penalty.	Retirement, but may be paid out earlier with payment of 10% early distribution penalty	End of vesting period
Tax implications: Employer	Tax deduction in amount, and at time, of contribution.	Tax deduction in amount, and at time, of contribution.	Tax deduction at time of employee exercise, in amount of difference between share price at date of exercise and exercise price.
Tax implications: Employee	Taxed at time of distribution, usually at retirement.	Taxed at time of distribution, usually at retirement.	Taxable at time of employee exercise, in amount of difference between share price at date of exercise and exercise price.
Annual Employer Participation Required After Initial Adoption	Yes, but some plans may not require any contribution if a profit threshhold is not met.	Yes.	No.
Determination of Annual Compensation Amount	Generally determined as a % of salary, % amount may vary with profilitability as stated in plan documents.	Actuarially determined in accordance with predetermined benefit formula contained in plan documents.	At management discretion, within parameters identified in the stock option plan.
Financial Statement Implications (during sampling period from 1997 to 2002)	Pension expense recognized equal to amount of annual contribution.	Actuarially determined pension expense recognized, could be negative if plan assets were large enough to generate sufficient expected returns. The expense does not usually equal the amount of the contribution. A modified measurement of the firm's net pension liability recognized on the balance sheet.	Firms could choose between expense recognition or footnote disclosure of what earnings would be if options had been expensed.
Cash Flow Implications	If a contribution is required, it must be made within a short window after year end.	Funding requirements determined by ERISA, annual contribution generally required if plan is not overfunded. Contribution must be made within a short window after year end.	Shares distributed at exercise may be provided through Treasury stock, requiring open market repurchase; or through issuance of additional shares in which case no cash outflow is ever required. Proceeds from exercise result in cash inflows.
Employee Inclusion Requirements	Virtually all full time employees must be included.	Virtually all full time employees must be included.	None.
Vesting Timetable	3 to 5 years	3 to 5 years	No regulatory mandate. In practice the vesting period is generally 3 to 5 years from grant date.
Employee Early Departure Costs	None, as plan functions as portable tax-deferred savings account.	Reduction in retirement distribution.	Forced exercise of vested options, forfeiture of non-vested options.

Exhibit 2. Variables Definitions
Panel A – Model Variables

CONSTRUCT	PREDICTED SIGN	LABEL		DEFINITION
Model Variables				
Stock option proportion of pay of non-executives	n/a	OPTPAY	=	OPT_VAL / (OPT_VAL + TOT_WAGE + PLAN_LEVEL)
Value of options granted to non-executives	n/a	OPT_VAL	=	(# options granted to non-executives) X (the average Black Scholes value of an option granted to the top 5 employees of the firm)
Total wages paid to non-Executives	n/a	TOT_WAGE	=	[(average hourly earnings of production workers) X (# of employees) X (8 hours per day X 5 days per week X 52 weeks per year)]
Retirement Plan employed	-	PLAN_YN	=	1 if firm maintains a retirement plan of any type, and 0 otherwise
Total Retirement Plan Compensation	-	PLAN_LEVEL	=	(PLAN_LEVEL_DBP) + (PLAN_LEVEL_DCP)
DBP type plan	-	PLAN_TYPE_DBP	=	1 if firm maintains a defined benefit plan, 0 otherwise
DCP type plan	-	PLAN_TYPE_DCP	=	1 if firm maintains a defined contribution plan, 0 otherwise
DBP compensation	-	PLAN_LEVEL_DBP	=	[the service cost of a defined benefit plan] / firm sales
DCP compensation	-	PLAN_LEVEL_DCP	=	[the retirement expense of a defined contribution plan] / firm sales

Exhibit 2. Variables Definitions
Panel B - Control Variables

CONSTRUCT	PREDICTED SIGN	LABEL		DEFINITION
Control Variables				
Innovation opportunity set	+	IOS	=	[(acquisition expenditures + research & development expenditures + capital expenditures) / total assets at the beginning of the year]
Firm size	+	SIZE	=	logarithm of firm market value at end of year
Cash constraints	-	CASHCON	=	(net cash flow from operating activities) - (cash dividends + capital expenditures + research & development expenditures) / (number of employees)
Wages paid to non-executives	?	WAGE	=	the average hourly wage of a production worker
One year change in wages paid to non-executives	?	DWAGE	=	(current period's WAGE - last period's WAGE) / (last period's WAGE)

Table 1. Sample Summary Data
Panels A and B

Panel A - Sample by Year	
1997	618
1998	644
1999	620
2000	645
2001	900
2002	923
TOTAL	4,350
Panel B - Sample by Industry (SIC) Classification	
SIC 1000	0
SIC 2000	191
SIC 3000	910
SIC 4000	1,604
SIC 5000	349
SIC 6000	340
SIC 7000	155
SIC 8000	667
SIC 9000	134
TOTAL	4,350

Table 1. Sample Summary Data
Panel C

Panel C - Firms and Firm-Years by Plan Type

MAINTAINS A DBP?	MAINTAINS A DCP?	FIRMS	FIRM-YEARS
Y	Y	480	1,708
Y	N	131	498
N	Y	462	1,570
N	N	156	574
		1,229	4,350

Table 2. Panel A – Sample Descriptive Statistics
Economic Characteristics and Model Variables

Variables	Mean	1-Qrt	Median	3-Qrt	Max
Assets	$10,395	$469	$1,738	$7,087	$1,097,190
Sales	$6,417	$416	$1,413	$5,580	$245,308
Net Income	$299	$3	$55	$269	$22,072
Market Value	$11,068	$600	$2,113	$7,702	$467,096
Value of options granted to non-executive employees	$113.421	$4.394	$13.895	$49.431	$49,883.700
Percent of options granted to non-executive employees	0.723	0.613	0.720	0.828	1.000
Proportion of stock option pay (**OPTPAY*)*	0.149	0.015	0.048	0.192	0.997
Retirement Plan Yes/No (**PLAN_YN)**	0.868	1.000	1.000	1.000	1.000
Pension and Retirement Expense *(***PLAN_LEVEL*)*	0.006	0.002	0.005	0.008	0.029
DBP Plan Type (**PLAN_TYPE_DBP**)	0.507	0.000	1.000	1.000	1.000
DBP Plan Level (**PLAN_LEVEL_DBP)**	0.003	0.000	0.000	0.005	0.016
DCP Plan Type (**PLAN_TYPE_DCP)**	0.754	1.000	1.000	1.000	1.000
DCP Plan Level (**PLAN_LEVEL_DCP**)	0.003	0.000	0.002	0.005	0.018
Innovation opportunity set (**IOS**)	0.173	0.066	0.122	0.220	1.110
Firm size (**SIZE**)	7.695	6.397	7.656	8.949	11.979
Cash constraints (**CASHCON**)	-14.852	-19.935	0.283	9.448	180.565
Wage (**WAGE**)	$16.58	$13.65	$16.39	$19.11	$31.14
Wage change (**DWAGE**)	0.038	0.017	0.036	0.053	0.285

Table 2. Panel B – Pearson (Spearman) Correlations above (below) the diagonal
Model Variables

	OPTPTOP	PLAN_YN	PLAN_LEVEL	IOS	SIZE	CASHCON	WAGE	DWAGE
OPTPAY		**-0.2897**	**-0.2094**	**0.3392**	**-0.0752**	**-0.3348**	**0.2044**	**0.0915**
PLAN_YN	**-0.2611**		**0.4097**	**-0.1703**	**0.1430**	**0.1780**	0.0037	**-0.0696**
PLAN_LEVEL	**-0.2430**	**0.5729**		**-0.1241**	**0.1772**	**0.0565**	**0.1350**	**-0.0472**
IOS	**0.3533**	**-0.1766**	**-0.1479**		**-0.0666**	**-0.3408**	**0.0462**	**0.0500**
SIZE	**-0.0768**	**0.1413**	**0.2276**	**-0.0809**		**0.1657**	**0.0700**	**-0.0766**
CASHCON	**-0.2401**	**0.1360**	**0.0740**	**-0.4272**	**0.2135**		-0.0871	**-0.0083**
WAGE	**0.2023**	0.0162	**0.1454**	0.0343	**0.1073**	**0.0690**		**0.3524**
DWAGE	**0.1058**	**-0.0604**	**-0.1022**	**0.0755**	**-0.0679**	-0.0008	**0.1962**	

Bold *(italics)* indicates significance at the **1%** level.
Assets are total assets at end of year. Sales are firm sales for the year. Net Income is net income before extraordinary items for the year. Market Value is the number of shares outstanding at year end times the end of year share price. Value of options granted to non-executive employees is the number of options granted to non-executive employees multiplied by the ExecuComp calculated Black-Scholes value of the option at grant. Percent of options granted to non-executive employees is the percentage of firm total options granted to all employees that was granted to non-executives. All other variables are defined in Exhibit 2. Dollars are in millions.

Table 3. OLS Regression
Aggregated Model

$$OPTPAY = \beta 0 + \beta 1PLAN\_YN + \beta 2PLAN\_LEVEL + \beta 3IOS + \beta 4SIZE + \beta 5CASHCON + \beta 6WAGE + \beta 7DWAGE + e$$

	Expected Sign	Estimated Coefficient	*t-stat*
Explanatory Variable			
Intercept	+/-	0.0608	*3.63*
PLAN_YN	-	-0.1024	*-11.21*
PLAN_LEVEL	-	-4.9211	*-8.97*
IOS	+	0.2597	*15.33*
SIZE	+	0.0007	*0.45*
CASHCON	-	-0.0006	*-14.63*
WAGE	?	0.0089	*13.76*
DWAGE	?	-0.0261	*-0.54*
N	4,350		
Adjusted R^2	0.256		

See Exhibit 2 for variable definitions.

Table 4. Panel A – Descriptive Statistics by Plan Type
Economic Characteristics and Model Variables

PLAN_TYPE_DBP	**Y**	**Y**	**N**	**N**	
PLAN_TYPE_DCP	**Y**	**N**	**Y**	**N**	***p-value F-test***
Assets	$11,670	$40,866	$2,338	$2,197	0.0001
Sales	$8,170	$17,452	$2,686	$1,831	0.0001
Net Income	$448	$873	$49	$40	0.0001
Market Value	$12,952	$26,442.	$6,431	$4,803	0.0001
Value of options granted to non-executive employees	$87.119	$115.610	$138.931	$120.014	0.5360
Percent of options granted to non-executive employees	0.714	0.729	0.731	0.728	0.0001
Proportion of stock option pay (**OPTPAY*)*	0.061	0.052	0.217	0.306	0.0001
DBP Plan Type (**PLAN_TYPE_DBP**)	1.000	1.000	0.000	0.000	0.0001
DBP Plan Level (**PLAN_LEVEL_DBP)**	0.005	0.006	0.000	0.000	0.0001
DCP Plan Type (**PLAN_TYPE_DCP)**	1.000	0.000	1.000	0.000	0.0001
DCP Plan Level (**PLAN_LEVEL_DCP**)	0.004	0.000	0.004	0.000	0.0001
Innovation opportunity set (**IOS**)	0.127	0.115	0.213	0.249	0.0001
Firm size (**SIZE**)	8.191	8.987	6.988	7.028	0.0001
Cash constraints (**CASHCON**)	0.380	-5.591	-22.049	-48.522	0.0001
Wage (**WAGE**)	$16.12	$17.78	$16.71	$16.53	0.0001
Wage change (**DWAGE**)	0.030	0.026	0.047	0.049	0.0001

Table 4. Panel B – Pearson (Spearman) Correlations above (below) the diagonal
Model Variables

	OPTPTOP	PLAN_ TYPE_ DBP	PLAN_ TYPE_ DCP	PLAN_ LEVEL_ DBP	PLAN_ LEVEL_ DCP	IOS	SIZE	CASHCON	WAGE	DWAGE
OPTPAY		**-0.4310**	**-0.1055**	**-0.3223**	0.0056	**0.3392**	**-0.0752**	**-0.3348**	**0.2044**	**0.0915**
PLAN_TYPE_DBP	**-0.4745**		**0.0487**	**0.4147**	**-0.0221**	**-0.2805**	**0.3775**	**0.1910**	-0.0175	**-0.1530**
PLAN_TYPE_DCP	**-0.0691**	**0.0487**		0.0058	**0.4764**	**-0.0461**	**-0.0766**	**0.1064**	**-0.0654**	-0.0023
PLAN_LEVEL_DBP	**-0.4495**	**0.9134**	0.0212		**0.0335**	**-0.2043**	**0.3462**	**0.1207**	**0.0879**	**-0.1149**
PLAN_LEVEL_DCP	**0.0432**	-0.0201	**0.6892**	-0.0185		0.0156	**-0.0676**	-0.0161	**0.1082**	**0.0437**
IOS	**0.3533**	**-0.3267**	-0.0382	**-0.2943**	0.0265		**-0.0666**	**-0.3408**	**0.0462**	**0.0500**
SIZE	**-0.0768**	**0.3898**	**-0.0737**	**0.4077**	**-0.0686**	**-0.0809**		**0.1657**	**0.0700**	**-0.0766**
CASHCON	**-0.2401**	**0.1800**	**0.0923**	**0.1385**	0.0299	**-0.4272**	**0.2135**		**-0.0872**	-0.0083
WAGE	**0.2023**	0.0093	**-0.0715**	**0.0674**	**0.0391**	0.0343	**0.1073**	**-0.0690**		**0.3524**
DWAGE	**0.1058**	**-0.1750**	0.0127	**-0.1752**	0.0231	**0.0755**	**-0.0679**	-0.0008	**0.1962**	

Bold *(italics)* indicates significance at the **1%** *(5%)* level.
Assets are total assets at end of year. Sales are firm sales for the year. Net Income is net income before extraordinary items for the year. Market Value is the number of shares outstanding at year end times the end of year share price. Value of options granted to non-executive employees is the number of options granted to non-executive employees multiplied by the ExecuComp calculated Black-Scholes value of the option at grant. Percent of options granted to non-executive employees is the percentage of firm total options granted to all employees that was granted to non-executives. All other variables are defined in Exhibit 2. Dollars are in millions.

Table 5. OLS Regression Results
Disaggregated Model

$$OPTPAY = \beta 0 + \beta 1PLAN\_TYPE\_DBP + \beta 2PLAN\_TYPE\_DCP + \beta 3PLAN\_LEVEL\_DBP + \beta 4PLAN\_LEVEL\_DCP + \beta 5IOS + \beta 6SIZE + \beta 7CASHCON + \beta 8WAGE + \beta 9DWAGE + e$$

	Expected Sign	Estimated Coefficient	*t-stat*
Explanatory Variable			
Intercept	+/-	-0.0213	*-1.31*
PLAN_TYPE_DBP	-	-0.1355	*-16.97*
PLAN_TYPE_DCP	-	-0.0209	*-2.92*
PLAN_LEVEL_DBP	-	-5.1664	*-5.02*
PLAN_LEVEL_DCP	-	0.2664	*0.33*
IOS	+	0.1912	*11.56*
SIZE	+	0.0121	*7.49*
CASHCON	-	-0.0006	*-15.05*
WAGE	?	0.0083	*13.28*
DWAGE	?	-0.1189	*-2.56*
N	4,350		
Adjusted R^2	0.32		

See Exhibit 2 for variable definitions.

РАЗДЕЛ 2
КОРПОРАТИВНАЯ СОБСТВЕННОСТЬ И КОНТРОЛЬ

SECTION 2
CORPORATE OWNERSHIP & CONTROL

FAMILY CONTROL, AUDIT COMMITTEES AND AUDIT FEES

Sidney Leung*, Ran Wang**

Abstract

This paper examines the impact of family control on audit effort and audit risk as proxied by audit fees, the relation between the quality of the audit committee (AC) and audit fees, and how family control influences the association between AC quality and audit fees. Using a sample of Hong Kong companies from the 2005/06 fiscal year, we find that family-controlled firms have lower audit fees. The results also show a positive association between AC quality and audit fees in Hong Kong. Moreover, the association of higher AC quality with higher audit fees is stronger in family-controlled firms than in non-family-controlled firms. Collectively, our findings suggest that audit committees in family-controlled firms require a higher degree of external audit effort than do those in non-family-controlled firms.

Keywords: Audit risk, audit fees, audit committee, family control, Hong Kong market

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1. Introduction

It is well recognized in the accounting literature that East Asian economies have a different institutional background from Western industrialized countries. The high value placed on personal networks in the former region suggests the existence of an informal contracting convention. The mainstream culture and background of East Asian economies also support the prevailing influence of family ownership. Classical economic theory posits that personal networks and family control are inconsistent with a market–oriented system and detract from the elements of transparency, competition, and fairness considered necessary to ensure that transactions are efficient. Nevertheless, if the above logic holds, this raises some interesting questions: why have economies with these institutional features undergone rapid economic development, and why do they remain so strong? In addition, why is family control such a prevalent and powerful factor when corporate governance practice suggests that it leads to a loss of efficiency?

Our first research question examines the corporate governance efficiency of family-controlled firms, which we measure by audit effort and risk. Prior research suggests that while family control can reduce conflict between owners and management, it can also induce more severe conflict between controlling shareholders and minority shareholders.

In addition, although appointing controlling family members to top management posts can ensure that owners and managers pursue common interests and maximize firm wealth, such an approach also sacrifices the benefits of employing professional managers.

The efficiency of family control can be examined in a number of ways: one stream of the literature (see, for example, Anderson and Reeb, 2003) examines the market performance of family firms; another stream tests earnings informativeness and earnings quality (see, for example, Wang, 2006, Bikki et al., 2009). External audits are another channel for evaluating the impact of governance in family firms. In comparison with public statements and market price reaction, auditors' opinions are a better way of assessing the influence of family firm governance arrangements as auditors have greater access to unpublished information and internal records that allow them to assess firms' internal control systems as a whole. Moreover, Hogan and Wilkins (2008) demonstrate that even when internal control deficiencies are identified, auditors can still provide an unqualified opinion by increasing their substantive testing. In other words, auditors adjust their audit effort and audit fees according to the degree of risk identified. This suggests that audit fees may be representative of the degree of audit effort and risk and hence relate to the efficiency of the firm's corporate governance and ownership structure.

The second research question we examine in this paper relates to the quality of audit committees in the Hong Kong market. The HKICPA has issued "*A Guide for Efficient Audit Committees*" which makes a number of best practice recommendations for such committees. A concern exists in Hong Kong and the East Asian region that even if a firm's accounting meets all regulatory requirements, institutional factors such as *guanxi* (personal networks and relationships), family ownership, and bank power may distort the incentive to prepare true and fair financial statements and may thus detract from accounting quality. Given the unique institutional setting of Hong Kong, we test for the existence of a positive relation between AC quality and audit fees. We use four measures as proxies of the quality of the audit committee: *diligence, size, independence*, and *expertise*.

Our third research question focuses on how family control influences the association between AC quality and audit fees. Specifically, given that the literature argues that family firms have more governance deficiencies than other firms, we examine whether high-quality ACs in family-controlled firms require more audit effort, as reflected in higher audit fees.

Using a combination of 2005/06 fiscal year data for a sample of 438 Hong Kong companies taken from the Compustat (Globalvantage) database and manually collected family control and corporate governance variables from the 2005/06 annual reports of the same companies, we reach several conclusions. After controlling for firm characteristics that have been documented in the audit fee literature, our OLS results show that family-controlled firms have lower audit fees, which proxy for audit effort and risk. Our results also support the existence of a positive association between audit committee quality and audit fees in Hong Kong. This relation is stronger in family-controlled firms than in non-family-controlled firms, suggesting that high-quality audit committees demand more external audit effort in family firms.

This paper makes three major contributions. First, it forges a link between the family control literature and the audit fee literature. The use of audit fees as a proxy for audit risk sheds light on the measurement of corporate governance efficiency in family-controlled firms. Our testing of corporate governance efficiency in family firms versus non-family firms is important because family control potentially has opposite effects in agency problems (Type I and Type II). Moreover, due to the prevalence of family ownership and the market power exerted through family control, family firms are an especially important research topic in the East Asian context. Our findings also enhance our understanding of whether family ownership and *guanxi* networks are efficient and benefit shareholders and investors.

The second contribution this paper makes is to facilitate a better understanding of audit committee efficiency in the context of East Asian economies, which benefit from high-quality regulation but have a less market-oriented institutional background. Specifically, we highlight the characteristics of audit committees operating in the Hong Kong economy, and especially those of family-controlled firms. Moreover, we extend prior research by examining the roles played by both audit committees and family control in the audit pricing process.

The third contribution this paper makes is to shed light on the regulatory aspects of audit practice in family-controlled firms. It provides some evidence on whether the best practice recommendations made for audit committees work well in the Hong Kong market in general and in family-controlled firms in particular. Hong Kong regulators may draw on the implications of this study for audit committee quality and the influence of family control.

The rest of the paper is arranged as follows. Section 2 presents the literature review and develops our hypotheses. Section 3 outlines the sample selection procedure and the research design adopted. We discuss our empirical results in section 4 before presenting our conclusions in section 5.

2. Theory and Hypotheses

2.1. Audit Fees and Audit Risk

According to the audit risk model, audit risk is specified as a function of three risk components: inherent risk, control risk, and detection risk.

Audit Risk = Inherent Risk*Control Risk*Detection Risk

Inherent risk refers to the probability that environmental factors will produce a material error before considering the quality of internal control. Control risk means the probability that the internal control system will not prevent or detect a material error. Detection risk represents the probability that audit procedures will not detect a material error which has not previously been detected by the internal control system. Auditors document both inherent risk and control risk on the basis of client assessments. When inherent risk and/or control risk are/is high, auditors must reduce detection risk to maintain overall audit risk at an acceptable level. This normally means increasing the level of substantive testing. For example, when managers manipulate accruals to conceal poor performance or postpone earnings to future years, auditors revise upwards their assessments of inherent risk, which will result in higher audit fees.

Evidence is mixed on whether auditors' tests will be increased when risk factors are present before the SOX 404 phase (Section 404 of the Sarbanes-Oxley Act) (Mock and Wright, 1999; O'Keefe et al., 1994). However, research on the post-SOX 404 disclosure of weaknesses and deficiencies shows that auditors' risk adjusting behavior is quite significant. For example, Hogan et al. (2008) show that audit firms appear to increase their fees when control deficiencies exist, particularly in cases where the problems are the most severe. Hoitash et al. (2007) use client size and estimates of expected audit fees to proxy for unobservable audit risk and effort and find a statistically significant positive association between total fees and audit effort.

2.2. Family-controlled Firms and Audit Fees

While agency problems in family firms go beyond issues between management and shareholders (the Type I agency problem), family firms have certain advantages in addressing conflict between managers and owners. The appointment of family members to the CEO post or to other top management posts in a family-controlled firm can reduce the incentive of managers to engage in short-term behavior. Furthermore, as concentrated shareholders, controlling families conduct better monitoring, reduce information asymmetry, and reduce the free rider problem. Founding families that seek to maintain a long-term presence in their firms also closely guard their reputation. Family firms are generally better at monitoring management and reducing managerial opportunities to engage in earnings management. According to stewardship theory, earnings are less likely to be manipulated when controlling families have interests that are consistent with increasing the firm's wealth. (Tosi and Gomez-Mejia, 1989).

Despite the Type I advantages of family firms, the Type II agency problem – conflict between controlling shareholders and minority shareholders – is more severe in this type of firm. Controlling shareholders have an opportunity to maximize their private benefits by expropriating value from minority shareholders (Fan and Wong, 2002). Founding families have their own concerns and interests, such as stability and capital preservation, which may differ from the interests of outside shareholders; family control firms have the ability to exploit opportunities to gain private rent. They may benefit more from firm growth, technological innovation, or firm survival than from enhancing shareholder value (Fama and Jensen, 1985). Family controllers are also capable of expropriating wealth from the firm through excessive compensation, related party transactions, or special dividends. The potential for family firms to engage in these forms of behavior means that family members may be unable to reconcile their financial preferences with the interests of outside owners. For example, Maury (2006) uses a sample of European corporations to provide evidence that in a low shareholder protection and high control economy environment, family control will mitigate the agency problem between owners and managers, but is likely to cause conflict between family and minority shareholders. DeAngelo et al. (2000) show that the owners of family-controlled firms extract private benefits to the cost of minority shareholders. Fan and Wong (2002) find that conflicts between large shareholders and minority shareholders are more serious in East Asian countries where controlling family ownership is widespread, legal protection of minority shareholders is weaker, and financial reporting is less transparent.

Prior research also indicates that family firms are inclined to exert their influence through direct management control. Anderson and Reeb (2003) and Demsetz and Lehn (1985) show that family firms are more likely to appoint family members to top management positions or to serve as CEO with a view to aligning the performance goals of owners and managers. In other words, dominant families seek to impede third party control of their firms by selecting managers and directors from within the family (Barclay and Holderness 1989) and, especially when a family member fills the CEO position, to exclude more capable and talented outside professional managers. Family firms therefore stand to lose by foregoing opportunities to hire talented managers who are not family members. Large shareholders in family firms may remain active in management even if they lack the qualifications to do so and are likely to detract from the firm's competitiveness.

Overall, although family control can help in the setting of consistent business targets that combine the efforts of both management and ownership, it also can put the economic interests of minority shareholders at risk. Moreover, personnel arrangements in family firms are based on kinship relationships rather than on fair competition, a feature which may influence the integrity and professionalism of employees. In

addition to firm value and the informativeness of financial statements, external auditors' opinions are another useful channel for measuring the efficiency of family control. In comparison with public statements and market price reaction, auditors' opinions may be more reflective of the impact of firm governance arrangements given that auditors have access to firms' unpublished information which allows them to assess the effectiveness of the firm's internal control system as a whole. For example, auditors have access to the systems their clients employ to process transactions, can evaluate the quality of personnel involved in the accounting function, and can examine client policies and procedures related to the preparation of financial statements. By using their professional knowledge, external auditors can make reliable judgments about firms' accounting practices, the informativeness of their financial statements, and the efficiency of their corporate governance arrangements. Hogan et al. (2008) demonstrate that even when internal control deficiencies are identified, auditors can still provide an unqualified opinion by increasing their substantive testing. In other words, auditors adjust their audit effort and audit fees according to the degree of risk they detect. Audit fees may therefore represent audit effort and audit risk and relate to the efficiency of the firm's corporate governance practices and ownership structure. Although Gul et al. (2003) find a negative relation between family ownership and audit fees, it is worthwhile considering whether family control has the opposite effect. If the reduction in Type I agency costs dominates the Type II agency problem associated with family control, we expect family control to have a positive net influence on governance efficiency (such as through better internal control and risk management), resulting in lower audit fees due to lower audit risk and reduced audit effort. We therefore propose the following hypothesis:

H1a: Family control is associated with lower audit effort/audit fees.

Alternatively, if increases in Type II agency costs dominate the reduction of Type I agency costs in family-controlled firms, we expect family control to have a negative impact on governance efficiency (such as through the expropriation of assets by controlling families, weak internal control, and poor risk management), resulting in higher audit risk and audit effort and thus higher audit fees. The alternative hypothesis is therefore stated as follows:

H1b: Family control is associated with higher audit effort/audit fees.

2.3 *Audit Committee Quality and Audit Fees*

In December 1995, the Hong Kong Society of Accountants, or the HKSA (now renamed the Hong Kong Institute of CPAs, or the HKICPA) issued the first report of its Corporate Governance Committee (formerly the Corporate Governance Working Group). "A Guide for the Formation of An Audit Committee", which was first issued in 1997 and later in revised form as "A Guide for Effective Audit Committees" in 2002, is aimed at promoting corporate governance practice in Hong Kong by providing practical guidance on audit committees. It suggests that the function of an audit committee includes reviewing the effectiveness of the firm's financial reporting process, internal controls, and risk management system, and overseeing audit duties. Moreover, the guide recommends that audit committees meet three or four times a year, that the typical committee size should be three to five members, and proposes benchmarks for assessing the independence and quality of audit committees. Due to the efforts the HKICPA has made to promote corporate governance and the widespread acceptance of audit committees among Hong Kong firms, audit committees have become a fundamental part of the corporate governance landscape in Hong Kong.

Hong Kong, in common with other emerging economies in East Asia, benefits from high-quality corporate governance regulation, but this may not necessarily result in effective audit committees. For example, Ball et al. (2003) raise the concern that institutional factors such as family control, *guanxi*, and bank power may distort the incentives of financial statement preparers and hence detract from accounting quality. Inferring from above discussions , the existence of a mature legal and penalty system is a prerequisite to an active audit committee as it ensures that audit committee members, and especially independent directors, will be concerned to maintain their reputation and avoid regulatory penalty. The institutional environment and the ownership structure should also support the enforcement of audit committee reviews and decisions. The unique features of the legal, regulatory and institutional environment in East Asian economies suggest that it is worthwhile investigating whether findings of a positive association between audit committee quality and audit fees are valid in the East Asian setting.

Prior research consistently shows a positive association between an effective audit committee and audit fees (e.g., Abbott et al., 2001; Vafeas and Waegelein, 2007). This stream of the literature suggests four underlying explanations for this positive relation: first, due to concerns about financial, reputational, and litigation losses caused by financial misstatements, independent and active audit committees demand a higher level of audit quality which may be higher than that the Big 4 audit firms normally provide. This demand for better quality accounting leads to greater audit coverage and hence higher audit fees. Second, independent and active audit committees have greater bargaining power within the firm that enables them to pay higher audit fees. By protecting auditors from fee cuts, audit committees prevent any potential decrease in audit

quality. Third, audit committees enhance the independence of external auditors by constraining the non-audit services they provide. Fourth, an active audit committee can persuade management to select a more knowledgeable auditor with a better reputation.

As suggested by prior studies, certain audit committee characteristics can have an impact on the execution of audit committee duties (Carcello and Neal, 2000; Raghunadan et al., 2001). Four major characteristics of audit committees have an impact on their performance: diligence, size, independence, and expertise. In terms of diligence, Menon and Williams (1994) highlight meeting frequency as a signal of audit committee dedication. Audit committees that meet frequently are more likely to be informed of current auditing issues and to be more diligent in the discharge of their duties. Audit committees that meet more frequently can proactively and positively influence audit coverage during the various stages of the audit. In terms of audit committee size, while some studies (e.g., Vafeas and Waegelein, 2007; Boo and Sharma, 2008) address the association of size and audit fees, the results are mixed. Researchers who have examined the aspect of independence have found that when audit committee members are not personally and/or economically dependent on management, they are willing to disagree with management on a variety of issues. Carcello and Neal (2000) find that financially distressed firms with audit committees are more likely to receive going-concern opinions. During the review of the audit program and its results, an independent audit committee may demand that the scope of the audit be expanded to avoid being associated with financial misstatements and preserve its reputational capital. This suggests that independent audit committee directors demand greater levels of audit assurance and potentially provide stronger support for auditors during scope negotiations with management. In terms of expertise, knowledgeable audit committees are better equipped to understand auditor judgments and discern the substance of disagreements between management and external auditors. This leads us to expect a positive association between audit fees and audit committee expertise.

A larger, more independent, more diligent, and more expert audit committee may demand significantly higher audit quality than that normally provided by the Big 4 audit firms. This positive relation would also suggest that audit committee members seek additional audit assurance from external auditors because they are concerned about potential audit risk. Because Hong Kong is well known as a financial center and has one of the leading compliance systems in the world, we expect to see a positive association between audit committee quality and audit fees in the Hong Kong context:

H2a: Audit committees that meet more frequently are associated with higher audit fees;
H2b: Larger audit committees are associated with higher audit fees;
H2c: More independent audit committees are associated with higher audit fees;
H2d: More expert audit committees are associated with higher audit fees.

2.4 Impact of Family Control on the Association between AC Quality and Audit Fees

As discussed in hypothesis one, family control in firms may not only reduce manager-owner conflict (the Type I agency problem), but may also introduce conflict between large and minority shareholders (the Type II agency problem). Which effect of family control dominates in the Hong Kong market is an empirical issue. Based on hypothesis two, a larger and more diligent, independent, and expert audit committee will demand broader audit coverage, which will in turn result in higher audit fees. Nevertheless, regardless of the size, diligence, independence or expertise of an audit committee, it needs a well-developed market and regulatory environment to be effective. Given that the Hong Kong economy features concentrated family ownership structures, *guanxi* networks, and strong banks, the positive relation between audit committee quality and audit fees is open to question in the Hong Kong environment. We address the research question of whether the positive relation between the effectiveness of the audit committee and audit fees is weakened or strengthened by family control by analyzing the two following scenarios.

The first scenario is that audit committees in family firms may require more assurance from external auditors than audit committees in non-family firms. This is because family firms suffer from more severe agency problems between controlling families and minority shareholders. To protect the economic interests of powerless minority shareholders, audit committees in family firms may demand more external audit coverage and work. Furthermore, audit committees consist of non-executive directors, the majority of whom are independent non-executive directors who are likely to be more concerned about their reputation than other directors. As market participants normally expect agency problems to arise in family-controlled firms, an efficient audit committee will support a more detailed and expanded external audit requirement to reduce the possibility that financial misstatements, which will damage the reputation of audit committee members, are issued.

The second scenario we examine is that although audit committees in family firms may seek a higher level of audit coverage that those in non-family firms, the controlling family may seek to weaken their influence. Audit committees normally represent the board and oversee the accounting process and the quality of financial reports produced by management. However, when the board and management are from the same controlling family, the appointment and re-

appointment of independent directors is ultimately determined by the controlling family. This may weaken the bargaining power of the audit committee and limit its efficiency in monitoring management. Because audit committee members are subject to the power and influence of controlling parties including owners, boards, and managers, whether an audit committee is likely to be effective in monitoring and controlling management cannot be forecast with any degree of certainty. The political power wielded by controlling families may weaken the positive association between audit committee quality and audit fees.

In summary, while audit committees in family-controlled firms are more likely to maintain or enhance their reliance on external auditor coverage than are their counterparts in non-family-controlled firms, the political power wielded by controlling families is also likely to influence their functioning. Given the two possible effects of family control, the final hypothesis is stated in alternative form:

H3a: The positive association between AC quality and audit fees is stronger in family-controlled firms than in non-family-controlled firms; and

H3b: There is no difference in the positive association between AC quality and audit fees between family-controlled firms and non-family-controlled firms.

3 Research Design

3.1 Sample and data collection

lThe sample year is 2005/06 (from December 2005 to November 2006). We select the 2005/06 year because the new Code on Corporate Governance Practices became effective for Hong Kong firms with accounting periods commencing on or after 1 January 2005. After excluding companies engaging in the financial industry, we identify 638 Hong Kong companies from the Compustat (Globalvantage) database. Of these 638 observations, 25 companies are not listed in Hong Kong, 8 have been delisted, are inactive, or have been liquidated, 1 has changed its financial year-end, and 1 has been taken over. These observations are therefore dropped from the sample. We then manually collect ownership data and other corporate governance variables from the 2005 annual reports of the sample companies. This stage results in the exclusion of 61 companies in which more than 50% of board members were replaced during the financial year but the members of the board of directors were not clearly defined in the "corporate information" section of the annual report. After deleting extreme values and dropping missing values for the required variables, we are left with a total of 438 observations.

3.2 Research Methodology

Dependent variables

Following prior discussion (e.g., Hogan et al., 2008), audit fees can be a proxy of audit coverage and audit effort, as well as of audit risk. When a firm is perceived to have an efficient corporate governance system and an efficient accounting process, the auditor (audit service supplier) will reduce audit effort and thus the audit fees the firms is charged, and vice versa. An active audit committee (the audit service demand side) seeks to increase external audit coverage and effort to minimize the risk that financial statement fraud is not detected. The dependent variable is calculated in two ways: as the natural logarithm of audit fees and as the natural logarithm of the sum of audit fees and non-audit fees (i.e., total fees).

Experimental variables

Family control is proxied by a dummy variable, *FAM*, which takes the value of 1 when either the CEO or the Chairman of the board is a member of the controlling family and 0 otherwise. A firm is identified as having a controlling family if the same family owns more than 10% of the firm's shares. Ownership data and data on whether directors and senior managers are from the same family are manually collected from the 'directors' report' section of the annual reports. Because the Chairman is the head of the board, we consider that the family controls the board if a family member occupies this position. A family member occupying the CEO position is also taken to represent family control as the CEO is responsible for managing the firm's operations. Some studies (e.g., Anderson and Reeb, 2003) suggest using the fractional equity ownership of the family and (or) the presence of family members on the board to identify family firms, although we do not follow this approach here.

Following prior research (e.g., Carcello and Neal, 2000; Raghunadan et al., 2001), the efficiency of the audit committee is measured by four characteristics: diligence, size, independence, and expertise. We use the natural logarithm of the number of meetings held per year to represent the diligence of the audit committee. The more frequently an audit committee meets, the more diligent it is considered to be. The size of the audit committee is measured by the natural logarithm of the number of committee members. Independence is proxied by the proportion of independent non-executive directors on the board. The expertise of the audit committee is measured by whether AC members have an accounting background.

