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EDITORIAL

Dear readers!

This issue of the journal Corporate Ownership and Control is devoted to corporate governance development in Tunisia.

We were fortunate in setting very stable relationships with many corporate governance scholars from Tunisia during 2007 and 2008. Following those relationships we decided to pay the attention of the reading audience to the academic circles of Tunisia actively involved in the corporate governance research. This special issue of our journal is an award to the scholars from Tunisia for their efforts in corporate governance research.

Rym Hachana and Jamila Hajri examine the relationship between entrenchment and performance. Their study is based on cross-section data of 21 quoted Tunisian companies (from both manufacturing and service sector) over the period 2000 to 2006. Their evidence contributes to understanding the role played by several entrenchment pathways, such as the ownership structure, the debt policy and the structure of the board of directors.

Nadia Ben Sedrine and Nadia Loukil investigate the effect of blockholders and board structure into stock liquidity in Tunisian market. They use five measures of liquidity in order to detect the multidimensionality of liquidity: immediacy cost, price impact, trading frequency, trading speed and total transaction cost. Results show that blockholders, insiders or outsiders, reduce trading speed, while ownership concentration and board characteristic effect on liquidity depend on liquidity dimension considered. Insider ownership concentration enhances price impact. Outsider ownership concentration induces a high trading activity. A large board size improve firm transparency reduces transactions cots. A high proportion of outsider directors increase trading speed.

Marjène Rabah Gana and Anis El Ammari investigate the incidence of the shares transfers by the original shareholders on the degree of the initial underpricing. The authors use a sample of Tunisian candidates companies over the 1992-2006 period. Their empirical results make it possible to confirm the existence of a significant initial underpricing of about 19% and which depends closely on the behavior of shares transfer. More precisely, the original and the controlling shareholders, in order to limit the transfer of wealth towards the new shareholders, reduce the degree of IPO underpricing.

Nadia Belkhir Boujelbéne and Abdelfettah Bouri examine the relationship between ownership structure and market liquidity. From a sample of Tunisian firms listed in the period from 2001 to 2005 the authors showed that ownership concentration by blockholders is positively related to spread. A positive but generally insignificant relation is found between spreads and insider ownership. However, institutional ownership does not add any explicative power to the liquidity.

Sana Ben Cheikh and Mohamed Ali Zarai research the impact of the management power and the manager's personal characteristics on the performance of the highly-rated enterprises. In order to test the validity of the theoretical hypotheses, the empirical study is based on a sample of 32 Tunisian highly-rated enterprises during the period 2000-2005. The results have shown that the leader's power, made up of indicating variables, plays an important role on the stock exchange and accounting performance.

Nizar Hachicha, Abdelfettah Bouri and Foued Khlifi verify if the abnormal returns resulting from the event study methodology are due to econometric problems or to psychological bias generated by irrational investors' reactions. For the econometric bias, five problems are studied: the choice of market index; the missing observations; the abnormal returns normality, joined hypothesis; and the variance volatility in the event window. Results show that abnormal returns are far from being due to the event study methodology failures and econometric bias.

Fatma Wyème Ben Mrad Douagi and Rim Boussaada contribute to the necessary renewal of corporate governance by attempting to highlight some crucial features and issues related to the impact of culture on Tunisian corporate governance system. Based on cultural dimensions of Hofstede (1980), the authors try to identify the impact of culture on Tunisian corporate governance system. They argue that the characteristics of Tunisian corporate governance system such as ownership concentration, inactivity of hostile takeover market, one–tier board system, limited transparency of information and underdevelopment of financial market, reflect the Tunisian culture.

Amel Belanes Aroui and Abdelwahed Omri try to point out that even managerial entrenchment does matter. Authors consider the non financial firms that are listed in the Tunisian Stock exchange during the 1996 - 2006 period. The results are somewhat robust to different specifications. They may enhance and extend the agency-based corporate governance literature on executive risk-taking. But above all, they may shed some light on the emerging markets context namely the Tunisian one.

We will do our utmost to continue publishing papers on corporate governance in Tunisia in the future.

CORPORATE OWNERSHIP & CONTROL

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CONTENTS

MANAGEMENT ENTRENCHMENT AND PERFORMANCE: CASE OF TUNISIAN FIRMS

Rym Hachana*, Jamila Hajri**

Abstract

Since entrenchment strategy has a real impact on performance, we examine in this paper the relationship between entrenchment and performance. This study is based on cross-section data of 21 quoted Tunisian companies (from both manufacturing and service sector) over the period 2000 to 2006. Our evidence contributes to understanding the role played by several entrenchment pathways, such as the ownership structure, the debt policy and the structure of the board of directors. In this paper, we aim to shed light on these governance's features by indicating by which channel entrenchment strategy is carried out in Tunisian companies.

Keywords: management entrenchment, Tunisia, board of directors

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1. Introduction

The prominent role that managers play in firms justifies the interest in analysing their rationality as economic agents more deeply and in studying the effects of their behaviour on these companies.

The dominant theories of corporate governance tend to see managers as agents who are interested in maximising their own interests at the expense of the legitimate of the company's owners, through opportunistic behaviour. The literature tends to construct theoretical structures that minimise the room for manoeuvre afforded to these managers.

More recent management theories show that maximising the job security, the reputation in order to increase their worth in the management job market and maximising their margin of discretion generate effects that are not necessarily at the expense of the owners and are not necessarily counter-productive for the survival of the company.

This lack of consensus has motivated this research, which contributes to better understanding of the role played by the managers in quoted tunisian firms. In fact, we try to verify the impact of the managerial discretion on the performance of these companies. In other words, we will answer to these followings questions: Are Tunisian managers entrenched? Do they serve only their own interests at the expense of the shareholders?

The contributions of our paper are at least three: First, we enlarge the firm-level database from emerging market economies. Second, we shed new lights on the important role of country-specific institutional setting in corporate governance and its impact on ownership structure and debt policy, Third, we measure performance through two variables (Market-T-Book and Return On Assets) in order to compare value created only for shareholders (MTB) to value created to all stakeholders (ROA).

Tunisia represents an ideal setting to examine these issues. In fact, Tunisian listed companies have similar ownership characteristics to publicly traded companies in most countries around the world. They are characterised by a high degree of ownership in general and are predominantly family-controlled. Tunisian economy is characterised by low institutional ownership and an inactive market for corporate control. Moreover, stockholders have fewer rights.

We try to provide insight into the entrenchment effects on the performance. To analyse this impact, we retain three corporate governance's features which are: the ownership structure, the debt policy and the structure of the board of directors.

More specifically, we try to analyse how Tunisian managers get entrenched? By possessing an important share in the capital? Or by adopting a specific financial policy? Or by manipulating the board of directors.

The remainder of this paper is organised as follows. The second section describes the entrenchment pathways and the expropriation effects. The third section summarises previous literature on the link between entrenchment and performance. The fourth section describes our empirical approach, presents the models and discusses the methodology. The results are discussed in the fifth section, and the last section presents the conclusion.

2. Entrenchment Pathways And Expropriation Effects

In a wider sense, managerial entrenchment means the various strategies that managers adopt to increase their margin of discretion in running the firm, which in turn increase their chances of maximising their managerial capital.

Managers have two main ways of becoming entrenched: financial way and social way which includes political and institutional aspect. We detail in the followings paragraphs each strategy separately.

2.1 Financial entrenchment strategies

Financial entrenchment strategies take the form of investment in three specific types of asset that only the managers can appropriate (Shleifer and Vishny 1989):

1. Controlling and filtering scarce strategic information on the company (e.g. investment plans and marketing strategy);
2. Controlling and filtering intangible strategic company assets (e.g. client portfolios, technology, and social networks);
3. Developing and accumulating know-how / experience of management functions in a company of this type.

The managers' progressive accumulation of these intangible assets places them in a position of information asymmetry compared to other firm assets, increasing their relative value, increasing the relative cost of dismissing them and increasing their value in the event of their moving to another company.

Financial entrenchment strategies have the greatest consequences from the point of view of corporate governance, as they attempt to change the ownership's structure. The change in ownership can be affected in two ways: One is by modifying its composition, diluting it with new owner-actors (e.g. by bringing in capital from outside or other types of members whose interests are contrary to those of the initial members) and enhancing the role of management. The other is by capturing the representatives of the owners, the Governing Council by different means (e.g. co-opting, connivance and cross-directorship). Through this type of strategy, managers will hold the power of information, so they will be able to serve exclusively their interests which reduce shareholders' value.

2.2 Social, political and institutional entrenchment strategies

Entrenched managers try to establish a solid network with employees, local communities, political lobbying and social communities to be protected from any threat or risk of removal.

Pagano and Volpin (2005) analyse the behaviour of incumbent managers and workers in a firm faced with a hostile takeover threat, and argue that incumbents are natural allies of workers: the former have an interest in offering long-term contracts to workers so as to discourage the takeover, while the latter are likely to support a lazy manager prone to low monitoring against a more efficient raider. So that, incumbent managers can commit to a stakeholder-friendly behaviour in order to obtain stakeholders' support against a replacement attempt through manager-specific investments (Shleifer and Vishny, 1989). One instance of such investment is the acquisition of expertise in implementing socially responsible policies and sustainable production process that will later turn stakeholder-friendly projects into "pet projects" for the CEO.

A further example is that of a manager who spends time gathering the advice of, and building relationships with, NGO representatives, local communities, and environmentalists. Finally, the CEO can start a parallel career in a social activist organization, and enjoy personal gratification from being praised by other members.

In fact, when good corporate governance deprives managers of standard tools to protect their jobs (such as anti-takeover defenses and CEO-dominated boards) CEOs turn to subtler ways to stay in power. Moreover, as the effectiveness of social activists' campaigns increases, investments in Corporate Social Responsibility expertise and close relationships with stakeholder representatives become powerful entrenchment tools.

More specifically when stakeholder protection is left to the voluntary initiative of managers, relations with stakeholders and social activists may turn into a powerful entrenchment strategy for incumbent CEOs (Cepsa and Cestone 2007). According to these authors, this reality is particularly true in countries and periods where political lobbying, social activism, and media campaigns have the power to promote or disgrace top executives of large corporations. Inefficient managers have then a special motive for committing themselves to a socially responsible behaviour that gains stakeholders' support.

Cepsa and Cestone (2007) suggest also that explicit stakeholder protection – whether enforced by courts and regulators, or by private monitoring institutions specialized in corporate social responsibility issues – can break this alliance, thus favouring control contestability and managerial turnover.

3. Link between entrenchment and performance: Literature review

The literature has highlighted the relationship between entrenchment and performance. Some studies consider that entrenchment affect negatively the performance. However, others precise that entrenchment enhances firm's value. We try to verify the sign of this relation for the specific case of quoted Tunisian firms. To achieve this goal, we select three entrenchment's attributes which are the ownership

structure, the financial policy and the structure of the board of directors. Hence, we exclude some entrenchment strategies, such as the investment in specific assets and anti-takeover strategies. In fact, the market for corporate control doesn't exist in Tunisian economy.

3.1 Ownership Structure And Entrenchment Effects: Theory And Previous Empirical Results

There is theoretical and empirical work on the existence of an impact of ownership structure on performance. We try to summarise the most important studies that have analysed this relation.

Mehran (1995) explains how the existence of large shareholders in the firm facilitates the control of managerial discretion, and thus lessens the need for equity-based compensation for managers in order to achieve a convergence between their interests and those of outside owners.

More recently, Farinha (2003) thinks that given their large shareholdings in the firm, entrenched managers may be tempted to offset the risk of non-diversification of their personal wealth through higher dividends.

Miguel et al (2004) find that insider ownership is related to performance in a non-linear way because of the managerial entrenchment that, contrary to the convergence of interest effect, leads to market valuation being negatively affected by some range of high ownership stakes. Similarly, the expropriation phenomenon that is likely to dominate the monitoring effect at high levels of ownership concentration explains why a highly concentrated ownership negatively influences corporate value.

Studying the interrelationship between managerial ownership and board structure, Lasfer (2006) concludes that high managerial ownership entrenches managers by allowing the CEO to create a board that is unlikely to monitor. Its results show a strong negative relationship between the level of managerial ownership and corporate governance factors (such as the split of the roles of CEO and the chairman, the proportion of non-executive directors). He also finds that companies with low managerial ownership are more likely to change their board structure which cast doubt on the effectiveness of the board as an internal corporate governance mechanism when managerial ownership is high.

3.2 Financial Policy And Entrenchment Effects: Theory And Previous Empirical Results

A wide literature in finance and in management have analysed the role of financial policy as a variable facilitating entrenchment. In fact, some studies try to answer to the following question: Does the financial policy, and in particular the debt policy constrain or facilitate entrenchment?

Corporate debt policy has been viewed as an internal control mechanism, which can use agency conflicts between management and shareholders, particularly the agency costs of free cash flow as suggested by Jensen (1986). In fact, he argues that managers with substantial amounts of free cash flow are likely to engage in non-optimal activities. Debt can be a disciplinary device that may be used to reduce the agency costs of free cash flow. Jensen and Meckling (1976) argue that managerial shareholding can reduce managerial incentive to consume perquisites, expropriate shareholder's wealth and to engage in other non-maximising behaviour and thereby helps in aligning the interests between management and shareholders.

Wang (2006) shows that dividend yield is negatively influenced by managerial entrenchment and leverage ratio. Furthermore, managerial agency conflicts vary with a firm's financial health. The interests of managers and shareholders become naturally aligned and shareholder-manager conflicts over risk choice and cash payout level disappear as a firm approaches bankruptcy. Specifically, entrenched managers choose leverage not only to reduce the likelihood of bankruptcy but also to avoid a threat from outside shareholders to terminate their contract. Managers will assume the minimum amount of debt necessary and choose the minimum dividend payout rate to prevent the outside shareholders from exercising their threat to fire.

According to the same author, when the entrenchment power reaches a certain level, managers are able to stop dividend payment without provoking shareholders' firing action. In other words, outside shareholders receive higher dividend if they are more effective in disciplining management.

Kumar (2006) examines the link between capital structure and shareholding pattern for a panel of more than 2000 publicly traded Indian corporate firms over the years 1994 to 2000. He finds that firms with weaker corporate governance mechanisms, dispersed shareholding pattern, in particular measured by the entrenchment effects of group affiliation, tend to have a higher debt level. Firms with higher foreign ownership or with low institutional ownership tend to have lower debt level. Studying the case of 135 non-financial quoted Spanish firms from 1990 to 1999, De Miguel et al (2005), demonstrate that entrenched managers encourage debt decreases in order to avoid its disciplinary role and to reduce risks, despite the negative consequences this decision may have on Spanish firms.

3.3 Board's Structure And Entrenchment Effects: Theory And Previous Empirical Results

An important measure of the degree of managerial entrenchment is the extent to which executive turnover is involuntary. By definition, non-entrenched managers are exposed to board and/or market-

imposed discipline. Thus, they are more susceptible to forced departure. Entrenched managers, in contrast, are less likely to leave involuntarily since they are less vulnerable to internal pressures.

Goyal and Park (2002) measure managerial entrenchment using the combination of chief executive and chairman duties. They report that vesting both positions in the same individual significantly reduces the probability of forced CEO turnover. Besides, Wilcox (2002) argues that staggered elections encourage board independence by reducing the threat that a director who refuses to succumb to management will not be renominated each year. Bebchuk and Cohen (2005) find that staggered boards of publicly US traded companies are associated with an economically meaningful reduction in firm value (as measured by Tobin's Q). They also provide suggestive evidence that staggered boards bring about, and not merely reflect, a reduced firm value. Finally, they show that the correlation with reduced firm value is stronger for staggered boards that are established in the corporate charter (which shareholders cannot amend) than for staggered boards established in the company's bylaws (which shareholders can amend).

Bates and al (2007) demonstrate that board classification is an anti-takeover device that facilitates managerial entrenchment.

In the following section, we will present our empirical design and methodology.

4. Empirical Design And Methodology

We will gauge the impact of entrenchment strategy on the performance of Tunisian quoted companies, and try to analyse which channel is privileged by managers to be entrenched. In fact, we consider three entrenchment pathways which are: the structure of ownership, the financial policy and the board's structure.

We begin our analysis by presenting our variables and hypothesis.

4.1 Data Selection And Hypothesis

We select all companies quoted on the Tunisian financial market over the period 2000 to 2006. Financial companies are excluded because of their specific characteristics. Other companies are also excluded because they become newly quoted on the Tunisian market.

We collect data on managerial ownership, board structure, financial policy and other control variables from companies' financial statements published on the site of Tunisian stock market (BVMT). The entrenchment variables were found by sending mails to directors in the corresponding firms. We asked them their age, the number of years passed in the firm and in the post of CEO. The discussion in the previous sections suggests the need to identify observable variables to test for the existence of an entrenchment strategy and the relationship between entrenchment and performance.

Table 1. Summary of variable definition

Variable name	Definition
Market-to-book MTB	Ratio between market capitalisation and total book value
Return On Assets ROA	Ratio between earnings before tax and interests and total assets
LNAGE	Logarithm of the age of CEO between 2000 to 2006
YEAR CEO	Number of years passed in occupying the post of CEO
YEAR FIRM	Number of years passed in the firm
BOARD SIZE	Number of directors sited in the board
BOARD IND	Number of non-executive directors who are outsiders with no business or personal relationship with the firm or any of its employee-directors.
CEO PROP	The percentage of equity ownership held by executive directors
INSTIT PROP	The proportion of shares owned by other companies.
FAM PROP	The proportion of shares owned by the controlling family.
DEBT	Ratio total debt over total asset
LN ASSET	Logarithm of total asset
FIRM AGE	2006 less the year the firm was founded

We will detail the different dependant and control variables and present our hypothesis.

4.1.1 Board's structure

Board's size. The literature has not defined the optimal board size. However, a number of studies argue that small boards operate more effectively than larger ones because of the high coordination costs and free rider problems associated with large boards. For example, Raheja (2003) develops a model where small boards will mitigate the agency conflicts between managers and shareholders. Consistent with the monitoring role of small boards, Yermack (1996) reports a negative relationship between firm value and board size.

Proportion of non-executive directors. Another aspect of corporate governance that may influence the level of managerial entrenchment relates to the composition

of the board. One argument here is that unless a board is independent, monitoring of management will be weak. Consistent with this conjecture, Rosenstein and Wyatt (1990) find a positive relationship between the percentage of non-executive directors on the board and corporate performance. However, there are studies that find exactly the opposite results. For example, the analysis by Franks et *al*. (2001) support the view that non-executive directors are usually characterized by a lack of information about the firm, do not bring the requisite skills to the job and, hence, prefer to play a less confrontational monitoring role.

H1: We expect that either board's size or its composition can be a strong tool for entrenchment. Thus, they will be negatively associated to performance.

4.1.2 Ownership structure

We try to analyse managerial ownership variable through shares owned by the CEO, by the controlled family, and other companies or institutions (We include also in the institutional ownership the shares owned by the state).

CEO ownership. According to the convergence of interests hypothesis, executive ownership helps align the interests of managers with those of shareholders. It is argued that executive ownership works as an incentive mechanism to prevent managers from expropriating wealth from outside shareholders. There is, however, evidence that the relationship between executive ownership and corporate performance is not necessarily linear and that the ultimate effect of executive ownership on performance is determined by a trade-off between the alignment and the entrenchment effects (Florackis, 2005 and Davies *et al.*, 2005).

Family ownership. According to Bozec and Laurin (2007), concentrated ownership structures can generate in the hands of large shareholders (mostly wealthy families) specific agency problems such as large shareholders expropriating wealth from minority shareholders. They add that firm performance is lower when large shareholders have both the incentives and the opportunity to expropriate minority shareholders.

We expect that large shareholders has (1) the opportunity to expropriate (high free cash flows in the firm) and (2) the incentive to expropriate (low cash flow rights).

H2: CEO ownership has an incentive role: The interests of managers and shareholders will be common, then the entrenchment strategy lose any sense. However, we expect that the possession by wealthy family of important shares help them to be entrenched which will affect negatively their performance.

4.1.3 Debt policy

The relation between debt structure and corporate governance is advantageous, not only to better understand whether or not firms that are vulnerable to expropriation issue more debt to have more resources to use for private interests, but also to shed lights on the other possible agency problems. These agency problems may arise between the firm's controlling shareholders and the debt providers and also between the debt suppliers and their minority shareholders. For example, whether the controlling shareholder of a firm and the firm's debt providers belong to the same business groups controlled by the same family. In this case, instead of performing the active monitoring and governance function, the debt suppliers could become the center of corrupt crony systems. In consequence, this would lead to an increase in the level of non-performing loans and hinder the proper functioning of the financial system.

It has been shown that entrenched managers prefer lower than optimal leverage (Broumen and *al.*, 2006); choose debt with longer maturity (Datta and *al.*, 2005); hold large amounts of cash (Harford and *al*., 2005); pay lower dividends (Hu and Kumar, 2004; and Khan, 2006); and overinvest (Pawlina and Renneboog, 2005).

H3: Debt policy constitutes an important tool for entrenchment.

We also include control variables, as suggested in the literature, to reduce specification bias.

4.1.4 Size of the firm

Firm size also has an ambiguous effect on the scope for managerial entrenchment. Jensen (1986) argues that larger companies are more likely to suffer from agency costs, which, in turn increases the desire for larger managerial ownership. However, because of the wealth constraint problem, managers cannot hold large stakes in large firms. In addition, large firms might enjoy economies of scale in monitoring by top management and by rating agencies, leading to a lower managerial ownership.

H4: An important firm size facilitates entrenchment.

4.2 Methodology

To test our research hypotheses, we use the following pooled cross-sectional time series model:

$$MTB = \alpha_0 + \alpha_1 AGECEO + \alpha_2 YEARCEO + \alpha_3 YEARFIRM + \alpha_4 CEOPROP + \alpha_5 INSTITPROP + \alpha_6 INSTITPROP_i + \alpha_7 FAMPROP_i + \alpha_8 CEOPROP_i + \alpha_9 DEBT_i + \alpha_{10} LNASSET_i + \alpha_{11} AGEFIRM_i + \varepsilon_i$$

Then, we test this equation below:

$$ROA = \alpha_0 + \alpha_1 AGECEO + \alpha_2 YEARCEO + \alpha_3 YEARFIRM + \alpha_4 CEOPROP + \alpha_5 INSTITPROP$$

$$+ \alpha_6 INSTITPROP_i + \alpha_7 FAMPROP_i + \alpha_8 CEOPROP_i + \alpha_9 DEBT_i + \alpha_{10} LNASSET_i + \alpha_{11} AGEFIRM_i + \varepsilon_i$$

Where

α = regression coefficients

i = index of ith firm

ε_i = error term

5. Empirical Results

5.1 Descriptive Statistics

The table 2 presents full-sample descriptive statistics.

The sample has an average MTB of 18.15% and an average of ROA of 12.19%. Panel A in Table 1 presents measures of entrenchment attributes. A Tunisian manager stays in average 15 years in the firm and occupies the post of CEO over 7 years.

Panel B in Table 1 presents descriptive statistics for dependant variables in our sample of Tunisian companies. The average number of directors in the board is 6 persons. The size of the board is about 9 directors.

The sample has an average of institutional ownership of 59%, family ownership of 21%. However, the CEO can possess in maximum 6% of the capital.

The sample has an average debt ratio of 50.21.

Panel C in Table 1 includes control variables: The total asset has an average of 10.98 with a standard deviation of 1.07. Whereas, average firm age for the sample is 29.85 years with a standard deviation of 18.48

Panel A of Table 3 presents the correlation coefficients between entrenchment attributes and MTB and the panel A of Table 3' indicate the correlation coefficients between entrenchment attributes and ROA.

We remark that MTB is negatively correlated at the 1% significance level with a coefficient of CEO AGE. Furthermore, MTB is also correlated at the 5% significance level with the number of years passed in the company. We think that new and young managers affect positively the value created for shareholders as they bring new ideas and new strategies to the firm.

The different measures of entrenchment (age, etc) are each negatively correlated to the corresponding measures of ROA. In fact, stakeholders also prefer young managers who can be able to innovate and to up-to-date strategies and structures.

The correlation matrix presented in Table 3 and 3' shows that shareholders are more sensitive than stakeholders to any entrenchment strategy. The entrenchment variables are significant with MTB and not with ROA.

Table 2. Descriptive statistics

Variables	MTB					ROA				
	Obs	Mean	Std.Dev.	Min	Max	Obs	Mean	Std.Dev.	Min	Max
MTB / ROA	147	0.181513	1.732635	.02	1.45	146	.1219178	.1593968	.01	1.29
Panel A:										
LNAGE	147	3.97415	.1350943	3.66	4.21	147	3.97415	.1350943	3.66	4.21
YEARCEO	147	7.571429	5.929956	0	30	147	7.571429	5.929956	0	30
YEARFIRM	147	15.19048	6.638754	0	31	147	15.19048	6.638754	0	31
Panel B:	147									
BOARDSIZE	147	9.619048	1.79166	5	12	147	9.619048	1.79166	5	12
BOARDIND	147	6.190476	2.203153	2	10	147	6.190476	2.203153	2	10
INSTITPROP	147	.5901361	.2401569	.15	.93	147	.5901361	.2401569	.15	.93
FAMPROP	147	.2135374	.3026952	0	.85	147	.2135374	.3026952	0	.85
CEOPROP	147	.088226	.1382103	0	.65	146	.088226	.1382103	0	.65
DEBT	147	.5021233	.2555514	.02	1.9	146	.5021233	.2555514	.02	1.9
Panel C:	147									
LNASSET	147	10.98789	1.072619	3.83	14.14	147	10.98789	1.072619	3.83	14.14
FIRMAGE	147	29.85714	18.48991	6	81	147	29.85714	18.48991	6	81

Table 3. Correlation matrix

Variable	MTB											
	MTB	LNAGE	YEARCEO	YEARFIRM	BOARS	BOARIN	INSTIP	CEOP	FAMP	DEBT	LNA	FIRMA
MTB	1.0000											
Panel A:												
LNAGE	**-0.0079**	1.0000										
YEARCEO	0.1321	0.4101	1.0000									
YEARFIR	**-0.0121**	0.0337	0.4473	1.0000								
Panel B:												
BOARS	0.1316	-0.1624	0.0308	-0.0694	1.0000							
BOARIND	0.1893	-0.1458	0.2230	0.2518	0.6269	1.0000						
INSTITP	0.3508	-0.0684	-0.1024	-0.0165	0.0791	0.3359	1.0000					
CEOPROP	-0.2392	-0.0595	0.00541	-0.2821	-0.0373	-0.3516	-0.8846	1.0000				
FAMPROP	-0.0231	-0.1560	-0.1423	-0.1826	0.1573	0.0441	-0.4280	0.5091	1.0000			
DEBT	0.0810	0.0328	-0.0180	-0.3654	0.1126	0.0515	-0.1866	0.0659	0.3029	1.0000		
Panel C:												
LNASSET	0.1060	0.1285	-0.1650	-0.3373	0.2675	0.2090	0.2496	-0.170	-0.126	0.3541	1.000	
FIRMAGE	0.5901	-0.1280	-0.0344	-0.0209	0.2448	0.4271	0.4931	-0.263	-0.444	-0.013	0.396	1.000

Table 3. Correlation matrix

Variable	ROA											
	ROA	LNAGE	YEARCEO	YEARFIRM	BOARS	BOARIN	INSTIP	CEOP	FAMP	DEBT	LNA	FIRMA
ROA	1.0000											
Panel A:												
LNAGE	-0.4383	1.0000										
YEARCEO	-0.1522	0.4119	1.0000									
YEARFIR	-0.1084	0.3334	0.4510	1.0000								
Panel B:												
BOARS	0.2040	-0.1640	0.0355	-0.0727	1.0000							
BOARIND	0.1943	-0.1501	0.2363	0.2487	0.6247	1.0000						
INSTITP	0.2519	-0.0715	-0.0944	-0.0229	0.0688	0.3193	1.0000					
CEOPROP	-0.0337	-0.1566	-0.1405	-0.1843	0.1551	0.0390	-0.4388	1.0000				
FAMPROP	-0.1806	-0.0577	0.0442	-0.2795	-0.0247	-0.3331	-0.8817	-0.544	1.0000			
DEBT	-0.1398	0.0337	-0.0214	-0.3640	0.1171	0.0611	-0.1807	0.0679	0.2984	1.0000		
Panel C:												
LNASSET	-0.0707	0.1282	-0.1639	-0.3386	0.2666	0.2079	0.2489	-0.171	-0.124	0.3560	1.000	
FIRMAGE	0.0707	-0.1296	-0.0296	-0.0243	0.2403	0.4210	0.4881	-0.267	-0.438	-0.009	0.3958	1.000

5.2 The Entrenchment Pathways And The Impact On Performance

Considering the table below which summaries the regression results:

Table 4. Regression results

Variables	MTB	ROA
LNAGE	1.119528	-0.453333
	(0.276)	**(0.000)*** **
YEARCEO	0.318833	0.0002453
	(0.172)	(0.923)
YEARFIRM	0.032875	-0.0031516
	(0.215)	(0.272)
BOARDSIZE	0.1443551	-0.0168633
	0.073*	**(0.053)*** **
BOARDIND	-0.184282	0.0215887
	(0.022) **	**(0.014)** **
INSTITPROP	4.705693	0.1230309
	(0.000)* **	**(0.014)** **
FAMPROP	2.898664	-0.008492
	(0.004)* **	(0.936)
Variables	MTB	ROA
CEOPROP	3.621579	2.352890
	(0.568)	(0.357)
DEBT	1.351101	-0.088492
	(0.006)* **	(0.119)
LNASSET	-0.4468714	-0.002598
	(0.001)* **	(0.856)
AGEFIRM	0.0643739	-0.0013182
	(0.000)* **	**(0.090)***

P-values are given in parentheses ***; **; * represent significance at the 1%; 5% and 10% level respectively.

We confirm the results founded by (Florackis and Ozkan 2007) who demonstrate that internal corporate governance mechanisms, such as ownership and board structures play an important role in determining the extent of managerial entrenchment. Their empirical analysis suggests that higher managerial entrenchment leads to greater agency costs. They add that short-term debt and dividend payments work as effective corporate governance devices in reducing the costs of manager-shareholder agency conflict.

5.2.1 First Pathway: Entrenchment Through The Board Of Directors And Performance

The size and the independence of the boars seem to be a strong pathway for Tunisian managers to be entrenched. For example, the board size variable is significant at a level of 1% and has a negative impact on ROA (-0.016).

Similarly, the board independence is a significant variable at a level of 5% (0.022) and has a negative impact on performance measured by MTB (-0.18).

We confirm then **H1**, in fact, tunisian managers use board members to increase their own interests. They establish good relationship with board members to be preserved form any threat. So, we join Yeh and Woidtke (2005) who suggest that there is poor governance when the board is dominated by members who are affiliated with the controlling family but good governance when the board is dominated by members who are not affiliated with the controlling family. We confirm that the independence of the board matter in concentrated ownership firms. Hence, the board structure is an important indicator of whether the controlling shareholder is committed to good corporate governance or entrenched.

This case is particularly true in Tunisia. In fact, board directors are usually members of the same family or of another wealthy family. It exist a network composed by rich Tunisian families who dominate the majority of the board of directors.

In this case, controlling shareholders may select board members that are less likely to monitor and more likely to support their decisions in order to entrench themselves further when the entrenchment effects of excess control outweigh the positive incentive effects of cash flow ownership. In this situation, the net personal benefit of expropriation is greater than the net personal benefit of shareholder wealth maximization.

These results suggest that controlling shareholders do wield influence over board member selection. In particular, boards that are closely linked to controlling families are associated with strong, negative entrenchment effects, and firms with these board structures are valued less by investors.

5.2.2 Second Pathway: Entrenchment Through Ownership Structure And Performance

We confirm that the presence of institutions (companies and State) and controlling families in the capital of Tunisian companies facilitate the entrenchment strategy. The institutional property and the family property are significant variables at a level of 1% and have a positive impact on MTB and on ROA.

Hence, we infirm **H2** since the link between ownership structure of institutional and controlling family- even if it constitutes a strong pathway of entrenchment- and performance is positive.

We confirm the hypothesis underlined by Bozec and Laurin 2007. In fact, when ownership is concentrated in the hands of a dominant shareholder, typical governance mechanisms, such as the board of director or the market for corporate control, may not be effective. Firms are exposed to an entrenchment problem that is a situation where the dominant shareholders have the power to pursuit of their own interests rather than the interests of all shareholders.

For these firms, the agency costs do not result from the traditional conflict between outside shareholders and managers (Type I agency costs, as per Villalonga and Amit, 2006). Instead, the costs are caused by a conflict between large shareholders, who control the firm's assets, and minority shareholders, who provide financing but run the risk of expropriation (Type II agency costs, as per Villalonga and Amit, 2006).

In entrenched companies, top management positions are often assigned to a member of the controlling family rather than to the most capable manager (Caselli and Gennaioli, 2003)

Analysing the CEO ownership, we find that the ownership of executive directors –when he isn't a member of the controlling family is very small (less than 3%). We assume that the inclusion of this variable is not going to be determinant in the analysis of the entrenchment strategy in Tunisia.

5.2.3 Third Pathway: Entrenchment Through Debt Policy And Performance

The regression results show that entrenched managers adopt a higher debt policy. In fact,

Debt can facilitate entrenchment, particularly in the countries where institutions are weak and appear to be ineffective (Bunkanwanicha and al, 2008). This is particularly true for Tunisian companies. In fact, this variable is significant at a level of 1% (0.006) and has a negative impact on ROA (-0.088).

Consequently, we confirm **H3** and agree with Kumar (2006) who show that firms with weaker corporate governance mechanisms tend to have a higher debt level. However, firms with higher foreign ownership or with low institutional ownership tend to have lower debt level, which is not the case in Tunisia.

6. Conclusion

This paper investigates empirically whether substantial protection from removal enhances or reduces the value of firms. This question has been much debated, and both defenders and opponents of management insulation have identified many ways, some positive and some negative, in which such insulation could affect value. Putting this long-standing question to an empirical test, we find that controlling family and concentrated ownership encourage entrenchment strategy by choosing directors in the board who are not necessarily the most independent, by investing in order to maximise firm size and by choosing an executive manager who can serve exclusively their interests.

The results in this paper suggest that controlling shareholders entrench themselves further by selecting both board members that are more likely to make decisions favoring controlling shareholders and those that are less likely to monitor when divergence is higher. Moreover, the resulting increase in board affiliation is associated with negative valuation in family-controlled firms. In sum, our results are consistent with larger agency conflicts and weaker corporate governance existing when the majority of directors and all of the supervisors belong to the controlling family.

Our analysis leaves future work for some questions about the relationship between entrenchment and compensation strategy. Moreover, it will be interesting to study the duality in the functions of CEO and chairman in Tunisian boards and analyse the network composed by controlling families who sits in the majority of Tunisian boards.

References

1. Bates, T.W., Becher, D.A., and Lemmon, M.L. (2007) Board classification and managerial entrenchment: Evidence from the market for corporate control, Journal of Financial Economics, forthcoming.
2. Bebchuk, L.A. and Cohen, A. (2005), The costs of entrenched boards, Journal of Financial Economics, 78, 409-433.
3. Berger, P., Ofek, E. and Yermack, D. (1997) Managerial entrenchment and capital structure decisions, The Journal of Finance, 52, 1411-1438.
4. Bozec, Y. and Laurin, C. (2007) Large shareholder entrenchment and performance: Empirical evidence from Canada, Journal of Business Finance and Accounting, forthcoming.
5. Broumen, D., De Jong, A. and Koedijk, K. (2006) Capital structure policies in Europe : Survey evidence, Journal of Banking and Finance, 30, 1409-1442.