3.3 The Regression Model

The following regression model is used to examine Hypothesis 1 and Hypothesis 2.

$$LNTAF = b_0 + b_1 LNMEET + b_2 LNSIZE + b_3 ACIND + b_4 ACEXP + b_5 FAM + b_6 PNED + b_7 LNSUB + b_8 LNAT + b_9 LNFOR + b_{10} LNSEGB + b_{11} LNSEGG + b_{12} DE + b_{13} ROA + b_{14} BIG5 + b_{15} INVERC + b_{16} AOP + b_{17} QUICK + b_{18} YE + b_{19} LNSALE + e \quad (1)$$

$$LNAF = b_0 + b_1 LNMEET + b_2 LNSIZE + b_3 ACIND + b_4 ACEXP + b_5 FAM + b_6 PNED + b_7 LNSUB + b_8 LNAT + b_9 LNFOR + b_{10} LNSEGB + b_{11} LNSEGG + b_{12} DE + b_{13} ROA + b_{14} BIG5 + b_{15} INVERC + b_{16} AOP + b_{17} QUICK + b_{18} YE + b_{19} LNSALE + e \quad (2)$$

where the dependent variables are:
LNTAF = the natural log of total audit fee;
LNAF = the natural log of audit fee;

the control variables are:
PNED = the proportion of non-executive directors on the board;
LNSUB = the natural log of the number of subsidiaries;
LNAT = the natural log of total assets;
LNFOR = the natural log of the number of foreign subsidiaries;
LNSEGB = the natural log of the number of business segments;
LNSEGG = the natural log of the number of geographical segments;
DE = long-term debt divided by total assets;
ROA = income before extraordinary items divided by the previous year's total assets;
BIG4 = 1 if the auditor is Big 4 audit firm and 0 otherwise;
INVERC = inventory plus accounts receivable divided by total assets;
Quick = current assets minus inventory divided by current liabilities;
AOP = 0 if an unqualified rep
ort is issued and 1 otherwise;
YE = 1 if the final day of the financial year is Dec.31;
LNSALE = the natural log of total sales;

and the experimental variables are:
LNMEET = the natural log of the number of meetings held by the audit committee per annum;
LNSIZE = the natural log of the number of members on the audit committee;
ACIND = the proportion of independent directors on the audit committee;
ACEXP = 1 if at least one independent director on the audit committee has an accounting background and 0 otherwise;
FAM = 1 if the CEO or Chairman of the board is a family member and 0 otherwise.

The independent variables other than the experimental variables are identified from the existing audit fee literature (e.g., Hogan and Wilkins, 2008; Gul et al., 2003).

To assess the impact of family control on the positive association between audit committee quality and audit fees, we divide the sample into two groups using the dummy variable FAM where a value of 1 represents family firms and 0 represents non-family firms. Equations 3 and 4 are both solved for the two sub-samples.

$$LNTAF = b_0 + b_1 LNMEET + b_2 LNSIZE + b_3 ACIND + b_4 ACEXP + b_5 PNED + b_6 LNSUB + b_7 LNAT + b_8 LNFOR + b_9 LNSEGB + b_{10} LNSEGG + b_{11} DE + b_{12} ROA + b_{13} BIG5 + b_{14} INVERC + b_{15} AOP + b_{16} QUICK + b_{17} YE + b_{18} LNSALE + e \quad (3)$$

$$LNAF = b_0 + b_1 LNMEET + b_2 LNSIZE + b_3 ACIND + b_4 ACEXP + b_5 PNED + b_6 LNSUB + b_7 LNAT + b_8 LNFOR + b_9 LNSEGB + b_{10} LNSEGG + b_{11} DE + b_{12} ROA + b_{13} BIG5 + b_{14} INVERC + b_{15} AOP + b_{16} QUICK + b_{17} YE + b_{18} LNSALE + e \quad (4)$$

The definitions of the variables in Equations 3 and 4 are the same as those for the variables in Equations 1 and 2.

4 Empirical results

4.1 Descriptive statistics and correlations among the variables

The summary statistics for all of the variables are presented in Panel A of Table 1. The independence of the audit committee, measured by the proportion of independent non-executive directors on the audit committee, is particularly high with a mean of 93%. This shows the highly independent status of audit committees in Hong Kong and suggests they are unlikely to be influenced by management. The family control dummy has a mean of 0.49, which shows the considerable market share enjoyed by family firms in Hong Kong.

The correlation coefficients among all the variables are shown in Panel B of Table 1. The correlation statistics between the experimental variables and the dependent variables are not as significant as expected. This is likely to be because we do not control for a number of major factors such as total assets, segments, etc. Consistent with prior literature, firms with more domestic and foreign subsidiaries, greater assets, more business and geographical segments, and higher sales require more audit effort and hence pay more in audit fees. Big 4 auditors also charge significantly more than other auditors.

Table 1 insert here

4.2 Univariate Analysis of Audit Fees

Table 2 reports the univariate t-test results for differences in audit fees between family firms and non-family firms, audit committee meeting frequency, and audit committee size, independence, and expertise. Although the mean level of audit fees paid by family firms is lower than that paid by non-family firms, the t-test p value is not significant. However, this result is not meaningful until we control for firm size, auditor type, etc. Although they should also be treated with caution until we control for the same variables, the results for audit committee size, audit committee meeting frequency, and audit committee independence and expertise are not consistent with prior literature. These results may indicate that the Hong Kong market is different from Western industrialized markets, although they should be more convincing after comparing them with the results of our multivariate tests.

Table 2 insert here

4.3 Multivariate analysis comparing audit fees with family control and audit committee characteristics

Table 3 shows the results of ordinary least-square regressions used to test Hypothesis 1 and Hypothesis 2 after controlling for the factors that have commonly been identified in the audit fee literature. The regression results on family control and audit fees are significantly negative. Family firms suffer less from the agency problem between management and ownership, but are more likely to see conflict between controlling shareholders and minority shareholders. An empirical test based on Hong Kong data will help us diagnose which effect dominates in the Hong Kong market. However, it is too early to claim that family control can reduce audit risk in Hong Kong because there are two possible explanations for the result of lower audit fees for family-controlled firms. The lower level of audit fees in family-controlled firms could be the result of decisions made by external auditors who perceive more efficient corporate governance and accounting processes in family firms. Alternatively, the low audit fees result could be driven by deliberate efforts made by management to restrict the coverage and scope of external audits. It is too early to say what drives our results; the analysis for H3 will provide additional insight into the impact of family control on audit fees.

In Equation 1 and Equation 2, we also test the relation of audit committee quality and audit fees in the Hong Kong institutional environment (Hypothesis 2). The results reported in Table 3 show that although the signs of the four characteristics (diligence, size, independence, and expertise) are consistent with prior literature and our expectations, we find that only the number of AC meetings and the size of the audit committee are significantly associated with higher audit fees. The findings suggest that a larger AC (greater AC resources) and more meetings (greater AC effort) lead to higher demand for additional auditor work and effort. However, we find no evidence of higher audit fees in firms with more independent AC members or more AC members with an accounting background.

Table 3 insert here

Family ownership and control is a feature of Hong Kong's corporate landscape. Controlling families influence the operations of the enterprises they own through their political power. Our testing of family-controlled firm and non-family-controlled firm sub-samples may shed some light on the question of whether family-controlled firms are more efficient in terms of corporate governance, monitoring, and accounting process. If internal monitoring is weak in family firms, we expect that a high-quality audit committee would demand more external auditing effort to discharge its responsibility and that this would lead to higher audit fees. On the other hand, if family-controlled firms have better governance and internal monitoring, they are likely to be less reliant on external audits and will pay lower audit fees as a result. The sub-sample analysis reported in Table 4 shows that the key elements of audit committee quality are associated with higher audit fees in family-controlled firms. These findings are consistent with the notion that audit committees in family-controlled firms seek more external audit assurance.

Table 4 insert here

5. Conclusion

We investigate three research questions in this paper. First, we examine whether family-controlled firms are associated with higher or lower audit fees. Second, we evaluate whether the quality of audit committees in the Hong Kong market is associated with higher audit fees. Finally, we evaluate the impact of family control on the association between audit committee quality and audit fees.

After analyzing 2005/06 fiscal year data for Hong Kong companies drawn from the Compustat (Globalvantage) database, along with data on corporate governance variables manually collected from the annual reports of the same companies, we reach several conclusions. According to the OLS regression results, family-controlled firms pay lower audit fees, which proxies audit effort and risk. We also find that the positive association between audit committee quality and audit fees confirmed in earlier research also exists in Hong Kong. Interestingly, this relation is stronger in family-controlled firms than in non-family-controlled firms. Taken together, our results suggest that high-quality audit committees in family-controlled firms are concerned with ensuring the controlling family does not exert undue influence

on the board and are thus are more likely to rely on external auditors' efforts to ensure the accuracy and reliability of the firm's financial statements.

This paper enriches the family firm literature by showing that audit risk proxied by audit fees can shed light on the corporate governance efficiency of family-controlled firms. Further research in this area is likely to lead to a better understanding of how East Asian economies, and Hong Kong in particular, are affected by the prevalence of family ownership and the widespread use of *guanxi* networks. A further contribution this paper makes is to examine how various audit committee characteristics affect the Hong Kong economic environment, particularly among family-controlled firms. Our work may also assist regulators by presenting evidence of how corporate governance regulations work in the Hong Kong market.

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Appendices

Table 1. Descriptive statistics and correlation coefficients of the variables

Panel A: Descriptive statistics of the variables

Variable	N	Mean	Std Dev	Minimum	Maximum
LNAF	438	13.903	0.935	10.915	17.116
LNTAF	438	14.128	0.975	11.462	17.116
LNMEET	438	1.311	0.276	0	2.197
LNSIZE	438	1.438	0.112	1.0993	1.946
ACIND	438	0.931	0.126	0.5	1
ACEXP	438	0.797	0.403	0	1
FAM	438	0.486	0.5	0	1
PNED	438	0.499	0.132	0.083	0.786
LNSUB	438	2.764	0.712	0	4.99
LNAT	438	20.471	1.632	15.111	25.457
LNFOR	438	1.484	0.968	0	4.511
LNSEGB	438	1.271	0.392	0	2.303
LNSEGG	438	1.03	0.591	0	2.485
INVERC	438	0.314	0.221	0	1.516
DE	438	0.747	3.817	-0.00003	54.39
ROA	438	0.02	0.161	-1.466	0.532
AOP	438	325114	0.223	0	1
QUICK	438	2.526	3.592	0.11	30.058
YE	438	0.466	0.499	0	1
LNSALE	438	20.125	1.813	11.802	24.742
BIG4	438	0.731	0.444	0	1

LNTAF = the natural log of total audit fees;
LNAF = the natural log of audit fees;
PNED = the proportion of non-executive directors on the board;
LNSUB = the natural log of number of subsidiaries;
LNAT = the natural log of total assets;
LNFOR = the natural log of number of foreign subsidiaries;
LNSEGB = the natural log of number of business segments;
LNSEGG = the natural log of number of geographical segments;
DE = long-term debt divided by total assets;
ROA = income before extraordinary items divided by previous year's total assets;
BIG4 = 1 if the auditor is a Big 4 audit firm and 0 otherwise;
INVERC = inventory plus accounts receivable divided by total assets;
Quick = current assets minus inventory divided by current liabilities;
AOP = 0 if an unqualified report is issued and 1 otherwise;
YE = 1 if the final day of the financial year is Dec. 31;
LNSALE = the natural log of total sales;
LNMEET = the natural log of the number of meetings held by the audit committee per annum;
LNSIZE = the natural log of the number of members on the audit committee;
ACIND = the proportion of independent directors on the audit committee;
ACEXP = 1 if at least one independent director on the audit committee has an accounting background and 0 otherwise;
FAM = 1 if the CEO or Chairman of the board is a family member and 0 otherwise;
** Correlation is significant at the 0.01 level (two-tailed); * Correlation is significant at the 0.05 level (two-tailed)

Panel B: Pearson correlation coefficients

	LNTAF	LNAF	LNMEET	LNSIZE	ACIND	ACEXP	FAM	PNED	LNSUB	LNAT	LNFOR	LNSEGB	LNSEGG	DE	ROA	BIG4	INVERC	AOP	QUICK	YE	NSALE
LNMEET	-0.013	-0.019																			
LNSIZE	0.212**	0.225**	0.015																		
ACIND	-0.205**	-0.221**	-0.028	-0.671**																	
ACEXP	-0.053	-0.082	-0.0396	-0.020	0.027																
FAM	-0.029	-0.0328	-0.064	0.088	-0.106*	-0.02															
PNED	-0.022	-0.01	-0.213**	-0.25**	0.306**	0.02	0.084														
LNSUB	0.485**	0.46**	-0.066	0.128**	-0.163**	-0.083	0.097*	0.096*													
LNAT	0.724**	0.701**	-0.125**	0.221**	-0.272**	-0.115*	0.012	0.039	0.479**												
LNFOR	0.308**	0.275**	0.057	0.138**	-0.126**	-0.041	0.134**	-0.014	0.621**	0.244**											
LNSEGB	0.194**	0.176**	-0.129**	0.067	-0.004	0.084	-0.026	0.056	0.319**	0.230**	0.152**										
LNSEGG	0.256**	0.247**	-0.032	0.086	-0.024	0.015	0.097*	-0.021	0.233**	0.143**	0.255**	0.107*									
DE	-0.115*	-0.118*	-0.035	-0.07	0.075	0.048	-0.012	0.019	-0.018	-0.165**	0.009	-0.023	-0.045								
ROA	0.237**	0.238**	-0.125**	0.124**	-0.112*	-0.033	0.041	0.036	0.082	0.355**	0.095*	-0.113*	0.166**	-0.154**							
BIG4	0.465**	0.461**	-0.122*	0.136**	-0.18**	-0.038	0.025	0.006	0.169**	0.444**	0.061	0.027	0.137**	-0.075	0.236**						
INVERC	-0.055	-0.026	0.124**	-0.084	0.111*	-0.006	0.041	0.029	-0.024	-0.234**	0.055	-0.179**	0.117*	-0.061	0.068	-0.056					
AOP	-0.140**	-0.139**	-0.021	-0.089	0.109*	-0.008	-0.045	-0.006	-0.067	-0.17**	-0.053	-0.013	-0.088	0.032	-0.313**	-0.157**	0.11*				
QUICK	-0.079	-0.089	-0.001	0.067	-0.048	0.046	-0.031	-0.006	-0.182**	-0.035	-0.094	-0.014	-0.183**	-0.03	-0.004	0.011	-0.32**				
YE	-0.108*	-0.123**	-0.09	0.039	0.051	0.051	0.145*	0.04483	-0.027	-0.154**	-0.029	-0.065	-0.057	0.084	0.008	-0.093	0.1*	-0.04	0.1*		
LNSALE	0.659**	0.654**	-0.059	0.165**	-0.202**	-0.111*	0.005	0.02255	0.459**	0.762**	0.293**	0.066	0.254**	-0.169**	0.451**	0.427**	0.19**	-0.18**	-0.28**	-0.1*	

Table 2. Univariate t-test results on audit fees

	LNTAF			LNAF		
	N	Mean	p-value	N	Mean	p-value
FAM						
Non-family firm	225	14.026	0.55	225	13.933	0.49
family firm	213	13.968		213	13.871	
ACMEET						
low frequency	307	14.21	0.006	307	13.992	0.002
high frequency	131	13.934		131	13.693	
ACSIZE						
small size	344	14.039	0.0002	344	13.715	<0.0001
large size	94	14.663		94	14.042	
ACIND						
Low independence	105	14.311	<0.0001	105	14.289	<0.0001
High independence	333	13.909		333	13.781	
ACEXP						
Without AC background	89	14.23	0.2699	89	14.275	0.0865
With AC background	349	14.102		349	13.959	

LNTAF = the natural log of total audit fees;
LNAF = the natural log of audit fees;
Non-family firm = Neither the CEO nor the Chairman of the board is a member of the controlling family;
Family firm = CEO or Chairman of the board is a member of the controlling family;
Low frequency = Audit committee meets less than or equal to 3 times per annum;
High frequency = Audit committee meets more than 3 times per annum;
Small size = Audit committee has 3 members or fewer;
Large size = Audit committee has 3 or more members;
Low independence = The proportion of independent directors on the audit committee is less than or equal to 95%;
High independence = The proportion of independent directors on the audit committee is higher than 95%;
Without AC background = None of the independent directors on the audit committee has an accounting background;
With AC background = There is at least one independent director on the audit committee who has an accounting background.

Table 3. Regressions Results for Equation 1 and Equation 2

	Dependent variable=Total Audit Fees		Dependent variable=Audit Fees	
	Coeff.	t-stat	Coeff.	t-stat
Intercept	3.8	4.1***	4.3811	4.72***
LNMEET	0.2416	2.11**	0.1925	1.68*
LNSIZE	0.5909	1.64	0.6994	1.93*
ACIND	0.472	1.41	0.255	0.76
ACEXP	0.0853	1.15	0.0074	0.01
FAM	-0.1106	-1.81*	-0.1141	-1.86*
PNED	-0.2911	-1.19	-0.1006	-0.41
LNSUB	0.1789	2.85***	0.164	2.61***
LNAT	0.2941	7.82***	0.259	6.88***
LNFOR	0.0337	0.84	0.0021	0.05
LNSEGB	0.0295	0.35	0.0232	0.27
LNSEGG	0.1593	2.95***	0.1457	2.69***
DE	0.0013	0.16	0.0013	0.16
ROA	-0.4244	-1.91*	-0.4103	-1.85*
BIG4	0.3796	4.97***	0.3625	4.74***
INVREC	0.177	1	0.2726	1.54
AOP	-0.0258	-0.18	-0.047	-0.33
QUICK	0.0083	0.89	0.0073	0.77
YE	0.0272	0.44	-0.0166	-0.27
LNSALE	0.0858	2.47**	0.0912	2.62***
N		438		438
Adj.R-SQ		0.6047		0.567
P-value of F-stat		<0.001		<0.001

LNTAF = the natural log of total audit fees;
LNAF = the natural log of audit fees;
PNED = the proportion of non-executive directors on the board;
LNSUB = the natural log of number of subsidiaries;
LNAT = the natural log of total assets;
LNFOR = the natural log of number of foreign subsidiaries;
LNSEGB = the natural log of number of business segments;
LNSEGG = the natural log of number of geographical segments;
DE = long-term debt divided by total assets;
ROA = income before extraordinary items divided by previous year's total assets;
BIG4 = 1 if the auditor is a Big 4 audit firm and 0 otherwise;
INVERC = inventory plus accounts receivable divided by total assets;
Quick = current assets minus inventory divided by current liabilities;
AOP = 0 if an unqualified report is issued and 1 otherwise;
YE = 1 if the final day of the financial year is Dec. 31;
LNSALE = the natural log of total sales;
LNMEET = the natural log of the number of meetings held by the audit committee per annum;
LNSIZE = the natural log of the number of members on the audit committee;
ACIND = the proportion of independent directors on the audit committee;
ACEXP = 1 if at least one independent director on the audit committee has an accounting background and 0 otherwise;
FAM = 1 if the CEO or Chairman of the board is a family member and 0 otherwise;

*,**,and *** designate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively. All tests are two-tailed.

Table 4. Regressions Results for Equation 3 and Equation 4

	Family Firm				Non_Family Firm			
	Total Audit Fees		Audit Fees		Total Audit Fees		Audit Fees	
	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
Intercept	2.6884	2.07**	3.687	2.84***	4.1075	2.86***	4.0528	2.79***
LNMEET	0.3941	2.06**	0.4446	2.34**	0.1705	1.16	0.0613	0.41
LNSIZE	0.795	1.61	0.6221	1.27	0.6293	1.08	1.1291	1.92*
ACIND	0.8386	1.79*	0.5597	1.2	0.1873	0.38	0.0288	0.05
ACEXP	-0.0157	-0.14	-0.0724	-0.65	0.1335	1.28	0.0543	0.51
PNED	-0.525	-1.33	-0.2296	-0.58	-0.1501	-0.46	-0.0003	0
LNSUB	0.2551	2.79***	0.2202	2.42**	0.0557	0.57	0.0639	0.65
LNAT	0.2666	4.83***	0.2282	4.15***	0.3441	6.26***	0.3053	5.49***
LNFOR	0.0222	0.35	-0.006	-0.09	0.0418	0.75	-0.0092	-0.16
LNSEGB	-0.0407	-0.31	-0.0467	-0.35	0.105	0.9	0.1043	0.89
LNSEGG	0.15227	1.83*	0.1218	1.47	0.1668	2.24**	0.1569	2.09**
DE	0.0077	0.59	0.0026	0.2	-0.002	-0.18	0.0018	0.17
ROA	-0.4699	-1.3	-0.3465	-0.97	-0.3649	-1.25	-0.4592	-1.55
BIG4	0.3274	2.9***	0.357	3.18***	0.3887	3.39***	0.3347	2.89***
INVREC	-0.0878	-0.35	-0.03978	-0.16	0.4889	1.8*	0.5724	2.09**
AOP	-0.0162	-0.08	0.0234	0.11	-0.0152	-0.08	-0.0911	-0.46
QUICK	-0.0009	-0.06	-0.0017	-0.11	0.0118	0.97	0.012	0.98
YE	0.0385	0.42	-0.0141	0.15	-0.0056	-0.06	-0.568	-0.64
LNSALE	0.135	2.55**	0.1397	2.65	0.035	0.73	0.0491	1.01
N		214		214		224		224
Adj.R-SQ		0.5625		0.5202		0.6329		0.5996
P-value of F-stat		<0.001		<0.001		<0.001		<0.001

LNTAF = the natural log of total audit fees;
LNAF = the natural log of audit fees;
PNED = the proportion of non-executive directors on the board;
LNSUB = the natural log of number of subsidiaries;
LNAT = the natural log of total assets;
LNFOR = the natural log of number of foreign subsidiaries;
LNSEGB = the natural log of number of business segments;
LNSEGG = the natural log of number of geographical segments;
DE = long-term debt divided by total assets;
ROA = income before extraordinary items divided by previous year's total assets;
BIG4 = 1 if the auditor is a Big 4 audit firm and 0 otherwise;
INVERC = inventory plus accounts receivable divided by total assets;
Quick = current assets minus inventory divided by current liabilities;
AOP = 0 if an unqualified report is issued and 1 otherwise;
YE = 1 if the final day of the financial year is Dec. 31;
LNSALE = the natural log of total sales;
LNMEET = the natural log of the number of meetings held by the audit committee per annum;
LNSIZE = the natural log of the number of members on the audit committee;
ACIND = the proportion of independent directors on the audit committee;
ACEXP = 1 if at least one independent director on the audit committee has an accounting background and 0 otherwise;

*,**,and *** designate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively. All tests are two-taile

CAPITAL STRUCTURE IN BLOCKHOLDER-DOMINATED FIRMS: A CLOSER LOOK ON CORPORATE OWNERSHIP AND CONTROL

Ottorino Morresi*

Abstract

In countries where holding control takes on much relevance it is arguable that capital structure choices are shaped in response to ownership characteristics. These issues are explored in the Italian context being dominated by pyramidal groups and majority-controlled firms. The results show that (1) family firms are more indebted than non-family counterparts and, within family firms, (2) founding-family controlled ones are more reliant on debt; (3) family firms exploit control-enhancing devices along with long-term leverage; (4) higher cash flow rights are associated with a lower leverage; (5) institutional investors are more common in firms with a higher dependence on long-term debt; (6) decreasing trends of the long-term leverage over time seem to occur with upward paths of the votes-to-capital ratio.

Keywords: capital structure, corporate governance, long-term debt, ownership structure.

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1. Introduction

Studies exploring the determinants of a firm's capital structure are plentiful but the matter, despite its central role in both theoretical and empirical profiles of corporate finance, is still puzzling from several perspectives: one of them stems from the effect exerted, on the equity-debt mix, by a firm's ownership and control structure. Despite a comprehensive theoretical framework, studies on this topic are short on clear, sound and robust empirical findings. Moreover, firstly, only a few issues are covered, leaving many of them unexplored or as anecdotal evidence, secondly, most literature has been focusing on ownership and control outlines and their effects on leverage in the US and the UK contexts that are dominated by large companies running in well developed financial markets, with a well-working market for corporate control, managed by professional managers, with dispersed ownership structures. But, it is well known that a great number of firms operate in countries having remarkably different characteristics than the US and the UK in terms of ownership and control such as concentrated ownership, family control, large use of control-enhancing mechanisms, market for corporate control led by private and voluntary transactions among the largest shareholders, etc.. The above differences require an *ad hoc* analysis that could capture the specificities of firms within a blockholder-dominated setting. Accordingly, it is required to reshape both the US-based ownership structure outlines employed as capital structure determinants and the hypotheses built on each determinant to make the evidence and the related comments consistent in a majority-shareholder system.

On the one hand, this work tries to add to the existent literature by investigating the impact of a number of ownership and control dimensions on firm leverage in Italy, a country with a majority-shareholder framework, high ownership concentration, large incidence of family-controlled pyramidal groups and control-enhancing devices (pyramids, dual-class shares, shareholders' agreements, etc.) as instruments to hold control as well as to separate it from ownership (Aganin and Volpin, 2003, Bianchi and Bianco, 2006). On the other hand, drawing on the peculiarities of corporate governance in Italy, I try to propose an original point of view on how a firm's capital structure could be set up cross-sectionally and over time. Analyses taking into account countries like Italy, remarkably different in a number of corporate governance patterns from the Anglo-Saxon context, are a fruitful area of inquiry because of the lack of reliable and rich studies.

The key idea of the work is that, in the Italian context, capital structure could be shaped to hold control. In other words, capital structure could be a device exploited by the largest shareholder for keeping control either jointly with other control-enhancing devices or as alternative tool to be employed as substitute. This outcome should be particularly clear for family-controlled firms.

The survey is based on all Italian non-financial listed firms during the period 2000-2006 with hand-collected data on corporate ownership to provide unique, detailed and up-to-date information of the entire structure of Italian listed groups needed to get a reliable ground to carry out the analysis.

The results show that family firms are significantly more indebted than non-family counterparts and, within family firms, those ones controlled by founding-families are more reliant on debt. This evidence would confirm the central argumentation of the study. Control-enhancing devices are exploited along with long-term leverage but, as expected, only in family firms. Higher cash flow rights held by the ultimate largest shareholder are associated with a lower leverage ratio: the higher the cash flows the higher will be the economic involvement of the controlling owner that wants to avoid excessive risks by maintaining a less leveraged firm. Institutional investors seem to be more common in firms with a higher dependence on long-term debt: institutional investors are interested in seizing value enhancements as a result of tax and monitoring benefits. Finally, a time-series analysis comparing the leverage ratio to the degree of separation between ownership and control, this latter measured by the votes-to-capital ratio, shows that decreasing trends of the long-term leverage over time seem to occur with upward paths of the votes-to-capital ratio: this evidence is consistent with the thinking that, over time, periods in which the use of control-enhancing mechanisms was large allow firms to raise less debt to hold control.

2. Theoretical framework

In the US framework and, more broadly, in the Anglo-Saxon context, studies have paid particular attention to two issues linked to corporate ownership and control as factors influencing a firm's capital structure:

- Managerial (insider) ownership (Jensen et al., 1992, Friend and Lang, 1988, Kim and Sorensen, 1986, Mehran, 1992, Brailsford et al., 2002, Holderness and Sheehan, 1988, Berger et al., 1997, Anderson and Reeb, 2003).
- The role of market for corporate control (Zwiebel, 1996, Harris and Raviv, 1988, Stulz, 1988, Novaes, 2002 and 2003, Garvey and Hanka, 1999, Berger et al., 1997, John and Litov, 2009).

Referring to the former point, theoretical argumentations state that shareholding held by managers could affect the leverage ratio in three ways: in the first one, agency problems linked to owner-manager conflict, free cash flow hypothesis (Jensen, 1986) as well as the risk aversion of managers worried to lose their position should bankruptcy occur (Donaldson, 1969, Amihud and Lev, 1981, Friend and Lang, 1988) could lead to a negative relation between managerial ownership and leverage (Jensen et al., 1992, Friend and Lang, 1988, Holderness and Sheehan, 1988). Specifically, debt is a tool to distract free cash flows from managerial control. If so, according to Jensen and Meckling (1976), when agency problems are more severe (i.e., insider ownership is too low: "alignment context"), debt may help reduce managerial opportunism. Alternatively, we can draw the same conclusion arguing that when managers are entrenched (insider ownership is too high: "entrenchment context"), bankruptcy risk and financial distress could cause managers to hold underlevered their firm as a result of holding undiversified portfolios increasing specific risk. Both explanations lead to a negative correlation between managerial ownership and leverage.

The second one predicts a non-linear inverted U-shape relation between insider ownership and the use of debt (Brailsford et al., 2002): at moderate levels of managerial ownership, the incentive effect takes place making the disciplinary role of debt unnecessary. When managerial ownership increases, the control by managers over firm increases as well resulting in a higher managerial discretion that could lead to a higher leverage ratio to mitigate the risk of wealth-destroying actions by managers. However, when insider ownership reaches a certain point, managerial discretion as well as economic involvement of managers in the firm are so high to lead to a decrease of leverage for reducing bankruptcy risk (alternatively, one can argue that the alignment role played by managerial shareholding makes debt exploitation redundant at high levels of insider ownership). It is to be noted that the second interpretation puts together the first two explanations. Nonetheless, a few studies also find a positive relation between managerial ownership and leverage (Kim and Sorensen, 1986, Mehran, 1992, Berger et al., 1997). Kim and Sorensen (1986) provide three explanations of the result: the first one accounts for a higher leverage in insider-dominated ownership structures with the aim to hold control by managers; the second one refers to agency costs of equity: the higher the insider ownership the higher should be the costs of external equity associated with incentive to consume perks; the third one pertains to the agency costs of debt: covenants and other provisions reducing incentive to exploit bondholders are more effective when managerial control is close. Moreover, firms with higher insider ownership are likely to negotiate with lenders and to be more willing to infuse equity capital in occurrence of positive NPV growth opportunities. Berger et al. (1997) and Mehran (1992) state that firms with higher insider ownership look for higher leverage ratios in order to increase firm value

as a result of alignment framework. Finally, there are also studies that find no evidence on the relationship between managerial ownership and capital structure choices (Anderson and Reeb, 2003).

With reference to the role of market for corporate control, some influential studies predict (Zwiebel, 1996, Harris and Raviv, 1988, Stulz, 1988, Novaes, 2002 and 2003, Israel, 1992) and find (Berger et al., 1997, Garvey and Hanka, 1999, John and Litov, 2009) a strong link between corporate leverage and the activity in the market for corporate control. What emerged from the literature is that takeover threats cause managers to increase leverage largely in response to the trade-off between empire-building purposes of entrenched managers interested in holding their charge and the necessity to make sure an efficient and viable running, therefore a high firm value, to keep control pressures and bankruptcy risks away. From this perspective, takeover and bankruptcy occurrences are taken into account because both events may jeopardize mangers tenure: capital structure is shaped to maximize managers' interest which, over financing policies, could deviate from shareholders one (Novaes, 2003). In other words, capital structure choices themselves are subjected to an agency problem. Israel (1992) models optimal capital and ownership structures as resulting from anticipated future control contests. He shows that (1) more efficient managers use less debt, (2) firms facing better challenger for control issue more debt, (3) firms with supermajority rules raise less debt. Zwiebel (1996) provides a theoretical model showing that capital structure arises as an optimal response of managers to simultaneous concerns for expanding and retaining control of their empires. In the same vein as Israel (1992), Novaes (2002) further demonstrates that managers who lever up to end a takeover threat have a higher probability of being replaced as increasing leverage would convey bad news on the management's ability. Berger et al. (1997) empirically show that entrenched managers are more likely to use equity. Garvey and Hanka (1999) find that firms protected by stronger antitakeover laws reduce their leverage ratio. A recent study by John and Litov (2009) proposes a different view and finds consistent results. Unlike Berger et al. (1997) and Garvey and Hanka (1999), they find that managers insulated from takeover threats are likely to increase leverage as a result of better financing conditions and better access to debt.

Other studies have paid attention to other governance issues as factors affecting capital structure largely outside the Anglo-Saxon context but many questions remain unresolved. The literature on these issues is unsystematic and lacks of strong and consistent results. In those studies, key ownership and governance issues are related to ownership concentration (Filatotchev and Mickiewicz, 2001, Mueller and Inderst, 1999, Driffield et al., 2007), the identity of the largest shareholder (Mishra and McConaughy, 1999, Romano et al., 2001, Anderson and Reeb, 2003, Anderson et al., 2003, Harijono et al., 2004, King and Santor, 2008), outside blockholders (Brailsford et al., 2002), wedge between cash flow rights and voting rights (Driffield et al., 2007, King and Santor, 2008).

Filatotchev and Mickiewicz (2001) show that, especially when shareholders protection is poor, dominant owner and creditors can collude at the expense of minority shareholders providing support to the role of debt as tool to expropriate wealth from minority shareholders. Mueller and Inderst (1999) declare that ownership concentration increases agency costs of debt as a result of costs borne by dispersed owners in providing information needed to select investment opportunities and, therefore, to undertake high-risk projects.

Driffield et al. (2007) as well as King and Santor (2008) find that a closer control is associated with a greater use of debt. Mishra and McConaughy (1999), Romano et al. (2001), Harijono et al. (2004), King and Santor (2008), Anderson and Reeb (2003) point out the role of a particular type of majority shareholder (i.e., the family) as influencing capital structure decisions. They find mixed results: Mishra and McConaughy (1999) show that family firms are less reliant on debt because of risk aversion of families; Harijono et al. (2004) and King and Santor (2008) find opposite results; Anderson and Reeb (2003) find no difference on financing mix between family and non-family firms. However, Anderson et al. (2003) show that family-controlled firms face lower agency costs of debt in comparison with non-family counterparts.

Brailsford et al. (2002) assess the influence of external blockholders and find a positive relation between the stake held by outside blockholders and the leverage ratio. This result supports the value-seeking position of outside blockholders interested in acquiring value enhancements as a result of tax benefits and the monitoring role of debt.

Driffield et al. (2007) and King and Santor (2008) find different results on the link between ownership-control separation and leverage: the former show that firms having a divorce between voting and cash flow rights bear a higher amount of debt; the latter find that the wedge itself plays no role on capital structure decisions but the use of control-enhancing mechanisms prompts a lower leverage ratio. It is essential to note that the sample is notably different in both studies: Driffield et al. (2007) explore a sample of Asian firms covering countries with poor investor protection; King and Santor (2008) analyze Canadian firms, belonging to a country having a good legal and judicial system protecting shareholders. In the first study, from the corporate control perspective, debt is raised along with other control mechanisms, in the second one, debt is a substitute of them.

Apart from the role of managerial ownership and market for corporate control, which are matters well studied and with a steady background in the Anglo-

Saxon framework, empirical evidence and theoretical approach for the other topics are still too limited and anecdotal to enable us to describe a comprehensive picture on how ownership and governance profiles could affect financing policies in non-US-based contexts. In light of quoted results, this study tries to contribute to bridge the gap by exploring the effect of a number of ownership and governance issues that are common attributes in firms outside the US and the UK.

3. Facts and figures accounting for such a survey

Since 1998, with the so called "*Draghi Reform*" (i.e., the consolidated Italian law on companies, markets and finance, D.Lgs 58/1998), Italy has been experiencing a massive and frenetic process improving the legal framework protecting shareholders. Enriques and Volpin (2007) show and comment the main stages of this evolution. However, despite the new Company Law (2004) and the Law on Savings (2005), the quality of Italian corporate governance keeps being poor in comparison with other developed Common Law and Civil Law countries. An excellent work by Aggarwal et al. (2007) that updates and improves the seminal study by La Porta et al. (1998) on the quality of corporate governance systems around the world, shows that Italy is well below the mean country. More in detail, by relying on 44 governance attributes related to four sections (i.e., board, audit, anti-takeover, compensation & ownership), they find that the sample of Italian firms meets 44% of governance attributes compared with a US score and a mean score, respectively, equal to 61% and 58% (without US firms, the mean score stands at 49%). Only two countries (i.e., Belgium and Portugal) have a lower score. The situation is even worse if we only focus on those provisions that, in the opinion of authors, have received the most attention in academic literature and from observers and practitioners: Italy stands at penultimate position with a 42% score. Only France performs worse with a 36% score. Overall, from the situation depicted in La Porta et al. (1998), where Italy, in a six-point anti-director rights index, had 1 point, corporate reforms evolution, in a comparative approach, seems not to provide substantial enhancements to the quality of Italian corporate governance.

Based on the above framework, a recent paper (Mengoli et al., 2009) studying the evolution of corporate ownership in Italy gives the picture of ownership, control and votes-to-capital ratio, over the period 1995-2005, of all Italian listed firms. This study provides valuable information supporting the above considerations. First of all, the study shows that mean and median values of the voting stake held by the largest shareholder almost always outnumber the absolute majority threshold: in light of its persistence over time, keeping the control seems to be important and source of advantages for the largest shareholders of Italian firms no matter which changes have affected the Company Law during the decade (Bianchi and Bianco, 2006). Secondly, cash flow rights values show an increasing trend: the median value rises from 43.8% (in 1995) to 50% (in 2005), showing an increase of ownership concentration. The stability over time of voting rights along with the rise of cash flow rights leads to a decline of the votes-to-capital ratio and, therefore, a lower ownership-control separation (the mean value of the ratio drops from 1.28 to 1.09. The difference is statistically significant). Thirdly, as regards the use of control-enhancing devices, the extent of pyramiding (percentage of firms controlled by a pyramidal scheme) declines from 31% to 14% as well as the use of dual-class shares (the dual-class shares' plunge was 27%: from 39% in 1995 to 12% in 2005).

The survey shows further noteworthy results: the above decline in the ownership-control separation and in the use of control-enhancing devices is remarkably lower for "existing firms" that are firms surviving in the sample for the entire period (the mean of the votes-to-capital ratio decreases from 1.25 to 1.14. The difference is not statistically significant). Moreover, despite the above trends involve median and mean values, for both cash flow rights and voting rights, the median value is significantly higher than the mean one and the difference increases in later years (i.e., the rise of median value is quicker than that of mean value). These results have three important outcomes: firstly, over time, the number of firms that do not separate goes up; secondly, both surviving and exiting firms separate much more than entering firms; thirdly, firms choosing separation exploit it to extreme levels. Overall, despite corporate reforms seem to have influenced ownership and control framework, older firms are shown to be more resistant to changes than younger ones. In short, despite both newly-listed and older firms account for the decrease in ownership-control separation, the older ones seem to contribute to a lesser extent.

Consistently with Mengoli et al. (2009), from the late 1980s, voting premium size has been experiencing a decreasing (but irregular) trend that has brought it to historic low levels. Caprio and Croci (2008) have estimated a mean and median voting premium, respectively, equal to 19.76% and 9.82% in 2003, peaking at 100% in 1988. This trend and the difference between mean and median values are results of two main factors: on the one hand, family control keeps dominating, on the other hand, expropriation risks are smaller. The large difference between mean and median, that has increased in later years, stems from the coexistence of cases in which expropriation risks are greater, with an increasing number of firms having no wealth-extraction problem.

Bigelli et al. (2007) find that nearly 70% of dual-class shares unifications into a single class took place after the 1998 "*Draghi Reform*". Bianchi and Bianco (2006) find a trend comparable to Mengoli et al.

(2009) in the use of pyramiding by listed firms and show that compared with the decline in pyramiding, firms controlled by coalitions rose. By number, coalitions rose as much as 23% (from 10.9% to 34.4% of all listed firms) in the period 1990-2005. Interestingly, types of coalitions that experienced greater increases were both family coalitions and non-family coalitions with a bank joining the coalition itself.

Overall, holding control keeps being very important but the tools by which it is exerted seem to have changed over time also as a result of reforms involving the Company Law that have made instruments aimed at enhancing the control less appealing. Moreover, economic data on voting premium cast some doubts on why it is so important. Not surprisingly, the role of market for corporate control is insignificant.

The study wants to contribute to the debate on changing control devices in Italy as well as on capital structure determinants from the stand of governance and ownership profiles by studying to which extent corporate leverage could be exploited in order to wield control and to keep ownership dilution problems away. Put differently, is the use of corporate leverage a result of the owner's goal to preserve firm control? Besides, I am going to explore the effect exerted by the type of controlling owner as well as other ownership and governance variables arguably linked to debt financing.

4. Research hypotheses design

Once holding control has been demonstrated to be a "must" of Italian shareholders, it is possible to raise some questions and hypotheses entitling capital structure decisions to be outcomes of ownership and control aims. From this point of view, debt is known to be an alternative source of funds that prevents dilution control issues. If being in control is really important:

HP 1: a positive relationship between ownership concentration and leverage ratio is expected.

But, greater ownership concentration, when the separation between voting and cash flow rights is at low levels, also entails a higher economic involvement of the largest shareholder as well as a higher risk (i.e., undiversified shareholders, like families, have much of their wealth invested in the firm. They could bear significant losses in the occurrence of distress or failure of their firm). If so, higher leverage ratio, *ceteris paribus*, asks for higher bankruptcy risk resulting in a huge damage to controlling shareholder should collapse occur:

HP 2: a negative relationship between ownership concentration and leverage ratio is expected.

Joining the above argumentations, they could give rise to a non-linear relationship between ownership concentration and leverage ratio. Specifically, It is arguable that there could be an inverted U-shape relationship between ownership concentration and leverage: at low levels of concentration, debt amount stands at low figures as well. When concentration increases, as debt is exploited to accomplish the increase itself, the leverage soars as well. At a certain point, concentration and debt levels lead to a couple of occurrences: firstly, economic commitment of controlling shareholder gets to extraordinarily high levels, secondly, bankruptcy and financial distress risks arise. Accordingly, it is reasonable that the need to hold control is overwhelmed by the need to keep bankruptcy risks away. This pattern should result in a decline of leverage:

HP 3: an inverted U-shape relationship between leverage ratio and ownership concentration is expected.

HP 1 and to some extent HP 2 and HP 3 evaluate being in control without considering the type of controlling shareholder. This issue is noteworthy as the benefits coming from being the largest shareholder could be remarkably different depending on the nature of the dominant owner. On the matter, some recent literature (Claessens et al., 2002, Morck et al., 2000, Cronqvist and Nilsson, 2003, Faccio et al., 2001) argues that the family is a controlling shareholder more able and inclined than others to divert private benefits and then it would give a higher value to control (Caprio and Croci, 2008). If the aim to hold control outweighs the risk aversion that a few studies (Mishra and McConaughy, 1999, Fernandez and Nieto, 2005) identify as an attribute of family firms:

HP 4: a positive relationship between family control and leverage ratio is expected.

As said above, debt could be employed as either an alternative tool for being in control or a device to be used along with other control mechanisms. In the first case, a negative relation between control-enhancing devices and leverage should be found, in the second one, the relationship should be inverted. Which of the two above argumentations could be suitable for Italy? According to the decreasing trend in the use of control-enhancing mechanisms along with the stability of the voting stake held by the dominant owner (Mengoli et al., 2009) it is arguable that debt could be raised to avoid control dilution issues stemming from the lower reliance on separating mechanisms. From this perspective, debt is viewed as a replacement of such mechanisms therefore:

HP 5: a negative relationship between leverage ratio and the extent of separation is expected.

An alternative view is that being in control is really important mainly for firms exploiting control-enhancing devices over time. It is important to recall that "existing" and "exiting" firms in the Mengoli et al. (2009) sample are remarkably less affected by trends involving ownership and control. On the contrary, majority shareholders of firms that do not use control-enhancing mechanisms are likely to give up or to lessen the control without making use of leverage. From this perspective debt reliance runs along with separating mechanisms therefore:

HP 6: a positive relationship between leverage ratio and the extent of separation is expected.

According to Brailsford et al. (2002), I also take into account as determinant of capital structure decisions the role of outside investors (i.e., investors not linked to controlling owner, to managers and to firm itself through economic and personal ties).
From a theoretical perspective, the link between firm leverage and outside blockholders is sound and based on a couple of explanations. According to the value-based hypothesis, outside blockholders look after firm value and accordingly are interested in value-creating actions. Judicious increase of leverage is likely to rise firm value. According to the monitoring hypothesis, outside blockholders want to avoid that managers put in place opportunistic actions at the expense of shareholders. Debt is a disciplinary tool binding managerial discretion. Alternatively, one can expect outside blockholders to be a monitoring device therefore making the use of debt redundant. The first explanation leads to a positive link between outside blockholders and leverage, the second one to a negative relationship.

In the Italian context, it is reasonable to expect the role of outside blockholders in affecting leverage to be trivial. Bianchi and Bianco (2006) found that, in 2005, financial institutions (banks, insurance companies and institutional investors) held a mean stake in non-financial listed companies as much as 3.6%. For foreign investors, the mean stake rises to 10.8%. Foreign investors and, especially, financial institutions are more likely to be "outsiders". Moreover, despite recent reforms have increased the "voice" of minorities, the effectiveness of these provisions has to be proved.

HP 7: no relationship between capital structure choices and outside blockholders is expected.

5. Research design

The analysis has been performed on a sample of 203 Italian non-financial listed firms from 2000 to 2006 (seven years). Sample selection has provided an unbalanced panel totaling 1,142 observations. Capital structure has been measured by common proxies according to the debt/equity mix and the debt maturity composition:

- LEV1 = interest-bearing debt / (interest-bearing debt + equity)
- LEV2 = long-term debt / (long-term debt + equity)
- LEV3 = short-term debt / (short-term debt + equity)

The use of different capital structure variables aims to assess if ownership structure patterns account for a larger or lower use of debt with different maturities. The idea on the relevance of the debt maturity is that short-term debt is more constraining than long-term debt as refinancing and repayment needs are closer. Besides, short-term debt is often associated to routine operations by funding working capital investment. Accordingly, its changes could not be under the discretionary control of the firm. Vice versa, long-term debt-raising plans are usually a result of strategic choices (e.g., fixed investments, acquisitions, etc.) that are made by the firm with a greater extent of flexibility. The above discussion leads us to argue that long-term debt could serve as corporate control mechanism better than short-term debt.

The effect on capital structure of ownership structure and governance variables has been assessed by regression analysis according to different regression models and several econometric techniques. Capital structure determinants not linked to ownership and governance patterns have been introduced as control variables and summarized as follows:

- TAX: (tax expenses / pre-tax profit). It is the effective tax rate employed as proxy of the corporate tax burden. According to the trade-off theory, it is expected a positive link with the leverage ratio (Barclay et al., 1995, Balakrishnan and Fox, 1993, Kim and Sorensen, 1986, Bayless and Diltz, 1994, Mackie-Mason, 1990, Graham, 1996, Rajan and Zingales, 1995).
- TANG: (fixed assets / total assets). It defines a firm's asset tangibility. The higher the ratio the lower should be bankruptcy risks and costs. According to the trade-off theory, it is expected a positive link with leverage (Harris and Raviv, 1990).
- ROA: (EBIT / total assets). It measures the firm performance. According to the pecking order hypothesis (Myers, 1977, Myers and Majluf, 1984), it is expected a negative link with leverage.
- CASH: [(cash and equivalents) / total assets]. The higher the degree of liquidity the lower should be financing needs and the lower should be bankruptcy risks. Accordingly, it is expected a negative relationship with leverage.
- AGE: natural logarithm of the number of years since firm foundation. Firm age could be used as proxy of business growth stage. According to the financial growth cycle theory by Berger and Udell (1998), older firms are likely to be in a maturity stage, with stable cash flows and therefore to raise more debt.

- SIZE: natural logarithm of a firm's total assets. Firm size is often employed as proxy of firm diversification, bankruptcy risks and its ability to access capital markets. Larger firms are likely to be more diversified, to bear lower bankruptcy risks and to find an easier access to capital markets. Accordingly, it is expected a positive correlation with leverage (Rajan and Zingales, 1995, Titman and Wessels, 1988, Whited, 1992).
- OPER: (depreciation + labor cost)/sales. The variable points to assess the business risk (Barton and Gordon, 1988, Ferri and Jones, 1979, Friend and Hasbrouck, 1989, Friend and Lang, 1988, Bradley et al., 1984, Mehran, 1992, Mackie-Mason, 1990, Titman and Wessels, 1988, Ang and Peterson, 1986, Balakrishnan and Fox, 1993, Jensen et al., 1992). Depreciation and labor cost are likely to be costs that, within a certain production capacity, are not affected by changes in firm production and sales. Accordingly, these costs give rise to operating leverage that makes operating income more volatile.
- LN_MTBV: natural logarithm of the market-to-book ratio. It is a proxy of a firm's growth opportunities. Most literature discusses and finds a negative correlation with leverage. Several explanations are provided (Smith and Watts, 1992, Barclay et al., 1995, Rajan and Zingales, 1995, Jung et al., 1996, Lang et al., 1996, Hovakimian, 2006, Baker and Wurgler, 2002, Kayhan and Titman, 2007): firstly, firms with a higher market-to-book ratio are likely to show lower agency costs of free cash flow (Jensen, 1986). Secondly, a higher market-to-book ratio could be due to a high incidence of intangible assets and related bankruptcy costs. Finally, many growth opportunities could lead to higher agency costs of debt as a result of asset substitution risks.

A few studies (Chen and Zhao, 2006, Du and Dai, 2005) find a positive correlation between market-to-book ratio and leverage. This result is consistent with the pecking order hypothesis: high growth rates ask for great financing needs to be fulfilled by making use of debt should internal funds be insufficient. One can also argue that firms with good growth opportunities face a lower cost of debt. Moreover, we could find contrasting results depending on which leverage measure is employed (market leverage vs. book leverage). Du and Dai (2005) find a negative link by using market leverage and a positive link by using book leverage: firstly, the market value of equity is often larger than the book value, secondly, if one employed the market value of equity instead of the book value in the denominator of the ratio, when the stock market rises the variable LN_MTBV would go up, while the market leverage ratio would go down. The book leverage would remain unaffected by the equity market value changes.

Determinants of capital structure related to a firm's ownership and control structure are as follows:

- VR/CFR: votes-to-capital ratio of the ultimate controlling shareholder. The ratio is the common measure of the separation between ownership and control. The expected link with leverage could have a lot of explanations: on the one hand, shareholders of firms making large use of control-enhancing devices could face no problem in holding corporate control and in pursuing firm growth opportunities. Accordingly, they could make less use of debt to this purpose. Alternatively, firms experiencing a convergence between cash flow rights and voting rights could be forced to raise debt to keep growing without losing control. In both cases, we can suppose a negative correlation with leverage.

On the other hand, heavy reliance on these devices could prove that shareholders are struggling to hold control. Alternatively, it is arguable that shareholders that meet one-share-one-vote rule pay lesser attention to hold control. As debt allows firms to raise capital without diluting control, from those perspectives, a positive correlation is expected. Moreover, the higher the ratio the lower will be the economic involvement of the controlling owner that results in a lower portfolio concentration, a lower risk aversion and a higher willingness to raise debt to fund investments as bankruptcy risk is less worrying (wealth at risk is lower).

The ownership concentration, the persistence over time of a close control despite a sharp decline in the use of control-enhancing mechanisms, chiefly due to newly-listed firms but not to older firms, lead us to argue that in Italy could play the second explanation. See HP 5 and HP 6 in section 4 for a more formal statement of hypotheses.

With reference to the methodology employed to assess voting rights and cash flow rights, the former are the result of the application of the weakest-link rule (Faccio and Lang, 2002), the latter come up from the application of the input-output model (Leontief, 1986) on shareholdings. Based on the technology matrix, the input-output model allows us to take into account direct and indirect ownership, treasury shares and cross-holdings for any type of group.

- CFR: cash flow rights held by the ultimate largest shareholder. This variable is employed to provide a measure of the incentive effect of the controlling shareholder. At first glance, the link with leverage could be as follows: a high value of CFR gives evidence of a strong commitment of the largest shareholder in the firm and therefore a great amount of wealth exposed to risk in occurrence of bankruptcy. Accordingly, risk-avoiding actions, like refraining from raising debt to keep bankruptcy risk away, could be major aims of majority shareholder. From this perspective, we should find a negative correlation with leverage. However, high values of CFR could also be due to a financing policy chiefly oriented to debt rather than to equity. In this case, the expected link is positive and the explanatory variable comes to be the capital structure making the endogeneity test required. See HP 1, HP 2 and HP 3 in the section 4.
- INSTIT: this variable captures the weight of institutional investors in a firm's ownership structure. Hypotheses related to the use of this variable are

largely provided in the section 4 (HP 7). Here I want to give some calculation notes. I have taken into consideration stakes held by banks, insurance companies and mutual funds. Unfortunately, as Italian law on shareholders' disclosure requirements sets at 2% the trigger percentage on shareholdings, the "real" voice of these investors has been definitely underestimated. Institutional investors, serving as minority shareholders, can get involved in the firm running by the rights that the Company Law provides them. Institutional investors are eligible for all the rights granted to minorities by holding at least a 10% voting stake. Below 10%, rights are distributed in the following ranges:

- OWNERSHIP = 0% no right
- 0% < OWNERSHIP < 5% (e.g., filling the agenda in the shareholders' meeting with new matters, reporting to the board of auditors potential irregularities, filing suit against directors, etc.).
- 5% ≤ OWNERSHIP < 10% (e.g., reporting to the court potential irregularities, etc.).
- OWNERSHIP ≥ 10% (e.g., calling a shareholders' meeting, etc.).

To take into account the above breakdown, I have built the variable INSTIT as follows:

INSTIT = 0, if no institutional investor holds a stake.
INSTIT = 1, if the stake held by institutional investors ranges from 0% (excluded) to 5% (excluded).
INSTIT = 2, if the stake held by institutional investors ranges from 5% (included) to 10% (excluded).
INSTIT = 3, if the stake held by institutional investors is greater than or equal to 10%.

- FAM: it is reasonable to believe that the type of controlling owner could affect capital structure choices as a result of owner's aims. The most widespread controlling shareholder both in Italy and throughout the world is the family whose objectives are both personal (e.g., reputation and well-being of the family, achieving success at work and in life for heirs, sharing values as honesty, loyalty, mutual trust, etc.) and economic (e.g., increasing portfolio wealth, getting rent-seeking positions, protecting the firm from extreme risk-taking actions, etc.). The family can achieve them by affecting capital structure choices: on the one hand, as already said, debt allows firm to raise capital keeping dilution problems away. If the family intends to exploit benefits coming from being the controlling owner, debt could help carry out this aim. On the other hand, debt, above certain levels, causes financial distress and bankruptcy risks casting family wealth and reputation in trouble. Accordingly, the family would prefer an equity-oriented capital structure (see HP 4 in section 4). This variable is a dummy equaling 1 in case of family-controlled firms, 0 otherwise. A firm is family-controlled if the ultimate largest shareholder (i.e., at the top of a pyramidal control chain, if existing) is one of the following subjects:
  - A group of people linked by kinship that hold at least a 30% voting stake as a whole. If the stake is in the 30% − 50% range, to make sure family control, it is additionally required that the largest shareholder's stake doubles the second largest shareholder's stake.
  - A single owner (there is no family member holding stakes) with at least a relative of the controlling shareholder in the board.

The identity of the ultimate largest shareholder has been traced by using *R&S-Mediobanca* database and the reports of chambers of commerce that also show the ownership structure of non-listed firms (in pyramidal groups, holding and sub-holding firms are often non-listed companies). The family has been identified by surname (stakes held by relatives with the same surname have been considered as a whole). For families with more than one branch and family members with different surnames (i.e., founder's wife, sons of female heirs, etc.), family membership has been controlled by using *Google search engine* and *Lexis-Nexis* database for reading annals of the most important Italian and international newspapers (e.g., *Il Sole 24 Ore*, *La Stampa*, *The Wall Street Journal*, *Financial Times*, etc.).

Statistical assessments are based on the following OLS regression model with time and industry fixed effects:

$$LEV_{i,t} = \alpha + \beta_1 ROA_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 AGE_{i,t} + \beta_4 TANG_{i,t} + \beta_5 OPER_{i,t} + \beta_6 LN\_MTBV_{i,t} +$$
$$+ \beta_7 CASH_{i,t} + \beta_8 TAX_{i,t} + \beta_9 CFR_{i,t} + \beta_{10} VR/CFR_{i,t} + \beta_{11} FAM_{i,t} + \beta_{12} INSTIT_{i,t} + \overline{\beta}_{IID} INDUSTRY_i + \overline{\beta}_{TD} TIME_t$$

Where:

$INDUSTRY_{i,t}$ is a vector composed of (30-1) industry dummies, one for each sector (Mediobanca industry classification has been employed).

$TIME_t$ is a vector composed of (7-1) time dummies, one for each year of the survey.

$LEV_{i,t}$ is the dependent variable taking the meaning described above (LEV1, LEV2 or LEV3). All the independent variables are described above.

Data related to control variables have been collected from *Datastream Thomson Financial* database; information concerning the firms' ownership and control structure has been collected from *Calepino dell'Azionista*, *CONSOB web site*, *R&S-Mediobanca*, reports of chambers of commerce.

6. Main results

Table 1 provides a first sight of the main descriptive statistics of the variables employed in the study and compares each of them between family and non-family firms. At first glance, family firms are more reliant on long-term debt but not on short-term one and, at the same time, show a higher mean value of votes-to-capital ratio and cash flow rights. It appears that controlling families exploit both instruments (i.e., debt and equity-based control-enhancing devices) to avoid dilution problems. Besides, as expected, ownership structure of family firms shows a lower

mean stake held by institutional investors. With reference to other determinants of capital structure, I find that family firms perform better than non-family counterparts in terms of accounting measures while the relationship is reversed by using market measures. Family firms are older, larger and show a higher operating risk as pointed out by the ratio between fixed costs and sales. The result showing that family firms are older as well as larger than non-family firms seems to be counterintuitive: the reason behind it is that, among non-family firms, I have included a number of entrepreneur-led firms as well as firms controlled by unrelated managers that are generally much younger and smaller than the others.

Moving to Table 2, we can make a first analysis of the correlation among the key variables. Firstly, the results related to common determinants provide a preliminary support of familiar hypotheses on capital structure determinants. The correlation matrix exhibits a strong and positive link between leverage measures and the following variables: SIZE, AGE, TANG and TAX, while it shows a negative relationship with the following determinants: ROA, OPER and CASH. Secondly, with reference to ownership structure variables, opening results seem to be of interest and those ones on total and long-term debt above all. More in detail, as shown in Table 1, family firms are shown to be more indebted than non-family firms but only as regards total and long-term debt. The proxy of the separation between ownership and control (VR/CFR) evidences a positive and significant link with leverage measures: it seems that firms with a higher separation intend to exploit the leverage to a greater extent than the others highlighting that whenever holding control gets relevance (i.e., VR/CFR is higher), the controlling owner deploys debt financing to consolidate his/her position keeping the risk of loss of control away. Cash flow rights, as one could predict by observing the positive sign of VR/CFR, show a negative relationship with leverage. Indeed, CFR and VR/CFR are strongly negatively correlated and the negative sign of CFR is expected to lead to a positive link between VR/CFR and leverage. According to economic (not exclusively statistical) argumentations, introductory results shed light, on the one hand, on the real chance that the higher the ownership concentration (i.e., CFR) the higher will be the risk taken on by the controlling shareholder who will be inclined to hold a safer capital structure, on the other hand, on the fact that entrenched dominant owners are unwilling to give up the control even though that aim calls for a more aggressive, riskier and, maybe, unsound capital structure. Finally, correlation matrix seems not to show any significant link between institutional investors and capital structure except for long-term debt. This latter points out a positive and significant link with the variable INSTIT. One could argue that, on the one hand, because the tax shield depends on the interests charged that, normally, are higher for long-term debt, institutional investors prefer firms bearing debt with longer maturities, on the other hand, long-term debt is less constraining than short-term one and, therefore, institutional investors could act as monitoring device in place of debt. In this case, a reverse causality relationship between capital structure and institutional investors could take place.

Turning to the regression analysis, all tables show that familiar determinants of capital structure are consistent with the common hypotheses supporting each of them with the exception of the market-to-book ratio which shows a positive and significant relationship with leverage that is found by a little literature (Chen and Zhao, 2006). However, the unpredicted result could be due to the use of book leverage rather than market leverage (Du and Dai, 2005). Without paying further attention to the well-known determinants, I focus on the ownership structure determinants (i.e., CFR, VR/CFR, FAM and INSTIT) being the key issue of the study.

Table 3 shows a negative and significant relationship between cash flow rights and leverage (short-term + long-term leverage). This means that the higher the ownership concentration the lower will be the firm reliance on debt. The result is consistent with hypothesis HP 2 relating the higher ownership concentration to the higher risk-taking of the controlling owner that picks a more conservative leverage ratio (i.e., the dominant owner invests a great deal of its own wealth in the firm and accordingly it is highly committed to the firm viability). Family firms, as supposed in hypothesis HP 4, are significantly more indebted than non-family counterparts. The evidence supports the view that debt financing helps controlling families keep control without preventing firm growth at least within safe levels of leverage ratio. This result is strong and accordant with the opinion that the aim to hold control more than offsets risk-avoiding behaviors.

Despite the total leverage does not show any statistically significant link with the variables VR/CFR and INSTIT, Table 4, which takes into account debt with a longer maturity, shows more interesting results. The variable INSTIT turns to be positive and statistically significant highlighting that, as stated above, institutional investors "encourage" the firm to raise more long-term debt either to gain greater tax benefits or for monitoring purposes.

With reference to the short-term debt (Table 6), the results related to ownership structure variables are remarkably poorer: the only variable that holds its statistically significance and economic meaning is FAM. It is arguable that short-term debt, unlike long-term one, is strongly linked to financing needs generated by day-to-day operations; therefore it is more likely to be less dependent on a firm's ownership characteristics. In other words, plans to raise short-term debt are likely to be accomplished for aims unrelated to ownership attributes.

More interestingly, because it is reasonable to believe that ownership factors, and particularly

ownership-control separation, matter much more in family firms, in Table 5 I run the same regression as in Table 4 introducing an interactive variable defined as product between the variables FAM and VR/CFR in order to investigate whether the direction and the significance of the link between separation and leverage is different and stronger/weaker in family firms than non-family counterparts. The results are noteworthy and show that family firms exploiting control-enhancing devices to a greater extent are also significantly more reliant on long-term debt. Vice versa, non-family firms having a higher degree of separation seem to bear a lower amount of long-term debt. Basically, in family firms, debt and control-enhancing mechanisms work jointly while in non-family firms they work apart. This result consolidates the hypothesis that the control is definitely important for family firms that, despite the significant deviation between cash flow rights and voting rights, are also disposed to increase the leverage. A vicious and realistic interpretation of the above finding is that the inclination of the family-controlled firms towards riskier capital structures is a result of the higher separation and, therefore, of the weaker link between (higher) voting power and (lower) wealth at risk.

The investigation of the link between votes-to-capital ratio and long-term leverage in both all firms and family firms has been enriched by a comparative analysis of the historical trend of both variables. Figures 1 (all firms) and 2 (family firms) compare both trends and show an appealing evidence: an upward tendency of the long-term debt seems to go together with a decreasing trend of the votes-to-capital ratio. The path seems to be significantly more outlined in family firms. It appears that, if on the one hand, more indebted family firms exploit control-enhancing mechanisms to a greater extent, on the other hand, over time the link between long-term leverage and separation seems to be negative: basically, periods with increasing trends of the leverage occur with decreasing movements of the votes-to-capital ratio.

Figure 3 provides a similar comparison over a larger sample that also includes non-family firms and a longer period of time. Specifically, it is intended to show a summary review of the historical trends of long-term debt and voting premium, this latter employed as a proxy of the votes-to-capital ratio that is missing for the earlier years (i.e., in Italy, a high voting premium is associated with a high ownership-control separation, Nicodano, 1998). The figure seems to confirm the previous evidence showing an interesting and original although preliminary point in the research: from the early 1980s to the early 1990s, long-term leverage experienced a sharp decline (the ratio almost halved), while the voting premium faced an increasing and equally sharp trend (the voting premium experienced a ten-time increase). In the mid-1990s, after the peak, the voting premium seems to stabilize around 50-60% and subsequently takes a vigorous downward drift (it is to be noted the comparable trend between votes-to-capital ratio in Figures 1 and 2 and voting premium in Figure 3 since 2000). And the long-term leverage? In the same period as the voting premium, it shows, since the early 1990s, a steady path until 2000 after that the trend is inverted taking an upward direction. In summary, there seems to be a non-spurious relationship between voting premium and long-term leverage: the historical trends show that when the ownership-control separation tends to increase (i.e., the voting premium is high), the long-term leverage follows a reverse direction or, at least, sharply adjusts the intensity of the past tendency. Despite the above comments come from a reading of a graph and keep holding on as anecdotal evidence, 23 years of observations could already give an interesting and original revisitation of the link between ownership-control separation and debt financing.

Besides, I have split family firms in two subgroups, founding-family controlled firms (i.e., the founding-family runs the company and/or holds the majority of ownership) and non-founding-family controlled firms (i.e., the largest shareholder and the firm's managers are not member of the founding-family), by introducing a further dummy variable (FOUNDING) that takes value 1 for founding-family controlled firms and value 0 otherwise. Table 7 shows that the former are significantly more leveraged than the latter. The result is once more very consistent with the role of debt as corporate control mechanism. Based on such result, it is plausible to believe that founding-families are more willing to hold control as well as to curb the use of own funds for supporting the firm's growth without dilution problems. Vice versa, for non-founding-families the firm itself is more likely to be a mere financial investment to be sold should good market conditions and returns occur.

As robustness tests, I have performed regressions by using panel data models (random and fixed effects) on long-term leverage that has shown a more appealing evidence. Overall, Table 8 provides results supporting the findings described above with reference to both familiar determinants of capital structure and ownership structure determinants. The most consistent results come from the random effects specification (Panel A), while the fixed effects specification (Panel B) shows weaker results. In reading both specifications, it is to be noted that, firstly, in Panel A2 of Table 8, the Hausman test indicates the absence of correlation between the composite error term ($\omega_{i,t} = \varepsilon_i + \nu_{i,t}$) and all the explanatory variables. In general, the random effects approach is more appropriate and produces more efficient estimations than the fixed effects approach provided that the composite error term is uncorrelated with all of the independent variables (Brooks, 2008). Secondly, the within transformation performed in the fixed effects model rules out time-invariant variables. Accordingly, this procedure makes the results of the variables FAM and INSTIT, that are almost always constant over time, unreliable.

7. Concluding remarks

This study explores, on the one hand, the capital structure determinants from the point of view of corporate ownership and control in a country dominated by family-controlled pyramidal groups with high ownership concentration. The existent literature on the topic only focuses on a few ownership attributes and finds either a weakly significant empirical evidence or discordant results on the role of ownership structure variables. This study provides support to the argumentation that ownership and control variables matter, at least in a blockholder-dominated context. On the other hand, it shows an interesting, although anecdotal, view of the capital structure evolution suitable in contexts with a high dependence on control-enhancing mechanisms. Specifically, the study finds that family firms are significantly more reliant on debt. This result is relevant because it tells us that the families, as expected, put a high level of importance on the objective to hold the control which overwhelms risk-reducing behaviors aimed at keeping a sound and viable firm. This evidence is consistent with other studies (King and Santor, 2008, Harijono et al., 2004) which take into consideration countries like Canada where family firms and pyramidal structures are very common and countries like Australia where private benefits of control seem to be high (Nenova, 2003), particularly in mining industries. Besides, the results show that just the family firms exploit the long-term debt along with a severe usage of control-enhancing mechanisms. Finally, a high level of cash flow rights held by the ultimate largest shareholder is associated with low levels of the leverage ratio. The key policy implication coming from a merger of the above results is that, in the extent to which the families can exploit instruments to separate ownership from control therefore lowering the amount of wealth exposed to risk, the families themselves are inclined to reinforce their position as controlling owners by raising debt to retain the control, to support the firm's growth, to save their own resources and to curb the risk-taking. This line of reasoning is further validated by the results obtained by comparing founding-family controlled firms with non-founding-family controlled ones: the former are significantly more leveraged than the latter. Because it is expected that founding-families look after their firm like if it was their own thing, holding control is likely to be a paramount aim for them. Probably, this aim is less emphasized in non-founding-families. The above comments lose their consistence moving from long-term debt to short-term debt: the former, as a result of its longer maturity, is more manageable and less constraining for the management than the latter. Accordingly, long-term debt is shown to be more suitable for achieving corporate ownership and control purposes.

With reference to the temporal trend of the long-term leverage in comparison with the votes-to-capital ratio, it seems to come out a remarkable result that for now is going to hold as anecdotal evidence because of the shortage of data: over time, the link between the long-term debt and the extent of separation appears to be negative. Basically, decreasing trends of the long-term debt take place in periods with increasing trends of the votes-to-capital ratio. We can argue that periods with an intensive use of control-enhancing mechanisms lead firms to lower their dependence on long-term debt as instrument to be employed to raise funds and to keep dilution issues away. Unfortunately, a more in-depth analysis would require a huge amount of reliable data on corporate ownership, that are available only after the entry into force of the "*Testo Unico della Finanza*" (i.e., the consolidated Italian law on companies, markets and finance) in 1998.

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Appendices

Table 1. Descriptive statistics

	All firms			Family firms			Non-family firms		
	Mean	Median	Std. dev	Mean	Median	Std. dev	Mean	Median	Std. dev
LEV1***	0.4111	0.4342	0.2432	0.4226	0.4383	0.2319	0.3769	0.3891	0.2530
LEV2***	0.2771	0.2422	0.2296	0.2916	0.2593	0.2237	0.2431	0.1845	0.2340
LEV3	0.2653	0.2233	0.2077	0.2678	0.2317	0.1999	0.2484	0.1952	0.2128
ROA***	0.0380	0.0531	0.1094	0.0586	0.0621	0.0781	0.0058	0.0327	0.1374
SIZE***	12.8771	12.6976	1.7025	13.0884	12.8962	1.5569	12.7405	12.2319	1.8989
AGE***	3.1604	3.1355	1.0171	3.2871	3.3322	0.9226	3.0656	2.9957	1.1143
TANG***	0.2275	0.1866	0.1818	0.2470	0.2109	0.1747	0.2025	0.1540	0.1878
OPER***	0.2808	0.2501	0.1695	0.2548	0.2492	0.1163	0.3249	0.2601	0.2197
LN_MTBV***	0.5718	0.5306	0.7116	0.4746	0.4187	0.6954	0.6935	0.6259	0.7147
CASH	0.1286	0.0831	0.1339	0.1319	0.0883	0.1300	0.1336	0.0871	0.1417
TAX***	0.4389	0.4281	0.1863	0.4055	0.4035	0.1742	0.4763	0.4746	0.1904
CFR***	0.4891	0.5200	0.1835	0.5400	0.5670	0.1678	0.4255	0.4246	0.1825
INSTIT***	1.1524	1.0000	1.1456	1.0205	1.0000	1.0706	1.3176	1.0000	1.2141
VR/CFR***	1.2177	1.0000	0.5864	1.2798	1.0000	0.7148	1.1399	1.0000	0.3526
FAM	0.5560	1.0000	0.4971						
t-stat significance level, * (10%), ** (5%), *** (1%), on difference of means between family and non-family firms									

Table 2. Pearson correlation

	LEV1	LEV2	LEV3	ROA	SIZE	AGE	TANG	OPER	LN_MTBV	CASH	TAX	CFR	VR/CFR	FAM	INSTIT
LEV1		0.868**	0.837**	-0.126**	0.402**	0.151**	0.152**	-0.207**	0.022	-0.377**	0.098**	-0.136**	0.095**	0.094**	0.035
LEV2			0.535**	-0.046	0.445**	0.157**	0.241**	-0.141**	-0.015	-0.241**	0.040	-0.156**	0.138**	0.105**	0.099**
LEV3				-0.192**	0.216**	0.127**	-0.012	-0.191**	0.034	-0.340**	0.171**	-0.055	-0.002	0.047	-0.026
ROA					0.269**	0.139**	0.095**	-0.373**	0.038	0.032	-0.199**	0.085**	0.107**	0.236**	0.021
SIZE						0.290**	0.108**	-0.344**	-0.022	-0.185**	-0.108**	-0.152**	0.281**	0.127**	0.054
AGE							0.252**	-0.235**	-0.306**	-0.141**	-0.050	0.009	0.162**	0.108**	-0.040
TANG								0.116**	-0.166**	-0.284**	-0.083**	-0.024	0.070*	0.121**	-0.001
OPER									0.103**	0.168**	0.115**	-0.166**	0.004	-0.201**	0.068*
LN_MTBV										0.019	-0.072*	-0.070*	-0.009	-0.153**	0.111**
CASH											-0.184**	0.035	-0.019	-0.006	0.009
TAX												-0.000	-0.061	-0.189**	-0.045
CFR													-0.530**	0.310**	-0.258**
VR/CFR														0.119**	-0.006
FAM															-0.129**

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 3. Leverage and ownership structure

PANEL A – leverage (LEV1) and economic involvement (CFR)				PANEL B – leverage (LEV1) and wedge (VR/CFR)			
Variables	Coeff.	Std. Error	t-stat	Variables	Coeff.	Std. Error	t-stat
const	-0.0890	0.1225	-0.7262	const	-0.1916*	0.1116	-1.7174
ROA	-0.8087***	0.1177	-6.8710	ROA	-0.8000***	0.1211	-6.6050
OPER	-0.2521***	0.0936	-2.6945	OPER	-0.2232**	0.0945	-2.3619
CASH	-0.4010***	0.0665	-6.0261	CASH	-0.4105***	0.0673	-6.1018
TAX	0.1487***	0.0486	3.0609	TAX	0.1461***	0.0486	3.0041
FAM	0.0800***	0.0242	3.3089	FAM	0.0688***	0.0243	2.8332
LN_MTBV	0.0528***	0.0144	3.6661	LN_MTBV	0.0529***	0.0145	3.6497
AGE	0.0203*	0.0111	1.8283	AGE	0.0195*	0.0114	1.7100
SIZE	0.0582***	0.0079	7.3603	SIZE	0.0619***	0.0081	7.6247
INSTIT	0.0034	0.0060	0.5605	INSTIT	0.0071	0.0060	1.1908
CFR	-0.1318**	0.0546	-2.4139	VR/CFR	0.0001	0.0130	0.0058
TANG	0.0191	0.0891	0.2145	TANG	0.0093	0.0874	0.1068
HAC standard error of Arellano (2003) for panel data Adj. R-squared: 0.5303 Significance level: * (10%), ** (5%), *** (1%)				HAC standard error of Arellano (2003) for panel data Adj. R-squared: 0.5231 Significance level: * (10%), ** (5%), *** (1%)			