6. Bunkanwanicha, P., Gupta, G. and Rokhim, R. (2008) Debt and entrenchment: Evidence from Thailand and Indonesia, European Journal of Operational Research, 185, 1578-1595;
7. Cepsa, G. and Cestone, G. (2007) Corporate social responsibility and managerial entrenchment, Journal of Economics and Management Strategy, 16, 741-771.
8. Chaves, R. and Sajardo-Moreno, A. (2004) Social economy managers: Between values and entrenchment, Annals of Public and Cooperative Economics, 75, 139-161.
9. Datta, S. Iskandar,-Datta, N. and Raman, K. (2005) Managerial stock ownership and the maturity structure of corporate debt, Journal of Finance, 60, 2333-2350.
10. Davies, J.R., Hillier, D. and Mc Colgan, P. (2005) Ownership structure, managerial behaviour and corporate value, Journal of Corporate Finance, 11, 645-660.
11. De Miguel, A., Pindado, J. and De la Torre, C. (2005) How do entrenchment and expropriation phenomena affect control mechanisms, Corporate Governance: An international Review, 13, 505-516.
12. Farinha, J. (2003) Dividend policy, corporate governance and the managerial entrenchment hypothesis: An empirical analysis, Journal of Business Finance and Accounting, 30, 1173-1209.
13. Florackis, C. (2005) Internal corporate governance mechanisms and corporate finance: Evidence for UK firms, Applied Financial Economic Letters, 11, 211-216.
14. Florackis, C. and Ozkan, A. (2007) The impact of managerial entrenchment on agency costs: An empirical investigation using UK panel data, European Financial Management,
15. Franks, J.R., Mayer, C. and Renneboog, L. (2001) Who disciplines bad managers in poorly performing companies?, Journal of Financial Intermediation, 10, 209-248.
16. Gadhoum, Y. (1999) Potential effects of managers' entrenchment and shareholdings on competitiveness, European Journal of Operational Research, 118, 332-349.
17. Gedajlovic, E. and Shapiro, D. (1998) Management and ownership effects. Evidence from five countries, Strategic Management Journal, 19, 533-553.
18. Goyal, V.K. and Park, C.W. (2002) Board leadership structure and CEO turnover, Journal of Corporate Finance, 8, 49-66.
19. Harford, J., Mansi, S. and Maxwell, W. (2005) Corporate governance and firm cash holdings, Working paper, University of Washington.
20. Hu, A. and Kumar, P. (2004) Managerial entrenchment and payout policy, Journal of Financial and Quantitative Analysis, 39, 759-790.
21. Jensen, M. (1986) Agency costs of free cash flow, corporate finance, and takeovers, American Economic Review, 76, 323-329.
22. Jensen, M.C. and Meckling, W.H. (1976) Theory of the firm: Managerial behaviour, agency costs and the ownership structure, Journal of Financial Economics, 3, 305-360.
23. Khan, T. (2006) Corporate dividends and ownership structure: evidence form UK panel data, Economic Journal, 116, 172-189.
24. Kumar J. (2006) Debt vs Equity: Role of corporate governance, Working Paper, Xavier Institute of Management, India.
25. Lasfer, M.A. (2006) The interrelationship between ownership structure and board structure, Journal of Business Finance and Accounting, 33 (7) & (8), September, October, 1006-1033.
26. Mehran, H. (1995) Executive compensation structure, ownership and firm performance, Journal of Financial Economics, 38, 163-184.
27. Miguel, A., Pindado, J. and de la Torre, C. (2004) Ownership structure and firm value : New evidence from the Spanish case, Strategic Management Journal, 25, 1199-1207.
28. Morck, R, Shleifer, A. and Vishny, R. (1988) Management ownership and market valuation, Journal of Financial Economics, 20, 293-315.
29. Pagano, M. and Volpin, P. (2005) Managers, workers and corporate control, Journal of Finance, 60 (2), 841-868.
30. Paquerot, M. (1996) L'enracinement des dirigeants et ses effets, Revue Française de Gestion, Nov-Dec, 212-225.
31. Pawlina, G. and Renneboog, L. (2005) Is investment-cash flow sensitivity caused by agency costs or asymmetric information? Evidence form the UK, European Financial Management, 11, 483-513.
32. Raheja, C. (2003) The interaction of insiders and outsiders in monitoring : A theory of corporate boards, Working paper, Vanderbit University.
33. Rosenstein, S. and Wyatt, J.C. (1990) Outside directors, board effectiveness and shareholder wealth, Journal of Financial Economics, 26, 175-191.
34. Shleifer, A., Vishny, R. (1989) Management entrenchment: The case of manager-specific investments, Journal of Financial Economics, 25, 123-139.
35. Villalonga, B. and Amit, R. (2006) How do family ownership, control and management affect firm value, Journal of Financial Economics, 80, 385-417.
36. Wang, H. (2006) Managerial entrenchment, dividend policy and capital structure, working paper, Faculty of Management, Mc Gill University.
37. Wilcox, J.C. (2002) Two cheers for staggered boards, Corporate Governance Advisor, 10, 1-5.
38. Yeh, Y.H. and Woidtke, T. (2005) Commitment or entrenchment?: Controlling shareholders and board composition, Journal of Banking and Finance, 29, 1857-1885.
39. Yermack, D. (1996) Higher market valuation of companies with a small board of directors, Journal of Financial Economics, 40, 185-211.

BLOCKHOLDERS, BOARD STRUCTURE AND LIQUIDITY: EVIDENCE FROM TUNIS STOCK EXCHANGE

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Abstract

This paper investigates the effect of blockholders and board structure into stock liquidity in Tunisian market. We use five measures of liquidity in order to detect the multidimensionality of liquidity: immediacy cost, price impact, trading frequency, trading speed and total transaction cost. Results show that blockholders, insiders or outsiders, reduce trading speed, while ownership concentration and board characteristic effect on liquidity depend on liquidity dimension considered. Insider ownership concentration enhances price impact. Outsider ownership concentration induces a high trading activity. A large board size improve firm transparency reduces transactions cots. A high proportion of outsider directors increase trading speed.

Keywords: blockholders, board of directors, stock liquidity, Tunisian listed firms

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1. Introduction

Recent research devote a considerable attention to examining the relation between corporate governance and market microstructure aspects of the firm (Gaspar and Massa, 2007; Chen et al., 2007; Kanagaretnam et al., 2007; Rubin, 2007, ect.). However, all these studies have analysed market liquidity in developed markets, those are quote-driven markets and most liquid in the World such as the United States. This study contributes first, to the existing empirical studies by investigating the governance characteristic (ownership concentration and board structure) and liquidity relationship on one emergent market, the Tunisian Stock Exchange.

Tunis Stock Exchange offers an interesting framework to investigate this relation because of its unique institutional environment. Last years, foreign investors have interested to investing in Tunisia. This is due to reforms undertaking that make an accelerated development. These reforms concern essentially market reorganisation, different intervenient, and their functioning also. The second contribution, we explore in this research more than one dimension of liquidity: immediacy cost, price impact, trading frequency and potential delay of executing an order, and total trading cost.

The paper is organised as follows. Section 2 presents literature review. Data is described in section 3. Section 4 reports univariate analysis and section 5 presents multivariate analysis. Section 6 concludes the paper.

2. Literature Review

2.1. Ownership

Previous research has proposed two major hypotheses by considering ownership and liquidity: the adverse selection hypothesis and investor recognition hypothesis. The first hypothesis postulates that controlling managers provide an informational advantage to controller, which induce a high level of information asymmetry and reduce liquidity (Grossman and Stiglitz, 1980; Glosten and Milgrom, 1985; Kyle 1985; Easley and O'Hara, 1987; Bhide, 1993).

The second hypothesis suggests that ownership dispersion reduce information asymmetry. Then, a high number of investors make shares familiar, which leads to an increase in investor interest and an increase in overall trading volume (Demsetz, 1968; Merton, 1987). When blockholders reduce their ownership, the number of liquidity traders increase, so liquidity is improved (Holmström and Tirole, 1993).

The empirical evidence on the relation between liquidity and ownership is inconclusive. Using a sample of American firms, Chiang and Venkatesh (1988) and Sarin et al. (2000) found a positive relation between insider ownership and spread, while Glosten and Harris (1988) reported no significant relationship between spread and insider ownership. Brennan and Subrahmanyam (1996) and Dennis and Wenston (2001) reported that insider ownership enhance probability of informed trading and reduce liquidity.

For American firms, Rubin (2007), using different measures of liquidity proxies, found that liquidity is related to institutional ownership rather than insider ownership. While, Kanagaretnam et al. (2007), studying corporate governance effect on information asymmetry around earning announcement, found that spread is inversely related to insider ownership, while depth is positively related to insider ownership.

Concerning ownership concentration, Kothare (1997) report that ownership concentration reduces transaction volume and flow continuity, so spread increase and depth decrease, while Herflin et Shaw (2000) show that firms held by blockholders, insiders or outsiders, have a larger quoted spread, effective spread, adverse selection components and smaller depths.

Using a sample of Norwegian firms, Naes (2004) detect a negative relation between ownership concentration and spread and information costs, and report weak evidence on the negative spread and insider ownership.

Comerton-Forde and Rydge (2006), using Australian data, found a non linear relation between insider ownership and liquidity (spread and turnover). A low level of insider ownership affects positively liquidity, while a high level of insider ownership affects negatively liquidity. They show also that owner concentration is related negatively to liquidity. For Canadian firms, Attig and al. (2006) find that greater deviation between ultimate owner and control induces a larger spread.

2.2. Board Structure

Corporate disclosure and governance literature has examined the effect of board structure on corporate disclosure and transparency. In fact, an effective monitoring by board of directors enhance the quality and the frequency of corporate disclosure (Ajinkya et al., 2005; Karamanou and Vafeas, 2005; Klein, 2002a).

Lipton and Lorsch (1992) and Jensen (1993) advance that small boards are more able to monitor management in less time and commit less effort, while Yermack (1996) and Adams and Mehran (2002) that some firms need larger boards for effective monitoring. Anderson et *al.* (2004) found that larger boards reduce the cost of debt, signifying that these boards provide greater overseeing of the financial accounting process.

CEO duality constrains board independency and weaken monitoring role of the board (Fama et Jensen, 1983; Brickley et *al.*, 1994; Worrell et *al.*, 1997). In addition, CEO duality reduces corporate disclosure (Forker, 1992; Gul and Leung, 2004).

Concerning outside directors, Fama (1980), Fama and Jensen (1983) have argued that outside directors bear reputation cost if the performance is poor, which lead to effective monitoring. In addition, Beasley (1996) found that the proportion of outsider on the board is related inversely the likelihood of financial fraud. Bhojraj and Sengupta (2003) posit that outside directors is inversely related to agency risks, which should lead to superior bonds ratings and lower debt yields.

Few researches investigated the direct relation between boards of directors and microstructure aspects of firms. Attig and Morck (2005), using a sample of Canadian firms, found that larger boards and outside directors is more important to reducing opacity (adverse selection component of spread). Using data from London Stock Exchange, Cai et al. (2006) show a negative association between board size and adverse selection, and a positive relation between CEO duality and probability informed trading.

Kanagaretnam et al. (2007) investigate effect of board director's characteristics to information asymmetry around earning announcement. They found that spread is inversely related to board independence, board activity, while depth is positively related to board structure and board activity.

3. Data

The data for this paper is provided by Tunis Stock Exchange and le conseil du marché financier (CMF). It contains closing day prices, best quoted ask, best-quoted bid, trading volume, financial statements. Ownership structure and board composition data are collected manually from two sources: annual reports and stock guide. These data cover the period 1999 to 2005. The sample comprises all ordinary common stocks that still listed in the market in 2005.

3.1. Liquidity

We use four liquidity measures in order to reflect more than one dimension of liquidity. The first is the quoted bid ask spread (BASQ**).** The second is share turnover (TURN), formed by dividing the number of shares traded by the number of shares outstanding. These two measures are monthly average of daily values calculated over the month. The third measure is the illiquidity ratio of Amihud (2002); it gives a daily impact of order flow on prices (Amihud, 2002). The fourth measure is trading speed proposed by Liu (2006). It is defined as the standardized turnover-adjusted number of zero daily trading volumes over prior month; this measure is a proxy of the potential delay or difficulty in executing an order.

Lesmond et al. (1999) establish a relationship between costs transactions and zero returns. They assume that if the transaction cost threshold is exceeded, there is no transaction. Following Bekaert et al. (2005) we construct proportion of zero returns, PZER, that determine total trading cost.

Quoted bid ask spread, turnover are multiplied by 100, while ILIQ is multiplied by 10^6.

3.2. Ownership And Board Characteristic

-Insider blockholders, INBH, is defined by the percentage of ordinary shares held by directors and managers, whose own more than 5%.

-Insider non-blockholders, INMI, is defined by the percentage of ordinary shares held by directors and managers, whose own less than 5%.

-Outsider blockholders, OUBH, is defined by the percentage of ordinary shares held by outsiders, whose own more than 5%.

-Board size, BSIZ, measured as the total number of directors on board.

-Outsider directors, ODIR, are defined as the number of outside directors on the board divided by the total number of directors.

-Duality, DUAL, is a dummy variable that equals 1 if the CEO and the chairman are different person (i.e. separation of functions) and 0 otherwise.

3.3. Controls

We use as control variables: return volatility, VOLT, is measured by standard deviation of return multiplied by 100. Transaction volume, TRAD, firm size measured by the logarithm of the market capitalisation in the end of previous year, SIZE, return on assets, ROA, leverage LEVR, industry dummy variables: FINA equals 1 if the firm has a financial activity; INDS equals 1 if firms have a manufacture activity.

4. Univariate analysis

4.1. Sample distribution

The table 1 reports descriptive statistics for this study's liquidity proxies: trading speed, total transaction cost, price impact, turnover, spread, and governance variables: CEO duality, board size, outsider directors, insider blockholders, outsider blockholders and insider non blockholders, and control variables: return on assets, leverage, and industry dummy, trading volume, firm size and return volatility.

Table 1. Statistics on Variables

	N	Mean	median	Std. Deviation	Skewness
LM	256	82,1919	54,2886	76,5905	0,7672
PZER	266	0,5143	0,5010	0,2689	-0,0207
ILIQ	256	28,5797	6,4568	85,4890	6,3238
TURN	256	0,0629	0,0309	0,0858	3,5868
QBAS	254	3,0006	2,2188	2,5031	3,5850
DUAL	260	0,6962	1,0000	0,4608	-0,8580
BSIZ	260	2,2660	2,3026	0,2094	-1,0912
ODIR	260	0,8443	0,8889	0,1060	-1,1942
INBH	220	0,5507	0,5728	0,2007	-0,3164
OUBH	221	0,0620	0,0000	0,1242	2,9665
INMI	215	0,0190	0,0000	0,0357	2,3032
ROA	300	0,0353	0,0247	0,0672	-0,5885
LEVR	300	0,4692	0,3577	0,4225	1,8371
FINA	260	0,5077	1,0000	0,5009	-0,0310
INDS	260	0,2923	0,0000	0,4557	0,9186
TRAD	256	2011,3785	1096,8060	3214,2099	6,2723
SIZE	280	74604017,8859	37300000,0000	96161712,6227	3,0777
VOLT	256	1,8017	1,4646	2,8525	11,7031

The median potential delay of executing order is 54 days, the median turnover is 0.03%, while the median immediacy cost, quoted bid ask spread, is 2.21%. The median price impact is 6.45. $10^{-6}$and the median proportion of zero return is 50%. The median insider block holdings is 57.27%, while for the half of the sample there is no insider non block holding and no outsider block holdings. The median board size is ten directors, the median percentage of outside directors 88%. Only 69% of chairman is also a chief executive officer. The table show that the median size of firms in the sample is 37 millions Dinars, the median trading activity is 1097 shares by day, the median return on assets is 0.02%, the median leverage is 35.7% and the median volatility is 1.46%. Firms of the sample are distributed as following: 50% are financial firms, 30% are manufacture firms, 20% services. Statistics report that ILIQ, TURN, QBAS, TRAD, VOLT, SIZE are highly skewed. As a result, we use the log of these variables.

4.2. Univariate Analysis

Table 2, exhibits correlation between all liquidity measures: spread, price impact, total transaction cost, trading speed and turnover in Panel A and shows correlation between illiquidity measures and board size, outsider directors, CEO duality in Panel B.

Table 2. Correlation matrix

Panel A:					
	QBAS	ILIQ	PZER	LM	TURN
QBAS	1				
ILIQ	0,7937***	1			
PZER	0,6207***	0,6816***	1		
LM	0,7736***	0,8072***	0,9100***	1	
TURN	-0,4205***	-0,5715***	-0,6561***	-0,5972***	1
Panel B:					
	LM	PZER	TURN	ILIQ	QBAS
DUAL	-0,0112	0,0063	-0,1331**	0,0090	0,0048
BSIZ	-0,2558***	-0,2047***	0,0078	-0,2753***	-0,2879***
ODIR	-0,1295**	-0,1047*	-0,1040	-0,0573	-0,0385
INBH	0,1378**	0,0427	-0,1766***	0,2048***	0,2855***
OUBH	0,0429	0,0451	0,0479	0,0720	0,0272
INMI	-0,2039***	-0,2723***	0,2328***	-0,1960***	-0,1494**

*significance < 10%, **significance < 5% and ****significance < 1%

Table 2, reports correlation matrix between liquidity measures, ownership, board structure and other variables. Panel A shows that spread, price impact, potential delay in executing an order and total transaction cost are positively correlated. In addition turnover is inversely correlated to other liquidity measures.

Panel B provides correlation between liquidity and governance variables. Board size is negatively correlated to spread, price impact, potential delay in executing an order and transaction, while outside directors is negatively correlated to potential delay in executing an order and trading cost.

Price impact and spread are positively correlated to insider blockholders and negatively correlated to insider non-blockholders. Turnover and trading speed are positively correlated to insider non-blockholders and negatively correlated to insider blockholders. Outsider blockholders are not related to liquidity measures.

4. Multivariate analysis

In this analysis we test if blockholders and board structure affect liquidity. The model that we test is the following:

$$Liquidity = b_0 + b_1\, INBH + b_2 INMI + b_3 OUBH + + b_4 BSIZ + b_5 ODIR + b_6 DUAL + b_7 TRAD + b_8 VOLT + b_9 SIZE \quad (1)$$

$$b_{10} ROA + b_{11} LEVR + b_{12} FINA + b_{13} INDS + \varepsilon_t$$

Cross-section regression analysis allows controlling observations heterogeneity in their individual's dimensions, either by assuming a certain specific effects, or by assuming non-observable specific effect. In order to discriminate fixed effects or random effects, we apply specification test of Hausman (1978). We have noted that our model is a model with fixed effects when we use spread as liquidity proxy and random effects for other measures. We apply also Wald test for autocorrelation in panel data. We have concluded that there is a first order autocorrelation. And in order to correct this autocorrelation we use cross-section regression with AR (1) disturbances.

Table 3

Dependent	QBAS	ILIQ	LM	PZR	TURN
INBH	0,5030	1,3218**	53,5886**	0,1423	-0,1807
INMI	2,8288	-2,3491	111,0378	0,1780	-0,8109
OUBH	-0,2291	0,0433	74,0112*	0,1058	0,9435***
BSIZ	-0,1862	-0,2466	-12,8249	-0,2419***	-0,1770
ODIR	-0,9354	0,0046	-70,0502*	-0,0960	0,1567
DUAL	0,0752	-0,2666	8,1200	0,0001	0,0104
TRAD	-0,1175***	-0,5352***	-14,9970***	-0,0544***	0,9464***
VOLT	0,2357***	0,8675***	-3,7986	-0,0308	0,0080
SIZE	-0,2128**	-0,4059***	-7,7746**	-0,0123	-0,2549***
ROA	-0,0934	-7,0540***	-216,8550***	-0,6116***	0,2048
LEVR	0,3860	-0,6975	-77,6616***	-0,1272*	-0,6031***
FINA	No	1,2597	59,4013***	0,2426***	-0,2567
INDS	No	0,5739	28,8272*	0,0931	0,0045
CONST	5,9904***	12,0170***	368,4249***	1,5862***	-4,6033***
R squared	0,2334	0,7893	0,6718	0,6237	0,7001

*significance < 10%, **significance < 5% and ****significance < 1%
FINA and INDS are dropped from specification (1) due to collinearity.