Table 4. Long-term debt and ownership structure

PANEL A – leverage (LEV2) and economic involvement (CFR)				PANEL B – leverage (LEV2) and wedge (VR/CFR)			
Variables	Coeff.	Std. Error	t-stat	Variables	Coeff.	Std. Error	t-stat
const	-0.3370***	0.1195	-2.8196	const	-0.4098***	0.1132	-3.6214
ROA	-0.5217***	0.0911	-5.7285	ROA	-0.5171***	0.0896	-5.7727
OPER	-0.1009	0.0690	-1.4619	OPER	-0.0820	0.0691	-1.1865
CASH	-0.1195**	0.0574	-2.0820	CASH	-0.1252**	0.0574	-2.1817
TAX	0.1221***	0.0454	2.6880	TAX	0.1209***	0.0448	2.6988
FAM	0.0654***	0.0225	2.9039	FAM	0.0550**	0.0225	2.4449
LN_MTBV	0.0271*	0.0144	1.8810	LN_MTBV	0.0266*	0.0144	1.8458
AGE	0.0089	0.0104	0.8556	AGE	0.0071	0.0104	0.6836
SIZE	0.0660***	0.0075	8.7618	SIZE	0.0676***	0.0078	8.6662
INSTIT	0.0094*	0.0054	1.7419	INSTIT	0.0123**	0.0055	2.2369
CFR	-0.1022**	0.0475	-2.1536	VR/CFR	0.0124	0.0125	0.9939
TANG	0.1112	0.0849	1.3086	TANG	0.1048	0.0841	1.2462
HAC standard error of Arellano (2003) for panel data Adj. R-squared: 0.5247 Significance level: * (10%), ** (5%), *** (1%)				HAC standard error of Arellano (2003) for panel data Adj. R-squared: 0.5208 Significance level: * (10%), ** (5%), *** (1%)			

Table 5. Long-term debt, wedge and family firms

Variables	Coeff.	Std. Error	t-stat
const	-0.3297***	0.1187	-2.7780
ROA	-0.5040***	0.0925	-5.4463
OPER	-0.0751	0.0691	-1.0863
CASH	-0.1171**	0.0588	-1.9923
TAX	0.1249***	0.0454	2.7480
FAM	-0.0416	0.0542	-0.7677
LN_MTBV	0.0265*	0.0144	1.8389
AGE	0.0052	0.0104	0.4988
SIZE	0.0681***	0.0079	8.5716
INSTIT	0.0114**	0.0055	2.0759
VR/CFR	-0.0609*	0.0361	-1.6847
TANG	0.1027	0.0824	1.2457
FAM x VR/CFR	0.0841**	0.0392	2.1431
HAC standard error of Arellano (2003) for panel data Adj. R-squared: 0.5250 Significance level: * (10%), ** (5%), *** (1%)			

Table 6. Short-term debt and ownership structure

PANEL A – leverage (LEV3) and economic involvement (CFR)				PANEL B – leverage (LEV3) and wedge (VR/CFR)			
Variables	Coeff.	Std. Error	t-stat	Variables	Coeff.	Std. Error	t-stat
const	-0.0166	0.1430	-0.1163	const	-0.0762	0.1279	-0.5958
ROA	-0.7277***	0.1455	-5.0012	ROA	-0.7202***	0.1485	-4.8499
OPER	-0.2428***	0.0840	-2.8895	OPER	-0.2237***	0.0843	-2.6544
CASH	-0.3484***	0.0584	-5.9613	CASH	-0.3555***	0.0586	-6.0647
TAX	0.1412***	0.0445	3.1754	TAX	0.1387***	0.0451	3.0775
FAM	0.0488**	0.0206	2.3704	FAM	0.0461**	0.0203	2.2658
LN_MTBV	0.0475***	0.0140	3.3970	LN_MTBV	0.0485***	0.0135	3.6020
AGE	0.0271***	0.0093	2.9188	AGE	0.0283***	0.0092	3.0783
SIZE	0.0252***	0.0073	3.4608	SIZE	0.0289***	0.0073	3.9336
INSTIT	-0.0018	0.0056	-0.3142	INSTIT	-0.0001	0.0053	-0.0096
CFR	-0.0634	0.0646	-0.9818	VR/CFR	-0.0187	0.0181	-1.0346
TANG	-0.0587	0.0670	-0.8759	TANG	-0.0653	0.0673	-0.9704
HAC standard error of Arellano (2003) for panel data Adj. R-squared: 0.3722 Significance level: * (10%), ** (5%), *** (1%)				HAC standard error of Arellano (2003) for panel data Adj. R-squared: 0.3724 Significance level: * (10%), ** (5%), *** (1%)			

Table 7. Leverage and family firms: Founding-families vs. non-founding-families

Variables	Coeff.	Std. Error	t-stat
const	-0.2379	0.1575	-1.5107
ROA	-0.9357***	0.2013	-4.6480
OPER	-0.1055	0.1502	-0.7023
CASH	-0.4281***	0.0929	-4.6097
TAX	0.1924***	0.0580	3.3183
LN_MTBV	0.0657***	0.0201	3.2689
AGE	0.0285**	0.0128	2.2219
SIZE	0.0687***	0.0114	6.0321
INSTIT	-0.0131	0.0097	-1.3574
CFR	-0.1268**	0.0603	-2.1020
TANG	-0.1132	0.1089	-1.0392
FOUNDING	0.0862***	0.0283	3.0436
HAC standard error of Arellano (2003) for panel data Adj. R-squared: 0.6207 Significance level: * (10%), ** (5%), *** (1%)			

Table 8. Long-term leverage and ownership structure: Alternative econometric specifications

PANEL A

RANDOM EFFECTS							
PANEL A1 – leverage (LEV2) and economic involvement (CFR)				PANEL A2 – leverage (LEV2) and wedge (VR/CFR)			
Variables	Coeff.	Std. Error	t-stat	Variables	Coeff.	Std. Error	t-stat
const	-0.8530***	0.0996	-8.5626	const	-0.9086***	0.0949	-9.5744
ROA	-0.3457***	0.0565	-6.1140	ROA	-0.3345***	0.0563	-5.9419
OPER	-0.1176**	0.0538	-2.1863	OPER	-0.0920*	0.0532	-1.7295
CASH	-0.0503	0.0476	-1.0565	CASH	-0.0761*	0.0458	-1.6611
TAX	0.0710**	0.0296	2.3956	TAX	0.0706**	0.0295	2.3923
LN_MTBV	0.0358***	0.0096	3.7291	LN_MTBV	0.0355***	0.0096	3.6976
AGE	0.0135	0.0110	1.2287	AGE	0.0181*	0.0113	1.6761
INSTIT	0.0051	0.0050	1.0149	INSTIT	0.0057	0.0050	1.1455
SIZE	0.0822***	0.0065	12.6355	SIZE	0.0860***	0.0066	12.9446
CFR	-0.0828*	0.0495	-1.6710	VR/CFR	-0.0206	0.0166	-1.2422
FAM	0.0351*	0.0195	1.8037	FAM	0.0374*	0.0199	1.8791
TANG	0.0919*	0.0525	1.7508	TANG	0.0947*	0.0526	1.8000
HAC standard error of Arellano (2003) for panel data Hausman test: chi-square = 50.1416, p-value = 0.0010 Time dummy = YES Significance level: * (10%), ** (5%), *** (1%)				HAC standard error of Arellano (2003) for panel data Hausman test: chi-square = 6.9461, p-value = 0.9743 Time dummy = YES Significance level: * (10%), ** (5%), *** (1%)			

PANEL B

FIXED EFFECTS							
PANEL B1 – leverage (LEV2) and economic involvement (CFR)				PANEL B2 – leverage (LEV2) and wedge (VR/CFR)			
Variables	Coeff.	Std. Error	t-stat	Variables	Coeff.	Std. Error	t-stat
const	-2.0478***	0.1888	-10.8456	const	-2.0815***	0.1943	-10.7110
ROA	-0.3218***	0.0582	-5.5293	ROA	-0.3219***	0.0583	-5.5179
OPER	-0.0578	0.0616	-0.9378	OPER	-0.0510	0.0617	-0.8277
CASH	0.0279	0.0521	0.5360	CASH	0.0204	0.0523	0.3903
TAX	0.0398	0.0305	1.3059	TAX	0.0444	0.0305	1.4567
LN_MTBV	0.0483***	0.0105	4.6079	LN_MTBV	0.0480***	0.0105	4.5624
AGE	0.0829***	0.0245	3.3861	AGE	0.0856***	0.0245	3.4884
INSTIT	-0.0007	0.0053	-0.1255	INSTIT	0.0005	0.0052	0.1041
SIZE	0.1565***	0.0126	12.4176	SIZE	0.1542***	0.0127	12.1643
CFR	-0.1236*	0.0646	-1.9138	VR/CFR	-0.0015	0.0246	-0.0625
FAM	0.0170	0.0289	0.5886	FAM	0.0082	0.0287	0.2856
TANG	0.0877	0.0739	1.1862	TANG	0.0802	0.0741	1.0823
HAC standard error of Arellano (2003) for panel data Adj. R-squared: 0.8005 Time dummy = YES Significance level: * (10%), ** (5%), *** (1%)				HAC standard error of Arellano (2003) for panel data Adj. R-squared: 0.7996 Time dummy = YES Significance level: * (10%), ** (5%), *** (1%)			

Figure 1. Long-term debt and votes-to-capital ratio: Temporal trend

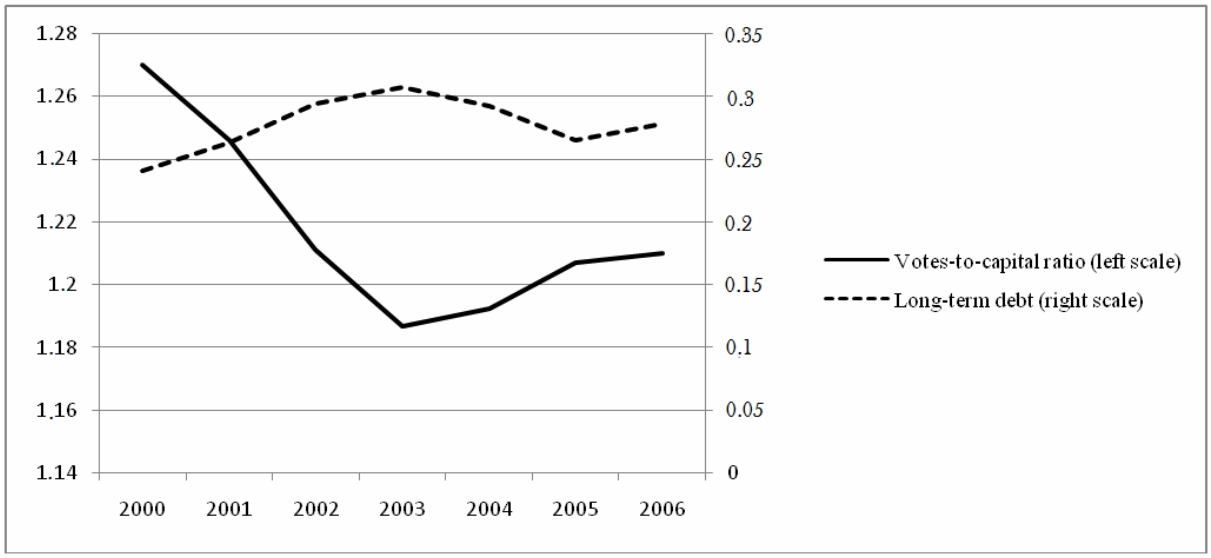


Figure 2. Long-term debt and votes-to-capital ratio in family firms: Temporal trend

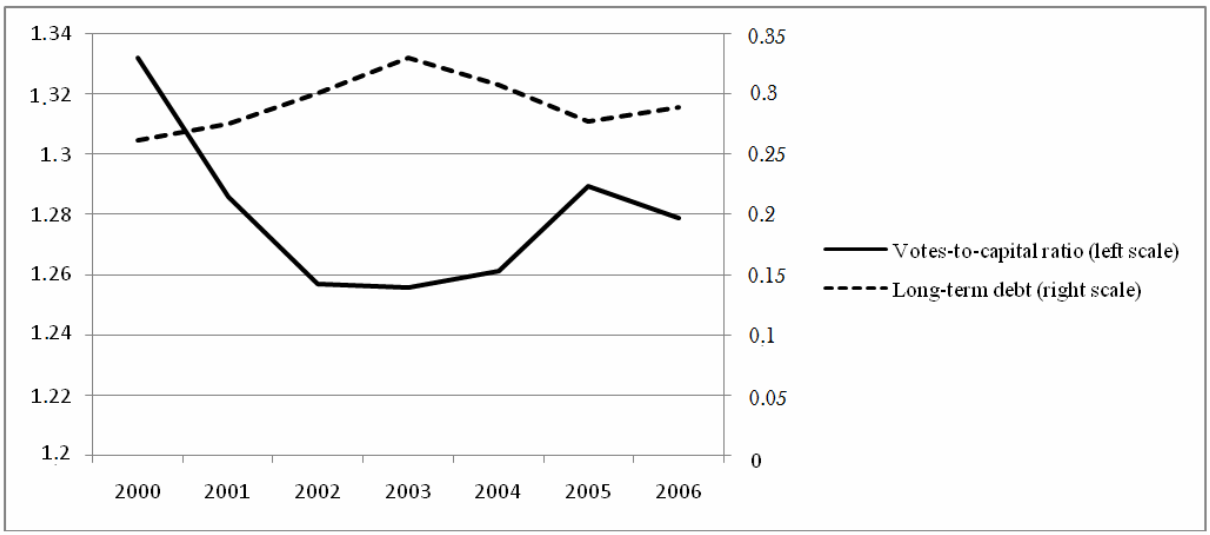
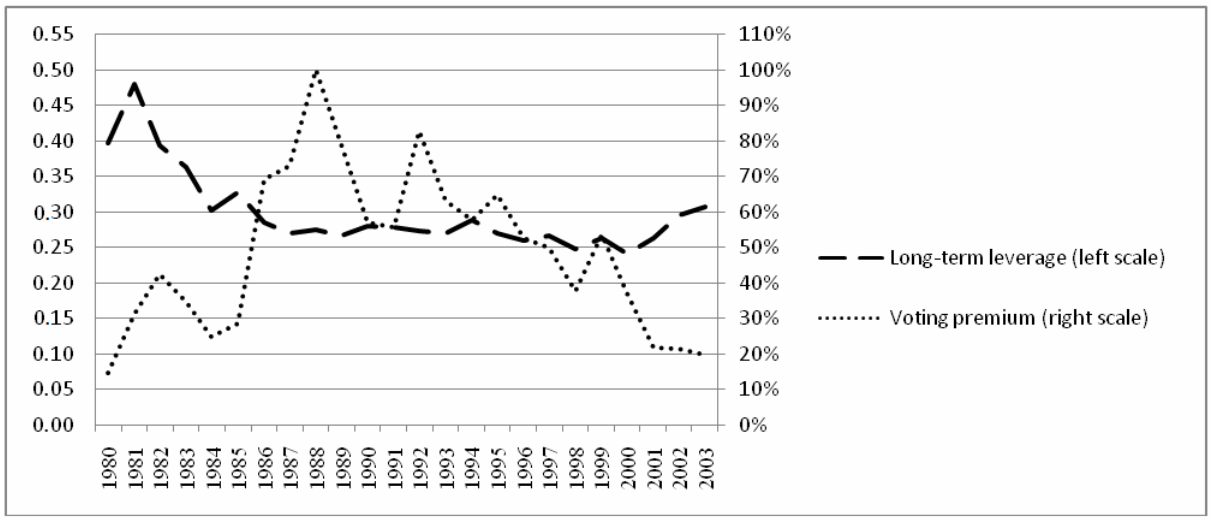


Figure 3. Long-term debt and voting premium (1980-2003)



PYRAMID GROUPS AND FIRM PERFORMANCE: EMPIRICAL EVIDENCE FROM CANADIAN CORPORATIONS

Gloria Y. Tian*

Abstract

Using data of Canadian corporations in 1994 and 2003, this study analyzes whether controlling shareholders of corporate pyramid groups, with substantial divergences in ownership and control, negatively or positively impact firm performance. We find some evidence that the combination of ownership concentration and pyramidal structure would lead to inferior firm performance and valuation, but little evidence concerning tunneling within groups. We argue the robust legal environment in Canada that encourages shareholder value maximization could mitigate the negative impact of control enhancing mechanisms on minority public investors.

Keywords: Corporate governance, pyramid groups, ownership, firm performance, family firms

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I. Introduction

The connection between ownership structure and firm performance has been a hot topic for both academics and the general public. The assumption of diffuse atomistic shareholders, in the classic finance theory and the "theory of the firm" in economics (e.g. Berle and Means, 1932; Jensen and Meckling, 1976), turns out to be generally valid only in the large corporate sectors of the United States and the United Kingdom *(see endnote 1)*. La Porta *et al*. (1999) find widely dispersed ownership structures to be quite rare in most countries. Belying the characterization of the typical firm in standard finance textbooks around the world, many large firms in most countries have controlling equity block holders. These are typically shares owned by another company, which in turn has yet another company as its controlling shareholder. These chains of corporate control organize the large firms of most countries into *corporate pyramid groups*, with control extending downward from a relatively small number of ultimate owners.

The key issue we investigate in this paper is whether ultimate owners of corporate pyramid groups, with substantial divergences in ownership and control, negatively or positively impact firm performance and valuation. In this context, Canada provides an ideal laboratory because of the marriage between two unique features. First, like the United States, Canada has a fairly robust legal regime that encourages firms to maximize shareholder wealth. Second, in comparison to the United States, Canada has higher corporate ownership concentration and more obvious presence of control pyramid groups.

Most of prior studies on divergences in ownership and control usually focus on East Asia, Europe, and emerging markets (e.g. Claessens *et al*., 2000; Faccio and Lang, 2002; and Khanna and Palepu, 2000 & 2001). However, these regions either have poor legal safeguards to protect shareholder rights, or the firm's objective is not necessarily to maximize shareholder value (e.g. German firms with labour union board seats would seek to protect employee rights).

In the United States, pyramid groups are almost unknown *(see endnote 2)*. Domestic subsidiaries are virtually always either 100% owned by the parent or unlisted joint ventures with other firms. U.S. firms also generally have only one class of common share.

In the United States, corporate governance problems primarily stem from the conflicts between managers who own few shares (agents) and millions of diffused shareholders (principals). This is the classic, or Type I, agency problem discussed in standard finance textbooks.

In Canada, the situation is far more complicated – a large number of big Canadian firms are organized into control pyramid groups (e.g. La Porta *et al.,* 1999; Daniels *et al.*, 1995; and Morck *et al.,* 2000), with the ultimate owners being wealthy families in many cases. In addition, Canadian stock exchanges do not discourage the use of super-voting shares or equity cross-holdings, both of which are found to exist within Canadian corporate pyramids (e.g. Morck *et al.* 2005). Many private firms are also scattered throughout Canadian pyramid groups, further complicating the matter.

To illustrate the difference between the United State and Canada, we compare in Figure 1 the simplified ownership structures of Minnesota Mining & Manufacturing Limited (3M) in the United States, and Brascan Limited in Canada, both based on 1994 ownership data. Brascan belonged to the control pyramid group of Edward & Peter Bronfman family, with a control chain of 16 tiers and containing more than 500 firms.

[Figure 1 goes here]

Having a controlling shareholder is potentially costly to minority public investors. In a control pyramid, the ultimate owner controls all firms in the group, but has a diminishing real economic interest in the cash flows of firms closer to the bottom of the control pyramid. Pyramidal ownership structure could thus incentivize the ultimate owner to divert resources from firms far away from him/her (i.e. firms closer to the bottom of the pyramid) to firms in which he/she has higher cash-flow claims (i.e. firms closer to the apex of the pyramid). This potentially creates a different type of agency problem, or Type II shareholder-shareholder agency problem as referred to by Villalonga and Amit (2006).

There are, of course, potential benefits to having a controlling shareholder, especially when this ultimate owner is associated with the founding family. The ultimate owner may have a longer-term perspective than outsider minority shareholders, actively monitor managers to reduce manager-shareholder conflicts, utilize political connections with governments as a competitive advantage, or allow group member firms to share risks so that they are less vulnerable than stand-alone companies to negative shocks of external capital markets (e.g. Stein, 1997; McConaughy *et al*., 1998; James, 1999; Anderson and Reeb, 2003; and Claessens *et al.*, 2006).

We test whether pyramidal structure is better or worse for minority public investors, at the aggregate level. We contribute to the existing research on the following dimensions. First, we distinguish the effect of concentrated ownership from the use of control-enhancing pyramidal structure on firm performance. Second, we directly test the tunneling hypothesis by linking a pyramid group firm's performance to its position within the pyramid. Third, we highlight a dramatic decrease of the presence of pyramid groups in Canada between 1994 and 2003, which prior studies have failed to reveal. We examine the potential impact of ownership *change* on firm performance, using sub-samples of firms that either entered or exited from corporate pyramid groups over the decade. Fourth, compared to other studies in Canada, such as Klein *et al.* (2005), Attig (2005), and King and Santor (2008), we consider not only large publicly traded companies but also small firms and firms that are privately owned.

Our findings can be summarized as follows. First, we find in 1994 about 27% of our sample firms belong to pyramid groups, with 11% belonging to family-controlled corporate pyramids. In 2003, pyramidal ownership becomes less substantial in Canada: only 20% of the sample firms belong to pyramid groups, with 6% belonging to family-controlled corporate pyramids. Second, we distinguish the effect of concentrated ownership and the use of control enhancing pyramidal structure. Compared to widely held companies and firms having ultimate owners but not through pyramids, Canadian pyramid group firms are larger, use more debt financing, and invest less in research and development. After controlling for firm-level characteristics and industry effects, we find some evidence that pyramid group membership is negatively associated with accounting returns and Tobin's Q ratio. In addition, the association is more profound if we compare pyramid group firms against widely held companies than if we compare pyramid group firms against firms with stand-free ultimate owners. Third, we find that within family-controlled pyramid groups, firms closer to a pyramid's base tend to perform worse than firms closer to the pyramid's apex. The results, however, are not statistically strong enough to support tunneling. Fourth, to examine whether changes in ownership have any material impact on firm performance, we investigate two sub-samples in which firms either belonged to certain pyramid groups but later exited and became independent, or were initially widely held without controlling shareholders but later acquired by corporate pyramids. We find that disappearance of (family-controlled) pyramidal structure improves a firm's accounting rates of return, but little impact on its market valuation.

The rest of the paper is organized as follows. Section II outlines our data selection process, provides descriptive statistics, and discusses the ownership structure of Canadian corporations. Section III presents main hypotheses, key variables, and the methodology used in this paper. We summarize key empirical findings in Section IV, and conclude with Section V.

II. Ownership Structure of Canadian Corporations

2.1 Sample and data sources

Our empirical analyses utilize two years' data, 1994 and 2003. In the univariate analysis below, we report summary statistics for 1994 and 2003 separately and provide anecdotes concerning changes of corporate ownership structure over the decade.

We chose these two years for two reasons. First, Canadian corporations were subject to loose governance and disclosure rules until early 1995, and compulsory disclosure on governance became general practice afterward. In 1994, in an effort to ensure that investors had information necessary to properly evaluate a company's corporate governance system, the Toronto Stock Exchange (TSX) established the Committee on Corporate Governance. *The Dey Report*, issued by the committee, proposed 14 guidelines on good governance practice, which in 1995 became part of the reporting requirements for all TSX-listed companies. Corporate governance in Canada has since become increasingly important. Investors, both individuals and institutions, have paid more attention than before to the possible effect of governance on a firm's financial profitability, stock-price performance and valuation. We examine company ownership and performance both before and after this regime change, which allows us to assess both the changing nature of corporate pyramids in Canada, and the impact of pyramidal structure on firm performance.

Second, 1994 is a year in which extensive use of corporate pyramids can be identified from our ownership databases. As discussed in detail later, we observe much fewer companies controlled by pyramid groups in 2003 than in 1994. This provides us some insights into how Canadian pyramid groups evolved in recent times.

Our ownership data comes from Statistics Canada's *Inter-Corporate Ownership (ICO)* and the *Financial Post Historical Reports*. The *ICO* data identify most inter-corporate equity holdings in all business groups in Canada, including control pyramids. *ICO* shows the portion of voting rights of a corporation owned or held by another corporate body or group of related individuals. We use a second source because, in some cases, the *ICO* data does not include the identity of the ultimate owner *(see endnote 3)*.

Firm-level financial data are extracted from the *Report on Business (ROB)* Database. Some of the data entries for private and crown corporations are missing. We use annual reports to correct some typos and other omissions in *ROB*.

2.2 Corporate pyramid groups in Canada, 1994

We begin with 2,144 companies that have annual financial data in the 1994 *ROB* database. The sample contains widely held companies without controlling shareholders, pyramid group firms, firms controlled by wealthy families and individuals but not through control pyramids, subsidiaries of other corporations, foreign-controlled companies, and firms without reliable ownership data. Similar to Morck *et al.* (2005) and others, we further classify pyramid group companies into three categories: family-controlled, government-controlled, and corporate-controlled, depending on the identities of their controlling owners.

We follow the methodology used by La Porta *et al.* (1999), Claessens *et al.* (2000), and Morck *et al.* (2000) in determining controlling ownership. We look at all shareholders who control at least 5% of voting equity in order to analyze both ownership rights and control rights. We choose 10% voting equity as the threshold in defining the controlling owners. For comparison purpose, we also provide the breakdown of our sample using 20% voting equity threshold, which represents "significant influence" according to *ICO* database *(see endnote 4)*.

Table 1 Panel A summarizes the incidences of firms in each ownership category, and Panel B reports the use of dual-class shares and the average ownership-to-control ratio for different category of firms *(see endnote 5)*.

Excluding foreign companies and firms without reliable ownership data, our sample in 1994 includes 1,546 firms, with 36% (549 companies) being widely held without controlling shareholders, 37% (568 firms) having controlling owners without involving pyramidal structure, and 27% (429 firms) being pyramid group firms. Among the pyramid group firms, 11% (174 firms) are controlled by wealthy individuals or families.

Divergences of ownership and control can be further enhanced when one combines pyramidal structure and dual-class shares, as superior voting classes of shares are typically held in greater proportion by controlling shareholders. Some of the biggest names in corporate Canada have dual-class structures, such as Onex Corp., Power Corp., Bombardier Inc., and Magna International. There are 130 firms employing dual-class structures, with 32 belonging to family-controlled pyramid groups (representing 29% of all family-controlled pyramid group firms).

Family-controlled pyramid group firms on average have much larger divergences of ownership and control than other types of firms, with the cash flow ownership rights to control rights ratio averaging 0.565. For firms having ultimate owners without through pyramidal structure, the average ownership-to-control ratio is 0.867, predominantly due to the use of dual-class shares. The average ratio is close to

1.000 (i.e. no divergence) for other types of companies.

[Table 1 goes here]

2.3 Evolution of pyramid groups, 1994 to 2003

There are 2,163 firms that have annual financial data in the 2003 *ROB* database. We follow the same selection procedure described previously to construct our sample in 2003. Table 2 summarizes the descriptive statistics of the 2003 sample, organized in the same fashion as the 1994 sample. We observe a noticeable shrink of pyramid groups. Among the 1,834 non-foreign firms with reliable ownership data, 41% (753 firms) are widely held without controlling shareholders, and 39% (712 firms) have stand-free controlling owners. Only 20% (369 firms) sample firms belong to pyramid groups, with firms controlled by wealthy families through complex control chains accounting for merely 6% (110 firms).

The pattern of using dual-class shares in 2003 is largely consistent with that in 1994. The only noticeable difference is, proportionately, more family-controlled pyramid firms employ both types of controlling enhancing mechanism – pyramid control chains and the dual-class shares. As a result, the average ownership-to-control ratio dropped to 0.469 for family-controlled pyramid group firms, but remained largely constant for other types of companies.

The proportion of pyramid group firms in our sample is higher than some existing Canadian studies, while lower than others. For instance, King and Santor (2008) report that on average 56% of their sample firms are widely held, and 32% are family-controlled; while Attig (2005) finds only 28% of their sample firms are widely held, and 53% are in pyramid group firms. While those studies focus only on samples of publicly traded firms, this paper investigates a much larger sample including both public and private companies.

[Table 2 goes here]

What happened to corporate Canada over the decade of 1994 to 2003? Appendix 1 briefly discusses three anecdotal examples to illustrate ownership changes that had occurred to some family-controlled pyramid groups between 1994 and 2003. Canada experienced an economic recession in the early 1990s, during which several of the country's largest corporate groups were badly damaged. The controlling families had to either liquidate almost all their assets, or to pass effective control to professional management teams. Between 1994 and 2003, Canada also observed increasing investor awareness toward good corporate governance practices. Historically, Canadian corporations were subject to segmented securities regulations and very loose governance requirements. Commencing with fiscal years ending on or after June 30, 1995, the TSX required listed firms to report on their corporate governance practices. Having been revised a few times afterward, the TSX governance guidelines have become a benchmark and standard for corporations in Canada. Though these guidelines largely focus on board efficiency, investors have also become increasingly aware of other aspects of governance, including the ownership structure. Improved corporate governance practice and Canada's robust legal environment, in turn, may have alleviated, if not eliminated, any possible expropriation of minority shareholders by whoever effectively controls a pyramid group firm *(see endnote 6)*.

2.4 Related Canadian empirical studies

There have been some studies examining concentrated corporate ownership in Canada, especially family ownership, and its impact on firm performance and valuation. The empirical results are in general mixed. For instance, Morck *et al.* (2000) find a negative relationship between firm performance and corporate control by heirs of wealthy families. Attig (2005) reports a negative association between firm's valuation and pyramid group membership, based on a sample of 478 publicly traded Canadian firms in 1997. Ben-Amar and Andre (2006) examine the value created in mergers and acquisitions and ownership structure. They do not find any negative impact of a controlling family on announcement-day abnormal returns. They argue that, though large shareholders might expropriate small shareholders through channels such as tunneling earnings, these large shareholders might also add value by providing competencies to the firm, and the monitoring role they play. The study closest to our own is King and Santor (2008), who examine the impact of family ownership on firm performance and capital structure using a sample of 613 publicly traded Canadian firms between 1998 and 2005. They find that family ownership alone does not affect firm's financial or market performance, but the *combination* of family ownership and dual-class shares leads to inferior market valuation. These studies, however, do not directly test whether tunnelling theory holds in Canada, nor do they specifically examine how the improvement of corporate ownership in Canada affects firm performance and valuation. This study aims to address these issues in more detail.

III. Hypotheses, Variables, and Model Specification

3.1 Summary of testable hypotheses

Our empirical tests focus on whether the controlling owner of a corporate pyramid group, with divergence in ownership and control, negatively or positively

affects the performance of firms he/she controls. In particular, we test the following hypotheses:

- (H1): Pyramidal structure destroys firm value: if true, one would expect pyramid group firms to under-perform companies that are not controlled by pyramid groups.
- (H2): Pyramidal structure facilitates tunneling of wealth: if true, one would expect pyramid group firms closer to the bottom of a group to under-perform firms closer to the apex of the group.
- (H3): Changes in ownership structure affect firm performance: if true, one would expect improved performance when a firm exits from its pyramid group, and distressed performance when a firm joins a pyramid group.

3.2 Description of key variables

Our dependent variables, which measure firm performance and valuation, include accounting return on assets (*ROA*), return on equity (*ROE*), and average Tobin's Q ratio (*AVQ*). ROA is defined as earnings before interest, depreciation, and amortization divided by total assets. ROE is defined as net earnings divided by total book equity. AVQ is computed as the ratio of the sum of market value of equity and book value of debt over book value of total assets, where market value is calculated as the year-end price of common equity times the year-end shares outstanding.

Consistent with existing studies on the association between corporate ownership and performance, we consider five firm-level control variables: *size, leverage, R&D, risk* and *growth*. Size is defined as the natural logarithm of total assets; leverage is defined as the ratio of long-term debt to total assets; R&D is defined as research and development expenditures divided by total assets *(see endnote 7)*; risk is defined as the sum of squared standard errors of a market model using both the Canadian and U.S. market returns (taking into account \$US/\$C exchange rates); and growth is the firm's annualized profit growth rate over the past five years. All numerical variables are winsorized at 99% and 1% tails. Industry classification is based on the TSE300 sector classification. In the statistical analysis that follows, we also include two dummy variables, *FINANCIAL* and *UTILITIES*, for heavily regulated industries.

Table 3 summarizes the mean and median values of firm-level control variables, and reports Pearson correlations among them, based on pooled data. Compared to widely held firms without controlling owners, pyramid group firms are bigger, use more debt financing, and invest less in research and development. Profit growth and firm-specific risk are comparable across different types of companies. Among pyramid group firms, those owned by governments are the largest, but family-controlled pyramid group firms are the most levered and spend the least on research and development.

[Table 3 goes here]

3.2 Model specification

To test (H1), whether pyramidal structure on average creates or destroys value, we rely on the following multiple regression framework:

$$Performance_i = \alpha_i + \delta Pyrmid + \beta_i X_i + \varepsilon_i \quad (1)$$

where variable *Pyramid* is used to indicate pyramid group membership. The binary variable equals one if a firm belongs to a pyramid group, and zero otherwise. A significant negative coefficient on *Pyramid* would indicate that pyramid group firms on average under-perform their stand-alone counterparts.

Concentrated ownership can be observed in two categories of firms: those controlled by wealthy families/individuals through pyramid groups, and those controlled by stand-free ultimate owners who do not employ pyramids. Concentrated ownership alone, however, does not necessarily lead to inferior firm performance. To disentangle concentrated (family) ownership and the use of pyramidal structure to enhance the ultimate owner's control, we repeat the regression tests with an alternative benchmark. This time, binary variable *Pyramid* equals one for family-controlled pyramid group firms, and zero for firms having ultimate owners without using corporate pyramids. A significant negative coefficient on *Pyramid* would indicate that, beyond the effect of ownership concentration, control-enhancing pyramidal structure is associated with poor firm performance and lower valuation.

To test (H2), the presence of tunnelling of wealth within pyramid groups, we first define the position of each pyramid group firm within its group, because the ultimate owner controls all companies in the group but his/her ownership stake diminishes moving down the control chain. The layer of the pyramid in which the firm is located is a rough measure. *LEV*, the first position variable, is defined as the natural logarithm of the number of tiers of the pyramid between the firm in question and the ultimate owner. Firms nearer the pyramid's apex have smaller *LEV*s, and *LEV* is zero for the apex firm of the group.

Divergences of ownership and control can be complicated by the use of super-voting shares, equity cross-holdings, and the existence of numerous private firms within corporate pyramids. The second measure of position, *RATIO*, is the ratio of percentage ownership rights to percentage control rights the ultimate owner has in each pyramid group firm he/she controls. Firms nearer the pyramid's apex have *RATIO*s closer to one, while firms nearer the pyramid's bottom have *RATIO*s closer to zero *(see endnote 8)*. This approach is used in studies such as Daniels *et al.* (1995), La Porta *et al.* (1999), Morck *et al.* (2000), Claessens *et al.* (2000), and Faccio and

Lang (2002). We then test the following pooled regression model:

$$Performance_i = \rho_i + \lambda Position + \gamma_i X_i + \mu_i \quad (2)$$

where the degree of ultimate owner's divergence between ownership and control is captured with variable *Position*. A significant negative coefficient on this variable means poor performance for firms in lower tiers of pyramids, and is consistent with the tunnelling hypothesis.

To test (H3), the impact of changes in ownership structure on firm performance, we form two sub-samples: firms that have exited from their respective pyramid group by 2003 (exit firms), and firms that were initially widely held but later acquired by pyramid groups (entry firms). We examine two cross-sectional regressions:

$$Performance_{i,2003} = \alpha_i + \phi_1 Entry + \phi_2 Entry \times Family + \theta_i X_i + \upsilon_i \quad (3.1)$$

$$Performance_{i,2003} = \alpha_i + \theta_1 Exit\phi_2 + \theta_2 Exit \times Family + \theta_i X_i + \upsilon_i \quad (3.2)$$

where binary variable *Entry* equals one for an entry firm, and zero if the company remains stand-alone; binary variable *Exit* equals one for an exit firm, and zero if a firm remains in its pyramid group; binary variable *Family* captures any additional impact of family control. If pyramidal structure harms firm performance, and if changes in ownership have material impact on firm performance, we would expect coefficient on *Entry* to be negative and significant, and coefficient on *Exit* to be positive and significant. If family-controlled pyramid group firms behave somewhat differently than other types of pyramid group firms, we would expect significant coefficients on the interaction terms.

IV. Empirical Findings

4.1 Does pyramidal structure destroy value?

We begin our empirical tests with Cochran means and non-parametric median scores of firm performance measures across different types of companies. Results are summarized in Table 4. Compared to widely held firms, companies controlled by (family) pyramid groups have significantly lower ROA, ROE and AVQ. Without considering firm-level characteristics and industry effects, pyramid group firms on average under-perform widely held firms based on both accounting returns and Tobin's Q ratio.

[Table 4 goes here]

Table 5 summarizes multiple regression results comparing family-controlled pyramid group firms and widely held independent companies *(see endnote 9)*. Model 1 is a simple stepwise ordinary least square regression; model 2 controls for heavily regulated industries; model 3 is a generalized least square model that is heteroskedasticity-consistent and takes into account industry fixed effect; model 4 is similar to model 3 but with the Heckman (1979) correction term. A firm's performance often determines its strategy, given its resources and the conditions prevailing in its industry. To address potential self-selection bias, we employ Heckman's (1979) 2-stage model, in which pyramidal structure is determined in the first stage as an endogenous choice rather than exogenous effect, and performance measures are analyzed in the second stage. We choose to include the difference between this year's firm size and last year's size as the instrumental variable, given its insignificant correlation (not reported) with firm valuation. The details of Heckman's procedure are included in Appendix 2.