Table 3 provides that only a few of governance variables have an effect on liquidity measures. Insider blockholders has a positive effect on immediacy cost, proportion of zero return, price impact, potential delay of executing an order, and a negative effect on turnover. But these effects are significant only on price impact, potential delay of executing an order. This result suggests that insider blockholders are associated with a high level of information asymmetry, which induces a high level of price impact and more time to execute an order.

Results, in table 3, show also that outsider blockholders have a positive and significant effect on the potential delay of executing an order and on turnover. For other variables the effect is positive and no significant. This result suggests that outsider blockholders have an informational advantage which induces a high potential delay to execute an order. The positive effect on turnover indicates that outsider blockholders have a high level of trading activity.

Insider non-blockholders and duality have no significant effect on liquidity measures.

The negative and significant coefficient of board size on proportion of zero-return suggest that large board are more effective and enhance the transparency of the firm, then reduce transactions costs.

Finally the negative and significant effect of outside directors on potential delay to execute an order suggests that boards are more effective when the board has higher proportions of outside directors.

For control variables, table 3, shows that trading activity have a negative and significant effect on spread, potential delay of executing an order, price impact and total transaction cost and positive and significant effect on turnover. Volatility has a positive and significant effect on spread, price impact and negative and significant effect on total transaction cost, while firm size has a negative and significant effect on all liquidity measures.

Return on assets has a negative and significant effect on all liquidity measures except turnover and leverage has a negative and significant on LM, PZER and TURN, while industry dummy have a positive effect on LM, PZER and ILIQ.

6. Conclusion

Results show that ownership concentration and board characteristic effect on liquidity depend on liquidity dimension considered. Insider ownership concentration induces a high level of information asymmetry, which reduces trading speed and enhances price impact. Outsider ownership concentration induces a high trading activity and reduces trading speed. A large board size improve firm transparency reduces transactions cots (PZER). A high proportion of outsider directors are associated to low level of information asymmetry, which increases trading speed.

References

1. Adams, R., Mehran, H. (2002), "Board structure and banking firm performance", *Working Paper, Federal Reserve Bank of New York.*
2. Ajinkya, B., Bhojraj, S. and Sengupta, P. (2005), "The governance role of institutional investors and outside directors on the properties of management earnings forecasts", *Journal of Accounting Research*, Vol. 43, No. 3, pp. 343–376.
3. Amihud, Y. (2002), "Illiquidity and stock returns: cross-section and time-series effects", *Journal of Financial Markets*, Vol. 5, No. 1, pp. 31–56.
4. Anderson R., Mansi, S. and Reeb, D. (2004), "Board characteristics, Accounting report integrity, and the cost of debt", *Journal of Accounting and Economics*, Vol. 37, No. 3, pp. 315–342.
5. Attig N., Fong, M., Gadhoum, Y., and Lang, L. (2006), "Effects of Large Shareholding on Information Asymmetry and Stock Liquidity", *Journal of Banking and Finance*, Vol. 30, No. 10, pp. 2875-2892.
6. Attig, N. and Morck, R. (2005), "Boards and Corporate Governance in a Typical Country", *working paper. http://economics.ca/2005/papers/0238.pdf.*
7. Beasley, M. (1996), "An empirical analysis of the relation between the board of director composition and financial statement fraud", *Accounting Review*, Vol. 71, No. 4, pp.443–465.
8. Bekaert, G., C. Harvey and C. Lundblad (2005), "Liquidity and Expected returns: lessons from emerging markets", *NBER working paper. http://www.nber.org/papers/w11413.*
9. Bhide, A. (1993), "The hidden costs of stock market liquidity", *Journal of Financial Economics*, Vol. 34, No. 1, pp. 31-51.
10. Bhojraj, S., and Sengupta, P., (2003), "Effect of Corporate Governance on Bond Ratings and Yields: The Role of Institutional Investors and the Outside Directors", *Journal of Business*, Vol. 76, No. 3, pp.455-475.
11. Brennan, M. J., and Subrahmanyam, A. (1996), "Market microstructure and asset pricing: On the compensation for illiquidity in stock returns", *Journal of Financial Economics*, Vol. 41, No. 3, pp. 441–464.
12. Brickley, J., Coles, J. and Terry, R. (1994), "Outside directors and the adoption of poison pills", *Journal of Financial Economics*, Vol. 35, No 3, pp. 371–390.
13. Cai, X., Keasey, K. and Short, H. (2006), "Corporate Governance and Information Efficiency in Security Markets", *European Financial Management*, Vol. 12, No. 5, pp.763–787.
14. Chen, W., Chung, H., Lee, Ch. and Liao, W., (2007), "corporate governance and equity liquidity: analysis of S&P transparency and disclosure rankings", *Corporate governance: An International Review*, Vol. 15, No. 4, pp. 644-660.
15. Chiang, R. and Venkatesh P. (1988), "Insider holdings and perceptions of information asymmetry: A note", *Journal of Finance*, Vol. 43, No. 4, pp.159–188
16. Comerton-Forde, C. and Rydge, J. (2006), "Director Holdings, shareholder concentration and illiquidity", *SSRN working paper. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=713181.*
17. Demsetz, H. (1968), "The Cost of Transacting," *Quarterly Journal of Economics*, Vol. 82, No. 1, pp.33–53.

18. Dennis, P. and Weston, J. (2001), "Who's Informed? An Analysis of Stock Ownership and Informed Trading". *Working paper*. *gates.comm.virginia.edu/pjd9v/paper_informedtrading.pdf*
19. Easly, D. and O'Hara, M. (1987), "Prices, trade size and information in security markets", *Journal of Financial Economics,* Vol. 33, No. 1, pp.173–199.
20. Fama, E. (1980) "Agency problems and the theory of the firm", *Journal of Political Economy,* Vol. 88, No. 2, pp. 288–307.
21. Fama, E., and Jensen, M. (1983), "Separation of ownership and control", *Journal of Law and Economics,* Vol. 26, No. 2, pp. 301–25.
22. Gaspar, J. and Massa, M. (2007), "Local ownership as private information: Evidence on the monitoring-liquidity trade-off", *Journal of Financial Economics* Vol. 83, No. 3, pp. 751-792.
23. Glosten, L. and Harris, L (1988), "Estimating the components of the bid-ask spread", *Journal of Financial Economics,* Vol. 21, No. 1, pp.123-142.
24. Glosten, L. and Milgrom, P. (1985), "Bid-ask and transaction prices in a specialist market with heterogeneously informed traders", *Journal of Financial Economics,* Vol. 14, No. 1, pp.70-100.
25. Grossman, S.J. and Stiglitz, J.E. (1980), "On the impossibility of informationally efficient markets", *American Economic Review,* Vol. 70, No. 3, pp. 393–408.
26. Gul, F. and Leung, S. (2004), "Board Leadership, Outside Directors' Expertise and Voluntary Corporate Disclosures", *Journal of Accounting and Public Policy,* Vol. 23, No. 5, pp.351-379.
27. Heflin F. and Shaw, W. (2000), "Block holder Ownership and Market Liquidity", *Journal of Financial and Quantitative Analysis,* Vol. *35*, No. 4, pp.621-633.
28. Holmström, B. and Tirole, J. (1993),"Market Liquidity and Performance Monitoring", *Journal of Political Economy*, Vol. 101, No. 4, pp.678-709.
29. Jensen, M. (1993), "The modern industrial revolution, exit, and the failure of internal control systems", *Journal of Finance,* Vol. 48, No. 3, pp. 831–80.
30. Kanagaretnam, K., Lobo, G. and Whalen, D., (2007), "Does corporate governance reduce information asymmetry around quarterly earnings announcements", *Journal of Accounting and Public Policy,* Vol. 26, No.4, pp. 497-522.
31. Karamanou, I. and Vafeas, N. (2005), "The association between corporate boards, audit committees, and management earnings forecasts: An empirical analysis", *Journal of Accounting Research,* Vol. 43, No. 2, pp. 453–486.
32. Klein, A. (2002), "Audit committee, board of director characteristics, and earnings management", *Journal of Accounting and Economics*, Vol. 33, No. 3, pp. 375–400.
33. Kothare, M. (1997), "The effects of equity issues on ownership structure and stock liquidity: a comparison of rights and public offerings", *Journal of Financial Economics*, Vol. 43, No. 1, pp. 131-148.
34. Kyle A. (1985), "Continuous auctions and insider trading", *Econometrica,* Vol. 53, No. 6, pp. 1315–1336.
35. Lesmond, D., Ogden, J. and Trzcinka, C. (1999), "A new estimate of transaction costs", *Review of Financial Studies,* Vol. 12, No. 5, pp.1113–1141.
36. Lipton, L. and Lorsch, J. (1992), "A modest proposal for improved corporate governance", *The Business Lawyer*, Vol. 48, No.1, pp. 59–77.
37. Liu, W. (2006), "A liquidity-augmented capital asset pricing model", *Journal of Financial Economics*, Vol. 82, No. 3, pp. 631–671.
38. Merton, R. (1987), "A simple model of capital market equilibrium with incomplete information". *Journal of Finance*, Vol. 42, No. 3, pp. 483–510.
39. Naes, R. (2004), "Ownership Structure and Stock Market Liquidity", *Working Paper, Norges Bank.http://www.norges-bank.no/publikasjoner/ arbeidsnotater/pdf/arb-2004-06.pdf.*
40. Rubin A. (2007), "Ownership level, ownership concentration and liquidity", *Journal of Financial Markets,* Vol. 10, No. 3, pp. 219-248.
41. Sarin A., Shastri, K. and Shastri, K. (2000), "Ownership Structure and Stock Market Liquidity", *SSRN working paper. http://papers.ssrn.com/sol3/ papers.cfm?abstract_id=2652*
42. Yermack, D. (1996), "Higher market valuation companies with a small board of directors", *Journal of Financial Economics,* Vol. 40, No. 2, pp. 185–212.

INITIAL UNDERPRICING AND TRANSFER OF SHARES ON THE TUNISIAN STOCK EXCHANGE

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Abstract

In this empirical study, the incidence of the shares transfers by the original shareholders on the degree of the initial underpricing is studied, using a sample of Tunisian candidates companies over the 1992-2006 period. Our empirical results make it possible to confirm the existence of a significant initial underpricing of about 19% and which depends closely on the behavior of shares transfer. More precisely, the original and the controlling shareholders, in order to limit the transfer of wealth towards the new shareholders, reduce the degree of IPO underpricing.

Keywords: Initial Public Offerings, Initial Underpricing, Ownership Structure, Agency Theory, Entrenchment Theory

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1. Introduction

Underpricing has been the subject of numerous empirical studies. It has been observed in several countries all over the world and is a mysterious phenomenon which is linked to the majority of newly listed companies. It appears as a positive divergence between the quoted and offer prices. Among these studies, we refer to those of Loughran, Ritter and Rydqvist (1994) and Broye and Schatt (2001) who show that the underwriters issue the shares to the public at a price lower than the "fair" price. This resulted in an abnormally high return in the initial trading days.

The work of Loughran & al. (1994) summarizes the results of a number of important studies on the underpricing of Initial Public Offerings (hereafter IPOs) in 25 countries. In most of these countries there is persistently positive initial-day return (or underpricing) for all initial issues. The highest average initial stock returns (388%) were recorded in the Chinese IPO market and the lowest (4.20%) in the French IPO market. According to Clendenning and Associates (2001), the shares issued on the Toronto Stock Exchange (TSE) are underpriced on average by 5.80% (14% according to Jog and Hitsman, 2000) compared with 10.90% on the New York Stock Exchange (NYSE) and 49.60% on the NASDAQ. Loo and Riding (2001) also noted that the IPO underpricing on the NASDAQ is greater for the technological companies than traditional ones.

The initial underpricing phenomenon has various theoretical explanations in the financial IPO literature. For some writers, the anomaly stems from a problem of asymmetric information between the investment bank and the issuing firms (Baron, 1982) or between a group of informed investors and another, uninformed (Rock, 1986). According to Aggarwal and Rivoli (1990) and Ritter (1991), the IPO underpricing stems from excess optimism on the investor's part, who pay a higher price than the "fair" price defined by the underwriter. Another explanation supposes that the underwriter must offer a price voluntarily lower than the "fair" market price in order to remunerate the risk taken by the investors, who are unable to estimate future cash flows distribution correctly, because of the uncertainty and asymmetric information concerning this operation. The underpricing also makes it possible to attract a certain category of better informed investors, in general institutional, who demand compensation for their part in the IPO process (Rock, 1986; Beatty and Ritter, 1986). Welch (1992) shows by his "cascade» theory that IPO underpricing is used by the underwriters to start a massive movement of purchasing at the IPO time. Allen and Faulhaber (1989), Grinblatt and Hwang (1989) and Ruud (1993) justify the underpricing by the presence of a price support by the underwriters during the first days of stock trading. More recently Connelly & al. (2004) explain the initial underpricing phenomenon by a proxy related to asymmetric information as the ex-ante uncertainty. Venkatesh and Neupane (2004) attribute this to the regulatory environment, and to some characteristics specific to each market and to the periods of introduction (cold vs. hot)[1].

If several hypotheses have been put forward to explain initial underpricing, few studies have been concerned with the possible relationship between the evolution of the shareholding structure and the undervaluation of the new listings. However, the IPO has some important effects on the firm governance

[1] Generally, the issuers time their IPO to list in periods when investors are especially optimistic about the growth potential of companies going public.

system. In addition, this process generates a loss of control for the current shareholders, since it consists of selling a large block of shares. Moreover, the new shareholders intervene in the company management with a view to maximizing its market value, while the original shareholders seek to maximize their personal remuneration and assets. The result is a transfer of wealth from current shareholders in favor of new investors. Accordingly, one might think that the evolution of the IPO current ownership structure determines the listed company behavior on the market (Roosenboom and van der Goot, 2005) since the degree of the underpricing depends on the extent of the costs sustained by the IPOs firms.

The present study considers the impact of shares transfer by both the original and the controlling shareholders on the degree of underpricing at the IPO time in the Tunisian Stock Exchange (TSE). The comprehension of the impact of the behavior of stock transfer on the initial IPO underpricing is of great interest given the policy adopted by the Tunisian Financial Market Council (FMC) to promote the stock market by the creation of an alternative market. The results should represent an important first step in understanding the IPO market in Tunisia and yield additional insights regarding determinants of IPO underpricing in emerging capital markets.

For this reason (as Broye and Shatt, 2003), the corporate governance is described using the transfer of old shares by the original shareholders. This kind of transfer is found more frequently used than the new issues transfer[2]. The remainder of the article is divided into six sections. The next section highlights some empirical studies focusing on the relationship between the transfer of shares and the degree of IPO underpricing. In section 3 and 4 data, study sample, methodology and variables used in our empirical analysis are described. Section 5 reports regression results and offer robustness analyses. The concluding section summarizes the major findings.

2. The Repercussion Of The Transfer Of Shares By The Controlling Shareholders On The Ipo Underpricing

Recently, the study of samples of newly listed companies in the stock market, notably those of Hill (2006), Roosenboom and Schramade (2006), Yang and Sheu (2006), Wang (2005) and many others, on one hand put the emphasis on the concentration of capital and on the other, on the evolution of the shareholding structure as explanatory variables of the IPO underpricing. Their results show that the shareholding structure and the ownership concentration significantly affect the degree of the initial underpricing, especially in the context of emerging financial markets[3] (La Porta & al., 2000).

Broye and Shatt (2003) consider the incidence of the share transfers by the original shareholders on the degree of the initial underpricing in France. Their results show a curvilinear relationship. Habib and Ljungqvist (2001) suggest an inverse relation between the transfer of shares and their undervaluation. This result is contradictory to that found by Leland and Pyle (1977) who show that a significant share transfer signals a limited profit prospect of the firm and consequently incites shareholders to proceed with the devaluation of shares to attract potential investors.

Whatever the significance of this relationship, adequate theoretical explanations in the financial IPO literature are found. In fact, the signaling theory stipulates that the larger the share part sold, the larger the IPO underpricing[4]. The entrenchment theory bears out that the shareholders are incited to reduce the initial underpricing when they sell a large number of shares[5].

3. Data And Study Sample

Before presenting our study results, the work sample is described.

3.1. Data Sources

All companies newly listed on the Tunisian Stock Exchange (TSE) between March 1992 and March 2006 are identified. For all these firms, the characteristics of the issuers (sector, age, size, debt level, year founded) and the issuance (introduction date, issue date, offer price, number of shares available to the public, capital taken up, auditor and financial intermediary's identity) are taken from the candidate's IPO prospectuses out from the Tunisian FMC. The data on the closing prices and the market index are taken from the daily price index of the TSE. Information on the shareholding structure before and after going public is collected from IPO prospectus.

3.2. Study Sample

Our original sample comprises 47 Tunisian IPOs firms, candidates for listing on the stock market. However, we were able to consult the IPO prospectus for only 40 of them. Among these 40 IPO companies,

[2] 25.63% versus 2.78% on average.

[3] Claessens et al. (2000) suggest in the context of emerging financial markets that the presence of less stringent regulation means that big shareholders have an unhindered ability to pursue private benefits at the expense of other minor shareholders. Chen and Strange (2004), have proved in the case of poor regulatory environment that high concentration ratio leads to lower initial IPO return as the market correctly identifies the ability of the dominant stockholder to pursue private benefits easily and without penalty.

[4] The managers, who are supposed to be better informed than the other investors, offer them a premium to encourage their participation in the IPO process.

[5] The aim is to protect the profits linked to the control of the original shareholders and limit the wealth losses incurred after listing on the Stock Market Exchange.

32 were retained, those which produced a detailed account of their shareholding structure.

Table (1) shows the sample distribution for each year in terms of issues number. It is clearly evident that the annual rate of new listings on the TSE by selling existing shares, was progressing up to 1999. This coincided with Tunisian government resolution to lighten its control of public companies. Further more, in the year 2000 and from 2002, very few new listings have been observed which shows that recourse to the stock exchange is not necessarily an alternative priority for financing. Finally, we see that, except for a lull in the mid 90's, resorting to the financial markets to raise capital remains modest compared to developed markets.

Table 1. Constitution and annual distribution of the study sample listing (1992-2006)
For each year the total number of IPO firms in the Tunisian Stock Exchange, the number of available prospectuses, the number of the candidate companies in the study sample and the size of the offering are indicated.

Year	Number of IPO	Available Prospectuses	Sample of work	Size of offering (000.Dinars)
1992	2	1	1	9 000
1993	3	2	1	6 412.859
1994	3	3	2	4 566.691
1995	6	6	3	31 757.042
1996	3	2	2	22 622.527
1997	6	6	4	1 6530
1998	4	4	3	21 464.375
1999	6	6	6	30 859.187
2000	1	0	0	0
2001	5	4	4	2 8515
2002	3	2	1	6 158.717
2003	1	1	1	5 544
2004	0	0	0	0
2005	3	3	3	19 783.500
2006	1	1	1	5 940
Total	47	41	32	20 9153.898

4. Methodology Of Research

The methodology used to study the incidence of transferring shares on the IPO underpricing, consists of regressing the degree of the underpricing on variables describing the fraction of shares transferred.

4.1. Variables. Measures

In the financial literature relating to the study of the initial underpricing of newly listed companies, several measurements of the IPO underpricing are recorded. In fact, the most widely used approach to examine the level of initial stock returns of the newly listed shares is the method of Unadjusted Initial Underpricing (IU). More precisely, the IU is calculated using the following equation:

$$IU_i = \frac{P_{i1} - P_{i0}}{P_{i0}} \quad (1)$$

Where

P_{i0} **:** the initial offer price for the i[th] candidate company.

P_{i1} **:** the average closing prices for the i[th] candidate company on the first five trading days[6].

Concerning the explanatory variables describing the shares transfer by the original shareholders, the following variables are defined according Broye and Schatt (2003):

- ***LnORIOWNER*** **:** Is the napierian logarithm of one, plus the proportion of the old shares offered by the original group of shareholders at the IPO time (the number of old shares transferred divided by the total number of shares existing before IPO).
- ***LnCONOWNER*** **:** Is the napierian logarithm of one, plus the fraction of old shares offered by the original controlling shareholders (the number of old transferred shares divided by the total number of shares existing before IPO). The blockholders who own 5% or more of the stocks are retained as control shareholders.

[6] We decided to calculate the initial underpricing on the first five days as the newly listed stock may not be quoted on the stock exchange at first. This is because of the high demand from investors result in a rising reservation of the said stock. For example, during listing, Tunisair shares were sought by 150.000 subscribers for an offer which was subscribed 3,8 times.

Others such as Morck & al. (1988) point out that the extent of underpricing also depends on the share part which is still held by the controlling shareholders. In fact, the larger the proportion after going public, the larger the extent of IPO underpricing, as the controlling shareholders are able to compensate for the costs resulting from the initial underpricing, by the advantages they gain within the company as controlling shareholders. This fraction is represented by the variable ***LnTOPOWNER***, calculated as the napierian logarithm of one, plus the proportion of the shares held by the first and second controlling shareholders after the IPO.

In addition, the various studies found in the financial IPO literature, concord with the fact that the initial IPO underpricing increases with ex-ante uncertainty. At this point it is interesting to introduce other control variables describing this uncertainty. These variables are defined below:

- ***SIZE*** **:** Is the offering size measured as the number of shares issued on the market, multiplied by the final offer price. The results communally accepted in the financial IPO literature stipulate that shares initial returns are negatively linked to the offering size (Henry & al., 2003; Faugeron-Crouzet and Ginglinger, 2002).
- ***AGE*** **:** The age of the candidate company measured by the difference between the number of years of listing on the stock exchange and the creation of the company[7]. The ex-ante risk of the candidate company supposedly grows with age. The more recent the activity of a company, the more difficult it is to predict its future development, and thus it should show a larger initial underpricing (Bilson & al., 2003; Broye and Schatt, 2003; Ritter, 1991; Venkatesh and Neupane, 2004; Connelly & al., 2004).
- ***LEV*** **:** The financial leverage which corresponds to the relationship between the book value of debts[8] and the book value of total assets. It has been established that a high leverage ratio before going public, raises the ex-ante uncertainty (Venkatesh and Neupane, 2004).
- ***REP-A:*** A dummy variable measuring the reputation of the auditor. It is equal to 1 (one), if the auditor is one of the "big four" [9], and 0 (zero) otherwise. The reputation of the auditor effectively reflects the value of the candidate company and is linked to a lowest IPO underpricing (Clarkson & al., 1992).
- ***REP-IF:*** Dummy indicator of the financial intermediary reputation. It is equal to 1 (one) if the IPO operation is driven by a well renowned underwriter and 0 (zero) otherwise. The rating of the underwriter is based on the size of the issues they have managed as a listing agent. Thus, if the underwriter introduces a company of which the issuance size is superior (respectively inferior) to the average, the underwriter is supposed to be renowned (unrenowned). Clarkson and Merkley (1994) and Chemmanur and Fulghieri (1994) show that the initial IPO underpricing is lower when the candidate company uses a prestigious financial intermediary.

[7] After Loughran and Ritter (2001) and Ljungqvist and Wilhelm (2003), we have used the date of the creation of the candidate company and not the year of its registration in the commercial company register. Indeed, a company can have started its activity before acquiring the legal entity.

[8] Short and long-term debts as they appear in the audit report of the candidate company before listings.

[9] KPMG, Deloitte, Ernst & Young and Price Waterhouse Coopers .

4.2. Methodology

The basic objective of this study is to identify the repercussion of shares transfer on the degree of the initial IPO underpricing. For this purpose, the proportion of existing shares proposed by both the original and the controlling shareholders at the IPO date is taken into account. We have built the following regression models to test some of the proxies of information asymmetry model along with the shares transfer variable. The regression models thus retained are as follow:

$$IUi = \beta_{0i} + \beta_{1i}\, SIZE_i + \beta_{2i}\, AGE_i + \beta_{3i}\, LEV_i + \beta_{4i}\, REP\text{-}A_i + \beta_{5i}\, REP\text{-}UW_i + \beta_{6i}\, LnTOPOWNER_i + \beta_{7i}\, LnORIOWNER_i + \varepsilon_i \quad (2.1)$$

and

$$IUi = \beta_{0i} + \beta_{1i}\, SIZE_i + \beta_{2i}\, AGE_i + \beta_{3i}\, LEV_i + \beta_{4i}\, REP\text{-}A_i + \beta_{5i}\, REP\text{-}UW_i + \beta_{6i}\, LnTOPOWNER_i + \beta_{7i}\, LnCONOWNER_i + \varepsilon_i \quad (2.2)$$

To estimate these two models, an Ordinary Least Squares (OLS) regression is applied. Besides, as the distribution of the initial underpricing variable deviates from a normal one [10] and given the narrowness of our study sample, the "bootstrap" method is applied to obtain efficient estimators.

5. Discussion Of The Empirical Results

The descriptive results concerning the different variables presented above are set out successively with those of the regression models.

5.1. Descriptive Analysis

The descriptive analysis provided in Table (2) (Panel A) shows that Tunisian candidate companies wait, on average, 20 years before being listed on the stock exchange, which is remarkably low if compared to Italy and Japan IPOs but similar to other European samples. It reveals also that these newly listed companies, even if they are small, are linked to the phenomena of underpricing, as in most stock markets. The initial stock return made by an investor who is able to sell the stock acquired at the initial offering price after the first five trading days, is on average

[10] Shapiro wilk's statistics were calculated. The probability p which is associated, deads us to reject the null hypothesis of normality. These results are available on demand.

19.22%. This underpricing is significantly different from zero at the level of 1%. Our results confirm those obtained in the majority of studies. Concerning the Tunisian studies, the initial underpricing previously detected is smaller than that found in the study of Ben Naceur and Omri (1997) which showed an average underpricing of 29.58% over a study period between 1991 and 1995. It is also, smaller than the one noted by Ben Naceur and Ghanem (2001), being 27.82% over the 1990-1999 period. It must be pointed out that these authors used a different measure from the one used in this study. The initial IPO underpricing recorded in the developed capital markets shows a smaller devaluation: 10% on the American market, 6.44% on the Canadian market and 13.23% on the French market[11]. The degree of initial underpricing recorded in this article is distinctly smaller than that found on the stock market of other emerging countries. For example, the Chinese capital stock exchange shows an IPO underpricing of 388%, that of Malaysia 80.30% and South Korea 78.10%[12].
It appears clearly from (Panel B), that the level of the IPO underpricing is not stationary. In fact, it reached a maximum of 61.36% in 1995 and fell to a minimum of 0.90% in 2002. Panel C of Table (2) reveals that half the companies in the study sample called on the services of a reputable underwriter. Moreover, 53.13% of the companies are checked by high repute auditors at the IPO time.

Concerning the behavior of the old shares transfer, it can be noted that the controlling shareholders are those who sell a large part of their shares, on average 21.36% of the stock, for a total of 25.63% of shares sold. In spite of this, a large proportion of the shareholding in Tunisian candidate companies persists after going public, given that the controlling shareholders still hold about 2/3 of the shares post-IPO: the first two controlling shareholders possess more than 40%[13], not noticeably different from other markets[14]. This highlights clearly that controlling shareholders retain the majority of the capital after the IPO.

It appears that the IPO market in Tunisia is largely undervalued. This IPO underpricing represents, as Kooli states (2000), an indirect cost linked to the IPO process which the issuing company must bear. Thus, the underpricing can influence the choice of financing of Tunisian companies and dissuade them from seeking the capital necessary to their economic growth by issuing stocks.

We shall try to check the behavior of share transfer of existing shareholders influence underpricing of Tunisian candidates companies in the following section.

5.2. Analysis Of The Influence Of Shares Transfer On The Degree Of Initial Underpricing

The results obtained from the regression models (2.1) and (2.2) confirm the influence of the different explanatory variables on the degree of IPO underpricing. The results are given in Table (3). Because of the multicolinarity problems, different reduced models are examined. It is noticed that the shares transferred by the original shareholders (Ln ORIOWNER) exert a negative influence on the initial underpricing. As far as the transfer of shares by the controlling shareholders is concerned (Ln CONOWNER), it seems that they also influence the IPO underpricing in a negative fashion. These results were endorsed and became even more significant when controlling for the fraction of shares still held by the controlling shareholders after going public. This leads us to think that the controlling shareholders do not necessarily profit from the greater private advantages resulting from the listing of their company on the stock exchange. This could be due to the fact that the Tunisian candidate companies introduce only a small part of their capital and consequently the variation in the fraction of shares held by controlling shareholders after the operation is insignificant.

In short, the negative signs of the coefficients associated with the variables describing the behavior of share transfer supports further the entrenchment theory according to which the original and controlling shareholders are urged to limit the initial IPO underpricing, in order to reduce their potential wealth losses following the transfer of a part of their companies shares to the public. These assumptions confirm the results put forward by Demsetz and Lehn (1985) and La Porta & al. (2000).

Concerning the relationship between the underpricing and control variables, it confirms the results of most of the empirical studies, with the exception of the auditor-reputation variable (REP-A) which has a positive impact on the IPO underpricing, without, however, being statistically significant. It is also the case for the leverage variable (LEV), which is negatively and statistically correlated to the degree of the IPO underpricing (at the level of 5%).

[11] See Kooli (2000).
[12] For a summary of past results see Loughran et al. (1994) and Ritter (1998).
[13] The detailed results concerning the development of the original shareholders structure and the two controlled shareholders before and after listing on the stock exchange, are available on demand.
[14] Cassia et al. (2004), Wang (2005), Boubaker and Labégorre (2007), …

Table 2. Descriptive statistics for study sample listed on the TSE between March 1992 and March 2006

This table presents the descriptive statistics (average, median, standard deviation) of the candidate companies carried out between March 1992 and March 2006 on the TSE, taking into consideration continuous variable (Panel A), distribution of the IU per year (Panel B) and dummy variables (Panel C).

- **Panel A- Continuous Variables:** ***AGE*** = the age of a firm in years measured by the difference between the establishment date to the IPO date; ***LEV*** = the book value of pre-IPO debt (short and long term) divided by the book value of total assets; ***SIZE***= napierian logarithm of the amount of the stockholders' equity emitted in term of local currency at the IPO time; ***IU*** (the measure of Initial Underpricing) = (average of the closing prices of the first five trading days - issue price)/issue price.

Characteristics of the IPO firms on the TSE (N = 32)			
	Means	Median	standard deviation
Offer volume (number of stocks)	398 369	324 150	283 332
Percentage (%) of old stocks proposed by the original shareholders	25.63	20.69	23.13
Percentage (%) of old stocks proposed by the controlling shareholders	21.36	20	15.71
Offering size (MD)	6 536.059	5 522.396	4 562.648
Candidate company age (in year)	20.20	19.08	15.99
Debts at the IPO time (in %)	40.35	42.38	26.65
Initial Underpricing (IU) (in %)	19.22	6.09	35.77

- **Panel B- Distribution of the initial IPO underpricing per year:** The total sample is composed of 32 IPO firms listed in the TSE between March 1992 and March 2006. The initial underpricing is calculated according to the following measurement: ***IU*** = (average of the closing prices of the first five trading days - issue Price)/issue Price.

Years	Number of IPOs	Mean of IU	Median of IU
1992	1	4.57	4.57
1993	1	0.66	0.66
1994	2	8.97	8.97
1995	3	67.36	6.07
1996	2	3.62	3.62
1997	4	11.79	4.62
1998	3	8.55	5.65
1999	6	26.04	28.79
2000	0	-	-
2001	4	12.37	3.26
2002	1	0	0
2003	1	12.12	12.12
2004	0	-	-
2005	3	21.26	10
2006	1	28.21	28.21
Mean		19.22	6.09

- **Panel C- Dummies Variables:** ***REP-A*** = 1 if the auditor belongs to one of the "Big Four", and 0 otherwise; ***REP-UW*** = 1 if the underwriter is renowned, and 0 otherwise.

Characteristics of the IPO firms on the TSE (N = 32)		
	Sample	Frequency (%)
REP-A = 1	17	53.13
= 0	15	46.87
REP-UW = 1	16	50
= 0	16	50

To conclude, it is interesting to specify that the quality of the models used is relatively good with an R^2 of over 40%. This result tends to show that share transfers explain an important part of the IPO underpricing of new listings.

Table 3. The incidence of the shares transfers on the initial IPO underpricing (IU)

This table presents the results of the following regression models: $IUi = \beta_{0i} + \beta_{1i}\, SIZE_i + \beta_{2i}\, AGE_i + \beta_{3i}\, LEV_i + \beta_{4i}\, REP\text{-}A_i + \beta_{5i}\, REP\text{-}UW_i + \beta_{6i}\, LnORIOWNER_i + \varepsilon_i$ (Model 1); $IUi = \beta_{0i} + \beta_{1i}\, SIZE_i + \beta_{2i}\, AGE_i + \beta_{3i}\, LEV_i + \beta_{4i}\, REP\text{-}A_i + \beta_{5i}\, REP\text{-}UW_i + \beta_{6i}\, LnCONOWNER_i + \varepsilon_i$ (Model 2); $IUi == \beta_{0i} + \beta_{1i}\, SIZE_i + \beta_{2i}\, AGE_i + \beta_{3i}\, LEV_i + \beta_{4i}\, REP\text{-}A_i + \beta_{5i}\, REP\text{-}UW_i + \beta_{6i}\, LnTOPOWNER_i + \beta_{7i}\, LnORIOWNER_i + \varepsilon_i$ (Model 3); $IUi = \beta_{0i} + \beta_{1i}\, SIZE_i + \beta_{2i}\, AGE_i + \beta_{3i}\, LEV_i + \beta_{4i}\, REP\text{-}A_i + \beta_{5i}\, REP\text{-}UW_i + \beta_{6i}\, LnTOPOWNER_i + \beta_{7i}\, LnCONOWNER_i + \varepsilon_i$ (Model 4). The total study sample is composed of 32 IPO firm listed in the TSE over the period March 1992-March 2006. The t-statistics are reported in parentheses; ** and * denote statistical significance at 5 and 10 percent level, respectively. Adjusted R^2 values are indicated.

Linear regressions explaining the IU degree

	Ownership Variables				Control Variables					
	Constant	LnORIOWNER	LnCONOWNER	LnTOPOWNER	SIZE	AGE	LEV	REP-A	REP-UW	R^2
Model (1)	51.146	-0.610			12.872	-0.965	-0.621	18.617	-23.360	0.4494
	(2.87)**	(-1.74)*			(2.81)**	(-2.74)**	(-2.77)**	(1.45)	(-2.08)**	
Model (2)	50.799		-0.709		11.609	-0.909	-0.589	18.608	-24.884	0.4305
	(2.76)**		(-1.73)*		(2.55)**	(-2.56)**	(-2.59)**	(1.42)	(-2.15)**	
Model (3)	40.190	-0.731		0.203	13.175	-0.954	-0.598	18.646	-23.794	0.4531
	(1.23)	(-2.09)**		(0.40)	(2.79)**	(-2.66)**	(-2.55)**	(1.42)	(-2.06)**	
Model (4)	36.664		-0.719	0.260	12.124	-0.901	-0.563	18.623	-25.010	0.4366
	(1.10)		(-1.79)*	(0.51)	(2.56)**	(-2.49)**	(-2.39)**	(1.40)	(-2.09)**	

5.3. Tests of robustness

In order to test the robustness of our results, another measure of the initial IPO underpricing was used. The adjusted underpricing allows us to take into consideration the market fluctuations[15] (MAIU) (Yu and Tse, 2006; Su, 2004; Cassia et al., 2004; Marshall, 2004; Yanxiang Gu, 2003). The market-adjusted returns are generally expressed in the form of the return on a particular stock minus the return on the general stock market as below:

$$MAIU_i = IU_i - R_m \qquad (3)$$

Where

$$R_m = \frac{I_{i1} - I_{i0}}{I_{i0}} \qquad (4)$$

IU$_i$ **:** initial underpricing as measured by the expression (1).

R$_m$ **:** return of the market index benchmark for the first five trading days after fixing the initial price.

Ii$_0$ **:** the opening stock market index for the ith candidate company on the offering day.

I$_{i1}$ **:** the average closing stock market index for the ith candidate company on the first five trading days.

Regression models similar to those used in the equations (2.1) and (2.2) are then used by replacing the IU measure by MAIU as the explanatory variable.

The results presented in Table (5) have substantially changed. In fact, when the fraction of the shares transferred by the original shareholders at the public offering date has a significant negative effect on the underpricing, the controlling shareholders do not appear as a significant variable.

These results could be due to the fact that, in reality the relationship between variables describing the shareholding and the underpricing is not linear. In fact, certain studies have concluded a curvilinear relationship between the transfer of shares and the underpricing (Short and Keasy, 1999; Morck & al., 1988). In order to do this, we took from Kim & al. (2004) by introducing the models quadratic form and the cubic form of the proportion of shares transferred by the original shareholders as well as by the controlling shareholders, that is the following variables $(LnORIOWNER)^2$, $(LnORIOWNER)^3$ and $(LnCONOWNER)^2$, $(LnCONOWNER)^3$ to confirm the nonlinear hypothesis. The coefficients linked to the variables (LnORIOWNER) – (LnCONOWNER) and $(LnORIOWNER)^3$ – $(LnCONOWNER)^3$ should be positive and those of the variables $(LnORIOWNER)^2$ – $(LnCONOWNER)^2$ should be negative. The results presented in Table (5) show that the nonlinear relationship between the transfer of shares and the IPO underpricing (measured respectively by the IU and MAIU variables) is not significant. Thus, it appears that the conclusion pre-established concerning the impact of the behavior of share transfer by the original and control shareholders over the degree of IPO underpricing is well and truly measured by a linear relationship. On the other hand, our results seem to be affected by the choice of the underpricing measure.