Large firms are associated with lower accounting returns and market valuation, while R&D investment tends to be positively related to firm performance. Regression coefficients on *Pyramid,* the membership binary variable for family-controlled pyramids, are insignificant in all ordinary least squares models. Heckman (1979) 2-staged model offers several observations. First, we find that financial firms are more likely to have controlling owners who organize corporate pyramids, whereas fast-growing firms are less likely to belong to pyramid groups. Second, Heckman's Lambda for ROE is negative and significant, indicating firms that are more likely to belong to pyramid groups tend to yield lower return on equity. Third, we find a negative significant coefficient on *Pyramid* in the AVQ regression, but negative and insignificant coefficients in regressions of accounting returns.

[Table 5 goes here]

Table 6 presents the comparison between family-controlled pyramid group firms and firms having ultimate owners but not through pyramids. The regression coefficients on *Pyramid* are negative and marginally significant in regressions of accounting returns, but insignificant in the AVQ regression. We interpret the results as indicating that the use of control-enhancing corporate pyramids, in addition to simple concentrated ownership, harms firm's financial performance. Results in tables 5 and 6 are somewhat consistent with (H1) that, compared to stand-alone companies, (family-controlled) pyramid group firms generate lower returns and thus suffer a valuation discount.

[Table 6 goes here]

4.2 Does tunneling exist within Canadian pyramid groups?

Tunneling, or self-dealing called in Canadian securities law, means that a controlling shareholder, through the group apex firm he/she controls, diverts resources from lower-tier firms in which he/she has a

smaller equity stake. More straightforward diversion implies that resources from lower-tier firms end up being used disproportionately to generate utility for the controlling shareholders, rather than dividends for outside public investors. In terms of empirical evidence, if tunneling exists within Canadian pyramid groups, we would expect high-tier (low-tier) pyramid group firms to perform significantly better (worse) than benchmark widely held companies. Both ROA and ROE can be used to detect income shifting. If resources are tunneled from the bottom toward the apex of a pyramid group, we should observe significant inequality of these variables within the group. Thus, we form two sub-samples of family-controlled pyramid groups firms, based on their positions within their respective group. A high-tier pyramid group firm is required to have *LEV* smaller than median *LEV* (0.602), and to have *RATIO* higher than median *RATIO* (0.650). Similarly, a low-tier firm is the one with both above-median *LEV* and below-median *RATIO*.

Table 7 Panel A compares firm performance of 56 high-tier family-controlled pyramid group firms to that of 66 low-tier firms. Performance measures of widely held companies are presented as a benchmark. Regression results are reported in Table 7 Panel B. Considering the insignificant regression coefficients of some firm-level characteristics, we only control for firm size, leverage, R&D investment and fixed effects.

The performance measures of high-tier pyramid firms are uniformly higher than those of low-tier pyramid firms, with the difference in AVQ significantly different from zero. This is consistent with the shareholder-shareholder conflicts (i.e. Type II agency problem). However, high-tier pyramid firms still on average under-perform their widely held counterparts. In the regression models, *LEV* is negatively related to accounting returns and firm valuation, while *RATIO* is positively related to all performance measures. However, the regression coefficients on *LEV* and *RATIO* are significant only for Tobin's Q, indicating pyramid group firms closer to the pyramid's apex are valued higher than firms closer to the bottom of the pyramid. The insignificant empirical findings on ROA and ROE suggest that income shifting, or tunneling (H2), should not be a major concern for average investors who put money into pyramid groups.

[Table 7 goes here]

4.3 Does ownership change affect firm performance?

Comparison between tables 1 and 2 is consistent with the argument that, with the combined effect of robust legal environment and improved governance practice, the presence of corporate pyramid groups has decreased over time in Canada. The natural question we then ask is whether ownership *changes* have any material impact on firm performance. We compare firms that have exited from (family-controlled) pyramid groups against those that have stayed; and we compare firms that have entered (family-controlled) pyramid groups against those that have remained independent. Due to missing ownership information, we identify only 49 exit firms and 25 entry firms.

Table 8 summarizes our findings. The main messages are that family control seems to have some impact on firm performance in addition to ownership changes, and that disappearance of pyramidal structure improves firm's financial performance. On average, firms exited from (family-controlled) pyramid groups have returns on equity (0.038) 0.030 percentage point higher than those stayed within the groups. There is little difference in performance between firms acquired by corporate pyramids and companies that remained widely held.

[Table 8 goes here]

4.4 Alternative monitoring mechanisms: board of directors

The possibility of expropriation of minority outside shareholders by the controlling shareholders, or costs of the Type II agency problem, might be mitigated by some factors not yet covered in our analyses. These factors include overall legal environment (external monitoring) and board monitoring (internal monitoring). Regarding the legal environment, we argue that, even though companies in Quebec are under a somewhat different legal regime than the rest of Canada, a cross-sectional variation in legal environment is not likely to substantially change our results. All companies, as long as they are listed on the TSX, are subject to the same set of disclosure rules and governance guidelines. Besides, federal and provincial securities authorities have been trying to harmonize various requirements in terms of securities trading and investor protection.

With regard to the board's monitoring role, a first difficulty of controlling for this effect is, as discussed in Section 2, that Canada lacked uniform board governance practices prior to 1995. And even after TSX governance guidelines came into effect, companies still have some degree of flexibility in determining how their boards are formed and what information they disclose to outside investors. Given the apparent failure of boards in scandals such as Hollinger International (controlled by Lord Conrad Black, who formed a powerful pyramid group in Canada since the late 1970s, and later renounced his Canadian citizenship and moved to the United Kingdom), one cannot help questioning how effective board members are in monitoring the apex shareholders and top corporate executives. Nonetheless, we included the Board Composition Score, extracted from the *Global and Mail's Board Games* governance ranking (2003), as an additional

control variable for some large companies, either owned by family-controlled pyramid groups or freestanding without apex shareholders. This board variable does not seem to have material impact on our results.

V. Conclusion

A central topic in corporate governance is how firms are owned and controlled, and how competitive firms are under various ownership mechanisms. This paper attempts to develop some insights into one particular ownership structure, the corporate control pyramid, which has been used extensively throughout the twentieth century in Canada.

Both Canada and the United States have strong legal safeguards of shareholder rights, but the U.S. essentially limits severe divergences in ownership and control through listing requirements and tax policy, making it difficult to disentangle the effects of regulatory regime and control enhancing mechanisms. Canada thus offers a much better laboratory to address the issue of how control enhancing mechanisms, pyramidal structure in particular, affect minority public shareholders in a robust legal environment.

We find, in 1994, a large fraction of Canadian firms have controlling shareholders owning at least 10% of voting equities, and some of these firms (27% of the sample) are organized into control pyramid groups, through which the ultimate owners control a large amount of resources with only limited cash flow spending. The presence of control pyramids, however, has decreased somewhat dramatically in the last decade of the century. By 2003, only 20% of Canadian companies belonged by pyramid groups.

With respect to the specific hypotheses we set out to test, we find some evidence supporting (H1), that the average performance of group-affiliated firms is poorer; little evidence concerning (H2), that pyramidal ownership structure facilitates tunneling; and no significant evidence for (H3), that changes in ownership leads to changes in market valuation. In particular, compared to freestanding companies without ultimate owners, pyramid group firms, especially the ones controlled by wealthy families and individuals, have poor accounting returns and lower Tobin's Q ratio. After firm-specific characteristics and industry effects are controlled for, we still observe some negative association between family-controlled pyramidal structure and firm valuation. Within family-controlled pyramid groups, we find that firms nearer the pyramid's bottom are valued much lower than those closer to the pyramid's apex. However, we do not detect significant relationship between a pyramid group firm's position and its accounting returns, which would indicate expropriation of minority public investors by the controlling shareholders (i.e. costs of Type II agency problem). When a (family-controlled) pyramid group firm exits from the group and becomes widely held, its return on equity improves but there is little change to its market valuation; when a previously independent firm joins a (family-controlled) pyramid group, there is no change to its financial returns or valuation.

How do we interpret these empirical findings? Concentrated ownership may affect firm performance both negatively and positively. On one hand, resources, in practice, might not always be allocated efficiently among group member firms. In a control pyramid group, the ultimate owner enjoys more controlling power compared to his/her cash flow commitment in firms belonging to his/her group. Such divergence of ownership and control rights could incentivize the ultimate owner to extract private benefits of control at the expense of minority public investors. On the other hand, as argued by Stein (1997), Anderson and Reeb (2003), and Claessens *et al.* (2006), the existence of a ultimate (family) owner might benefit group member firms because of reduced manager-shareholder conflicts, uses of internal capital markets and risk sharing among member firms, and the long-term perspective of the ultimate owners.

In countries with weak legal safeguards of investor rights and loose governance practice, such as those in East Asia, the issue of expropriation of minority public investors might be of primary concern of control pyramids. Corporate Canada also features concentrated ownership and pyramidal structure. Our empirical results indicate, however, only limited negative impact of control pyramidal structure on firm performance and valuation.

We argue this is related to the robust investment environment of the country. Canada, like the United States, has probably the best securities regulation and enforcement in the world; Canada scores high in global shareholder rights ratings (e.g. GMI Corporate Governance Score); it also enjoys a relatively low level of corruption (e.g., Transparency International). All of these factors may have played a role in explaining why corporate Canada, with many corporations controlled by pyramids, does not suffer much to the Type II agency costs discussed in other countries with similar organizational structures.

Our study examines how corporate pyramid groups evolved in Canada over the ten-year period of 1994 to 2003, and whether pyramidal structure imposes significant agency costs on minority shareholders who own but do not control firms they invest in. We, however, do not attempt to measure what common factors drive changes in corporate ownership structure. In fact, as indicated in our anecdotal examples, different groups evolve due to different reasons, either internal such as strategic refocus or external such as adverse macro economic conditions. Our study is also limited to a specific country and time period, and it may not be generalizable to other contexts.

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Endnotes

[1] Some recent studies challenge the notion of diffused ownership even for the United States and UK. For instance, Anderson and Reeb (2003) argue that about one third of S&P500 companies can be classified as "family-controlled" firms. They define a firm to be family controlled "when founding families hold shares in the firm or when founding family members are present on the board of directors." This definition is somewhat less restricted than the definition of family control based solely on ownership of voting stocks.

[2] The United States, according to Becht and DeLong (2004), had pyramid groups historically.

[3] We thank Michael King at the Bank of Canada for helping identify some inaccuracy problems with *ICO*. For example, Magna International is defined by *ICO* as an independent widely held firm. However, the company's founding chairman, Mr. Stronach, controls about 70% of voting interests in Magna through a trust. We re-classify Magna International as a company controlled by a wealthy family.

[4] Some empirical papers concerning ownership structure in Canada, such as King and Santors (2008), use 20% equity cutoff. Our main regression analyses are based on 10% threshold. As a robustness check,

we also repeat all tests using 20% voting equity threshold, and the results are mostly qualitatively consistent with those reported in the paper.

[5] Different mechanisms, including stock pyramids, cross-ownership, and dual-class shares, can be used to achieve the separation of control rights from ownership rights, as argued by papers such as Bebchuk *et al.* (2000). In Canada, the latter two mechanisms are utilized within the control pyramids, and dual-class shares can also be found in family-controlled group that not necessarily use pyramidal structure.

[6] In explaining the evolution of business groups in Canada, some scholars have emphasized the importance of pressure from domestic competition and the need for protection against foreign competition (e.g. Bliss 1987), others have argued for a tax regime with respect to inter-company dividends and inheritance tax, and pyramid groups' ability to better position to lobby the government (e.g. Morck and Yeung 2005). Since the last decade of the twentieth century, we observe increased integration of international capital markets and trades. The Canadian government has also relaxed its restrictions on foreign ownership and investments in Canada. Some of the legendary Canadian business families have gradually shifted away from Canada to the United States or other countries, attempting to better position themselves in the new global economy. We do not observe significant changes in the Canadian tax system between 1994 and 2003. We thus argue that these two factors, competition and corporate tax, are not likely to be the driving force behind the diminishing trend of corporate pyramid groups in Canada.

[7] Many companies do not report R&D separately. R&D is set to be zero in such cases.

[8] *RATIO* is calculated as follows. First, we define ownership rights as the fraction of the firm's cash flow to which the controlling owner is entitled. This is the sum of any direct ownership by the controlling owner himself or herself, by firms fully owned by the controlling owner, and through firms controlled by him/her via the control pyramid. The last is the product of the fractional equity stakes that connect the firm to the controlling owner of the pyramid. If several chains of inter-corporate equity holdings connect the firm to the controlling owner, these are combined. Second, for each firm, we define control rights as the fraction of votes the ultimate controlling owner casts in the firm's shareholder meetings. This is the sum of his/her direct voting rights and indirect voting rights in the firm, which is defined as the minimum votes along the combination of all control chains.

[9] Because pyramid group firms controlled by government agencies and other corporations tend to behavior similarly to widely held companies in terms of ownership concentration (e.g., there is little divergence of ownership and control rights), we focus on family-controlled pyramid group firms. We have also compared widely held companies to all pyramid groups firms, and the results (not reported here) are qualitatively the same as but weaker than those presented in Table 5.

Appendix 1. Evolution of (family-controlled) Pyramid Groups between 1994 and 2003

Example 1: Edward & Peter Bronfman (Edper) Group and Brascan

The once-almighty Edper Bronfman family group gradually faded in corporate Canada after the economic recession of 1992-93. Even prior to the recession, the Edper group was already in serious trouble, partly due to the high level of debt accumulated during the group's rapid expansion between the late 1970s and 1980s. After the recession, Edward Bronfman decided to pass on the control of the group to the Limited Partnership, comprised primarily of the senior management team, so that he could spend more time in philanthropic activities, which had been his great passion for many years. The Limited Partnership owned roughly 17% of voting equity in Brascan Corporation, the first-tier public company of Edper group in 2003. Brascan, directly and indirectly, owned more than 20% of equity in firms including Brascan Financial, Noranda Inc., Brookfield Properties Corp., and Nexfor Inc. At the 10% voting-equity cutoff we chose, Brascan is considered a company within a pyramid group with a wealthy family (i.e. Bronfman family) as apex shareholder. If, however, we increase the threshold to 20%, Brascan is considered widely held but with the Partnership as its largest shareholder.

Example 2: Reichmann Family and Abitibi-Price

The company ran into serious trouble during the 1992-93 recession, and partly caused by a miserable failure in its UK Canary Wharf investment. In 1992, Olympia and York collapsed under approximately $20 billion in debt. The Reichmann family had to liquidate its controlling stakes in almost all of its companies, including Abitibi-Price, and Gulf Canada. Firms associated with Reichmann family were thus pyramid group firms in 1994 but no longer so in 2003.

Example 3: Thomson Group and Hudson's Bay

The Thomson family, through its publicly traded Thomson Corp. and private investment arm Woodbridge Co., acquired 75% of the Hudson's Bay Company (HBC), Canada's oldest public company, in the late 1970s. HBC, which then had diverse investments in oil and gas, financial services, and a distillery, was transformed into a more focused operation. In 1992 the Thomson group reduced its interest in HBC to 25% then, in 1997, the family finally reduced its remaining 21% of ownership in HBC through a secondary equity offering. The

Thomson family remained focused on its media business and gradually moved into providing specialized information on legal, investment, and medicine through electronic formats. Hudson's Bay is therefore treated as a pyramid group firm in 1994, but widely held in 2003.

Appendix 2. Heckman 2-stage Self-Selection Model

A firm's performance often determines its strategy, given its resources and the conditions prevailing in its industry. In particular, a firm that performs poorly in the past may choose to join a business group. The apex shareholder of the group may then place the firm at a particular place within his/her control pyramid. Simple OLS regressions do not correct for this self-selection bias. To address this issue, we employ Heckman's (1979) 2-stage model.

In this model, pyramid group ownership is first determined as an endogenous choice rather than exogenous effect, and performance measures are analyzed in the second stage. *Lambda*, the Heckman correction term, is introduced to control for the effect of sample-selection bias induced by the decision to make the firm a member of a pyramid group.

The first-stage model estimates the probability that a firm joins a pyramid group. An important issue in Heckman's technique is the choice of instruments in the selection equation and the performance equation. Many researchers suggest that the ideal instruments should be exogenous characteristics that affect selection but are not closely related to the specific firm's valuation (e.g., Greene, 1997). The firm-level variables in the system, such as financial leverage and historical growth rates, are likely to affect its performance. We choose to include the difference between this year's firm size and last year's size as the instrumental variable, given its insignificant correlation (not reported) with firm valuation.

The *initial Performance* regression is:

$$Y_i = \alpha + \beta' X_i + \delta O(Pyramid)_i + \varepsilon_i \quad \text{(A.1)}$$

where X_i is a set of exogenous firm-level variables; O_i is a dummy variable that equals one for pyramid group firms and zero otherwise; $\{\alpha, \beta, \delta\}$ is a vector of parameters to be estimated; and ε_i is an error term. The estimated parameter δ measures the relation between becoming a pyramid group member and firm performance, but since the pyramid firm's decision to join might depend on past performance, O_i and ε_i are not independent, and δ may be biased. I assume that the decision about a firm's *Joining* a pyramid is determined as:

$$O_i^* = \gamma' Z_i + \eta_i$$
$$O_i = 1 \ \ if \ \ O_i^* \geq 0$$
$$O_i = 0 \ \ if \ \ O_i^* < 0 \quad \text{(A.2)}$$

where O_i^* is an unobserved latent variable; Z_i is a set of variables that affect the decision; and η_i is an error term. Assuming that the two error terms, $\{\varepsilon_i, \eta_i\}$, are bivariate normally distributed with means zero, standard deviations σ_ε and σ_η, and correlation ρ, the expected performance measure of a firm that joins a pyramid group and of the firm that does not become:

$$E[Y_i \mid O_i = 1] = \alpha + \beta' X_i + \delta + \rho\sigma_\varepsilon \lambda_{1i}(\gamma' Z_i)$$
$$E[Y_i \mid O_i = 0] = \alpha + \beta' X_i + \rho\sigma_\varepsilon \lambda_{2i}(\gamma' Z_i)$$

where $\lambda_{1i}(\gamma' Z_i)$ is the Inverse Mills' Ratio and is computed as $\phi(\gamma' Z_i) \big/ \psi(\gamma' Z_i)$, and $\lambda_{2i}(\gamma' Z_i)$ is computed as $-\phi(\gamma' Z_i) \big/ [1 - \psi(\gamma' Z_i)]$.

The first step of the Heckman (1979) procedure is to obtain estimates of γ using a Probit model. The variables include firm-level variables discussed in Section 2.3.3. These consistent estimates can then be used to compute values for λ_{1i} and λ_{2i}. The second step estimates performance using an OLS framework, but with an extra variable, Heckman's lambda (λ_i), computed as $\lambda_{1i}(\gamma' Z_i) L_i + \lambda_{2i}(\gamma' Z_i)(1 - L_i)$, to correct for self-selection.

The *corrected Performance* equation now becomes:

$$Y_i = \alpha + \beta' X_i + \delta O_i + \delta_\lambda \lambda_i + \varepsilon_i$$

where the new parameter, δ_λ, is related to the correlation between the error terms in equations (A.1) and (A.2).

Figure 1. Ownership Structure: United States vs. Canada, 1994

Figure 1 illustrates the difference in ownership structure between an archetypical U.S. firm and an archetypical Canadian firm.

A. The Ownership Structure of a Typical Large US Firm

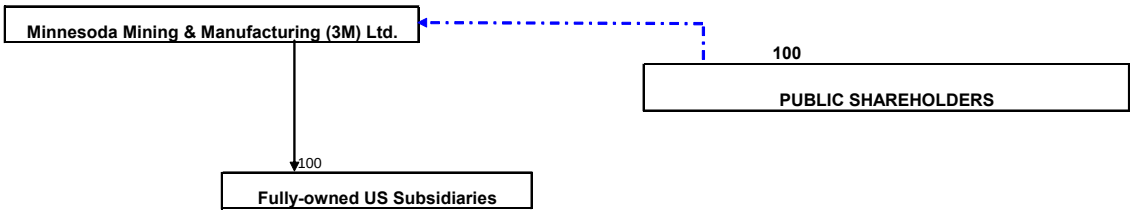

FIGURE B IS PART OF THE PYRAMIDAL STRUCTURE OF EDPER BRONFMAN GROUP.
The number attached to each firm represents the percentage ownership rights (O) and control rights ©. held by its upper-level company.

B. The Ownership Structure of a Typical Large Canadian Pyramidal Firm

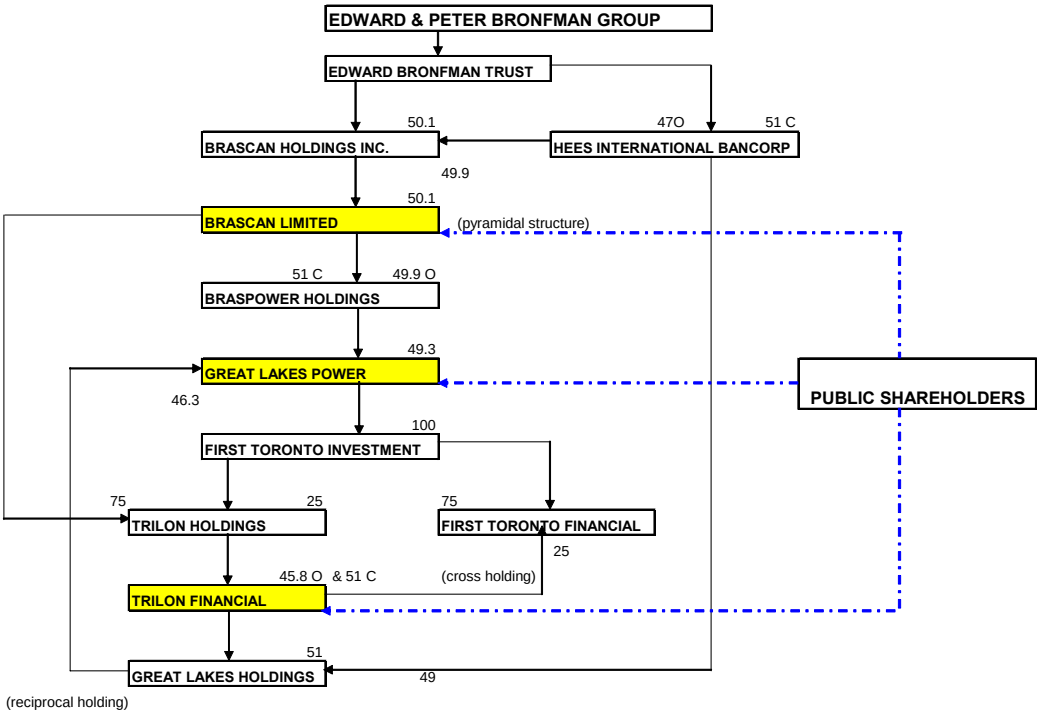

Table 1. Sample Selection Procedure and Distribution, 1994 Sample

Note: this table summarizes our 1994 sample, based on the *Report on Business* (*ROB*) database. The initial full sample contains 2,144 companies that have financial records in the *ROB*. Ownership and control data are collected mainly from Statistics Canada *Inter-Corporate Ownership Directory (ICO),* and *Financial Post Survey of Industries*. Panel A displays sample selection criteria, and the number of companies in each ownership category. Panel B reports the incidences of single-class stocks, dual-class stocks, and also presents the divergence of ownership and control rights for sample firms. Ownership-to-control ratio is defined as the percentage of ownership rights the controlling owner has in each firm divided by the control rights he/she has in that firm.

Panel A: Sample Selection and Distribution, 1994

	10% cutoff		20% cutoff	
Selection criteria	**Number**	**Percentage**	**Number**	**Percentage**
Full Sample -- All firms in ROB 1994	**2144**	**100%**	**2144**	**100%**
Firms without ownership data	**226**	**11%**	**226**	**11%**
Firms controlled by foreign investors	**372**	**17%**	**351**	**16%**
Firms in the sample	**1546**	**72.1%**	**1567**	**73.1%**
	10% cutoff		**20% cutoff**	
Analysis of the sample	**Number**	**Percentage**	**Number**	**Percentage**
Firms in the sample	**1546**	**100%**	**1567**	**100%**
Widely held firms without controlling owners	**549**	**36%**	**740**	**47%**
Firms with controlling shareholders				
Firms controlled by stand-free controlling owners	**568**	**37%**	**440**	**28%**
Firms controlled by ultimate controlling owners through pyramids	**429**	**27%**	**387**	**25%**
Firms controlled by wealthy families or individuals	174	11%	154	10%
Firms controlled by corporations or institutions	187	12%	168	11%
Firms controlled by government agencies	68	4%	65	4%

Panel B: Sample Distribution Based on Stock Classes, 1994

10% cutoff	**Single class stocks**	**Voting vs. Non-voting stocks**	**Multiple vs. Subordinate voting stocks**	**Other Types**	**Ownership-to-control Ratio**	**Total**
Widely held firms without controlling owners	**490**	**1**	**3**	**55**	**1.000**	**549**
Firms controlled by stand-free controlling owners	**428**	**32**	**54**	**54**	**0.867**	**568**
Pyramid firms controlled by wealthy families or individuals	**110**	**17**	**15**	**32**	**0.565**	**174**
Pyramid firms controlled corporations or institutions	**126**	**6**	**2**	**53**	**0.955**	**187**
Pyramid firms controlled by government agencies	**58**	**0**	**0**	**10**	**0.982**	**68**
total	**1212**	**56**	**74**	**204**	**0.896**	**1546**

Table 2. Sample Selection Procedure and Distribution, 2003 Sample

Note: this table summarizes our 2003 sample, based on the *Report on Business* (*ROB*) database. The initial full sample contains 2,163 companies that have financial records in the *ROB*. Ownership and control data are collected mainly from Statistics Canada *Inter-Corporate Ownership Directory (ICO),* and *Financial Post Survey of Industries*. Panel A displays sample selection criteria, and the number of companies in each ownership category. Panel B reports the incidences of single-class stocks, dual-class stocks, and also presents the divergence of ownership and control rights for sample firms. Ownership-to-control ratio is defined as the percentage of ownership rights the controlling owner has in each firm divided by the control rights he/she has in that firm.

Panel A: Sample Selection and Distribution, 2003

	10% cutoff		20% cutoff	
Selection criteria	**Number**	**Percentage**	**Number**	**Percentage**
Full Sample -- All firms in ROB 1994	**2163**	**100%**	**2163**	**100%**
Firms without ownership data	**126**	**6%**	**126**	**6%**
Firms controlled by foreign investors	**203**	**9%**	**203**	**9%**
Firms in the sample	**1834**	**85.5%**	**1834**	**85.5%**
	10% cutoff		**20% cutoff**	
Analysis of the sample	**Number**	**Percentage**	**Number**	**Percentage**
Firms in the sample	**1834**	**100%**	**1848**	**100%**
Widely held firms without controlling owners	**753**	**41%**	**1092**	**59%**
Firms with controlling shareholders				
Firms controlled by stand-free controlling owners	**712**	**39%**	**459**	**25%**
Firms controlled by ultimate controlling owners through pyramids	**369**	**20%**	**297**	**16%**
Firms controlled by wealthy families or individuals	110	6%	85	5%
Firms controlled by corporations or institutions	206	11%	165	8%
Firms controlled by government agencies	53	3%	47	3%

Panel B: Sample Distribution Based on Stock Classes, 2003

@ 10% cutoff	**Single class stocks**	**Voting vs. Non-voting stocks**	**Multiple vs. Subordinate voting stocks**	**Other Types**	**Ownership-to-control Ratio**	**Total**
Widely held firms without controlling owners	**701**	**1**	**1**	**50**	**1.000**	**753**
Firms controlled by stand-free controlling owners	**573**	**33**	**54**	**52**	**0.873**	**712**
Pyramid firms controlled by wealthy families or individuals	**59**	**17**	**11**	**23**	**0.469**	**110**
Pyramid firms controlled corporations or institutions	**123**	**6**	**8**	**69**	**0.921**	**206**
Pyramid firms controlled by government agencies	**44**	**0**	**0**	**9**	**0.983**	**53**
total	**1500**	**57**	**74**	**203**	**0.909**	**1834**

Table 3. Summary Statistics of Key Variables by Types of Company

Note: this table summarizes the key firm-level variables, and their correlation with each other, using pooled sample. Panel A reports mean and median values of these variables, and Panel B outlines the Pearson correlation matrix. All financial data are collected from the *Report on Business (ROB)* database. The number of companies for each type may be smaller than the total number of companies belonging to that type due to missing values. The key firm-level control variables are Size, Leverage, R&D, Risk and Growth Rate. Size is defined as the logarithm of total assets; Leverage is defined as the ratio of long-term debt to total assets; R&D is defined as research and development expenditures divided by total assets; Risk is defined as the sum of squared standard error of the market model (taking into account $US/$C exchange rates) estimates; and Growth Rate is the firm's annualized growth rate of profits over the past five years. All variables are winsorized at 99% and 1% level.

Panel A **Summary Statistics of Firm-level Variables**

		MEAN				
Category	OBS	*Size*	*Leverage*	*R&D*	*Risk*	*Growth*
Widely held firms without controlling owners	1229	7.34	0.14	2.34	0.08	5.89
Firms controlled by stand-free controlling owners	777	7.29	0.17	1.28	0.08	6.04
Firms controlled by pyramid groups						
Wealthy Families or Individuals	168	9.33	0.31	0.36	0.07	5.41
Government Agencies	88	9.64	0.28	1.05	0.06	6.85
Corporations and Insitutions	329	8.27	0.18	1.17	0.08	3.41
Total / Overall Average	2591	8.38	0.22	1.24	0.08	5.52
		MEDIAN				
Category	OBS	*Size*	*Leverage*	*R&D*	*Risk*	*Growth*
Widely held firms without controlling owners	1229	7.72	0.16	0.05	0.07	0.61
Firms controlled by stand-free controlling owners	777	7.40	0.26	0.00	0.07	1.61
Firms controlled by pyramid groups						
Wealthy Families or Individuals	168	9.76	0.28	0.00	0.06	1.27
Government Agencies	88	10.10	0.27	0.00	0.06	2.01
Corporations and Insitutions	329	8.38	0.23	0.00	0.06	1.02
Total / Overall Average	2591	8.67	0.24	0.01	0.06	1.30

Panel B **Pearson Correlation Matrix**

	Size	Leverage	R&D	Growth	Risk
Size	1.000	0.237	-0.052	0.188	-0.122
Leverage		1.000	-0.104	0.060	-0.088
R&D			1.000	0.031	0.042
Growth				1.000	0.009
Risk					1.000

Table 4. Mean and Median Scores of Firm Performance Measures

Note: This table describes mean values and median scores of various performance measures across different types of firms. Return on Asset (ROA) is defined as income before depreciations, interests and taxes over total assets; Return on Equity (ROE) is defined as net income divided by book value equity; Tobin's Q (AVQ) is approximated as the sum of the market value of stocks and book value of debt divided by total assets. Membership in family-controlled pyramid groups is determined using 10% voting equity threshold. All variables are winsorized at 99% and 1% level.

All Pyramid Firms vs. Widely Held Firms	OBS	Mean	Median Scores	Maximum	Mininum
Return on Asset (ROA)					
Widely held firms	1229	0.21	0.53	0.98	-0.05
Pyramid firms	585	0.15	0.49	0.84	-0.03
Difference		**0.06**	**0.04**	0.14	-0.01
t-stat / z-stat		2.71	2.16		
Return on Equity (ROE)					
Widely held firms		0.18	0.53	1.86	-0.65
Pyramid firms		0.12	0.49	1.84	-0.53
Difference		**0.06**	**0.04**	0.02	-0.12
t-stat / z-stat		3.03	2.16		
Average Q Ratio (AVQ)					
Widely held firms		2.10	0.53	9.99	0.33
Pyramid firms		1.87	0.43	9.25	0.09
Difference		0.23	**0.09**	0.74	0.24
t-stat / z-stat		1.50	2.59		

Family-controlled Pyramid Firms vs. Widely Held Firms	OBS	Mean	Median Scores	Maximum	Mininum
Return on Asset (ROA)					
Widely held firms	1229	0.21	0.53	0.98	-0.05
Family pyramid firms	168	0.11	0.44	0.53	-0.01
Difference		**0.10**	**0.09**	0.44	-0.04
t-stat / z-stat		3.24	4.21		
Return on Equity (ROE)					
Widely held firms		0.18	0.54	1.86	-0.65
Family pyramid firms		0.09	0.45	1.73	-0.50
Difference		**0.09**	**0.09**	0.13	-0.15
t-stat / z-stat		3.91	3.89		
Average Q Ratio (AVQ)					
Widely held firms		2.10	0.53	9.99	0.33
Family pyramid firms		1.44	0.45	5.95	0.12
Difference		**0.66**	**0.08**	4.03	0.21
t-stat / z-stat		2.17	2.00		

Table 5. The Effect of Membership in Pyramid Groups on Firm Performance

Note: this table reports multiple regression results of membership in pyramid groups on firm performance, after controlling for firm-specific characteristics (Size, Leverage, R&D, Risk and Growth Rate) and fixed effects. Dummy variable *Pyramid* equals one if a firm belongs to a family-controlled pyramid group, and zero if the company is widely held without controlling owner. Model 1 is stepwise OLS regression; model 2 includes two industry dummy variables – Financial and Utilities – to control for heavily regulated sectors; model 3 is the generalized linear model that is heteroskedasticity-consistent and takes into account industry fixed effect, Model 4 is Heckman (1979) model that controls for self-selection bias. The 1st-stage Probit regressions estimate the probability that a firm joins a pyramid group, and the 2nd-stage regression estimates the performance impact of pyramidal structure. Chi-squared and t-statistics are reported below coefficients. The Instrumental Variable for the Heckman (1979) model, IV, is defined as the difference between this year's firm size and last year's firm size.

Family-controlled Pyramid Group Firms vs. Widely Held Companies without Controlling Shareholders	ROA					ROE					AVQ				
	model (1)	model (2)	model (3)	model (4)	1st-stage Probit: Ownership	model (1)	model (2)	model (3)	model (4)	1st-stage Probit: Ownership	model (1)	model (2)	model (3)	model (4)	1st-stage Probit: Ownership
Constant	**0.163**	**0.179**	**0.180**	**0.170**	**-3.619**	0.128	**0.155**	0.122	0.098	**-3.882**	**0.788**	**0.628**	**0.821**	**1.346**	**-0.963**
	3.88	4.62	4.33	4.40	52.32	1.65	2.41	1.48	0.79	27.68	4.65	3.22	5.26	9.59	15.53
Pyramid (family-controlled)		-0.047	-0.050	-0.067			-0.037	-0.026	-0.035			-0.384	-0.927	**-1.227**	
		-1.33	-1.66	-1.34			-0.84	-0.92	-1.24			-1.57	-1.83	-3.23	
Lambda / Instrument				-0.061	-0.116				**-0.196**	**-0.330**				0.221	**-0.177**
				-0.37	1.91				-3.05	3.04				0.09	2.88
Size	**-0.048**	**-0.049**	**-0.049**	**-0.027**		**-0.061**	**-0.108**	**-0.066**	-0.032		**-0.124**	**-0.220**	**-0.128**	**-0.136**	
	-3.57	-4.11	-3.09	-2.20		-4.66	-5.44	-4.31	-1.70		-3.00	-4.86	-3.29	-5.33	
Leverage	**0.251**	**0.216**	**0.155**	**0.100**		0.097	0.099	0.105	0.068			-0.044	-0.093	-0.077	
	3.09	3.39	3.22	2.13		1.25	1.03	1.65	0.83			-0.31	-0.61	-0.54	
R&D	**0.069**	**0.069**	**0.066**	**0.076**		**0.103**	**0.109**	0.099	0.065		**0.101**	**0.095**	**0.092**	0.066	
	2.02	2.11	1.99	2.90		2.33	2.87	1.87	1.09		3.06	2.40	2.17	1.60	
Risk		0.033	0.051	0.023			-0.001	-0.050	-0.004			-0.554	-0.663	**-1.492**	
		0.20	0.32	0.28			-0.02	-0.25	-0.05			-1.41	-1.66	-4.31	
Growth		0.037	0.020		**-0.100**		0.022	-0.001		0.010		-0.008	-0.002		-0.053
		1.59	1.25		2.14		1.40	-0.26		0.08		-1.11	-0.33		1.76
Financial		-0.036			**0.124**		-0.009			**0.101**		0.971			**0.219**
		-0.32			5.99		-0.06			4.89		1.14			5.55
Utility		0.070			**0.120**		0.110			0.078		0.344			0.077
		0.09			4.47		0.59			1.83		0.46			1.11
Fixed Effect	NO	NO	YES	YES		NO	NO	YES	YES		NO	NO	YES	YES	
OBS	1362	1362	1362	1362		1362	1362	1362	1362		1362	1362	1362	1362	
Adjusted R2	**0.287**	**0.233**	**0.237**	**0.231**		**0.172**	**0.178**	**0.153**	**0.149**		**0.232**	**0.212**	**0.237**	**0.393**	

Table 6. Concentrated Ownership vs. Pyramidal structure

Note: this table reports multiple regression results of membership of pyramid groups on firm performance, after controlling for firm-specific characteristics (Size, Leverage, R&D, Risk and Growth Rate) and fixed effects. Dummy variable *Pyramid* equals one if a firm belongs to a family-controlled pyramid group, and zero if the company has a controlling owner who does not employ pyramidal structure. Model 1 is stepwise OLS regression; model 2 is the generalized linear model that is heteroskedasticity-consistent and takes into account industry fixed effect, and Model 3 is Heckman (1979) model that controls for self-selection bias.

Family-controlled Pyramid Group Firms vs. Firms with Stand-free Ultimate Owners

	ROA				ROE				AVQ			
	model (1)	model (2)	model (3)	1st-stage Probit: Ownership	model (1)	model (2)	model (3)	1st-stage Probit: Ownership	model (1)	model (2)	model (3)	1st-stage Probit: Ownership
Constant	**0.156**	**0.175**	**0.170**	**-2.818**	0.104	0.102	0.087	**-3.318**	**0.822**	**0.901**	**0.946**	**-1.263**
	2.69	3.88	3.21	33.80	1.65	1.48	0.67	31.37	5.22	6.71	6.90	22.75
Pyramid (family-controlled)		-0.049	-0.087			-0.010	-0.054			-0.327	-0.633	
		-1.27	-1.93			-0.30	-1.89			-0.79	-1.62	
Lambda / Instrument			-0.004	0.210			-0.136	**-0.399**			0.220	**-0.247**
			-0.05	1.09			-1.18	3.98			0.09	3.99
Size	**-0.043**	**-0.040**	**-0.017**		**-0.051**	**-0.057**	-0.021		0.064	**0.128**	0.103	
	-2.90	-2.68	-1.47		-3.40	-4.22	-1.24		1.28	2.29	1.65	
Leverage	0.151	**0.196**	0.008		0.094	0.149	0.083			-0.083	-0.066	
	1.88	2.37	0.48		1.44	1.97	1.23			-0.50	-0.35	
R&D	0.059	0.046	**0.080**		**0.114**	0.095	**0.085**		**0.100**	**0.093**	**0.095**	
	1.80	1.41	2.93		2.65	1.67	3.31		2.85	2.30	2.31	
Risk		0.050	0.024			0.052	0.008			-0.363	**-1.219**	
		0.37	0.28			0.25	0.07			-0.96	-3.75	
Growth		0.020		0.011		0.022		**0.113**		0.009		0.013
		1.19		0.73		1.38		2.82		0.73		0.75
Financial				**0.101**				**0.089**				**0.280**
				3.87				3.03				8.91
Utility				0.087				**0.158**				0.107
				1.79				5.21				1.43
Fixed Effect	NO	YES	YES		NO	YES	YES		NO	YES	YES	
OBS	1987	1987	1987		1987	1987	1987		1987	1987	1987	
Adjusted R2	**0.199**	**0.219**	**0.225**		**0.184**	**0.145**	**0.172**		**0.313**	**0.368**	**0.337**	

Table 7. The Effect of Position within Pyramid Groups on Firm Performance

Note: this table summarizes the impact of position of a pyramid group firm on its performance. Panel A presents t-test results of firm performance between high-tier and low-tier family-controlled pyramid group firms. The division is based on both LEV and RATIO. LEV is defined as the natural logarithm of a pyramid firm's position on the control chain, and RATIO is defined as the percentage ownership rights of the controlling shareholder in a pyramid firm divided by his/her control rights in the firm. High-tier firms are those with below-median LEV (0.602) and above-median RATIO (0.650), and low-tier firms are those with above-median LEV and below-median RATIO. All numerical variables are defined as previously.

Panel A: Comparison of Firm Performance

	OBS	ROA	ROE	AVQ
High-tier pyramid group firms	56	0.118	0.096	1.654
Low-tier pyramid group firms	66	0.103	0.085	1.258
Difference in Performance		0.015	0.011	**0.396**
T-value		0.79	1.02	2.10
Widely-held Firms	1229	0.210	0.180	2.100

Panel B: Position and Performance of Family-Controlled Pyramid Group Firms

	ROA	ROE	AVQ		ROA	ROE	AVQ
LEV	-0.070	-0.080	**-0.499**	**RATIO**	0.087	0.098	0.355
	-0.82	-0.24	-2.33		0.99	0.37	1.90
Size	**-0.024**	**-0.039**	-0.050	**Size**	**-0.023**	0.014	-0.107
	-2.46	-2.65	-0.78		-2.13	0.95	-1.06
Leverage	0.091	0.029	**-0.391**	**Leverage**	0.085	0.010	0.026
	1.93	0.44	-4.18		1.77	0.39	0.64
R&D	**0.045**	0.064	0.069	**R&D**	**0.070**	**0.086**	0.049
	2.02	1.73	0.53		4.43	2.72	0.53
OBS	122	122	122	OBS	122	122	122
R2	**0.217**	**0.098**	**0.198**	**R2**	**0.237**	**0.171**	**0.113**

Table 8. The Effect of Changes in Ownership on Firm Performance

Note: this table reports the cross-sectional regression results concerning the impact of ownership changes on firm performance, using a threshold of 10% voting equity. Binary variable Entry equals one for a pyramid group firm in 2003 that was initially widely held, and zero if the company remains stand-alone; binary variable Exit equals one for a firm that has exited from a pyramid group, and zero if the firm remains in its pyramid group; binary variable Family equals one for family-controlled pyramid group firms, zero otherwise. All numerical variables are as described previously.

Changes in Ownership and Firm Performance

	ROA	ROE	AVQ		ROA	ROE	AVQ
Constant	**0.161**	**0.112**	**1.303**	**Constant**	**0.221**	**0.197**	**1.972**
	4.22	3.33	5.35		6.63	4.82	12.44
Exit	0.060	**0.030**	-0.469	**Entry**	-0.042	-0.013	0.055
	1.17	2.27	-1.79		-0.61	-0.29	0.07
Exit * Family	0.010	0.008	0.033	**Entry * Family**	0.009	-0.019	-0.063
	0.69	0.77	0.23		0.92	-1.12	-0.42
Size	**-0.021**	**-0.029**	0.051	**Size**	-0.020	-0.013	0.127
	-2.13	-2.57	0.78		-1.89	-1.30	1.19
Leverage	-0.097	0.033	-0.139	**Leverage**	-0.086	0.020	-0.126
	-1.95	0.50	-1.52		-1.77	0.44	-1.63
R&D	0.035	**0.084**	0.072	**R&D**	**0.062**	**0.077**	0.059
	1.68	2.24	0.66		3.81	1.99	0.59
OBS	385	385	385	OBS	471	471	471
R2	**0.167**	**0.128**	**0.105**	**R2**	**0.311**	**0.173**	**0.211**

THE RELATIONSHIP BETWEEN CORPORATE GOVERNANCE AND FIRM PERFORMANCE REVISITED: WHERE DO WE STAND?

***Stefan Hilger* ***

Abstract

How is corporate governance measured, and what is the relationship between corporate governance mechanisms and corporate performance? This paper aims to shed light on these questions by providing an overview of the most important research findings in this area with a focus on the USA and Germany. My analysis gives rise to the following remarks. First, studies examining the impact of singles governance mechanisms are inconclusive and mixed in their findings, and especially the question of causality is still unanswered. Second, when a holistic approach is used, the proposition that good corporate governance enhances long-term performance is supported. However, corporate governance practices alone cannot assure long-term corporate performance and good standards of corporate governance are no substitute for the solidity of business models.

Keywords: corporate governance, corporate performance, ownership structure, board composition, takeover defenses, information disclosure

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1. Introduction

There is a widespread belief among investors that good corporate governance leads to superior corporate performance (Young, 2003). This belief is confirmed by opinion-based research, such as the Global Investor Opinion Survey published by McKinsey & Company in 2002. Undertaken in cooperation with the Global Corporate Governance Forum, this survey gathered responses from over 200 institutional investors about their specific investment intentions. As a result, it may be stated that for the majority of the institutional investors, corporate governance is of great concern. When evaluating an investment, three quarters of institutional investors consider corporate governance practices more or equally important than actual profit performance or growth potential of companies. In addition, about 80 % of them are willing to pay a premium for the shares of well-governed companies (Coombes & Watson, 2002).

Due to recent accounting scandals at prominent companies in the USA and Europe (e.g., Enron, WorldCom, Parmalat) and also as an outcome of the current financial and economic crisis, good corporate governance nowadays can be regarded as a means to restore trust. In addition to this, privatizations, pension fund reforms, the growth of private savings, and takeover waves led to an increased importance of corporate governance practices for the valuation of companies (El Mir & Seboui, 2006; Murphy & Topyan, 2005). A variety of empirical studies exist about the relationship between corporate governance and a firm's performance which have been mixed and inconclusive in their findings (Ho, 2005). Using a diversity of approaches, most of the studies examined the impact of different factors of corporate governance. Furthermore, diverse indicators were used to define a company's performance. While many studies found a significant positive influence of corporate governance practices on performance, there are no uniform answers to this question. Some studies even came to the result of a non-relationship, so that it may also be argued that the value of governance procedures has only been established due to an increased confidence in those procedures (Patterson, 2001).

The objective of this paper is to provide an overview of the most important research findings about the influence of corporate governance on corporate performance. Therefore, I compare existing empirical studies, highlight common results and deviations, and thus aim to identify the most important mechanisms of corporate governance. Since studies vary for different systems of corporate governance in different countries, I focus in this paper on the USA and Germany. These two countries represent two successful market economies with two main systems of corporate governance: the Anglo-Saxon market-oriented system and the long-term investor system (Murphy & Topyan, 2005). The fact that the two systems are both very successful but also very different raises the question, whether only a few common aspects of corporate governance have a significant influence on performance and not the whole system in detail.

The further structure of the paper is as follows. First, I explain the origin and development of the concept of corporate governance and the two different systems of corporate governance, namely the Anglo-Saxon and the German system. Thereafter, I present and analyze major studies examining the impact of different factors of corporate governance on firm performance. Next, I describe and discuss studies using a holistic approach and conclude by summarizing and evaluating the major research findings. I also sketch out implications for companies and investors from my findings.

2. The Concept of Corporate Governance

2.1. Agency Problems and the Development of Corporate Governance

The question of how corporations should be governed is not new. Even though it is a popular topic in current press releases and academic studies due to diverse changes in corporate law and regulation over last years, there have always been discussions about corporate governance and efforts to improve it for as long as corporations have been in existence (Hermalin, 2005). There is not a unique definition of what corporate governance means. Joel Stern defines a corporate governance system as "the set of institutions and processes, both inside and outside the firm, that help capital providers oversee and influence the behavior of corporate managers" (Gillan, 2004). According to Cromme (2005), "corporate governance is a term describing good, efficient management and supervision of companies on the basis of internationally recognised standards in the interests of the company's owners and its social environment". Shleifer and Vishny (1997) provide a very short definition. For them, "corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment". Although there are many more different definitions of the term corporate governance, there is consensus that it includes the prevailing conditions for the management and supervision of companies to handle conflicts of interests between various stakeholders (Bassen & Zöllner, 2007).

Companies nowadays care about corporate governance, as it is also a topic of growing concern for shareholders and other stakeholders. The principal-agent theory helps to explain this development and the actual importance for many firms (Fombrun, 2006). Agency problems arise due to a separation of security ownership and control in modern, especially publicly traded corporations. These corporations are owned by various shareholders, the principals, and run by managers, the agents (Fama, 1980). The shareholders have to ensure that managers act according to their interest, but between principals and agents partial conflicts of interests and information asymmetries usually occur. As a result, stockholders have to solve both adverse selection and moral hazard problems. The adverse selection problems primarily deal with the selection of capable and reliable managers, whereas moral hazard problems can occur in many different ways (Pfaff & Zweifel, 1998). Agency problems lead to agency costs and potential losses of shareholders, although it is often difficult to assess the exact amount of those costs. Corporate governance mechanisms can help to mitigate principal-agent problems and thus reduce agency costs. To be more concrete, they can offer a considerable protection for stockholders against opportunistic behavior of the management team (Mueller, 2006).

Various corporate governance codes and principles have been developed to define what is meant by good corporate governance practices, such as the Cromme Code in Germany or the Sarbanes-Oxley Act in the USA. Unless there are many differences between the codes of the Anglo-Saxon and the German system of corporate governance, most of the laws and recommendations focus on improving practices in the following areas: ownership structure and influence of the owners, board composition and leadership structure, shareholder rights and takeover defenses, and financial transparency and information disclosure (Fombrun, 2006). In the subsequent chapters, I analyze the impact of practices in these four areas as well as the impact of the whole system on corporate performance.

2.2. Comparison of the Anglo-Saxon and German System of Corporate Governance

Two main systems of corporate governance can be identified in western industrial countries: the Anglo-Saxon market or short-term shareholder oriented system and the long-term relation-oriented system (Murphy & Topyan, 2005; Kaplan, 1995). While a central objective of contemporary corporate law in the US is the protection of shareholder interests, German corporate law instead balances the interests of all stakeholders affected by a firm's activities (Baums & Scott, 2005). These differences in corporate law can be explained by unequal ownership structures in the two countries. The shareholder orientation in the U.S. market emerged from the fact that the capital market can be regarded as a primary source of corporate funding. Securities are widely held and predominantly in the hands of various private households and mutual stock funds. In contrast, diverse intercorporate relationships exist in Germany because of large corporate stockholders such as banks, insurance companies, families, and other industrial companies. Many cross-holdings and linkages between industry and banks can be observed, which earned Germany the label of *Deutschland AG*. In addition, retained earnings and loans were regarded as the main sources of corporate funding for many years. In the light of

proceeding globalization and liberalization of financial markets, this situation has changed since the 1990s. Nevertheless, many of those cross-holdings still exist (Cromme, 2005).

With regard to the different orientations and ownership structures, the German system of corporate governance can be characterized to be insider-dominated, whereas the U.S. system is regarded as an outsider-dominated system. An indicator of this is a relatively high stock market capitalization as a percentage of the gross domestic product in the United States compared to Germany (Tylecote & Conesa, 1999). The external market for control in the German system is very small, and managers are monitored by large shareholders and banks. Another distinctive feature of the German governance structure is the two-tier board system of large companies, including a management board and a supervisory board, which consists of both shareholders and employee or trade union representatives. In contrast to this, managers' behavior in the USA is monitored by boards of directors, regularly dominated by outsiders, and an external market for control. A distinct managerial behavior can be concluded from these different systems. Researchers argue that the close financial ties and relationships in Germany can lead to reduced agency costs and a more effective monitoring process. On the condition that German companies are less concerned with short-term earnings, it should also be easier for managers to invest in value-increasing long-term projects. Furthermore, the ownership structure may help to avoid hostile takeovers. On the other hand, fees and interest rates may be abnormally high in cases of poor financial performance due to existing alliances between banks and managers (Kaplan, 1995).

When it comes to the implementation of corporate governance, various standards and new international or national codes of conduct exist. Most of them are not mandatory, so that their compliance can be regarded as a voluntary act of self-regulation. In Germany, a separate commission was built to draw up the German Corporate Governance Code (GCGC). Under the chairmanship of Gerhard Cromme, the results of the commission and the final version of the GCGC were published in 2002. The objective was to promote confidence of international and national investors, employees, and other stakeholders in the management and supervision of German companies through creating transparency. The GCGC contains recommendations only instead of mandatory rules, but German listed stock corporations must declare whether they comply or not in accordance with § 161 of the German Stock Companies Act (AktG). There is sufficient reason to believe that nowadays the German code is widely accepted (Bassen, Kleinschmidt, Prigge, & Zöllner, 2006; Cromme, 2005). According to Wooldridge and Pannier (2005), 96 % of the code recommendations were implemented by DAX-listed companies at the end of 2004. Besides, there is no Prime Standard corporation which rejects the GCGC totally, and in 2004 there were even 13 DAX companies which complied without any exception.

In contrast to the non-mandatory recommendations in Germany, in 2002 a new law was introduced in the USA as a response to the Enron and WorldCom scandals called the Sarbanes-Oxley Act. The primary goal of this act is to prevent such insolvencies through tightening accounting and governance standards and forcing companies to pay more attention to internal controls. An opinion-based survey among the public shows a significant support for this act. Even though it is generally accepted that the new law helps to improve governance practices, it also has some shortcomings. Especially small-cap and foreign firms complain about the costs when complying with the new rules (Murphy & Topyan, 2005).

3. Impact of Ownership Structure

The ownership structure of a firm is often regarded as one of the main corporate governance mechanisms to solve principal-agent problems and thus to mitigate agency costs (De Miguel, Pindado & De la Torre, 2005). I analyze the impact of both ownership concentration and managerial ownership on corporate performance, as many empirical studies also make this distinction.

3.1. Ownership Concentration and Performance

One of the first empirical studies about the relevance of stock ownership concentration for the efficiency and strategic development of firms follows the seminal thesis of Berle and Means of 1932. In their research, Hill and Snell (1989) examined the impact of different factors on firm productivity. Among those factors are stock concentration and management stockholdings, whereas stock concentration is proposed to have both a direct and indirect influence on productivity. Hill and Snell aim to prove that concentrated stockholdings lead to lower information asymmetries between shareholders and managers, and thus facilitate the coordination of action and the demand of information from management. As a result, a positive significant relationship between stock concentration and productivity indicates the importance of large blocks of powerful shareholders. Moreover, it can be concluded that stock concentration also affects productivity indirectly through the mediators of unrelated diversification and Research and Development expenditures. Agrawal and Mandelker (1990) also found a positive relation between ownership concentration and corporate performance. In their empirical study, they support the active monitoring hypothesis that stock concentration leads to a better monitoring of managers. A significant positive relation between institutional ownership and changes in the wealth of shareholders around the announcement of anti

takeover charter amendments can be concluded from their research. Hence, institutional investors cannot be regarded as passive owners.

Two other studies about the relationship between ownership concentration and corporate performance for the U.S. market come to distinctive results. First, Holderness and Sheehan (1988) investigated the role of large block-ownership by analyzing 114 publicly listed corporations with majority shareholders and found no relation between majority ownership and firm performance. Second, Füerst and Kang (2004) examined the relation between ownership structure and firm performance and show that the presence of a controlling shareholder with more than 50% of the shares is neutral for operating performance, but negative for the market value of the company. In addition, they assert that large external stockholders cannot be regarded as active monitors, because large blockholdings above five per cent are negatively related with the expected residual income (ERI).

One of the first studies examining the influence of banks' ownership concentration on the performance of German firms was published by Gorton and Schmid (2000). Gorton and Schmid show that when using the market-to-book ratio (MTB) as a performance measure, a bank's control rights from equity ownership have a positive influence on firm performance. When Return on Equity (ROE) is the performance measure, codetermination leads to a decrease in firm performance. To sum up, concentration of control rights from equity ownership leads to improved firm performance, banks affect performance beyond the effects of non-bank blockholders, and codetermination reduces firm performance. Finally, banks in Germany can be regarded as an important part of corporate governance mechanisms. Januszewksi, Köke, and Winter (2002) examined the impact of product market competition and corporate governance on productivity growth in Germany. The results of their regression analysis indicate that companies operating in markets with intense competition experience higher productivity growth. This productivity growth is even higher for firms controlled by a strong ultimate owner, if this owner is a non-financial firm. For firms under the control of a private owner, no significant different productivity growth is realized, and firms under the control of a financial institution even experience a lower productivity growth. With this study, Januszewsky et al. prove the impact of ownership concentration on firm performance, but they also refute the above-mentioned results of Gorton and Schmid. Another study by Edwards and Weichenrieder (2004) also comes to the result of a positive and linear relationship between ownership concentration and performance.

In contrast to the above-mentioned studies, Lehmann and Weigand (2000) found a significantly negative impact of ownership concentration on Return on Assets (ROA). Results vary for different time-horizons as well as for the identity of the majority shareholders. For instance, a positive relationship between ownership concentration and profitability is found for corporations with financial institutions as largest shareholders.

Summing up, studies about the relationship between ownership concentration and performance are inconclusive and mixed in their findings. Different data sets and the use of diverse measures of shareholder concentration and performance lead to significant discrepancies. There is no consensus about the effects of ownership concentration. While some studies show the existence of a positive relation (Table 1), other studies show no impact or even a negative relationship. It is therefore hard to suggest whether ownership concentration leads to a better monitoring of managers or harmful effects of greater private benefits of control. Undoubtedly, further research in this area is needed, especially with regard to the identity of the different large shareholders.

3.2. Managerial Ownership and Performance

Several studies exist about the relationship between management ownership and corporate performance, and one of the first important investigations was published by Morck, Shleifer, and Vishny (1988). Their regression analysis resulted in a cubic relationship between managerial ownership and performance, measure by Tobin's Q. This means that levels of insider ownership below 5% and above 25% lead to a performance increase. However, at moderate levels of managerial ownership between 5% and 25%, performance decreases. The entrenchment of managers may help to explain this experienced decline, while the increases of Tobin's Q can be interpreted as reflecting the convergence of interests between stockholders and managers. Many other studies come to similar results of a cubic relationship between insider ownership and market value (Chen, Hexter, & Hu, 1993; Cho, 1998; Griffith, 1999; Holderness, Kroszner, & Sheehan, 1999) or find quite different results, but also support the hypothesis that managerial ownership has a significant impact on firm performance (Füerst & Kang, 2004; Han & Suk, 1998; Wruck, 1989).

In comparison to the above-mentioned research findings, Demsetz and Villalonga (2001) come to contrasting results. With their study, they aim to counter the arguments that ownership structure and managerial ownership have an impact on a firm's performance. Ownership structure should rather be regarded as an endogenous than an exogenous variable, which is also influenced by a company's value and not vice versa. The econometric model of Demsetz and Villalonga has two equations, whereas the first has performance and the second has fraction of shares owned by management as a dependent variable.

Table 1. Impact of Ownership Concentration on Performance

	Positive findings	Neutral or negative findings
USA	Wruck (1989) Hill & Snell (1989) Agrawal & Mandelker (1990) Han & Suk (1998) Core, Holthausen & Larcker (1999)	Holderness & Sheehan (1988) Demsetz & Villalonga (2001) Füerst & Kang (2004)
Germany	Gorton & Schmid (2000) Januszewski, Köke & Winter (2002) Edwards & Weichenrieder (2004)	Lehmann & Weigand (2000)

Table 2. Impact of Managerial Ownership on Performance

	Positive findings	Neutral or negative findings
USA	Cubic relation: Morck, Shleifer & Vishny (1988) Chen, Hexter & Hu (1993) Cho (1998) Griffith (1999) Holderness, Kroszner & Sheehan (1999) Other positive relation: Wruck (1989) Agrawal & Knoeber (1996) Han & Suk (1998) Core, Holthausen & Larcker (1999) Coles, McWilliams & Sen (2001) Füerst & Kang (2004)	Demsetz & Villalonga (2001)

As a result, the study provides evidence for the endogeneity of ownership structure and thus shows that studies using single equation models of the impact of ownership structure on performance are biased. Moreover, no statistically significant relation between ownership structure, especially managerial ownership, and firm performance is found.

To sum up, there seems to be a close connection between managerial ownership and corporate performance. Various empirical studies (Table 2) suggest a cubic relation, and it can be argued that both low and high managerial ownership has a positive influence on performance, as it reflects the convergence of interests between stockholders and managers. The decrease in performance for a moderate insider ownership is often explained through the entrenchment of managers. Despite the fact that much empirical evidence exists for a positive relationship, critics argue that corporate value and performance affect the ownership structure of a company, and not vice versa. Thus, it cannot be regarded as exogenously determined, and many studies are biased. More research is needed in this area as well, although there seems little doubt that at least some positive effects of managerial ownership exist. On top of that, no important studies are published for the German market, which implies that one cannot draw any conclusions for that market and here more research is needed as well.

4. Impact of Board Composition and Leadership Structure

The effectiveness of board of directors is a global concern due to recent corporate collapses and fraud cases. In the light of board composition and leadership structure, many corporate governance recommendations and codes of conduct exist. It is often suggested, that a separation between the chair and the chief executive officer (CEO) position leads to more independent boards, and that boards should also be dominated by outside directors to increase independency. Those suggestions are supported by agency theory. Therefore it is necessary to raise the question of whether those suggestions really have a positive influence on corporate performance or not (Heracleous, 2001). Several studies exist which examine the impact of board composition or leadership structure on corporate performance, especially for the Anglo-Saxon system of corporate governance. As described in chapter 2.2, the German two-tier board system contains by law a management board and a supervisory board. Hence, board composition and leadership structure will only be analyzed for the U.S. market here.

Millstein and MacAvoy (1998) published an important study proving the hypothesis that a professional board which is active and independent from management should increase corporate performance. Support for the hypothesis – that independent boards which are dominated by outsiders increase corporate performance – is also provided by Rosenstein and Wyatt (1990), who show that appointments of outside directors have a significant positive effect on shareholder wealth and increase firm value, despite the fact that the increase in stock price is very small and most boards are numerically dominated by outsiders before appointing new directors. This implies that outside directors are selected in the interests of shareholders.

The relation between board composition and the likelihood of financial statement fraud is examined by Beasley (1996). One finding of his study is that the board of director composition differs between fraud and no-fraud firms. On average, fraud firms have significantly fewer (50.2 %) outside directors than no-fraud firms (64.7 %), and the univariate and multivariate logit results suggest that outside directors are important monitors of management, because the probability of financial statement fraud is significantly influenced by the board composition. Additionally, other factors affect the likelihood of fraud, such as board size and certain outside director characteristics. In contrast to Beasley, Farber (2005) investigates firms' responses to fraud detection, which means the magnitude and economic consequences of fraud firms' changes in corporate governance practices during a three-year period after fraud detection. The results of this study support Beasley's findings, because one year before fraud detection, the fraud firms had a fewer percentage of outside directors, fewer audit committee meetings, and a higher percentage of chairmen of the board who were also CEO of the company. Farber also finds that all fraud companies take actions to improve governance systems after detection and have superior stock price performance after implementing the improvements.

In the light of leadership structure, Rechner and Dalton (1991) argue in favor of an independent structure where different individuals serve as CEO and chairperson of the board of directors. Using ROE, ROI, and profit margin as performance indicators, Rechner and Dalton found that firms with independent leadership structures outperformed those with CEO duality structures during the observed period. While many empirical studies come to the result that board composition and leadership structure have a positive impact on corporate performance, there are also studies countering this hypothesis. Bhagat and Black (1999) found that board independence correlates negatively with different performance measures. Nevertheless, Bhagat and Black state that such a relationship is hard to prove. Moreover, they point out that board composition could be an endogenous variable, which means that different companies need different kinds of boards. In addition, it could be valuable for firms to have at least a moderate number of inside directors than to have a majority of independent directors, but more research is needed to explore this.

With regard to CEO duality and firm performance, Baliga, Moyer, and Rao (1996) come to distinctive results than the above mentioned study of Rechner and Dalton. In their study, Baliga et al. considerd the announcement effects of changes in leadership structure, accounting measures of operating performance after changing the leadership structure, and long-term measures of performance for firms with CEO duality. It can be concluded from the results that the market is indifferent to changes in a company's leadership structure, because no significant share price reactions are observed around the announcement period. Moreover, the study provides little evidence that changes in duality status have an impact on operating performance, measured by ROE, ROA, operating cash flow to total assets, and operating cash flow to sales in the period after changing the structure.

In the light of both the impact of leadership structure and board composition on corporate performance, an important study was published by Dalton, Daily, Ellstrand, and Johnson (1998), which is a meta-analytic review of existing research addressing this topic. Their overview of existing studies clearly demonstrates that there is little consistency in the research findings. All articles were concluded for the meta-analyses which examined the relationship between board composition/leadership structure and financial performance, and it was necessary that a Pearson product-moment correlation was available or derivable between the variables. Afterwards, each observed correlation was weighted by the sample size of the study to calculate the mean weighted correlation across all studies. For the board structure attitude, Dalton et al. found 54 empirical studies with 159 usable samples and 40,160 organizations involved, whereas for CEO duality 31 empirical studies with 69 usable samples and 12,915 organizations involved were identified. Dalton et al. found no support for the hypothesis that board composition and leadership structure lead to superior corporate performance.

Table 3. Impact of Board Composition and Leadership Structure on Performance

	Positive findings	Neutral or negative findings
USA	Rosenstein & Wyatt (1990) Rechner & Dalton (1991) Beasley (1996) Millstein & MacAvoy (1998) Core, Holthausen & Larcker (1999) Farber (2005)	Agrawal & Knoeber (1996) Baliga, Moyer & Rao (1996) Dalton, Daily, Ellstrand & Johnson (1998) Bhagat & Black (1999)

It can be summarized that several studies addressing the relationship between board or leadership structure and performance exist (Table 3). Nevertheless, those studies are mixed and show little consistency. There is no convincing evidence that an increase in board independence through an increase of the outside director proportion will improve firm performance. In addition, there is also no clear support that leadership structure positively affects performance. One explanation for the mixed findings could be that it is impossible to make general recommendations regarding those governance structures, because different firms may benefit from different board structures. Moreover, other factors could influence performance over time, which are more important than board composition or leadership structure, and the complexity of those factors impedes to find significant relationships in narrow studies (Heracleous, 2001). Researchers also often argue that independent boards and a separation of the chairman and the CEO lead to a better monitoring. However, this is only one of a many roles of a board. While independence may improve the monitoring process and thus corporate performance, it could also be counterproductive for other board tasks (Young, 2003).

5. Impact of Shareholder Rights and Takeover Defenses

Corporate governance provisions, which are related to shareholder rights and takeover defenses, vary across firms. There also seems to be a close connection between those provisions and corporate performance, and several studies examining this relationship exist. For instance, a restrictive governance structure is expected to decrease managers' accountability to stockholders and thus to harm a firm's financial performance (Karpoff, Marr, & Danielson, 1994).

Karpoff et al. (1994) examine the correlation between the corporate governance structure of a company with regard to 20 different governance provisions and two performance indicators: industry-adjusted ROA and MTB. Their tests are based on governance profiles compiled by Institutional Shareholder Services, Inc. (ISS) of the Standard & Poor's (S&P) 500 index for the period 1984-1989. Karpoff et al. found that governance structures significantly influence performance. In detail, for firms with the most liberal governance structures, the highest financial performance is observed, and their assets are also relatively highly valued. This confirms the managerial entrenchment hypothesis, which states that companies with liberal structures perform better because managers are more accountable to shareholders. In addition, Karpoff et al. investigated the effects of the different provisions. After testing for causality and sensitivity, the most consistent finding is that the existence of a poison pill, which is one of the internal control mechanisms, negatively correlates with both ROA and MTB.

The relationship between shareholder rights and corporate performance is also confirmed by Gompers, Ishii, and Metrick (2003). Due to the fact that many corporations added takeover defenses and other restrictions of shareholder rights in the 1980s and afterwards, their research is designed to examine the performance effects by taking a long-horizon approach. Gompers et al. found that corporate governance provisions are strongly correlated with stock returns. Even though unobservable firm characteristics may influence the results and one cannot draw strong conclusions about causality with regard to the used data set, the study suggests that stronger shareholder rights and less restrictive governance structures have a positive impact on firm value, profits, and sales growth of a company. Further insight into the relationship between different governance provision and performance is provided by Bebchuk, Cohen, and Ferrell (2004) who also found a positive impact of single corporate governance provisions on corporate performance. Nevertheless, Bebchuk et al. state that future research is needed regarding the question of causation.

In contrast to the above-mentioned research findings, Klock, Mansi, and Maxwell (2005) examined the relation between governance provisions and the costs of debt financing. While anti-takeover governance provisions are regarded to be shareholder unfriendly, it could also be necessary to raise the question whether they are viewed favorably in the bond market or not. It follows from various regression analyses that anti-takeover governance provisions lower the cost of debt financing, while weak provisions with the strongest shareholder rights are associated with higher costs of debt financing.

Table 4. Impact of Corporate Governance Provisions on Corporate Performance

	Positive findings	Neutral or negative findings
USA	Karpoff, Marr & Danielson (1994)	Klock, Mansi & Maxwell (2005)
	Gompers, Ishii & Metrick (2003)	Nelson (2005)
	Bebchuk, Cohen & Ferrell (2004)	Lehn, Patro & Zhao (2005)

A further anti-takeover provision in the sample leads to a significant decrease in the costs of about four basis points, and the results are robust to various measures of provisions and tests of endogeneity. Hence, it may be concluded that anti-takeover amendments can be viewed as an effective tool to protect interests of bondholders, although not favorably for shareholders. It is therefore recommendable to look at the total effects of governance systems when evaluating them and before drawing conclusions. In the light of the endogeneity of the relationship between corporate governance provisions and performance, Nelson (2005) examined the impact of performance changes on governance practices and found that the adoption of governance provisions is also influenced by a firm's prior performance, among other factors, and especially poorly performing companies are more likely to adopt poison pills, since no shareholder approval is needed. The question of causation is also examined by Lehn, Patro and Zhao (2005) who also support the view that causation runs from corporate performance to governance systems, and not vice versa. As an explanation, Lehn et al. maintain that poorly run firms are more likely targets of hostile takeovers, which makes them adopt takeover defenses and thus affecting the value of their indices.

To sum up, many studies examining the link between governance provisions and corporate performance prove a correlation between the two variables (Table 4). This could support the managerial entrenchment hypothesis, which states that companies with liberal structures perform better because managers are more accountable to shareholders. On the other hand, research about the causation shows evidence for the endogeneity of both corporate governance systems and corporate performance, so that a firm's corporate governance provisions, which are related to shareholder rights and takeover defenses, may rather be affected by prior corporate performance. More research about the causation is therefore necessary, as well as further research with regard to the different kinds of provisions. For instance, provisions such as poison pills are considered to have the most significant impact on performance. In addition, it can also be shown that corporate governance provisions have an impact on a company's costs of debt financing. Hence, the effects of provisions should be analyzed with regard to both shareholders and bondholders. Finally, no major studies examine the link between corporate governance provisions and performance for the German market, which is also a consequence of the different systems of corporate governance and the small market for control in Germany.

6. Impact of Information Disclosure and Governance Commitment

Corporate governance codes and recommendations also contain information about the quality, accessibility, and timeliness of financial and operational disclosure. Besides, the GCGC does not contain mandatory rules and German listed stock corporations have to declare whether they comply or not in their annual reports (Cromme, 2005). Such commitments to certain codes of conduct as well as a firm's financial transparency and information disclosure might influence the market value of a company, which will be analyzed in this chapter.

Both for the German and the U.S. market no major studies about the relationship between financial transparency and shareholder wealth exist. Assuming that shareholders are willing to pay a premium for well-governed and transparent companies, this would positively influence stock prices. However, more research is needed to prove this assumption, but it is clear that information disclosure or reporting about corporate governance can affect investor behavior. For instance, the Business Week publication of ratings of boards of directors led to positive abnormal returns for companies mentioned in those ratings (Johnson, Ellstrand, Dalton & Dalton, 2005).

In the light of commitment to corporate governance codes and practices, a few studies about the German market exist investigating the impact of compliance with the GCGC on corporate performance. Zimmermann, Goncharov, and Werner (2004) analyzed 61 German companies of the DAX and MDAX with observations in 2002 and 2003 and found that the degree of compliance can be regarded as value relevant information for investors. This implies that there is at least some capital market pressure or some incentives which lead to a broad adoption of the GCGC recommendations. Finally, Zimmermann et al. state that future research is useful regarding the compliance with single recommendations and its performance effects.

Table 5. Impact of Compliance with the GCGC on Corporate Performance

	Positive findings	Neutral or negative findings
Germany	Zimmermann, Goncharov & Werner (2004)	Nowak, Rott & Marr (2005) Bassen, Kleinschmidt, Prigge & Zöllner (2006)

Two other studies about the relationship between compliance with the GCGC and performance come to distinctive results. Nowak, Rott, and Mahr (2005) used an event study to investigate whether compliance declarations lead to positive or negative abnormal returns, and the event window are two days before and five days after the publication of those declarations. They found that abnormal deviations in compliance with the recommendations (both positive and negative) do not result in statistically and economically significant abnormal returns. Bassen, Kleinschmidt, Prigge, and Zöllner (2006) also examined the relationship between compliance with the GCGC and corporate performance and conclude that a general significant relation between compliance with the GCGC and performance cannot be observed in 2003. However, compliance with some specific rules regarding the management board, such as publication of individual remuneration, positively influences corporate performance.

Research findings about the impact of compliance with the GCGC on corporate performance are very rare, inconclusive and mixed, so that the hypothesis that capital market pressure leads to a broad adoption of the recommendations cannot be proved (Table 5). Nevertheless, there is sufficient reason to believe that nowadays the German code is widely accepted and most recommendations are adopted by German listed companies, which also impedes the analysis (Bassen et al., 2006). Further research should focus on single recommendations and not compliance with the whole code over a longer time horizon. Additionally, more research about the performance effects of financial transparency and information disclosure is needed for the German and the U.S. market, because until now no important studies about this relationship exist.

7. Impact of the Overall System of Corporate Governance

Most of the studies described in previous chapters focus on single mechanisms of corporate governance, such as the ownership structure of a company, the board composition, or the compliance with specific codes of conduct. While some studies found a positive relationship between certain parts of corporate governance and performance, others refuted this hypothesis, so that it is difficult to draw general conclusions. It is therefore necessary to examine the impact of corporate governance on corporate performance on a holistic basis. The fact that inter-relationships may exist between different attributes and mechanisms of corporate governance supports this holistic approach (Ho, 2005).