[15] It is an average of 18.55% for the study period and is significantly different from 0 at a 1% level.

Table 4. Linear regression explaining the IPO underpricing according to MAIU (Market Adjusted Initial Underpricing)

This table presents the results of the following regression models: $MAIUi = \beta_{0i} + \beta_{1i}\ SIZE_i + \beta_{2i}\ AGE_i + \beta_{3i}\ LEV_i + \beta_{4i}\ REP\text{-}A_i + \beta_{5i}\ REP\text{-}UW_i + \beta_{6i}\ LnORIOWNER_i + \varepsilon_i$ (**Model 1**); $MAIUi = \beta_{0i} + \beta_{1i}\ SIZE_i + \beta_{2i}\ AGE_i + \beta_{3i}\ LEV_i + \beta_{4i}\ REP\text{-}A_i + \beta_{5i}\ REP\text{-}UW_i + \beta_{6i}\ LnCONOWNER_i + \varepsilon_i$ (**Model 2**); $MAIUi == \beta_{0i} + \beta_{1i}\ SIZE_i + \beta_{2i}\ AGE_i + \beta_{3i}\ LEV_i + \beta_{4i}\ REP\text{-}A_i + \beta_{5i}\ REP\text{-}UW_i + \beta_{6i}\ LnTOPOWNER_i + \beta_{7i}\ LnORIOWNER_i + \varepsilon_i$ (**Model 3**); $MAIUi = \beta_{0i} + \beta_{1i}\ SIZE_i + \beta_{2i}\ AGE_i + \beta_{3i}\ LEV_i + \beta_{4i}\ REP\text{-}A_i + \beta_{5i}\ REP\text{-}UW_i + \beta_{6i}\ LnTOPOWNER_i + \beta_{7i}\ LnCONOWNER_i + \varepsilon_i$ (**Model 4**). T The total study sample is composed of 32 IPO firm listed in the TSE over the period March 1992-March 2006. The t-statistics are reported in parentheses; ** and * denote statistical significance at 5 and 10 percent level, respectively. Adjusted R^2 values are indicated.

Linear regressions explaining the MAIU degree

	Ownership Variables				Control Variables					
	Constant	LnORIOWNER	LnCONOWNER	LnTOPOWNER	SIZE	AGE	LEV	REP-A	REP-UW	R^2
Model (1)	49.084	-0.669			12.538	-0.921	-0.585	15.654	-20.697	0.4262
	(2.72)**	(-2.02)*			(2,70)**	(-2.59)**	(-2.58)**	(1.20)	(-1.78)*	
Model (2)	48.265		-0.645		11.297	-0.867	-0.554	15.562	-22.211	0.4041
	(2.59)**		(-1.49)		(2.45)**	(-2.41)**	(-2.41)**	(1.17)	(-1.85)*	
Model (3)	36.057	-0.678		0.241	12.898	-0.908	-0.558	15.689	-20.816	0.4315
	(1.09)	(-1.87)*		(0.47)	(2.70)**	(-2.50)**	(-2.35)**	(1.19)	(-1.74)*	
Model (4)	31.547		-0.622	0.307	11.906	-0.857	-0.524	15.581	-21.935	0.4128
	(0.93)		(-1.32)	(0.60)	(2.49)**	(-2.35)**	(-2.20)**	(1.16)	(-1.77)*	

Table 5. Test of the nonlinear relationship

This table presents results from cross-sectional regressions of IPO underpricing on ownership and control variable. In these models, we add the quadratic and cubic terms of ownership to test for non-linearity in the relationship between ownership and IPO underpricing.

Panel A – This panel presents the results of the following regression models: : $IUi = \beta_{0i} + \beta_{1i}\ SIZE_i + \beta_{2i}\ AGE_i + \beta_{3i}\ LEV_i + \beta_{4i}\ REP\text{-}A_i + \beta_{5i}\ REP\text{-}UW_i + \beta_{6i}\ LnORIOWNER_i + \beta_{7i}\ LnORIOWNER^2_i + \beta_{8i}\ LnORIOWNER^3_i + \varepsilon_i$ (**Model 1**); $IUi = \beta_{0i} + \beta_{1i}\ SIZE_i + \beta_{2i}\ AGE_i + \beta_{3i}\ LEV_i + \beta_{4i}\ REP\text{-}A_i + \beta_{5i}\ REP\text{-}UW_i + \beta_{6i}\ LnCONOWNER_i + \beta_{7i}\ LnCONOWNER^2_i + \beta_{8i}\ LnCONOWNER^3_i + \varepsilon_i$ (**Model 2**); $IUi == \beta_{0i} + \beta_{1i}\ SIZE_i + \beta_{2i}\ AGE_i + \beta_{3i}\ LEV_i + \beta_{4i}\ REP\text{-}A_i + \beta_{5i}\ REP\text{-}UW_i + \beta_{6i}\ LnTOPOWNER_i + \beta_{7i}\ LnORIOWNER_i + \beta_{8i}\ LnORIOWNER^2_i + \beta_{9i}\ LnORIOWNER^3_i + \varepsilon_i$ (**Model 3**); $IUi = \beta_{0i} + \beta_{1i}\ SIZE_i + \beta_{2i}\ AGE_i + \beta_{3i}\ LEV_i + \beta_{4i}\ REP\text{-}A_i + \beta_{5i}\ REP\text{-}UW_i + \beta_{6i}\ LnTOPOWNER_i + \beta_{7i}\ LnCONOWNER_i + \beta_{8i}\ LnCONOWNER^2_i + \beta_{9i}\ LnCONOWNER^3_i + \varepsilon_i$ (**Model 4**). The total study sample is composed of 32 IPO firm listed in the TSE over the period March 1992-March 2006. The t-statistics are reported in parentheses; ** and * denote statistical significance at 5 and 10 percent level, respectively. Adjusted R^2 values are indicated.

Panel A – Nonlinear regression explaining the underpricing according to IU

	Ownership Variables					Control Variables					
	Constant	LnORIOWNER	LnORIOWNER^2	LnORIOWNER^3	LnTOPOWNER	SIZE	AGE	LEV	REP-A	REP-UW	R^2
Model (1)	55.970	-2.645	9.472	-9.771		13.168	-0.972	-0.640	21.471	-20.11	0.4681
	(2.59)**	(-1.05)	(0.89)	(-0.90)		(2.45)**	(-2.42)**	(-2.72)**	(1.58)	(-1.74)*	
Model (3)	47.897	-2.400	8.749	-9.181	0.126	13.580	-0.981	-0.629	21.428	-20.504	0.4693
	(1.12)	(-0.86)	(0.77)	(-0.80)	(0.22)	(2.34)**	(-2.37)**	(-2.56)**	(1.54)	(-1.65)*	

	Constant	LnCONOWNER	LnCONOWNER^2	LnCONOWNER^3	LnTOPOWNER	SIZE	AGE	LEV	REP-A	REP-UW	R^2
Model (2)	59.660	-1.896	3.955	-2.435		10.020	-0.802	-0.578	17.143	-24.331	0.4454
	(2.71)**	(-0.64)	(0.28)	(-0.15)		(1.94)*	(-2.04)*	(-2.43)**	(1.22)	(-1.80)*	
Model (4)	51.050	-1.601	2.929	-1.44	0.138	10.451	-0.813	-0.567	17.180	-24.653	0.4469
	(1.22)	(-0.49)	(0.20)	(-0.08)	(0.24)	(1.88)*	(-2.01)*	(-2.30)**	(1.20)	(-1.79)*	

▪ **Panel B –** This panel presents the results of the following regression models: $MAIUi = \beta_{0i} + \beta_{1i}\ SIZE_i + \beta_{2i}\ AGE_i + \beta_{3i}\ LEV_i + \beta_{4i}\ REP\text{-}A_i + \beta_{5i}\ REP\text{-}UW_i + \beta_{6i}\ LnORIOWNER_i + \beta_{7i}\ LnORIOWNER^2_i + \beta_{8i}\ LnORIOWNER^3_i + \varepsilon_i$ (**Model 1**); $MAIUi = \beta_{0i} + \beta_{1i}\ SIZE_i + \beta_{2i}\ AGE_i + \beta_{3i}\ LEV_i + \beta_{4i}\ REP\text{-}A_i + \beta_{5i}\ REP\text{-}UW_i + \beta_{6i}\ LnCONOWNER_i + \beta_{7i}\ LnCONOWNER^2_i + \beta_{8i}\ LnCONOWNER^3_i + \varepsilon_i$ (**Model 2**); $MAIUi == \beta_{0i} + \beta_{1i}\ SIZE_i + \beta_{2i}\ AGE_i + \beta_{3i}\ LEV_i + \beta_{4i}\ REP\text{-}A_i + \beta_{5i}\ REP\text{-}UW_i + \beta_{6i}\ LnTOPOWNER_i + \beta_{7i}\ LnORIOWNER_i + \beta_{8i}\ LnORIOWNER^2_i + \beta_{9i}\ LnORIOWNER^3_i + \varepsilon_i$ (**Model 3**); $MAIUi = \beta_{0i} + \beta_{1i}\ SIZE_i + \beta_{2i}\ AGE_i + \beta_{3i}\ LEV_i + \beta_{4i}\ REP\text{-}A_i + \beta_{5i}\ REP\text{-}UW_i + \beta_{6i}\ LnTOPOWNER_i + \beta_{7i}\ LnCONOWNER_i + \beta_{8i}\ LnCONOWNER^2_i + \beta_{9i}\ LnCONOWNER^3_i + \varepsilon_i$ (**Model 4**). The total study sample is composed of 32 IPO firm listed in the TSE over the period March 1992-March 2006. The t-statistics are reported in parentheses; ** and * denote statistical significance at 5 and 10 percent level, respectively. Adjusted R^2 values are indicated.

Panel B - Nonlinear regression explaining the underpricing according to MAIU

	Ownership Variables					Control Variables					
	Constant	LnORIOWNER	LnORIOWNER^2	LnORIOWNER^3	LnTOPOWNER	SIZE	AGE	LEV	REP-A	REP-UW	R^2
Model (1)	54.490	-2.984	11.246	-11.658		12.980	-0.935	-0.609	19.100	-21.683	0.4534
	(2.51)**	(-1.18)	(1.05)	(-1.07)		(2.40)**	(-2.31)**	(-2.58)**	(1.40)	(-2.01)**	
Model (3)	44.409	-2.677	10.343	-10.921	0.158	13.495	-0.946	-0.596	19.047	-21.912	0.4552
	(1.03)	(-0.95)	(0.91)	(-0.95)	(0.27)	(2.31)**	(-2.28)	(-2.42)**	(1.36)	(-1.97)**	
	Constant	**LnCONOWNER**	**LnCONOWNER^2**	**LnCONOWNER^3**	**LnTOPOWNER**	**SIZE**	**AGE**	**LEV**	**REP-A**	**REP-UW**	**R^2**
Model (2)	57.558	-2.584	7.852	-7.269		9.869	-0.742	-0.531	15.013	-17.51	0.4225
	(2.58)**	(-0.87)	(0.56)	(-0.43)		(1.89)*	(-1.87)*	(-2.21)**	(1.06)	(-1.74)*	
Model (4)	47.605	-2.243	6.665	-6.120	0.160	10.367	-0.754	-.519	15.056	-17.793	0.4245
	(1.12)	(-0.68)	(0.44)	(-0.34)	(0.28)	(1.85)*	(1.85)*	(-2.08)**	(1.04)	(-1.40)	

6. Conclusion

This study revealed interesting facts, but there still remain certain limits which would give themselves to further studies.

Summary of results

The underpricing of IPOs is a mysterious phenomenon in both theoretical and practical circles. Initial IPO underpricing of share transfer on the TSE is analyzed in this article. It transpires that, as in most stock markets, the market price of the shares of Tunisian listed companies significantly exceeds the offer price. More precisely, the Tunisian stock market, over the period 1992-2006, displayed an average IPO underpricing of about 19% and is very unstable. This is larger than that recorded in the developed countries. It is however lower than that recorded in the emerging stock markets such as China, Malaysia and South Korea. This relatively discount constitutes an implied cost supported by the original shareholders and leads to the fact that the Tunisian financial market suffers from evaluation problem.

The study of the possible relationship between the return of initial issues and the transfer of shares, enlightens us concerning the behavior adopted by both the original and the controlling shareholders. During a new listing, these shareholders are incited to reduce the underpricing in order to preserve their wealth. Thus, the entrenchment theory seems better adapted to the analysis of the phenomena of initial underpricing of Tunisian candidate companies. The result, however, seems sensitive to the choice of the measure of the underpricing.

Our results also reveal, as for most studies recorded in the financial IPO literature, that the majority of the variables describing the ex-ante uncertainty before issuance (size and age of the new listing, the underwriter reputation), makes the underpricing degree rise.

Study contributions

This study seems particularly interesting in Tunisia, where the economic tissue is made up of a family firms majority, heavily indebted and where almost all the introductions to the stock exchange are made by shares transfer by the original shareholders.

More precisely, this article presents an empirical contribution, as we believe it to be the first study concerned with urging original shareholders to underprice Tunisian candidate companies for listing in the stock market.

Works which have leaned in this direction of the study on IPO on the TSE (Tunisian Stock Exchange) were limited to descriptive statistics. This study is an attempt to define explanatory factors for the underpricing enigma on the Tunisian market. At the same time, this study allows us to compare our results with other studies carried out in both developed and emerging markets.

The robustness tests of were the most methodical part on the work.

This article is also of a practical interest in as far as the study of the performance of the candidate companies contributes to the analysis of the IPO process to decide if it is worth investing in initial public offering.

Limit and future fields of research

The narrowness of our study sample, although justified, imposes a restraining limit. Taking a larger sample, we could have improved our analysis and studied the distribution of initial issues according to the state of the stock market before issuance.

In conclusion, the study of the underpricing anomaly must be complemented by a study of long term performance. It might be profitable to invest in a newly listed company in the short term, whereas the long term stock exchange performance could well be disappointing.

References

1. Aggarwal, R., and Rivoli, P., (1990), "Fads in the Initial Public Offering", *Financial Management*, vol. (19), pp. 45-57.
2. Allen, F., and Faulhaber, G.R., (1989), "Signaling by Underpricing in the IPO Market", *Journal of financial Economics*, vol. (23), pp. 303-323.
3. Baron, D., (1982), "A model of the Demand for Investment Banking Advising and Distribution Services for New Issues", *The Journal of Finance*, vol. (37), pp. 955-976.
4. Beatty R., and Ritter J., (1986), "Investment Banking, and the Underpricing of Initial Public Offerings",

Journal of Financial Economics, vol. (15), pp. 343-361.
5. Ben Naceur, S., and Ghanem, H., (2001), "The Short and Long-run Performance of New Listings in Tunisia", *International Review of Finance*, vol. (24), pp. 235-246.
6. Ben Naceur, S., and Omri, A., (1997), " Sous-Evaluation des Sociétés Introduites sur la Bourse Emergente de Tunis (1991-1995)", *Revue Monde en développement*, vol. (25), n° 1, pp. 33-44.
7. Bilson, C., Heanry, R., Powell, J. G., and Shi, J., (2003), "The Decision to Voluntary Provide an IPO Prospectus Earnings Forecast: Theoretical Implication and Empirical Evidence", *Working paper*, Australian National University.
8. Boubaker, S., and Labégorre, F., (2007), "Ownership Structure, Corporate Governance and Analyst Following: a Study of French Listed Firms*", Journal of Banking and Finance*, (in press).
9. Broye, G., and Schatt, A., (2001), "Comment Réduire la Sous-Evaluation lors de l'Introduction en Bourse ? ", *Papier de recherche*, Université de Besançon.
10. Broye, G., and Schatt, A., (2003), "Sous-Evaluation à l'Introduction et Cession d'Actions par les Actionnaires d'Origine: Le Cas Français", *Finance Contrôle Stratégie*, vol. (6), n°2, pp.67-89.
11. Cassia, L., Giudici, G., Paleari, S., and Rdondi, R., (2004), "IPO Underpricing in Italy", *Applied Financial Economics*, vol. (14), pp. 179-194.
12. Chemmanur, T. J., and Fulghieri, P., (1994), "Investment Bank Reputation, Information Production, and Financial Intermediation", *Journal of Finance*, vol. (49), pp. 57-79.
13. Chen, A. and Kao, L., (2005), "The Conflict Between Agency Theory and Corporate Control on Managerial Ownership: The Evidence from Taiwan IPO Performance", *International Journal of Business*, vol. (10), pp. 39-61.
14. Chen, J., and Strange, R., (2004), "The Effect of Ownership Structure on the Underpricing of Initial Public Offerings: Evidence from Chinese Stock Markets", *The Management Research Paper*, King's College London, University of London.
15. Claessens, S., Djankov, S., and Lang, L. H.P., (2000), "The Separation of Ownership and Control in East Asian Corporation", *Journal of Financial Economics*, vol. (58), pp. 81-112.
16. Clarkson, P. M., (2000), "Auditor Quality and the Accuracy of Management Earnings Forecasts", *Contemporary Accounting Research*, vol. (17), n°4, pp. 595-622.
17. Clarkson, P. M., and Merkley, J., (1994), "Ex-ante Uncertainty and the Underpricing of Initial Public Offering: Further Canadian Evidence", *Canadian Journal of Administrative Sciences*, vol. (11), pp. 54-67.
18. Clarkson, P. M., Dontoh, A., and Richardson, G., (1992), "The Voluntary Inclusion of Profit Forecasts in IPO Prospectuses", *Contemporary Accounting Research*, vol. (8), pp. 601-626.
19. Clendenning and Associates, (2001), « Questions Relatives au Financement par Capital-Risque, par Placement Initial de Titres (PIT) et par Placements Subséquents de Titres (post-PIT) des Petites et Moyennes Entreprises Canadiennes», *Ottawa, Industrie Canada*.
20. Connelly, J., Limpaphayom, P., and Siraprapasiri, V., (2004), "Ownership Concentration and Initial Public Offering Performance: Empirical Evidence from Thailand", *Working paper*.
21. Demsetz, H, and Lehn, k. (1985), "The Structure of Corporate Ownership: Causes and Consequences", *Journal of Political Economy*, vol. (93), pp. 1155-1177.
22. Faugeron-Crouzet and Ginglinger, E., (2002), « Introduction en Bourse et Emission d'Actions Nouvelles sur le Marché Français », *Finance*, Décembre.
23. Grinblatt, M., and Hwang, C., (1989), "Signalling and the Pricing of New Issues", *The Journal of Finance*, vol. (44), pp. 393-420.
24. Habib, M. A., and Ljungqvist, A. P., (2001), "Underpricing and Entrepreneurial Wealth Losses in IPOs: Theory and Evidence", *The Review of Financial Studies*, vol. (14), pp. 433-458.
25. Henry, D., Ahmed, K., and Riddell, A., (2003), "The Effect of IPO Prospectus Earnings Forecast Errors on Shareholder Return", *Journal of Corporate Communications*, vol. (4), pp. 1-27.
26. Hill, P., (2006), "Ownership Structure and IPO Underpricing", *Journal of Business Finance & Accounting*, vol. (33), pp. 102-126.
27. Jog, V., and Hitsman, J., (2000), "Canadian IPO: TSE versus NASDAQ", *Carleton University*, Working Paper.
28. Kim, K., A., Kitsabunnarat, P., and Nofsinger, J., R., (2004), "Ownership and Operating Performance in an Emerging Market: Evidence from Thai IPO Firms", *Journal of Corporate Finance*, vol. (10), pp. 355-381.
29. Kooli, M., (2000), "La Sous-Evaluation des Emissions Initiales: Le Cas du Canada", *Gestion*, vol. (25), n°3, pp. 78-91.
30. Kutsuna, K., Okamura, H., and Cowling, M., (2002), « Ownership Structure Pre-and Post-IPOs and the Operating Performance of JASDAQ Companies », *Pacific-Basin Finance Journal*, pp. 163-181.
31. Labégorre, F., and Boubaker, S., (2005), « Publication Volontaire de Prévisions et Rentabilités Initiales : Le Cas des Administrations à la Cote du Second Marché (1994-2000) », *Cahier de recherche*.
32. Laporta R., Lapoez-De-Silanes, F., and Shleifer, A., (2000), "Investor Protection and Corporate Valuation" *Journal of Financial Economics*, vol. (58), pp. 3-27.
33. Leland, H., and Pyle, D.H., (1977), "Informational Asymmetries, Financial Structure and Financial Intermediation", *The Journal of Finance*, vol. (32), pp. 371-387.
34. Ljungqvist, A. P., and Wilhelm, W. J., (2003), "IPO Pricing in the Dot-Com Bubble", *Journal of Finance*, vol. (58), pp. 723-752.
35. Loo, A. N., and Riding, A., (2001), "Valuation, Underpricing, and Performance of E-Business NASDAQ IPOs", *21st Babson-Kauffman Entrepreneurship Conference, Jönköping International Business School, Suede*.
36. Loughran, T., and Ritter, J., (2001), "The New Issues Puzzle", *Journal of Finance*, vol. (50), pp. 23-52.
37. Loughran, T., Ritter, J., and Rydqvist, K., (1994), « Initial Public Offerings: International Insights », *Pacific-Basin Finance Journal*, vol. (2), pp. 165-199.
38. Marshall, B. B, (2004), "The Effect of Firm Financial Characteristics and the Availability of Alternative Finance on IPO Underpricing", *Journal of economics and Finance*, vol. (28), n° 1, pp. 88-103.