One of the first studies examining the impact of several mechanisms of corporate governance on corporate performance was published by Agrawal and Knoeber (1996). First of all, a regression analysis shows existing interdependencies among the corporate governance mechanisms. Following this, Agrawal and Knoeber examined the relationships between firm performance and the use of single control mechanisms. It turns out that a higher proportion of outside directors in the board, more debt financing, and more corporate control activity all lead to poorer corporate performance, whereas greater insider shareholdings enhance performance. As a result of simultaneous equations estimation, only a negative relation between the proportion of outside directors and performance can be observed. Agrawal and Knoeber claim that these findings are consistent with corporate governance mechanisms being chosen optimally, except for the outside director representation.

Core, Holthausen, and Larcker (1999) used a distinctive approach to measure the impact of governance structures on corporate performance. Using a cross-sectional multiple regression, they show that the level of total CEO compensation is related to firm size, investment opportunities, prior performance, and firm risk. Moreover, the eight variables related to the board structure as well as the four variables of ownership structure have a significant influence on total CEO compensation. With regard to specific board composition variables, it can be observed that less independent outside directors and the existence of CEO duality are associated with greater CEO compensation. On top of that, a higher proportion of outside directors above the age of 69 or serving in more than one board also increase total CEO compensation. This implies that weak corporate governance structures in terms of board composition enable the CEO to extract additional compensation. When it comes to ownership structure variables, it is shown that inside ownership of the CEO as well as the existence of large blockholders reduces the total remuneration, which also implies that less effective governance structures are related with increases in CEO compensation. Core et al. then investigated whether the observed associations between ownership or board structure and CEO compensation can be regarded as proxies for the effectiveness of a firm's governance structure.

Thus, the impact of CEO compensation on performance is measured. As a result, excess compensation of the CEO has a significant negative association with subsequent operating performance (measured by ROA) and subsequent firm stock returns.

The findings suggest that greater agency problems occur in firms with weaker governance structures, which leads to a higher compensation of the CEO and negative effects on corporate performance.

Using both Market Value Added (MVA) and Economic Value Added (EVA) as measures of performance, Coles, McWilliams, and Sen (2001) provide further insights into the relationship between various factors of corporate governance and performance. They found that some corporate governance variables, such as CEO ownership, positively influence performance. However, the most important driver of a firm's performance is industry performance, both for MVA and EVA. Furthermore, Coles et al. conclude that there is little evidence for the relationship between corporate governance practices and performance, and more research is needed in measuring this relationship within industries.

A very comprehensive analysis of the relationship between different governance structures and various outcome variables was undertaken by Larcker, Richardson, and Tuna (2004). Multiple regression analyses about the impact of 14 different governance factors on ten dependent variables show that all corporate governance constructs only have a modest explanatory power for explaining managerial behavior or organizational performance. Larcker et al. state that typical indicators of corporate governance have a very limited ability to explain managerial decision and firm valuation. This implies either that corporate governance is not as important as expected or that the used indicators are not very useful for measuring corporate governance. Besides, only one year data is used in the analysis, which restricts the ability to generalize. Finally, corporate governance factors and managerial behavior can be regarded as endogenous variables, and other measurement errors may exist.

Brown and Caylor (2004) also created a broad measure of corporate governance using detailed corporate governance data of the year 2003 and computing a so-called Gov-Score. They found positive and significant correlations between their Gov-Score and various performance measures. In detail, it is shown that better governed firms have higher dividend yields, a higher ROE and net profit margin, and a higher firm value as measured by Tobin's Q. However, also one significant negative correlation exists between Gov-Score and sales growth. Brown and Caylor argue that sales growth is the least reliable of all performance indicators, so that this result is not of relevance. The results of Brown and Caylor suggest that well-governed companies are usually more profitable, more valuable, and pay out more cash dividends. Nevertheless, Brown and Caylor state that more research is needed regarding causality and using data of a longer period.

In contrast to the above-mentioned studies, Ho (2005) used a different approach to examine the impact of overall corporate governance practices on corporate performance. Using primary data from a questionnaire, Ho provides evidence that most international companies accept good corporate governance practices and conform to them. As a result of correlation analysis between the overall scores of corporate governance and measures of competitiveness, it can be concluded that a high level of conformance to good governance practices leads to a high level of competitive potential, better management processes, and a significant higher ROE. However, differences between these relationships are observed for different regional groups. It can be suggested that a high conformance to good corporate governance enhances corporate competitiveness. Furthermore, Ho shows that corporate governance factors are interdependent, and their impact on corporate performance is much stronger when it is evaluated on a holistic basis.

With regard to the overall impact of corporate governance on corporate performance for the European and especially for the German market, two major research findings exist. Bauer, Guenster, and Otten (2004) examined the impact of corporate governance practices on stock returns and firm value in Europe and provide evidence for a positive correlation for both the UK and the European Monetary Union. However, results are statistically insignificant and further research is suggested using a longer time-series of governance ratings. Secondly, multivariate regression analysis is employed to measure the relationship between corporate governance and Tobin's Q as a measure of performance. It can be concluded that the impact of corporate governance on firm value is very strong, while it is much stronger for the European Monetary Union than for the UK. Bauer et al. state that the reason for this are poorer governance standards in the Eurozone than in the UK, and prior research provides evidence that the lower the governance standards are, the stronger the impact on firm value.

Constructing broad corporate governance ratings as well, Drobetz, Schillhofer, and Zimmermann (2004) investigated the relationship between corporate governance and corporate performance for the German market. The sample is based on a survey and the results of Drobetz at al. provide evidence that firms with a higher governance rating also tend to have a higher firm value. Moreover, it can be concluded that good corporate governance enhances firm value for German corporations, because investors are willing to pay a premium, and bad standards of corporate governance lead to valuation discounts.

Table 6. Impact of the Overall System of Corporate Governance on Corporate Performance

	Positive findings	Neutral findings
USA	Core, Holthausen & Larcker (1999) Brown & Caylor (2004) Ho (2005)	Agrawal & Knoeber (1996) Coles, McWilliams & Sen (2001) Larcker, Richardson & Tuna (2004)
Germany	Ho (2005) Bauer, Guenster & Otten (2004) Drobetz, Schillhofer & Zimmermann (2004)	

Research findings about the overall impact of corporate governance systems on corporate performance seem to be mixed and inconclusive upon first glance, especially with regard to the U.S. market (Table 6). However, there are no results providing evidence for a negative relationship between governance practices and performance when a holistic approach is used, and most neutral studies experience the lack of statistical significance. This does not necessarily mean that no link between the two variables exists. It is more the outcome of different study designs, because diverse measures of corporate governance and performance are used. With regard to the German market, major research findings show a positive relationship between corporate governance and corporate performance. Moreover, it can be concluded that substantial differences exist between this relationship in Germany compared to other countries, especially Anglo-Saxon markets. As a result of important research findings using a holistic approach, the proposition that good corporate governance enhances performance is supported. Nevertheless, critics argue that still the causality problem exists, so that future research should also focus on that topic.

8. Summary and Concluding Remarks

Corporate governance is a topic of growing concern and the term has entered the vocabulary of students and practitioners over the last years. Advocates argue that corporate governance mechanisms can help to mitigate principal-agent problems which arise due to a separation of ownership and control (Mueller, 2006). In addition, surveys amongst investors show that they are willing to pay a premium for the shares of well-governed companies, while bad standards of corporate governance can lead to valuation discounts (Coombes & Watson, 2002). It is therefore necessary to raise the question of whether a relationship between corporate governance and performance can be empirically proven. This paper presents and analyzes various research findings about the influence of both individual corporate governance mechanism and the whole system of corporate governance on corporate performance. The analysis can be summarized as follows.

First, studies examining the impact of ownership concentration on performance are inconclusive and mixed in their findings. For Germany as well as for the U.S. market, one cannot draw general conclusions. Critics argue that large blockholders even negatively influence performance due to greater private benefits of control of those large owners. When it comes to the performance effects of managerial ownership, various empirical studies for the US provide evidence of a cubic relation. This means that low and high managerial ownership are regarded favorably, whereas moderate insider shareholdings lead to negative effects due to an increased entrenchment of managers. Nevertheless, more research is needed focusing on the causality problem, because it can also be argued that managerial ownership is rather the outcome of superior performance than the influence. Second, there is no clear support that board composition or leadership structures positively affect firm performance. While advocates argue that both mechanisms lead to increased board independence, there is also sufficient reason to believe that no one-fits-all model exists. Besides, more independent boards and a separation of the CEO and the chairman function are associated with a better monitoring of managers, which is only one of the board's roles. It follows that the impact on other roles should also be examined to draw general conclusions. Third, several empirical studies investigating the link between corporate governance provisions and corporate performance support the managerial entrenchment hypothesis. Thus, companies with liberal and shareholder friendly structures should perform better because managers are more accountable to stockholders. However, corporate governance provisions could also be regarded as endogenous variables. Hence, future research should focus on this causality problem as well as effects on other stakeholders than owners have to be analyzed. Fourth, research findings about the impact of compliance with corporate governance codes and financial transparency on corporate performance are very rare. For the German market, there is no consensus whether capital market pressure leads to a broad adoption of the GCGC recommendations. On the other hand, there seems little doubt that the code is widely accepted among German corporations. Sixth, when a holistic approach is used to measure the impact of corporate governance on corporate performance, the proposition that good corporate governance enhances long-term performance is supported. Nevertheless, the causality question still exists and results differ for various studies.

When assessing the above-mentioned research findings it follows that study designs and results vary for different countries. The fact that the Anglo-Saxon market oriented system and the German relation-oriented system are both very successful makes it hard to draw general conclusions. Most studies examining the relationship between corporate governance and performance for the German market focus only on ownership structure or compliance with the GCGC, while shareholder rights and takeover defenses are not investigated. An explanation is that the market for control in the German system is very small compared to the US. Moreover, all studies are based on standards and performance in the past and thus on historic data, and the investigated time horizon varies between one year and several years. Furthermore, different measures of corporate governance and diverse indicators of performance are employed, which can lead to measurement errors. It is recommendable for future research not to focus on only one or few indicators, but to examine the relationship between various indicators of both corporate governance and performance to draw general conclusions. Finally, it is necessary to examine the causality between factors of corporate governance and long-term performance. Critics often argue that corporate governance cannot be regarded as an exogenous variable, but rather one that is influenced by performance and not the other way round. Future research should also focus on this causality question.

Overall, I conclude that no one-size-fits-all model of corporate governance exists. Different companies and different market structures may need distinctive mechanisms of corporate governance to improve performance. Nevertheless, large corporations face more pressure than ever before to attract investors by adopting best practices of corporate governance (Young, 2003). It is also quite wrong to suggest that corporate governance practices alone can assure long-term corporate performance. In fact, corporate values, corporate cultures, or strategies are equally vital drivers of success. Additionally, good standards of corporate governance cannot be regarded as a substitute for the solidity of business models. Thus, it is recommendable for future research to integrate those drivers of performance as well as a firm's external environment measured in terms of growth opportunities (Hutchinson & Gul, 2004; Yoshimori, 2005). On top of this, it can also be argued that corporate governance is advocated for reasons such as fairness, equity, and appearance of propriety, and not only for expected performance effects (Brown & Caylor, 2004). To sum up, there seems to be a connection between corporate governance and long-term corporate performance, both in Germany and the US. However, there are still many unanswered questions and more research is needed for a final assessment.

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РАЗДЕЛ 3 КОРПОРАТИВНОЕ УПРАВЛЕНИЕ В ЮЖНОЙ АФРИКЕ

SECTION 3 CORPORATE GOVERNANCE: SOUTH AFRICA

CORPORATE GOVERNANCE AND RISK MANAGEMENT: A SOUTH AFRICAN PERSPECTIVE

Jackie Young*

Abstract

A code of governance is crucial for any emerging country as it endeavours to provide a sound management framework and principles. Corporate governance and risk management are fairly new management concepts, but are becoming important management disciplines for the public and private sectors in South Africa. The aim of this paper is to provide insight into corporate governance and risk management from a South African perspective. South Africa is regarded as one of the more advanced countries in Africa, although still an emerging country with huge development potentials. However, should corporate governance and risk management principles be lacking and not adequately developed and implemented, the aforementioned potential will be nullified and could negatively affect the economic growth and well-being of the country.

Keywords: Corporate governance, Risk management, Code of ethics, Risk culture, Transparency, Accountability

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Introduction

South Africa is regarded as one of the leading countries in Africa in terms of economic growth and development. It has also been called the "hub of Africa" due to so many financial and business transactions flowing through the country in comparison with the rest of African countries. It is, therefore, imperative that South Africa demonstrates a solid commitment to good corporate governance practices. Since 2005 economic activities in Africa are dominated by three countries, namely South Africa, Egypt and Algeria, with South Africa contributing 60 percent of the continent's gross domestic product (Rossouw 2005). However, to remain an economic power in Africa, it is imperative that a sound platform for corporate governance exist. According to Armstrong (2003), the following factors motivate a drive for sound corporate governance:

- It is recognised that good corporate governance can contribute to the economic success of the country.
- It can enhance corporate responsibility and improve the reputation of organisations.
- It can attract foreign investors.
- It is regarded as a deterrent to corruption and unethical business practice.
- It can ensure market discipline and transparency.

However, to achieve this it is necessary to understand the meaning and purpose of corporate governance.

Defining Corporate Governance

According to Tarentino (2009), corporate governance addresses the processes, systems and controls by which organisations operate. It also refers to the relationship between those who govern and those who are governed. On a political level it can be regarded as the relationship between the government and its citizens. According to Mensah (2003), corporate governance is induced by internal and external factors. The internal factors are represented by, for example, effective governance systems, relationships among key role players in an organisation, sound policies and procedures, ownership and shareholders. External factors (also regarded as external drivers of good corporate governance) are laws, rules and institutions that provide a competitive playing field and discipline the behaviour of insiders, whether managers or shareholders. These factors are illustrated in figure 1.

It is imperative that a national code of corporate governance is supported by sound cardinal ethical values, such as transparency, accountability, responsibility and probity. The King Report (2002) recommended a six-stage process of governing ethical performance, namely:

- Identify through stakeholder engagement the perceptions and expectations that stakeholders have of the ethical performance of an organisation.
- Determine the ethical values and standards of the organisation and formulating it into a code of ethics.
- Institutionalise the values and code of ethics of an organisation on the strategic and system levels.
- Monitor and evaluate compliance to the code of ethics.
- Account and audit ethical performance according to emerging global standards.
- Disclose ethical performance to relevant stakeholders.

According to the United Nations Economic Commission for Africa (UNECA) (2002), good corporate governance exists in those economies where the institutions of government:

- have the capacity to manage resources efficiently;
- can formulate, implement, and enforce sound policies and regulations;
- can be monitored and be held accountable;
- have respect for the rules and norms of economic interaction; and
- in which economic activity is unimpeded by corruption and other activities inconsistent with the public trust.

From a government perspective, it could be concluded that the key elements contributing to an environment of good corporate governance are: transparency; an enabling environment for private sector development and growth; and institutional development and effectiveness (UNECA 2003).

Thus, taking into account the above elements for a sound code of corporate governance, the primary elements can be accepted as illustrated by figure 2.

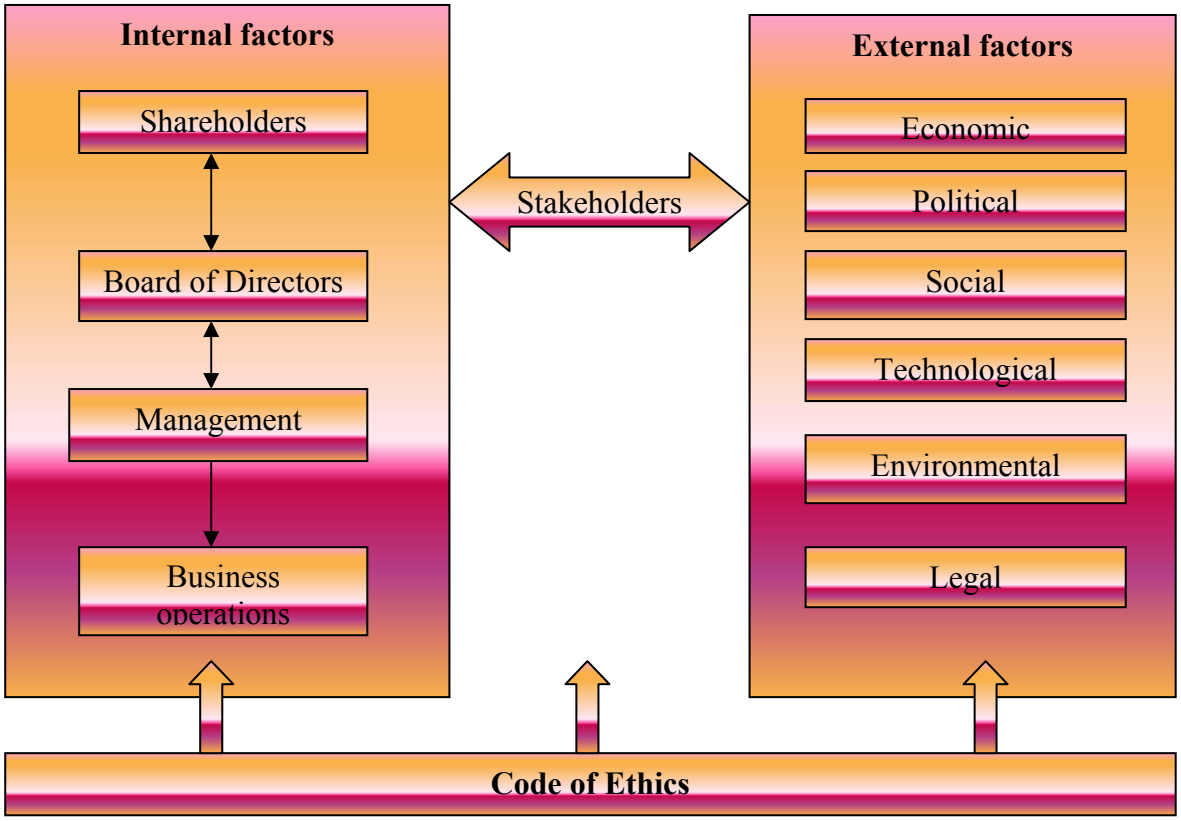


Figure 1. Internal and External Factors for Corporate Governance

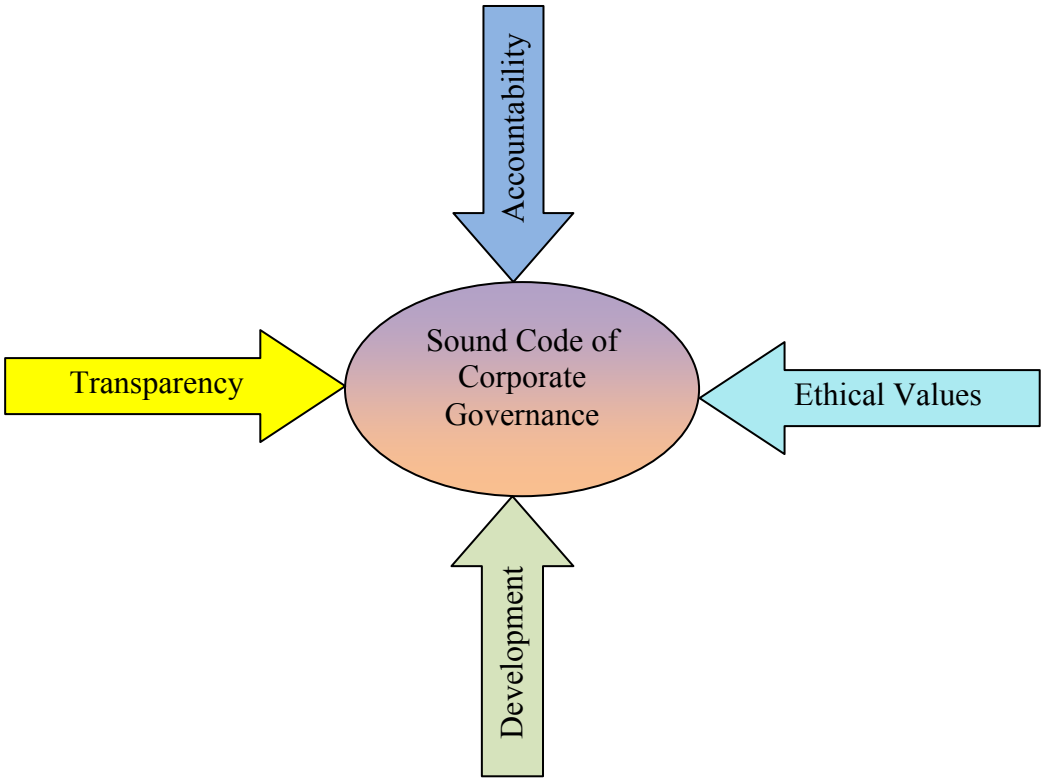


Figure 2. Elements of a Sound Code of Corporate Governance

The elements of transparency, accountability, development and ethical values are applicable for all participants of the private and public sectors. A lack of market discipline and *transparency* could be a deterrent for private companies to participate in stock exchanges which plays an important role in the economic growth and *development* of a country. Furthermore, a lack of effective regulatory frameworks could lead to *unethical* behaviour, economic dismay and exploitation by the state and large competitors. Sometimes, state-owned enterprises set poor examples of good governance as their board of directors do not always display competence in *accountability* that is required for good corporate governance. As such, it can be concluded that the aforementioned elements form a crucial part of good corporate governance for any country, which includes the private and public sectors.

However, according to UNECA (2002), the recognition that the responsibility for governance issues lies first and foremost with the national authorities, African states must commit to improving economic governance, for the following reasons:

- to enhance the ability to implement *development* and poverty reduction policies with scarce resources;
- to execute public management functions in an *accountable* manner;
- to *develop* and implement a credible policy environment in which domestic and international investors can have confidence and trade can be enhanced;
- to strengthen absorptive capacity to attract and mobilize *development* assistance flows;
- to demonstrate *transparent* and participatory economic policy-making and execution as well as an open flow of information available to all stakeholders; and
- to signal an adherence to standards of institutional functioning free of corruption.

Once again, the primary elements of a sound code of corporate governance can be detected in the above reasons, emphasising its importance.

Corporate Governance in Africa

One of the corporate governance initiatives launched by various countries in Africa is the national codes of corporate governance, which are often driven by the private sectors and professional bodies. Of the countries that have published such codes of corporate governance, include, for example:

- Ghana (Manual on Corporate Governance in Ghana, 2000);
- Kenya (Private Sector Corporate Governance Trust, 1999);
- Malawi (Corporate Governance Task Force, 2001);
- Mauritius (Report on Corporate Governance for Mauritius, 2003);
- Nigeria (Code of Corporate Governance for Nigeria, 2003);
- South Africa (Institute of Directors, 1994 and 2002 – King Report – the updated King Report will be released in 2010),
- Tanzania (Steering Committee on Corporate Governance in Tanzania, 2000);
- Uganda (Manual on Corporate Governance Codes of Conduct, n.d.);
- Zimbabwe (Principles for Corporate Governance in Zimbabwe, n.d.); and
- Zambia (Institute of Directors of Zambia, 2000)(Rossouw 2005).

Rossouw (2005) confirms that the national codes all emphasise the ethical nature of good corporate governance and special emphasis is placed on the fact that good corporate governance is based on the following fundamental values:

- Transparency;
- Accountability;
- Responsibility; and
- Probity.

Developing countries usually struggle with constraints and deficiencies relating to economic governance. Therefore, the need for initiatives to: eliminate procedures which facilitate corruption, fraud and criminal activities; strengthen institutional capacity; and to reduce government intervention and allow markets to operate efficiently to stimulate growth and reduce poverty are essential to promote good corporate governance.

In view of the recent global financial crises, it was demonstrated that all developing countries need to put in place and maintain good corporate governance mechanisms which will ensure a stable and transparent environment for economic growth. This would have a positive influence on, for example, allocation of capital, efficient monitoring of assets, the effectiveness of overall corporate performance and improved national economic performance, technology, skills and other important resources to ensure growth and development.

Corporate governance refers to the mechanisms through which organisations and their management are governed. As such, it involves a set of relationships between an organisation's management, its board of directors, its shareholders and its stakeholders. It furthermore provides the structure through which the objectives and the monitoring of performance are determined. As such, various aspects of corporate governance that play a major role to realise the fundamental values and initiatives are, for example:

- The importance of the role of the board of directors;
- Risk management; and
- Reporting and disclosure.

The importance of the role of the directors is probably one of the most important issues of an effective corporate governance code. When analysing

the King Report, for example, this issue becomes apparent as indicated next.

Role of the Board

Organisations should have a unitary board of directors with a charter which formalises its roles and responsibilities. These responsibilities should include the following:

- Appoint the chief executive officer and executives.
- Provide strategic direction to the organisation, considering key risk factors.
- Endorse and enforce internal policies and procedures.
- Ensure compliance with all relevant laws, regulations and codes of conduct through specific board committees.
- Ensure that the systems of internal control are functioning effectively.
- Ensure transparency of the organisation's strategy and objectives to all relevant stakeholders.
- Appoint external independent auditors to audit the organisation in its entirety.

The general responsibilities of the board, as discussed by the King Report of 2002, are in agreement with the abovementioned responsibilities. According to the King Report (2002), the board of an organisation and its management has two main responsibilities:

- Firstly to ensure the maximising of long-term benefits to its shareholders in terms of profits, cash flows and minimising risks; and
- Secondly, to other stakeholders to maximise wealth and to ensure the sustained prosperity of the business.

By developing and implementing a corporate governance code, which includes the abovementioned functions and responsibilities of a board of directors, will have a positive influence in establishing an organisation that will add value to the economic growth of a country.

Another aspect that is prominent and requires attention when developing a code for corporate governance is that of risk management.

Risk Management

Many developing and transitional economies, such as African countries, recognizes the fact that a healthy and competitive corporate sector is necessary for their sustainable and shared growth and that corporate governance is fundamental for the private sector. As African countries endeavor to attract a share of the foreign investments, it has to assure investors that their investments will be secure and efficiently managed on the basis of a transparent and accountable process. Effective risk management can be regarded as one method of providing assurance of a sound investment to investors.

The King Report (2002) also initiated the development of a corporate governance framework for risk management and to promote the highest standards of corporate governance in South Africa. According to the King Report (2002), risk frameworks, as part of an organisation's corporate governance, must provide assurance with regard to the following:

- Effectiveness and efficiency of operations;
- Safeguarding of assets;
- Compliance with applicable law;
- Business sustainability;
- Reliability of reporting; and
- Behaving responsibly towards stakeholders.

Risk reporting can be regarded as one of the more important components of risk management, which is the process whereby an organisation reports on risk exposures, internally, through its management information system, and externally, to its regulators and shareholders (Young 2006). This is also an important corporate governance requirement that will assist in effective decision-making. According to UNECA (2002), a major element of good corporate governance is effective participatory decision-making. This issue poses a risk to a number of African countries when considering, for example, the local elections. It is stated that the smooth running of elections is still problematic in several African countries, with scores of people, invariably, being disenfranchised leading to poor risk management and corporate governance (UNECA 2002).

Considering the aforementioned and comparing it with the requirements of good corporate governance, namely: it involves a set of relationships between an organisation's management, its board, its shareholders, and its other stakeholders and provides the structure through which the objectives and the monitoring of performance are determined, it is evident that there is a direct correlation between effective risk management and corporate governance.

It is furthermore clear that if an organisation, such as a bank, can provide assurance of complying with the aforementioned governance requirements, they would most likely attract the attention of potential investors.

A South African Perspective

Corporate governance in South Africa was institutionalised by the King Report on Corporate Governance in November 1994. The King Committee was formed in 1992 under the auspices of the Institute of Directors, with the task to consider corporate governance in the context of South Africa. As such, the purpose of the King Report in 1994 was to promote the highest standards of corporate governance in South Africa. Since 1994 a second King Report was drafted (King II) and published in 2002, which are also regarded as the code of corporate governance for South Africa.

As an emerging economy, South African corporate organisations realised the importance of establishing a good corporate governance structure. Aligned with this view, the United Nations Economic Commission for Africa (UNECA) (2002) states that sound economic governance is regarded as being primarily dependent on the strength of its institutional framework, the flexibility, manoeuvrability, and resilience to the changing political, economic and social development and the ability and competence of the personnel to take bold, practical and rational decisions. According to the King Report (2002), there are seven primary principles (characteristics) of good corporate governance, namely:

- *Discipline*: involves commitment by a company's senior management to adhere to behaviour that is universally recognised.
- *Transparency*: the ease with which an outsider is able to analyse a company's actions, economic fundamentals and the non-financial aspects pertinent to the company's business. As such, it measures how good management is in making information available to reflect the true situation of the company.
- *Independence*: includes the extent to which mechanisms have been implemented to minimise or avoid potential conflicts of interests, such as composition of the board of directors and board committees.
- *Accountability*: involves the allocation of accountability to decision-makers. Mechanisms must exist and be effective to allow for accountability. This provides investors with the means to query and assess the actions of the board and its committees.
- *Responsibility*: this allows for corrective action and penalising mismanagement regarding the management of the company. While the board of directors is accountable to the company, it must act responsibly towards all stakeholders.
- *Fairness*: all systems within the company must be balanced in considering all interested parties and the future of the company. The rights of various groups must be acknowledged and respected.
- *Social responsibility*: a well-managed company will be aware of, and respond to social issues and placing a high priority on ethical standards.

However, as part of the African continent, South Africa also needs to focus on the following institutional reforms in order to successfully promote corporate governance:

- Administrative and civil services;
- Strengthening of parliamentary oversight;
- Promoting participatory decision-making;
- Adopt effective measures to combat corruption and embezzlement; and
- Undertaking of judicial reforms (UNECA 2002).

Although South Africa is regarded as one of the leading countries in Africa regarding incorporating corporate governance, various issues and problems are hampering a successful evolvement thereof. For example, according to Temkin (2008) Brazier, CEO of Deloitte Tip-offs Anonymous, South Africa's senior executives and management have been accused of abusing their powers, mostly for the purposes of fraud and other white collar crime.

With poverty and unemployment on the increase in Africa and South Africa, the government is not always meeting the basic economic needs of South Africans. At an unemployment rate of approximately 40% in 2008, the social justice and development responsibilities are growing concerns, especially issues such as unemployment, housing shortages, education and healthcare. The government implemented the Employment Equity Act of 1998 and the Broad-Based Black Economic Empowerment Act of 2003 to intervene in the economy to achieve some form of economic equality. According to West (2006), much of the rhetoric of the governing party (African National Congress) and the justification for its policies are based on the need to "redress past wrongs" and correct the imbalances and structural faults inherited from apartheid and colonialism.

Regarding social justice and development, West (2006) states that the reality is that the existing corporate environment in South Africa does not incorporate such moral imperatives, but rather promotes the profit motive and, at best, South African corporations adopt a weak form of responsibility towards development. "A macroeconomic strategy which relies on the trickle-down effect of free-market capitalism to meet developmental goals is at odds with an ethics that insists on urgent human needs taking priority over profit maximization."

West (2006) states that a number of criticisms can be raised which question the exposition of African values. First, in an era of increased globalization, society in South African increasingly takes on the values of other cultures, particularly those of the USA. Secondly, the African values mentioned may refer to a romanticized, traditional African society that has never existed. Thirdly, this view of African values ignores the importance and influence of different groups within South Africa (such as Afrikaners, English-speaking whites, other Europeans and Indians and rural versus urban communities) and the increased integration that has taken place since the end of apartheid. Fourthly, the experiences of ruthless and corrupt dictatorship in other parts of Africa, and lastly, the existence of a new "black elite" that has benefited from a Black Economic Empowerment that has frequently failed in its attempts at being "Broad-Based" and that shows no more evidence of communitarian African values than white business leaders. This all indicates that there is an incompatibility between the South African corporate environment and South African values.

Executive Compensation is another issue at hand. There is a growing gap between executive compensation and those of average workers. This has sparked a series of strikes among workers and unions with the aim to influence companies' wage structures during 2009 (and still continuing).

Mensah, (2003) states that it is becoming increasingly recognised that companies should be managed to reflect the interests of society at large rather than for purely private interests. Corporate governance has been defined in terms of arrangements for protecting the interests of all stakeholders of the organisation.

"For a publicly-owned company with dispersed ownership, the manner of selection of board members is important. For closely held companies with a controlling shareholder, the governance issue revolves around the need to prevent the controlling shareholder from extracting excessive benefits from the corporation at the expense of the minority shareholders (Mensah 2003).

Mensah (2003) states that African capital markets face the following shortcomings:

- Limited listings and illiquidity
- Low investor confidence
- Gaps and insufficiencies of legal framework
- Unsupportive macroeconomic policies.

Experience in other countries indicates that the development of capital market mechanisms for improving corporate governance requires the following:

- Corporate governance codes, which impose restrictions beyond those that are imposed by law.
- A free market for corporate control supports effective corporate governance.
- Efficient, transparent and liquid securities markets provide effective price signals, punishing underperforming companies and rewarding good performers.
- A growing and efficient capital market is usually accompanied by a well developed "reputation industry"

In less developed markets, such as those in Africa, the problems of market inefficiency and illiquidity reduces the effectiveness of market-based discipline through pricing and an active market for corporate control (Mensah 2003).

According to a study performed by Nganga et al (2003) on corporate governance in Africa, the following common issues were found:

- Courts remain slow and inefficient – Although most countries are reviewing their commercial laws to improve shareholder protection and corporate governance principles, in practice the judicial systems remain slow and inefficient. For example, the current political situation in South Africa shows a negative trend in coping with the increase in crime and serious offences. An example is a 42% increase in armed robberies in the financial year (2005/06) in some of the major cities of South Africa as published in the Pretoria News dated 30 September 2006. An increase in other serious reported crime incidents are for example: murder, rape, attempted murder, carjacking etc. A potential result could be that investors will be hesitant to invest in South Africa (and other countries in Africa, as South Africa is regarded as one of the leading countries in Africa along with Egypt and Algeria), which could result in a negative economic growth, increase in poverty and not benefiting from globalisation. As such, it is clear that if these negative criminal offences increase, the economic growth of Africa and South Africa can be seriously threatened. Another example that could pose a serious risk for the South African business, as an example, is the judicial system. Good corporate governance requires an independent judicial system that is impartial, free from interference and renders respected judicial decisions. Disrespect for the judicial system could reflect a negative image and a high risk to potential investors.
- Stock market regulators have emerged as an alternative legal protection mechanism to inefficient courts. Listed companies represent a very small proportion of the total economic activity in the countries surveyed, with market capitalization to GDP ratios less than 25% in most countries, for example:
  - South Africa 123%
  - Egypt 25%
  - Morocco 26%
  - Nigeria 13%
  - Tunisia 12%
  - Botswana 24%
  - Mauritius 24%
  - Kenya 9%
  - Ghana 10%
  - Tanzania 4%

  (Nganga et al (2003).
- However, listed companies have the most developed regulation and corporate governance systems as they are subject to multiple layers of regulation by the company law, the listing rules on stock markets, the market regulators, and the banking regulations for financial institutions. Due to the relatively slow and inefficient legal systems, these stock market authorities and regulators have emerged as the protection institutions for shareholders and minorities.
- There exists a general convergence to International Accounting Standards. According to Nganga et al (2003), listed companies in Kenya, Tanzania, Botswana and Mauritius are required to use International Accounting Standards (IAS), while the Egypt General Accepted Accounting Principles (EGAAP) closely resembles the IAS.

Morocco and Tunisia have accounting systems derived from French Accounting Standards. South African institutions also conform to GAAP and the IAS.

- Ownership concentration is high. A high level of ownership concentration on most stock markets where owners have sidestepped owner-manager agency problems by acquiring a controlling stake in the business. For example, in Kenya the top five companies represent over half the market capitalization and all have a multinational corporation as the controlling body (for example, Barclays bank, Standard Chartered bank and British American Tobacco). Family control is of a particular concern in Egypt and Mauritius where families have historically been very influential in business).
- Low awareness amongst shareholders and directors. While corporate governance standards have been updated in Africa, there remains a lag in awareness amongst shareholders and directors. However, most countries are aware of this problem and address it in their codes of corporate governance, such as South Africa in the King Report on Corporate Governance of 2002 (Nganga et al 2003).

Most African countries are in a process of adopting an international governance code to deal with corporate governance. However, this proves not to be an easy task. For example, South Africa has a large number of State-owned Enterprises (SOE's) and the Government is struggling to effectively govern some of these. This is illustrated by various large SOE's that were without CEO's (by November 2009), such as Transnet (transport SOE), South African Airways, Eskom (energy SOE), South African Broadcasting Corporation, and ARMSCOR (arms manufacturing SOE). These SOE's form a crucial part of the wellbeing of South Africa and if not governed properly, according to good corporate governance standards, it will have a major negative effect on the South African economic growth and development.

Research Methodology

Notwithstanding the public sector and SOE's, the private sector plays a major role in any country's economic growth and development. Therefore, corporate governance and risk management also form an integral part of the effective management of these organisations. As such, the principles for good corporate governance are also applicable to these organisations. Most South African-based organisations are developing and implementing the primary corporate governance principles in one way or another.

In order to determine the status of development and implementation of good corporate governance in South Africa, it was decided to use a structured questionnaire to determine the degree of development and/or implementation of the basic principles of good corporate governance as identified by the King II report (mentioned earlier). It is a known fact that the banking industry plays a crucial role in the development of any emerging country and usually plays a leading role when it comes to issues such as corporate governance and risk management. South Africa does not differ from this approach and the South African banking sector is one of the leading industries in South Africa. This statement can be substantiated by the Financial Sector Charter which was developed by the banking industry in August 2002, which is a typical example of a code of conduct relating to good corporate governance. Furthermore, the banking industry is also the first to implement the allocation of capital for risks according to guidelines by the Basel Committee on Banking Supervision and regulatory requirements. As such, it was decided to use respondents from the South African banking sector for this survey. The respondents were identified at a junior to middle management level of the banking industry due to the fact that they must adhere to the requirements of the Financial Advisory and Intermediary Act of 2002, which requires most banking staff to have achieved a minimum academic standard as well as their initial exposure (professional experience) to the actual business of a bank within the economic environment. Furthermore, it is usually at this level where good corporate governance principles are implemented.

The questionnaire was, firstly, developed to determine the status of development and implementation of the following primary characteristics of good corporate governance:

- Discipline
- Transparency
- Independence
- Accountability
- Responsibility
- Fairness
- Social responsibility

Secondly, the questionnaire aimed to determine how the South African Government is performing against the following economic governance objectives:

- To enhance the ability to implement development and poverty reduction policies with scarce resources;
- To execute public management functions in an accountable manner;
- To develop and implement a credible policy environment in which domestic and international investors can have confidence and trade can be enhanced;
- To strengthen skilled capacity to attract and mobilize development;
- To demonstrate transparent and participatory economic policy-making and execution as well as an open flow of information available to all stakeholders; and

- To signal an adherence to standards of institutional functioning free of corruption.

The questionnaire requested respondents to indicate on a 5-point scale their view on the degree to which their organisation adheres to the principles of good corporate governance and, secondly, to what degree the South African Government is performing against typical corporate governance objectives. The following scale was used:

1 = not at all
2 = to a lesser degree
3 = to a degree
4 = to a large degree
5 = fully

The response was analysed in terms of the average score for each question in terms of the 5-point scale.

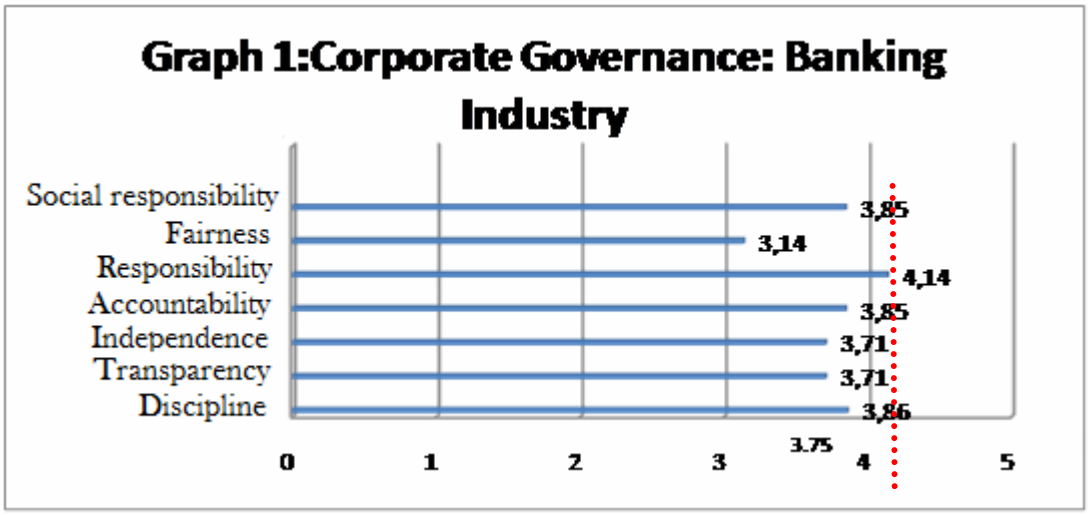
Research Results

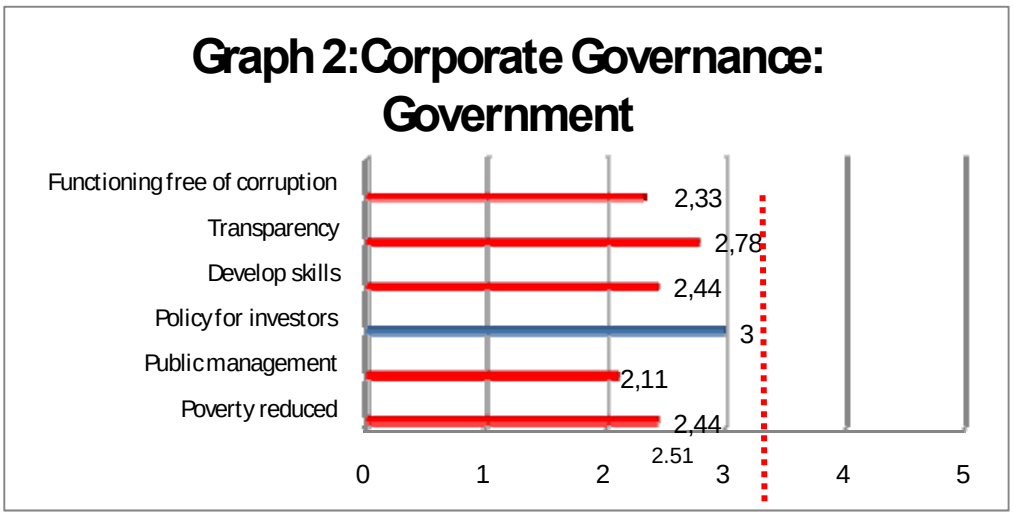
The questionnaires were randomly distributed to employees of banks in South Africa. A total of 80 questionnaires were dispatched and 38 were returned on the due date, which represents a 48% response. Although, the results might be subjective in the sense that it represents the views and opinions of only junior to middle management members of the banking industry, the result could be used as an indication of how these respondents are experiencing the development and implementation of good corporate governance within their immediate environment (banking industry) and the government's overall performance in terms of specified typical corporate governance objectives, which is general information available to a large percentage of the public through the media.

According to the response the average score for the development and implementation of the 7 corporate governance principles in the banking sectors is 3.75, indicating that the banks are implementing these principles to a large degree. (Graph 1).

The principle which were rated the highest was responsibility, indicating that mismanagement is not tolerated and that the board of directors act responsibly towards all stakeholders. The principle which scored the lowest rating is fairness, indicating that not all groups are acknowledged and respected. However, the score still indicates that fairness is implemented to an acceptable degree.

The response in terms of the Government's performance relating to the corporate governance objectives is illustrated in graph 2.


Graph 1:Corporate Governance: Banking Industry
Social responsibility
Fairness
Responsibility
Accountability
Independence
Transparency
Discipline
3,85
3,14
4,14
3,85
3,71
3,71
3,86
3.75
0
1
2
3
4
5


Graph 2:Corporate Governance: Government
Functioning free of corruption
Transparency
Develop skills
Policy for investors
Public management
Poverty reduced
2,33
2,78
2,44
3
2,11
2,44
2.51
0
1
2
3
4
5

The average score for all 6 objectives is 2.51, indicating that the Government is performing to a lesser degree against the objectives of corporate governance. In total only one objective is at an acceptable performance level according to the response. This objective, which scored the highest rating, is the development of a credible policy environment in which domestic and international investors can have confidence and trade can be enhanced. This point can be substantiated when analysing the influences of the recent financial global crises where the South African markets were not influenced at the same severity levels as other countries such as the USA and UK. Therefore, according to the response the Government is performing to an acceptable degree in this regard. On the other side, is the lowest rating of 2.11 for executing public functions in an accountable way. This correlates with, for example, the statement made previously regarding the inefficient way that the Government is handling the SOE's.

Conclusion

Although African countries across the continent are at various stages of implementing corporate governance codes and principles, most of these initiatives are being hampered by problems of corruption, inadequate infrastructures and cumbersome bureaucratic procedures.

According to the research results, it can be concluded that most of the large corporate organisations are adhering to the principles of good corporate governance, although the performance of the South African Government, measured against certain corporate governance objectives, requires attention to ensure a positive contribution to embed good corporate governance and economic growth.

However, corporate governance is an issue being reported on daily by the media and addressed by the Government and corporate organisations, indicating a positive awareness of the topic. This will ensure an active development and implementation of the basic principles of good corporate governance. In addition, the next King Report (King III) on corporate governance is currently being launched in South Africa, which should add further value to embedding an effective code of corporate governance in South Africa.

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CORPORATE GOVERNANCE IN SOUTH AFRICA: THE INTRODUCTION OF KING III AND REPORTING PRACTICES AT THE JSE ALT-X

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Abstract

South Africa has experienced a tremendous growth in its economy since its first free elections in 1994. Politicians, however, consider the transformation of the society and more equally distributed wealth as one of their key goals. Thus, companies often find themselves under scrutiny as regards their contribution. A new corporate governance code (King III) will become effective in March 2010. This reworked code now tries to enhance the reporting practices of companies as to their sustainability and corporate social engagement and tries to link international standards of corporate governance with African values. This paper introduces the novelties of King III and examines the current reporting practices of 68 companies listed on the Alt-X segment of the Johannesburg Stock Exchange. The paper discusses issues like risk, board composition and remuneration and provides valuable insights into the structure of small cap companies in South Africa and analyses which parts are used by companies to enhance their legitimacy.

Keywords: corporate governance, South Africa, corporate governance code

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Introduction

Corporate governance describes the system by which means companies are directed and controlled. Through the separation of the ownership and the use of the capital, director's responsibilities cover the functions of direction, executive action, supervision and accountability (Reinecke, 1996). By its nature, corporate governance covers a set of rules and principals written and enforced by law and professional bodies and is dependent upon good practices and suggestions. Often, many of these practices have their roots in the demands of the market. Yet, corporate governance is also necessarily political (Roe, 2003; Gourevitch and Shinn, 2005). It is dominated by the power-relation at a given point in time and strongly driven by political ideology and interests.

South Africa is the largest economy in Africa. Its historically Anglo-Saxon shaped administration and business values led it to have a very westernized approach to corporate governance, such as the market-based model of corporate governance and its dominant shareholder's view. For example, a single-tiered board structure is standard, without any representation of stakeholders like employees. The steps South Africa decides to make in pursuit of its economic policy are often echoed throughout the rest of Africa. The South African Corporate Governance Code, King II, has been reworked and the new code, King III, will be released in March 2010. King III takes an interesting route and tries to balance between international developments and African peculiarities. South Africa chose a code of principles and practices on a 'apply or explain' basis. Thereby, so is the explanation, it is intended to guarantee enough freedom to the companies to balance the cost of compliance with their imminent business needs.

In addition to the corporate governance code, there is much demand from politicians for a company to disclose how it is actively engaging in the transformation of the South African society by means, for example, of Black Economic Empowerment (BEE). The Code of Conduct for Broad-based Black Economic Empowerment, which is administered by the Department of Trade and Industry and based on the Black Economic Empowerment Act, 2003, was published in the Government Gazette in February 2007. There is growing pressure, across the economy, for companies to achieve adequate BEE ratings. To get this rating companies wishing to do business with any organ of state, including municipalities, or state-owned enterprises, must have a qualifying score (leaving aside the special considerations applying to exempt micro-enterprises and qualifying small enterprises). A large part of the scorecard is devoted to preferential procurement. An enterprise scores points for acquiring goods and services from other entities which are black-owned, or have a high recognition level. This creates a type of cascade whereby companies, in order to increase their own BEE ratings, are applying pressure on their suppliers to be compliant.

This paper points out key elements of King III and, subsequently, screens the annual reports of the companies listed on the Alt-X index at the Johannesburg Stock Exchange (JSE Ltd). The Alt-X which is comprised of 76 companies commenced in October 2003 in order to replace the failed venture capital and development capital boards established as sub-sets of the main board in the 1980s. The purpose behind its creation was to encourage entrepreneurship, especially among South Africa's emerging black middle class.

For this paper, a focus on the small caps of the Alt-X allows for the elimination of practices adopted from other stock exchanges, like the London Stock Exchange[1] at which plenty of major South African companies are listed alongside the JSE ltd. It is with the intention of understanding how South African companies with limited foreign interest are reporting on corporate governance issues, that the paper analyses the corporate governance sections of the financial statements of 68 available financial statements from the McGregor database (out of 76 listed companies at the Alt-X). The largely quantitative method used is enriched by giving excerpts of these financial statements. The statements are indicated in italics and are direct quotes out of different financial statements. The names of the companies are indicated in brackets.

The scope of this paper is not limited to the description of the findings in the company's financial statements. Rather, by asking if the political pressure which companies face is represented in their financial statements and if companies which follow really add valuable information for investors or if it is a mere mimicry exercise, it adds to the increasing body of writings about the political aspects of corporate governance. The influx of foreign direct investments and the increasing importance of the Stock Exchange facilitates change (O'Sullivan, 2003), but there is not necessarily cross-national convergence. So far, attempts to combine neo-liberal economic policies and social responsibility in the area of corporate governance have shown unsatisfying results, especially for those hoping for a more equitable global capitalism (Erturk et al., 2004).

The King III report understands companies as being part of a larger environment and it is their duty to act in a sustainable manner. This understanding is echoed by Institutional theory which sees institutions as:"[…] composed of cultural-cognitive, normative, and regulative elements that, together with associated activities and resources, provide stability and meaning to social life. …. Institutions operate at different levels of jurisdiction, from the world system to localized interpersonal relationships. Institutions by definition connote stability but are subject to change processes, both incremental and discontinuous" (Scott, 2001:48). Institutionalization is in turn defined as "the process through which components of formal structure become widely accepted, as both appropriate and necessary, and serve to legitimate organizations" (Tolbert & Zucker, 1983: 25). To explain the adoption of new practices and their growing similarity within social systems, institutional theorists adopt two approaches: striving for efficiency or legitimacy considerations (DiMaggio & Powell, 1983; Tolbert & Zucker, 1983; Westphal et al., 1997; Strang & Soule, 1998). If organizations adopt practices for efficiency reasons, their actions are rational and are driven by gains in efficiency or effectiveness (Thompson, 1967; Blau & Schoenherr, 1971). Institutionalists argue that the strive for legitimacy and support, on the other hand, can take a predominant position even if the actions and decisions that foster legitimacy go against the efficiency requirements of the firm (DiMaggio & Powell, 1983; Meyer & Rowan, 1977).

In countries like South Africa in which there is considerable pressure on companies to contribute to a more equal society, corporate governance might be used as a tool to enhance the legitimacy of companies. This paper is particularly interested in those elements of corporate governance that are designed to raise the legitimacy of the reporting companies.

Corporate governance in South Africa

The economic situation and the shareholder structure in South Africa have changed since the opening up of the economy. In the early 1990s a few dominant conglomerates controlled the JSE in which high levels of ownerships and cross-shareholding (Sarra, 2004) were exhibited. Previously the majority of shares were held by a few rich families, it is now institutional investors which are the largest holders of shares. Based on commodity producers, South Africa attracted significant foreign direct investment after the opening of the country post-Apartheid and the first democratic elections in 1994. The late 1990s were characterized by neo-liberal policy making, together with a stronger focus on shareholders and macroeconomic stability (Lachman, 2004; Lewis et al, 2004; Andreasson, 2007). There are, however, other players who are not so much in favour of this policy and, in the case of the labour unions and leftists, are more focused on reaching a more equal distribution of wealth in society.

Despite the strong focus on the attraction of foreign direct investments into South Africa and a strongly market-orientated economic system, the tensions in South Africa are evident in the framing of the economic policy. Some players, such as the Congress of South African Trade Unions, lobby for a more 'social' redistribution of wealth or the pursuit of socialist ideologies, such as the South African Communist Party. They reject the free market as the driver of economic growth and have instead proposed strong government interventions to overcome the debilitating legacy of uneven development and extreme socio-economic inequalities (Andreasson, 2007). Some authors have subsequently taken

extreme positions, rejecting the shareholder wealth maximization model as 'incongruent with South Africa's commitment to situating the corporation within civil society (Sarra, 2004: 21).

The ideologically unpredictable times which followed the first democratic elections were countered by a move of corporations and professional bodies and the drive for guidance and 'best practices' to enhance legitimacy. As a consequence, the Institute of Directors in South Africa established the King Committee on Corporate Governance, chaired by Mervyn King, a retired judge. The two corporate governance codes that were issued in 1994 and 2002 both carried his name and are commonly referred to as the King Report on Corporate Governance (King I) and the King Report on Corporate Governance for South Africa (King II) . King II received positive feedback, in particular for its integrated Sustainability Reporting section (e.g. Barrier, 2003). South Africa faced different, sometimes contradictory, influences on the prevailing system of corporate governance. Through the liaison of the JSE with the London Stock Exchange, major companies sought double listing in Johannesburg and London. These companies, thus, had to incorporate in their operations international practices on corporate governance and financial reporting (O'Sullivan, 2003). South African companies whose shares were listed in London were seen as leaders in a South African context, and their practices were soon being seen as best practices. In fact, a diverting regulation in South Africa would have only imposed more cost on these companies. Another movement in the same direction came from supranational organizations like the WTO or the IMF, who demanded a westernized system of accountability. In addition, South Africa rediscovered its own African roots. This 'African renaissance' led to attempts to Africanise the direction of business. African cultures are largely seen as communitarian (Gyekye, 2003; Mbiti, 1989; Mentiki, 1979; Wiredu, 2003).

King II focused strongly on the South African situation and attempted to incorporate the local business culture. The King Committee on Corporate Governance launched the King Report on Corporate Governance for South Africa – 2002 (King II Report) at an Institute of Directors (IoD, 2009) Conference at the Sandton Convention Centre, 26 March 2002. Due to changes in legislation, particularly the introduction of the new Companies Act No. 71 of 2008 and to keep up with international developments, King II had to be adapted. The new code named King III will come into effect on March 2010. As already visible in King I and II, the Committee for King III was focused on 'the importance of conducting business reporting annually in an integrated manner i.e. putting the financial results in perspective by also reporting on:

- 'how a company has, both positively and negatively, impacted on the economic life of the community in which it operated during the year under review; and
- how the company intends to enhance those positive aspects and eradicate or ameliorate the negative aspects in the year ahead'(IoD, 2009).

The Institute of Directors (2009) in its pre-statement to the King Report critically reflects on US-driven incentive-based solutions such as the Sarbannes-Oxley Act. It cites Prof. Romano of Yale Law School:

'SOX's corporate governance provisions were ill-conceived. Other nations, such as the members of the European Union who have been revising their corporation codes, would be well advised to avoid Congress' policy blunder'

or Prof. Ribstein of Illinois Law School comment that

'once set in motion, regulation is almost impossible to eliminate. In short, the first three years of SOX was, at best, an overreaction to Enron and related problems and, at worst, ineffective and unnecessary' (IoD, 2009).

Despite the repetitive mention of international developments the similarity to the regime in the UK is visible. When studying the evolution of the King report, one cannot help but acknowledge the influence of Sir Adrian Cadbury, of the same-named Cadbury Report. He was even consulted on the naming of the committee, as is shown here: '[f]ollowing Sir Adrian's advice, the committee in South Africa continues to be known as the King Committee and the King Code has become an internationally recognised brand' (IoD, 2009).

The King III Report focuses on three pillars: leadership, sustainability and corporate citizenship. Effective leadership is seen as the key to good governance and is facilitated through ethical values, in particular responsibility, accountability, fairness and transparency. King III's interpretation of these values shows its denial of a one-size-fits-all approach and its focus on two South African issues: the changes in the economic situation and the principle of *ubuntu.*

Ubuntu is largely translated as 'I am, because we are; and since we are, therefore I am' (Mbiti, 1989, p.110). Every individual is an extension of others and, therefore, reaching the fullness of one's potential without the concrete act of relating to another individual person is impossible. *Ubuntu* pinpoints the importance of community to individual identity and hence to human dignity (MEC for Education, 2006). In African cultures, effective leadership is based on moral duties. Despite these interesting insights, little is known about how to crystallize these African values into the operations of corporations. One possibility is the decision-making by consensus (Nash, 2002; Wiredu, 1977), discussing matters with everybody concerned. For businesses in a global economy, this approach would be hard to achieve. Sustainability, according to the opinion of the Commission, 'is the primary moral and economic imperative of the 21st century. It is one of the most important sources of both opportunities and risks for businesses'. It is about interconnecting nature, society

and business and the need for a fundamental shift of corporate governance in this regard. The requirement to report on sustainability issues was already incorporated into King II, which explicitly required companies to implement and to report on sustainability. Whereas in King II it was an adjunct to financial reporting, King III would like to see it becoming an integrative part of the financial reporting process. The concept of corporate citizenship, on the other hand, sees the company as a 'person' which should operate in a sustainable manner.

King II chose an 'inclusive' approach to corporate governance (West, 2004). Instead of the prevailing focus on shareholders, King II demands that all stakeholders be considered. Furthermore, the director's responsibility is to serve the company as a whole, rejecting a primarily shareholder-driven point of view. In addition, many recommendations take on non-financial reporting issues like transformation progress, human capital development policies, safety and health concerns, etc. (West, 2004). This means that what looks so much like stakeholder logic is not a stakeholder concept. Why? It has been ruled out by King II. 'The stakeholder concept of being accountable to all legitimate stakeholders must be rejected for the simple reason that to ask boards to be accountable to everyone would result in their being accountable to no one' (King II). As West (2004) has stated, the logic is interesting but unclear.

King III includes two models of corporate governance: 'stakeholder inclusive' and 'enlightened shareholder'. The first model means an inclusion of 'legitimate interests' and expectations of stakeholders. In an enlightened shareholder model these interests and expectations would only be considered if they were in the interest of the shareholders. It is probable, in any event, that the directors would have done that anyway in their attempt to maximize profits. The 'stakeholder inclusive' approach demands the inclusion of the interests and expectations of all stakeholders if in the best interest of the company. Whether this separation of the interests of shareholders vs. interests of the company will survive the test of time might well be open for debate.

One of the preconditions of a market-based model is a functioning stock exchange and a working market for mergers and acquisitions. The JSE has developed from a small trading place dominated by a couple of conglomerates with high levels of ownership concentration and cross-shareholding (Sarra, 2004) to one of the most important stock exchanges in the emerging markets. A major drive for this development came from the pursuit of neo-liberal economic policymaking of the early years of ANC rule backed by macroeconomic stability and the huge interest of foreign investors shown in the country's main companies (Lachman, 2004; Lewis et al., 2004; Andreasson, 2007). Although South Africa has a relatively active stock exchange based in Johannesburg, it is not very well capitalized and economic insecurities can quickly trigger a sudden outflow of capital. As the market is dominated by a group of institutional investors, the report urges these institutional investors to make use of their control rights and to enforce good government practices.

The reporting of Alt-X companies

Corporate governance statements follow a certain pattern. Although there is no fixed prescription as to how these statements should look, the statements of the companies investigated follow a certain pattern. Companies listed on the JSE report on the extent to which they comply with the principles incorporated in King II as well as the requirements of the Corporate Laws Amendment Act, 2006.

Leadership

The reports mention the meetings held throughout the past financial year and the attendance at these of the directors. What is interesting is that many companies change their directors quite frequently. Many companies follow this suggestion and require that one third of their directors would retire annually. Others decide that their directors should stand annually for re-election, viz:

Thereafter one third of the directors (or if their number is not a multiple of three then the number nearest to, but not less than one third) shall retire from office at the annual general meeting. Retiring directors shall be eligible for re-election (ideco).

To ensure that directors are fully conversant with their corporate responsibilities, Wits Business School offers a programme which is endorsed by the Institute of Directors. Quite a number of the companies studied reported that they had made use of the program. In case of other companies, the non-executive directors have no fixed term of office. Another reason for the frequent change might be found in the shortage of skills in South Africa. Finding people qualified for a directorship in South Africa is anything but easy. Those who do qualify are in strong demand, viz:

'[t]he directors acknowledge the need for an independent non-executive chairman to be appointed and this will be done once the company has identified a person suitably qualified for the position (sanyati).

What is remarkable, particularly for the European reader, is the age structure of the directors. A substantial number of directors (both executive and non-executive) are either under the age of 30 or slightly above it. This is reflected in population figures. Nearly 31,4% (one third) of the population is aged less than 15 years and approximately 7,5% (3,7 million) is 60 years or older (Statistics SA, 2009).

The code also suggests that the board agrees on a board charter which mentions the responsibilities of the board:

The Board has adopted a board charter which confers among others the following responsibilities to the Board:

• Retain full and effective control of the company;

• Give strategic direction to the company;

• Monitor management in implementing plans and strategies;

• Identify and regularly monitor key risk areas and key performance indicators of the business;

• Ensure that the company complies with relevant laws, regulations and codes of business practice;

• Ensure that the company communicates with shareowners and relevant stakeholders openly and promptly; and

• Regularly review processes and procedures to ensure effectiveness of internal systems of control and accept responsibility for the total process of risk management (rare).

South African companies are governed by a unified board with a Chief Executive Officer and a separate chairman (following the King report preferably chaired by an independent non-executive director). The Code actually suggests blocking the executive directors from becoming chairman within three years after he had resigned as CEO. One company explains why they did not follow this requirement:

X has a unitary Board with a Chairman who is elected from the Board. The roles of Chairman and the Chief Executive Officer (CEO) have been combined due to the decision to keep the Board small with the majority of the Board members involved in the Company's operations on a daily basis. Despite the convergence of the two roles into one, a balance of power and authority exists which ensures that no one individual has unfettered powers of decision making. This divergence from the King II Report's recommendation is in line with the rules of the JSE for Alt X listed companies, which due to their size have smaller boards, and where full compliance is impractical (Telemasters).

Yet, there is no guideline on how many directors a company should have or how the ratio of executive directors to non-executive directors should look like. Most companies have 8 directors (Median 7). The company with the highest number of directors comprised 12, the company with the smallest number 3. The Code mentions that the board should comprise a 'balance of power', with a majority of non-executive directors, preferably independent non-executive directors. The ratio of executive to non-executive directors also varies greatly. The median and mode for this ratio in the studied group was 1, stating that for each executive director there was one non-executive director. The highest ratio was 3, meaning that for six executive directors there were two non-executive directors in office. Another company had nine non-executives to two executive directors. The median for the ratio executive directors to independent non-executive directors in the sample studied came up to 0.5, indicating that for every two executive directors there is one independent non-executive director in place.

Many companies indicated that they had changed their structure from the previous year to the next. Some simply stated that they 'streamlined' their board and management structure to meet the challenges they faced. Others gave more detailed accounts, e.g.:

During the year, we strengthened our corporate governance infrastructure through appropriate senior management appointments:

• Appointment of an additional independent non-executive director

• Changes to the composition of the audit and remuneration committees

• Adoption of a board charter and audit committee charter

• Drafting of a comprehensive set of policies for the Group

• Suitable remuneration was put in place for all non-executive directors.

In 2008, the composition of the Board was enhanced by the addition of two experienced independent non-executive directors with strong financial backgrounds (rba).

Based on its recognition of risks, the Code demands a strong focus on the adequacy of the internal controls in place. For the directors to keep up with the system of internal controls, the code suggests the use of internal audit services. The internal audit function should report directly to the audit committee. In King III, the internal audit moves from a compliance based internal audit to a risk based internal audit. 15 companies identified shareholders as their prime target for communication. Ten identified no prime targets. 31 companies focused on stakeholders. Eight companies identified shareholders and stakeholders; four others formulated their focus as being on 'stakeholders and shareholders'.

King II requires companies to establish an audit committee, together with risk, nomination and remuneration committees. 53 companies have audit committees in place, 12 companies have audit and risk committees. 13 companies reported to have special risk committees in place. 53 companies had remuneration (and nomination) committees in use. One company named this committee 'remuneration and transformation'. Four companies ran separate nomination committees; five companies had their own investment committees. One company had an investment and transformation committee, one a committee for corporate governance, one for acquisition and one for employment equity. Three companies did not have any committees at all. They justified that on the grounds of the size of the board or the limited nature of the business activities, namely:

Due to the limited nature of the company's activities all board members are responsible for the following:

• all issues regarding corporate governance;

• to maintain adequate accounting records and functionally effective financial reporting and internal control systems, ensure compliance of published financial reports with relevant legislation, regulation, accounting practice and safeguard group assets; and

• to ensure that the group's remuneration policies are appropriate (wooltru ltd).

King III suggests that companies should remunerate directors and executives in a fair and responsible manner. Although most companies have remuneration committees, it is often not easy to understand what they are really doing – particularly in a country with a notorious shortage of skills. There is little opportunity but to pay market-related compensation for key personnel, including directors. In one example there was evidence that the committee as regards the board also acts against the advice of their consultants, as shown below:

The remuneration specialists consulted by management for input on current salary surveys, namely ..., recommended a 6% increase in directors' fees, but the Board decided not to implement any increases in view of the present economic downturn.

Short Term Incentive Scheme

Annual bonus:

The annual bonus is determined each year and paid after the audited annual financial statements for the year ended 30 June 2009 have been completed. The payment of the bonus is based on the performance against budget of the subsidiary companies (divisions) and of the group. ...To recognize and reward the performance of the staff in this difficult economic environment, the Board of Directors approved an after tax bonus of R1 008 000 which is equivalent to 3,4% of net profit for the year before deduction of the bonus paid with effect from 30 June 2009.

Long Term Incentive Scheme (SAR's)

The Long Term Incentive Scheme consists of two elements: Share Appreciation Rights (SAR's) and Performance Units (PUs). The SAR's that were recommended by ... and approved by the Board to key management with effect from 1 December 2008 and implemented with effect from 1 September 2008 (rare).

Sustainability and corporate citizenship

Sustainability has been identified as one of the three pillars of King III. King II had already demanded sustainability reports, but King III requires considerably more. Out of the population studied, only few issued a sustainability report. Many built in the same information content into other sections of their reporting. The reports were scanned to see if they included key words like 'Corporate Social Investment' to establish whether the companies engaged in corporate citizenship. Corporate social investment includes donations and other financial assistance given for an altruistic purpose. In sum, 15 companies reported on their corporate social investments.

In the 2009 financial year, the various entities within the Group made 103 donations to 49 different charities, many of which were in the form of monthly donations. Portable blood donor clinics have been held on site periodically throughout the year at the Durban and Port Elizabeth offices and were well supported by a significant number of staff in those regions – so much so that the Johannesburg branch are looking to follow suit in aiding this worthwhile endeavour (santova).

There are some central topics in the South African context that have social impacts. Therefore the list also included HIV-Aids, Broad-based Black Economic Empowerment, health and safety, environmental issues, employment equity and skills development.

...appreciate the serious impact of the HIV/AIDS pandemic, alongside the threat of other diseases which could cause significant risk. Healthcare promotion therefore concentrates on the preventative and corrective mitigation measures are being implemented to eliminate the underlying causes and hazards of all health risks. The Group promotes voluntary testing, non-discrimination and awareness about preventing the spread of the disease and mitigating its effects (rolfes technology holding).

The sections on employment equity are by and large the most informative and indicate a compliance with the applicable laws and regulations.

The Group's approach has been to encourage all staff to reach their maximum potential irrespective of gender, race or creed. While this focus remains in place, the Group is committed to increasing the participation of historically disadvantaged staff in its structures as per legislative and regulatory requirements. The requisite employment equity reports have been submitted to the Department of Labour (foneworkx).

The paragraphs on Black Economic Empowerment speak largely about the rating the company and its subsidiaries received, e.g. *'The Group's operating subsidiaries are either level 2 or level 3' (dth).*

To prevent reckless and short-sighted behaviour King II recommends a written code of ethics. 21 of the studied companies reported that they had a code of ethics in place. 13 others reported that ethical principles had been agreed on but not formalised. Two companies had a code of conduct in place while four others use a combined code. 41 companies addressed employment equity policies, 35 disclosed how they complied with Broad-based Black Economic Empowerment. 26 companies raise health and safety issues, 11 of them specifically speak about HIV-Aids. 18 companies specifically address the shortage of skills. Despite this, the paragraphs addressing these topics are not very insightful and address the company's awareness of the issue.

Political aspects of Corporate Governance

One of the key issues in the South African context is the transformation of its society. Since the first free election after the fall of apartheid in 1994, it is intended that the wealth of the country is distributed in a way that reflects the population of South Africa. The goal of transformation is largely advocated by politicians, and companies often find themselves under scrutiny for not doing enough to contribute to transformation. One of the most prominent issues in the area of transformation is BEE deals, designed to allow 'historically disadvantaged groups' to own shares of companies and to participate in its wealth creation. A detailed discussion of such BEE deals is not within the scope of this paper.

The paper is interested in how companies use corporate governance reports to demonstrate their will to comply with political goals and in the ways in which they account for their contribution to transformation. Three companies offer outstanding, very detailed descriptions about their actions regarding transformation, while the details given in the reports of other companies as to broad-based black economic empowerment, is very sparse.

The first company operates within the sector of computer supplies. It strongly stresses that it is in excess of the required black ownership threshold and points out a 50% direct BEE shareholding.

Notwithstanding this achievement, continued emphasis is placed on promoting and marketing ... shareholding with historically disadvantaged individuals. ... strong empowerment platform extends across all employment levels within the group – 62% of group executives is black, as is at least 90% of the board of ... of which 27% comprises black females (simeka business group).

This strong focus on BEE is not often visible in the high tech sector. It becomes clearer when reading the CEO's vision of the company, in which he highlights the strong importance of the public sector for the group's income generation.

Public sector remains an important growth avenue for the group. A number of large government contracts secured (through SUHL) vindicate the benefits of this strategy and have laid the platform for continued growth in this area (semeka).

Another company which is working in heavy construction offers a similar insight into its employee structure. Here, the company benefits from considerable government procurement and orders to build for the public space.

A third company which has an outstanding sustainability section is one that offers micro-finance to rural areas.

Interestingly, many mining companies do not engage in excessive accounting for transformation – despite the rhetoric to nationalize them. Their corporate governance sections are quite lean and do not engage with these topics apart from the necessary minimal statements of compliance. One reason for this might be found in the absence of government procurement.

Conclusion

South Africa is a society in transaction, and so is its economic landscape. What has been seen so far was UK-oriented principle-based corporate governance with an African touch. With King III, this road is followed further. The paper has outlined some of the key issues of the King III report which will come into effect after March 2010.

With King III, South Africa seems to walk the line between various positions: its international harmonization and recognition of cultural peculiarities, a marked-based control model with a call for a stronger influence of institutional investors on the companies in which they invest or a liberal economic environment in which companies are supposed to commit to social activities. This will be an interesting process to follow. King III will, even more forcefully, try to incorporate African values into the financial reporting of companies. Yet, the wisdom of using a written code or law to change corporate practices is still open to debate.

How many of these ambitious innovations will change financial reporting remains to be seen. As the paper has demonstrated, many parts of the corporate governance sections are addressing pressing social issues like employment equity, HIV/Aids or environmental issues. The information content on these issues is very limited and one wonders if anyone really benefits from its disclosure. With an increasing pressure on companies to report on these social issues, best practices will emerge. It is likely that these sections start to look very similar throughout the reports of companies due to copy-and-paste exercises. The information value provided is probably not worth the effort.

The most extended reports on social issues were seen at companies which do business with government or are working closely with government agencies. Thereby, these companies seem to use the corporate governance section to show their alignment with the goals of the political elite.

The small cap companies studied in this paper show differences in the information content they provide in their corporate governance section. Some of the companies made excessive use of these sections to report on non-financial issues whereas others followed the minimal requirement. Rather, it seems that these companies which benefit from detailed reporting would do so – even in the absence of a code. From the viewpoint of small listed companies a strict code with excessive reporting requirements would add little value.

Racial and gender profile	2009	% of total	2008	% of total
Non-designated group	54	5,2	47	4,3
Other males	4	0,4	3	0,3
White females	7	0,7	7	0,6
Indian males	64	6,1	39	3,5
Indian females	11	1,1	4	0,4
Coloured males	34	3,3	25	2,3
Coloured females	3	0,3	1	0,1
Other females	–	–	–	
African males	827	79,4	928	84,9
African females	37	3,4	39	3,6
Total number of employees	1 041	100,0	1 093	100,0

(erbacon)

	Female					Male							
	African	Coloured	Indian	White	Female Total	African	Coloured	Indian	White	Male Total	Grand Total	% Black	% Female
1. Top Management	0	1	1	0	2	1	0	3	1	5	7	85,7	28,6
2. Senior Management	0	1	1	7	9	0	2	16	25	36	44	43,2	17,3
3. Middle Management	13	4	3	13	33	10	4	18	21	35	88	67	38,4
4. Skilled and professionally qualified	40	10	11	56	107	41	11	32	106	190	297	45,5	36,0
5. Junior Management	37	26	13	58	134	29	10	17	46	102	236	56	56,8
6. Semi-Skilled	33	15	4	14	66	36	10	10	10	66	132	82	50
7 Unskilled	20	11	0	1	32	3	3	0	1	38	70	95	45,7
Grand Total	143	68	33	149	383	120	50	96	210	497	880	59,2	43,5

*Permanent employees only, excludes contractors.

(simeka business group)

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