39. Morck, R., Shleifer, A., and Vishny, R., W, (1988), «Management Ownership and Market Valuation: An Empirical Analysis», *Journal of Financial Economics*, vol. (20), pp. 293-315.
40. Ritter, J., (1991), "The Long-Run Performance of Initial Public Offerings", *The Journal of Finance*, vol. (46), pp. 3-28.
41. Ritter, J., (1998), « Initial public offerings » *Contemporary Finance Digest*, pp. 5-30.
42. Rock, K., (1986), «Why New Issues are Underpriced», *Journal of Financial Economics*, vol. *(*15), pp. 187-212.
43. Roosenboom, P., and Schramade, W., (2006), "The Price of Power: Valuing the Controlling of Owner-managers in French IPO Firms", *Journal of Corporate Finance*, vol. (12), pp. 270-295.
44. Roosenboom, P., and van der Goot, T., (2005), "The Effect of Ownership and Control on Market Valuation: Evidence from Initial Public Offerings in the Netherlands", *International Review of Financial Analysis*, vol. (14), pp. 43-59.
45. Ruud, J., (1993), "Underwriter Price Support and the IPO Underpricing Puzzle", *Journal of Financial Economics*, vol. (34), pp. 155-151.
46. Short, H., and Keasey, K., (1999), "Managerial Ownership and the Performance of Firms: Evidence from the UK", *Journal of Corporate Finance*, vol. (5), pp. 79-101.
47. Su, D., (2004), « Leverage, Insider Ownership, and the Underpricing of IPOs in China », *Journal of International Financial Markets, Institutions and Money*, vol. (14), pp. 37-54.
48. Venkatesh, S., and Neupane, S., (2004), "Does Ownership Structure Effect IPO Underpricing : Evidence from Thai IPOs", *Working paper*, School of Management.
49. Wang, C., (2005), « Ownership and Operating Performance of Chinese IPOs », *Journal of Banking & Finance*, vol. (29), pp. 1835-1856.
50. Welch, I., (1992), "Sequential Sales, Learning and Cascades", *The Journal of Finance*, vol. (47), pp. 695-732.
51. Yang, Chi-Yih and Sheu, Her-Jiun, (2006), "Managerial Ownership Structure and IPO Survivability", *Journal of Management and Governance*, vol. (10), pp. 59-75.
52. Yanxiang Gu, A., (2003), "State Ownership, Firm Size, and IPO Performance: Evidence from Chinese "A" Share Issues", *American Business Review*.
53. Yu, T., and Tse, Y.K., (2006), "An Empirical Examination of IPO Underpricing in the Chinese A-share Market", *China Economic Review*, vol. (17), pp.363-382.

OWNERSHIP STRUCTURE AND BID-ASK SPREAD: EVIDENCE FROM TUNISIAN COMPANIES

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Abstract

The majority of previous studies are limited to study the aspects of the ownership structure within the framework of government of company without wondering about the incidence of this mechanism on the stock liquidity. The objective of this paper is to examine the relationship between ownership structure and market liquidity. From a sample of Tunisian firms listed in the period from 2001 to 2005. We showed that ownership concentration by blockholders is positively related to spread. A positive but generally insignificant relation is found between spreads and insider ownership. However, institutional ownership does not add any explicative power to the liquidity.

Keywords: ownership concentration, insiders, institutional, stock liquidity, bid-ask spread

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1. Introduction

During the past decades, considerable attention has been dedicated to examining the relation between the market microstructure and corporate governance. The reason is that ownership structure may not only impact performance, but also stock liquidity. Concentrated ownership could decrease the level of trading activity, thus reducing market liquidity and adversely affecting the ability of the investors to sell their shares (Holmstrom and Tirole (1993)). Bhide (1993) and Coffee (1991) argue that a liquid market is an obstacle for effective governance. Heflin and Shaw (2000) investigate the relation between large block ownership and market liquidity for American firms. Sarin et al., (2000) examine the relation between stock liquidity and the fractional ownership of insiders and institutions. In recent studies on Australian firms, Comerton-Forde and Rydge (2006) find that the director holdings are positively related to illiquidity. In conclusion, ownership structure appears to be a vital factor that can significantly affect market liquidity.

Previous studies are undertaken for developed capital markets, in particular the US (Sarin et al., 2000; Heflin and Shaw, 2000; Rubin, 2007), Australia (Comerton-Forde and Rydge, 2006), Canada (Attig et al. 2006) and Norway (Naes, 2004) where the institutional environments differ greatly from that in Tunisia. This study is the first undertaken for Tunisian stock exchange to combine corporate governance research with market microstructure research by examining a link between a corporate governance variable, ownership structure, and a market microstructure variable, bid-ask spread.

Using a sample of 19 Tunisian firms, we find evidence that the bid- ask spread is positively associated with large block. We fail to find evidence that the bid-ask spread is positively related to the proportion of the firm's stock owned by insiders.

While we predict negative effects of the stock price and trading volume on the bid-ask spread.

The remainder of the paper is organized as follows. Section 2 presents the literature review. Data and methodology are portrayed in section three. Empirical results are presented and discussed in section four. Finally, section fife concludes the paper.

2. Literature review

Market microstructure theory predicts that the large individual owners have a negative effect on the liquidity, whereas the firms with much of small individual investors should have a high liquidity. The large owners have an information advantage relative to small owners.

Studies such as Heflin and Shaw (2000), Neas (2004) and Comerton-Forde and Rydge (2006) have all studied the relationship between block ownership and liquidity. These studies have found that the spreads is positively related to block ownership.

Holmstrom and Tirole (1993) derive a theoretical model for investigating the negative relationship between ownership concentration and market liquidity. The model suggests that the liquidity increased when the ownership by a large owner decreased.

Kothare (1997) argue that the presence of higher large shareholders reduce trading frequency, increase spread and reduce depth. Moreover, Becht (1999) examines the link between blockholdings and liquidity in Belgium and Germany. He finds that the voting power concentration through blocks has a negative effect on the liquidity. In Germany the liquidity cost is mitigated because blockholders deviate from one-share-one-vote. In Belgium, the liquidity is much reduced. On the other hand, Tobiasson et al. (1999) studied the relationship between liquidity and ownership structure in the Norwegian market. Their results show that the relation between the liquidity and the large owner is weak.

Using bid-ask spread as a measure of stock liquidity, Heflin and Shaw (2000) find that both relative and effective spreads are larger in the firm with higher blockholder ownership. Neas (2004) argue that the ownership concentration, measured by the aggregate holdings of the five largest owners, increases the spread. This result is in conformity with the theoretical predictions.

Comerton-Forde and Rydge (2006) report, on a sample of firm listed on the Australian Stock Exchange, a positive effect between ownership concentration and illiquidity.

Market microstructure theories argue that higher levels of insider ownership may increase the probability of informed trading and contribute to information asymmetry, leading to stock illiquidity. Insiders are shareholders who have access to privileged information about the firm, and who also have the power to make changes inside the firm. In this area, a large line of previous empirical studies has focused on the relationship between insider ownership and liquidity (Chiang and Venkaesh (1988); Kini and Mian (1995); Beny (1999); Sarin et al. (2000) and Dennis and Weston (2001); ect.).

Kini and Mian (1995), who examine whether ownership structure affects the specialist's choice of bid-ask spread on the NYSE, document a nonpositive relation between bid-ask spread and insider ownership.

Using a simultaneous equations approach, Sarin et al. (2000) find that insider ownership is positively related to bid-ask spreads and negatively related to quoted depth. But, Dennis and Weston (2001) find that spread is negatively related to the level of insider ownership.

The relation between liquidity and insider ownership in Norwegian market is studied in Neas (2004). A significant positive relationship is found between the spread measures and the holdings of the primary insiders. Primary insiders comprise company managers and members of the Board of Directors.

Rubin (2007) finds that insider's ownership of U.S firms is negatively associated with trade-based measures (volume and turnover), but positively associated with order-driven liquidity measures.

The predicted impact of institutional ownership on liquidity is not clear. On the one hand, institutional investors obtain private information about the firm because they have resources to make any analyses on the firm. The market makers are brought to widen spreads. Thus, bid-ask spread would be wider for firms with higher institutional ownership. On the other hand, institutional investors are heterogeneous and hold diversified portfolios.

The link between the spreads and institutional ownership has been investigated by many studies. Some of them have found a positive relation between those two variables (Sarin et al., 2000); others have found a negative relation (Dennis and Weston, 2001; Falkenstein, 1996).

Kothare and Laux (1995) find that spread is positively correlated to institutional ownership, but they treat the institutional ownership as exogenous, although Jennings et al., (2000) argue that spreads and the information asymmetry component of spread decrease with institutional ownership.

Sarin et al. (2000) treat the ownership structure and the spread as endogenous and they find that the spread is positively associated to institutional ownership. These results contradict those obtained by Dennis and Weston (2001) and Falkenstein (1996).

Dennis and Weston (2001) find that the relative spread is negatively associated to the institutional ownership. They suggest that institutional investors prefer stocks with narrower spreads since they are more liquid. The results corroborate those obtained by Tinic (1972) and Hamilton (1978). These authors found a relation negative between the institutional ownership and spread for a sample of NYSE and NASDAQ stocks, respectively.

Rubin (2007) finds a two-sided relation between institutional ownership and liquidity. Liquidity is positively related with institutional ownership and negatively related with institutional concentration. In contrast, Neo shows there is not a monotonic relation between concentration of institutional ownership and liquidity.

Neas (2004) and Sharma (2005) find no significant relation for a sample of Norwegian and Indian stocks, respectively.

3. Data and methodology

3-1 Hypotheses development

Ownership concentration

The large blocholders have access to private information and consequently they acquire superior information about firm value thus potential benefits from blockholder monitoring might be partially compensate by reduced liquidity attributable to wider spreads (Heflin and Shaw, 2000). Consistent with this assumption, Comerton-Forde and Rydge (2006) documents a negative relation between ownership concentration and liquidity.

Thus, the following hypothesis is proposed:

Hypothesis 1: The bid-ask spread is positively related to the ownership concentration.

Insider ownership

Theory predicts a negative relationship between stock market liquidity and insider ownership. The insiders have access to privileged information about the firm, and they trade based on this information. Sarin et al. (2000) argue that the presence of insiders increase the probability of informed trading and the cost of transaction. Thus, this contributes to higher level of information asymmetry and reduces liquidity. Consistent with this argument, Sarin et al. (2000) find a positive relationship between the insider ownership and the bid ask spread.

Accordingly, our second hypothesis is:

Hypothesis 2: There is an inverse relationship between insider ownership and liquidity: If the level of inside ownership increases, spread increases.

Institutional ownership

With respect to institutional ownership, on one hand, institutional investors have an informational advantage about the firm because they have resources to obtain and analyze information. Accordingly, their increased shareholding should guide to wider bid-ask and higher adverse selection costs (Sarin et al, 2000). On the other hand, institutional investors can be seen as heterogeneous, and the investment strategy is to hold diversified portfolios. In this case, the bid-ask spread would be a decreasing function of institutional ownership. Consistent with this argument, Barabanov (2002) find a negative relationship between the institutional ownership and the bid-ask spread.

Our hypothesis therefore is:

Hypothesis 3: The bid-ask spread is negatively related to the institutional ownership.

3.2 Data

The developed countries (US, UK, Australia; ect.) have a relatively strong market for corporate control and relatively dispersed stock ownership (Laporta et al. 1999) while Tunisia has a weak market for corporate control and concentrated stock ownership.

The final sample includes 19 firms that are listed on the Tunisian Stock Exchange (TSE) during January 2001- December 2005.

Shareholding data used in this study was collected manually from three sources: from listed companies' annual reports available on the Tunisian Stock Exchange, from the leaflets of issue of shares and from financial statements published in the official bulletins of the Tunisian Stock Exchange (TSE). Trading data are obtained from the Tunisian Stock Exchange.

3.3 Variables description

In our analysis we use the relative bid-ask spread as liquidity measure. Similarly to Sarin et al. (2000), Heflin and Shaw (2000), Amihud (2002) and Attig, Fong, Lang and Gadhoum (2006), we defined relative bid-ask spread % as the difference in ask and bid prices divided by the average of the bid and ask prices, is calculated for every quote.

The ownership structure of a firm in our sample is defined in terms of three variables: block ownership, insider ownership and institutional ownership.

Ownership by blockholders (**BLC**)

This variable refers to large bloc ownership; wich is measured as the percentage of shares held by the large blockholder. (e.g. Heflin and Shaw (2000) and Earle, Kucsera and Telegdy, 2005)

Institutional Ownership **(INST)** is defined as the percentage of shares held by the institutional owners. In fact, we considered as institutional investors, the banks, the investment firms, the insurance companies, pension funds, and mutual funds. This variable is reported in Sarin et al. (2000), Dennis and Weston (2001) and Rubin (2007).

Insider Ownership **(*INSID*)** is defined as the percentage of the outstanding shares owned by officers, directors and all other investors who may be related to the management. This variable is also employed by Kothare (1997), Sarin et al. (2000) and Comerton-Forde and Rydge (2006).

The control variables

Ownership structure is not the only factor which can influence the liquidity. Stoll (1978) shows that spreads are negatively associated with trading volume and share price, and positively associated with returns volatility. In addition, Glosten and Harris (1988) suggest that spreads may be influenced by factors[16] such as share price, trading volume, return volatility and firm size.

We use a number of control variables defined in the pervious literature to account for any effects of external factors in our analysis.

Share price **(PRICE)** is the average of closing daily price. Price levels can affect the liquidity of stock. Trading volume **(VOLUME)** is defined as total trading volume divided by of trading days. Return volatility[17] (**RVOL) is** measured as **t**he standard deviation of daily close-to-close returns.

Size firm[18] **(SIZE)** is the natural log of the market value of the firm's equity, calculated at the end of each trading day and averaged over the year. We use logarithms of market capitalization values to reduce skewness. This variable was also used by Rubin (2007) and Comerton-Forde and Rydge (2006).

3.4 Empirical methodology

The methodology used within the framework of our empirical analysis is that of panels. It is a multiple form of regression, which makes it possible to jointly

[16] Hanley, Kumar, and Seguin (1993)

[17] Heflin and Shaw 2000

[18] Demsetz (1986) and Chiang and Venkatesh (1988) show that firm size is a significant determinant of the bid-ask spread.

analyze the individual effects and the temporal effects. Indices i, t respectively represent the company and the period considered.

The econometrics of the data of panel makes it possible to highlight the heterogeneity of the observations in their individual dimensions by the taking into account of a fixed or random specific effect. Three tests make it possible to validate the specification of the model. The first is the test of presence of an individual effect, which consists in checking the existence of an individual effect. The second is the test of homogeneity of the coefficients that makes it possible to test the equality for all the companies and the third test is the test of Haussman, which is used to determine if it is necessary to resort to a model for fixed or random effect.

We separately study the effects of all detentions of the various groups of owner.

Our empirical tests are based on regression models that use bid-ask spread as the dependent variable.

First, we examine the negative relation between ownership concentration and liquidity. With this intention, we introduce into the regression the percentage of shares held by the large blockholder and the variables of control.

The model to be tested arises in the following way:

$$SPREAD_{it} = \beta_0 + \beta_1 BLC_{it} + \beta_2 PRICE_{it} + \beta_3 VOLUME_{it} + \beta_4 RVOL_{it} + \beta_5 SIZE_{it} + \mu_i + \nu_{it}$$

Where μ_i represents a firm-specific effect to be fixed or random, ν_{it} is a standard residual term and β_0, β_1, $\beta 2$, $\beta 3$, $\beta 4$ and β_5 are the unknown parameters of the model.

To examine the effect insider ownership on the bid-ask spread, the following regression equation is used, with spread as the dependent variable:

$$SPREAD_{it} = \beta_0 + \beta_1 INSD_{it} + \beta_2 PRICE_{it} + \beta_3 VOLUME_{it} + \beta_4 RVOL_{it} + \beta_5 SIZE_{it} + \mu_i + \nu_{it}$$

Then, we will test the relation between ownership institutional and bid-ask spread. Within this framework, we introduce the percentage of the shares held by the institutional investors into the regression.

$$SPREAD_{it} = \beta_0 + \beta_1 INSTI_{it} + \beta_2 PRICE_{it} + \beta_3 VOLUME_{it} + \beta_4 RVOL_{it} + \beta_5 SIZE_{it} + \mu_i + vit$$

Lastly, we include all ownership variables in the regression.

$$SPREAD_{it} = \beta_0 + \beta_1 BLC_{it} + \beta_2 INSD_{it} + \beta 3\ INSTI_{it} + \beta_4 PRICE_{it} + \beta_5 VOLUME_{it} + \beta 6\ RVOL_{it} + \beta_7 SIZE_{it} + \mu_i + \nu_{it}$$

4. Results

Table 1 presents the descriptive statistics concerning the variables retained in the analysis.

Table 1 reports descriptive statistics of the variables included in the regression analyses. The mean percentage bid-ask spread (SPREAD) is 2.25 percent whereas its standard deviation is 0.88 percent. Compared to the US (for example, Sarin et al. (2000) points out that a mean of 1.26 percent spread on a sample of 786 American firms). The mean proportion of shares held by large shareholders is 38.18 percent. The mean ownerships are 1.68 percent and 23.52 percent for insiders and institutional, respectively. The distribution of the documents of title between the shareholders of our sample shows that the structure of shareholding of these companies is very concentrated and that this concentration is ascribable to the large shareholder. This last holds, on average, 38.18%. Finally, the mean firm size of the companies composing the sample is 9.85 percent.

Table 1. Descriptive statistics for variables in regression analyses

Variables	Mean	Standard Deviation
Spread (SPREAD)	2.25	0.88
Blockholder ownership (BLC)	38.18	16.77
Institutional ownership (INST)	23.52	19.17
Insider ownership (INSID)	1.68	5.01
Share price (PRICE)	19.82	17.52
Trading volume (VOLUME)	7.05	1.06
Return volatility (RVOL)	0.024	0.069
Firm size (SIZE)	9.85	1.52

Notes: This table presents descriptive statistics for the variables used in the regression models. The sample consists of companies listed on the Tunisian stock exchange (BVMT) during 2001-2005. Trading data are obtained from the Tunisian stock exchange. The bid-ask spread (SPREAD) is define as the difference between ask and bid price divided by the average of the bid and ask price, calculated for each quote. Ownership by blockholders (BLC) is the percentage of shares held by the large shareholder. Insider ownership (INSIDER) is defined as the percentage of the outstanding shares held by the firm's insiders. Insiders are defined as officers, directors and all other investors who may be related to the management. Institutional ownership (INST) is defined as the percentage of shares held by the institutional. Price (PRICE) is the average of closing daily. Trading volume (VOLUME) is defined as total trading volume divided by of trading days. Return volatility (RVOL) is measured as the standard deviation of daily close-to-close returns. Size firm (SIZE) is the natural log of the market value of the firm's equity.

Regression Results

Table 2. Regression results – ownership structure and bid-ask spread

Independent variables	Dependent variable : SPREAD			
	Modéle1	Modéle2	Modéle3	Modéle4
Intercept	5.532 (9.57)*	5.349 (9.00)*	5.295 (8.35)*	5.729 (8.87)*
BLC	0.012 (2.30) **			0.0123 (2.33) **
INSIDER		0.023 (1.28)		0.028 (1.49)
INST			0.00025 (0.05)	-0.0032 (-0.67)
PRICE	-0.013 (-2.52) **	-0.013 (-2.33) **	-0.012(-2.34) **	-0.013 (-2.38) **
VOLUME	-0.232 (-1.78)**	-0.314 (-2.32)**	-0.280 (-2.10)**	-0.273 (-2.03)**
RVOL	0.671 (0.69)	0.521 (0.53)	0.501 (0.5)	0.681 (0.71)
SIZE	-0.096 (-0.99)	-0.069 (-0.7)	-0.084 (-0.84)	-0.082 (-0.85)
Wald chi2 (p-value) R-square	47.51 0.0000* 0.7177	39.54 0.0000* 0.6340	38.35 0.0000* 0.6542	45.72 0.0000* 0.6958

Notes: The table reports results from estimating a panel regression model for one measure of liquidity as the dependant variable: SPREAD is define as the difference between ask and bid price divided by the average of the bid and ask price, calculated for each quote. The independent variables are the blockholder's ownership (BLC), the insider ownership (INSIDER), the institutional ownership (INST), the price (PRICE), the trading volume (VOLUME), the return volatility (RVOL) and the size firm (SIZE). Ownership by blockholders (BLC) is the percentage of shares held by the large shareholder. Insider ownership (INSIDER) is defined as the percentage of the outstanding shares held by the firm's insiders. Insiders are defined as officers, directors and all other investors who may be related to the management. Institutional ownership (INST) is defined as the percentage of shares held by the institutional. Price (PRICE) is the average of closing daily. Trading volume (VOLUME) is defined as total trading volume divided by of trading days. Return volatility (RVOL) is measured as the standard deviation of daily close-to-close returns. Size firm (SIZE) is the natural log of the market value of the firm's equity. For each model, we report the estimated coefficients, t-statistics, the Wald chi2-value with the associated p-value and the R-squared.* denote significance at the 1 percent level, and ** denote significance at the 5 percent level.

Table 2 presents the results of estimating equation, in which the relative spread (SPREAD) is the dependent variable. Ownership by blockholders (BLC), the insider ownership (INSIDER) and the institutional ownership (INST) are independent variables along with other control variables. The sample includes 19 Tunisian firms for the 2001-2005 periods.

The test of Fisher is significant at 5 percent level; it confirms the existence of effects specific to the firm. In addition, the test of Hausman (1978) is significant; it confirms the random specification for the measure of liquidity.

As documented in Comerton-Forde and Rydge (2006) study, we find a positive relation between bid-ask spread and blockholder ownership in Model 1. The ownership concentration variable (BLC) is significantly positive at the 5 percent level (t-statistic=2.30) which detects that blockholder's ownership in Tunisian firms may decrease liquidity.

In Model 2, the spread is regressed on insider ownership. We find the sings of the parameter estimates for insider ownership is positive (0.023), consistent with the awaited sign but it is not significant. Sharma (2005) finds this result. Institutional ownership is put into the Model 3 with control variables. Institutional ownership does not significantly affect of the bid-ask spread. The coefficient is positive but it is not significant (t-statistic=0.05).

In Model 4, we include all ownership variables. We show that the bid-ask spread is positively and significantly related to the proportion of a firm's shares held by the large blockholders. The coefficient related to variable (BLC) is positive and significant at the 5 percent level (t- statistic=2.33). Our first hypothesis (H_1) is confirmed suggesting a positive relation between

bid-ask spread and the ownership concentration. This result is in conformity with the assumption that the large blockholders are regarded as informed investors. Our empirical results support the findings of Naes (2004) on a sample of Norwegian firms, which conclude that the owner concentration, measured by aggregate holdings of the five largest owners, increases the spread.

Contrary to our hypothesis (H2), the insider ownership (INSID) variable has a positive (0.027) but insignificant coefficient (t-statistic=0.135). Thus, we fail to find an association between the spread and the insider ownership. Our findings imply that the shareholding of the insiders does not seem to affect the liquidity in the Tunisian context. This is not consistent with the evidence documented in Sarin et al., (2000) study who concludes that insider ownership is positively related to bid-ask spread.

The inclusion of institutional ownership (INST) has no significant effect on the regression as shows in Model 4. This finding is also consistent with those of Neas (2004) and Sharma (2005), but opposite those of Jennings et al., (2000), Barabanov (2002) and Dennis and Weston (2001), who find that the relative bid-ask spread is negatively related to the institutional ownership. These authors interpret this as the preference of institutions for more liquid stocks. However, their result is in contrary to the finding of Kothare and Laux (1995), Sarin et al., (2000).

For the control variables included in our regression model, we find negative and statistically significant effects of the stock price (PRICE) and trading volume (VOLUME) on the bid-ask spread (SPREAD). The estimated coefficients of the stock price (PRICE) and trading volume (VOLUME) are statistically significant at the 5 percent level. These empirical results are consistent with the theoretical predictions of Stoll (1978), and the empirical evidence reported in Sarin et al. (2000), Heflin and Shaw (2000), Attig, Gadhoum and Lang (2003), and Rubin (2007) but are contrary to the evidence documented in Comerton-Forde and Rydge (2006) study.

We find a positive relation between the spread and the return volatility (RVOL). The coefficient for this variable is not significant in any of the regression estimated.

The firm size variable (SIZE) seems to be statistically insignificant. We fail to report relationship between firm size and bid-ask spread. It is not consistent with the findings of Sarin et al. (2000) and Naes (2004) who conclude that the spread decreases with the price, the volume and the size and increases with the returns volatility.

5. Conclusion

This study attempts to link corporate governance variables, large blockholder ownership, insider ownership, and institutional ownership and a market microstructure variable, bid-ask spread, in the Tunisian Stock Exchange during January 2001-December 2005.

Using a panel regression approach, we examined this relation to determine whether spread is associated with the percentage of shares held by the large blockholders, institutional owners and insider owners.

The most consistent result we find is the positive relation between bid-ask spread and blockholder ownership. We also find a relation positive but insignificant between insider ownership and bid-ask spread. This result is in accordance with the results obtained by Sharma (2005). The coefficient to this variable is in accordance with the awaited sign. This result is coherent with that found by Sarin et al., (2000). Consistent with Neas (2004), the bid-ask spread and the level of institutional ownership are negatively related, but this relation is not statistically significant.

Our results suggest that stock liquidity decreases with concentrated ownership.

Future researches seem to be considerably relevant, particularly in Tunisian context, to take into account foreign ownership and family ownership in order to detect their effect on the liquidity.

References

1. Amihud, Y., 2002, "Illiquidity and stock returns: cross section and time-series effects", Journal of Financial Markets 5, 31-56.
2. Attig, N., Fong, Lang and Y. Gadhoum, 2006, "Effects of large shareholding on information asymmetry and stock liquidity", Journal of Banking & Finance 2006.
3. Attig N., Y. Gadhoum and L.H.P. Lang, 2003, "Bid-Ask Spread, Asymmetric information and ultimate ownership", European Financial Management Association (EFMA) Meeting, Helsinki.
4. Barabanov, S., and M. McNamara, 2002, "Market perception of information asymmetry: Concentration of ownership by different types of institutions and bid-ask spread", SSRN working paper.
5. Beny N. L. 1999, "A Comparative Empirical Investigation of Agency and Market Theories of Insider Trading" Working Paper, Harvard University.
6. Bhide A. 1993, "The hidden costs of stock market liquidity", Journal of Financial Economics, 34, 31-51.
7. Bolton, P. and E. L. Von Thadden (1998), "Blocks, Liquidity and Corporate Control". Journal of Finance, vol. 53, p.
8. Chiang R. and P.C. Venkatesh, 1988, "Insider holdings and perceptions of information asymmetry". Journal of Finance, 43:1041–1048, 1988.
9. Comerton-Forde and J. Rydge, 2006, "Director Holdings, shareholder concentration and illiquidity" Finance Discipline, School of Business University of Sydney NSW 2006.
10. Demsetz H., 1968, "the cost of Transacting", Quarterly Journal of Economics, vol. n° 82, pp. 33-53.
11. Demsetz H., 1968, "Corporate Control, Insider Trading and Rates of Return" American Economic Review, 76, 3-16.
12. Dennis P. and J. Weston, 2001, "Who's Informed? An Analysis of Stock Ownership and Informed Trading", AFA 2002.
13. Eleswarapu, V.R., and C. Krishnamurti, 1999, "Liquidity, Stock Returns and Ownership Structure: An Empirical Study of the Bombay Stock Exchange." Working paper SSRN, 1999.
14. Fabozzi, F., 1979, "bid-ask spreads for over-the-counter stocks", Journal of Economics and Business 32, 56-65.
15. Falkenstein, E., 1996, "Preferences for stock characteristics as revealed by mutual fund portfolio holdings" Journal of Finance, 51, 111-136.
16. Fehle, F., 2004, "Bid-Ask Spreads and Institutional Ownership", Review of Quantitative Finance and Accounting 22, 275-292.
17. Golsten L.R and Harris L.E., 1988, "Estimating the components of the bid-Ask spread", the journal of Financial Economics, vol.n°21, PP.123-142.
18. Ham, R., M. Olsson, and M. Rafferty, 2005, "The Concentration of voting Rights and Equity Market liquidity in the Czech Republic", Corporate Governance Group Workshop, February, 2005.

19. Hamilton, J.L., 1978, "Marketplace organisation and marketability: NASDAQ, the stock exchange and the National Market System", Journal of finance 33,487-503.
20. Heflin F., and Shaw W. K., 2000, "Blockholder Ownership and Market Liquidity", Journal of Financial and Quantitative Analysis, 35, 621-633.
21. Ho Thomas S.Y and Stoll H.R., 1981, "Optimal dealer pricing under transactions and Returns uncertainty", The Journal of Financial Economics, vol. n°9, n°1, pp. 47-73.
22. Holmström B. and J. Tirole, 1993, "Market liquidity and performance monitoring", Journal of Political Economy, 101, 4, 678-709.
23. Huang R.D and Stoll, 1996, "Dealer versus auction markets: A paired comparison of execution costs on NASDAQ and NYSE", Journal of financial economics.
24. Huang R.D. and H.R. Stoll, 1997, "The components of the bid-ask spread: a general approach", Review of Financial Studies, 10, 4, 995-1034.
25. Jennings, W., K. Schnatterly, and P. J. Seguin, 2000, institutional ownership, information and liquidity. Working paper.
26. Kini, O., and S. Mian, 1995, "Bid-ask spread and ownership structure", Journal of Financial Research 58,401-414.
27. Kothare, M. and P. Laux, 1995, "Trading costs and the trading systems for N A SD A Q stocks", Financial Analysts Journal, 42-53.
28. Kothare, M., 1997, "The effects of equity issues on ownership structure and stock liquidity: A comparison of rights and public offerings", Journal of Financial Economics 43, 131-148.
29. Pham, P., P. Kalev, and A. Steen, 2003, "Underpricing, stock allocation, ownership structure and post-listing liquidity of newly listed firms, Journal of Banking and Finance 27, 919-947.
30. La Porta R., Lopez-de-Silanes F., Schleifer A., 1998, "Corporate ownership around the world." Journal of Finance 54, 471-517, (1999).
31. Maug, E., 1998, "Large shareholders as monitors: Is there a trade-off between liquidity and control?" Journal of Finance, 53:65–98.
32. Morck K. R, Stangeland A. D., and Yeung B., 2001, "Inherited Wealth, Corporate Control and Economic Growth: The Canadian Disease "NBER Working Paper No.6814.
33. Neas R. "Ownership Structure and Stock Market Liquidity» Oslo Norges Bank, Publications, Working Paper n° 2004-06, May28, 2004.
34. Noe, T., 2002, "Institutional Activism and Financial Market Structure", Review of Financial Studies, 15, 289-319.
35. Rubin, A., 2007, "Ownership Level, Ownership Concentration, and liquidity", Journal of Financial Markets, vol. 10, pp.219-248.
36. Sarin A., Shastri K. A., and Shastri K., 2000, "Ownership structure and stock market liquidity", Working Paper, Santa Clara University.
37. Sharma, L., 2005, "Ownership Structure and Stock Liquidity- Evidence from Indian Market", T A Pai Management Institute, Manipal, Working Paper, 2005.
38. Stoll. Hans R., 1978, "The supply of dealer services in securities markets", the Journal of finance, vol. n°33, n°4, pp. 1133-1153.
39. Stoll. Hans R., 1978, "The Pricing of security dealer services: an Empirical study of NASDAQ stocks", the Journal of finance, vol. n°33, n°4, pp. 1153-1173.
40. Tinic, S.M., 1972, "the economics of liquidity services" the Quarterly Journal of Economics 86, 97-93.
41. Zhang, Y., 2006, "Liquidity, a Blessing or Curse for Block Holdings", Working Paper, Indiana University.

IMPACT OF MANAGERIAL POWER AND THE PERSONAL CHARACTERISTICS OF CEO ON THE PERFORMANCE: CASE OF THE TUNISIAN COMPANIES

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Abstract

The main objective of this article consists in determining the impact of the management power and the manager's personal characteristics on the performance of the highly-rated enterprises. This paper examines two approaches. The first one specifies the leader's power by referring to the management characteristics as a group of personal sociological and professional aspects. The second one is concerned with the effect of these characteristics on the companies' performance. In order to test the validity of the theoretical hypotheses, the empirical study is based on a sample of 32 Tunisian highly-rated enterprises during the period 2000-2005. The results have shown that the leader's power, made up of indicating variables, plays an important role on the stock exchange and accounting performance. This fact leads us to conclude that all management characteristics contribute to the reinforcement of this power and to its effects on the enterprises' performance.

Keywords: The leader's power, The enterprise's performance, Management characteristics

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I. Introduction

The performance constituted an important preoccupation for the economists and the managers. Recent research is interested in the mechanisms by which the performance of the firm is established. In addition of the external factors, several researchers suggest that the personal characteristics of the CEO have an effect on the realization of the performance. In other words, the performance only improves when the firm entrusts its activities to CEO having specific managerial competences. This delegation given birth to many conflicts and also divergences of interest between the different partners of the firm. This debate was initiated by Berle and Means (1932) and then by Jensen and Meckling (1976). The agency theory is put in advance within this framework of relation. In absence of control mechanisms, CEO procure discretionary latitude which encourages them to satisfy their own interests and intentions without realizing those of the firm. For this reason, the firm must exert a strict control on CEO. If the control of the firm becomes limited, every CEO is capable in this case to impose his own style. According to this vision, the CEO impact increases when the source of internal or external control weakens (Miro, Erez and Naveh, 2004). The particular attention, reach on the CEO power, stimulated the interest of several researchers. Thus, an abundant literature (Bertrand and Mullainathan, 2003, Bertrand and Schoar, 2003, Malmendier and Tate, 2003, Adams, Almeida and Ferreira, 2003 and Baber and Fabbri, 2006) seeks to analyze the impact of managerial power on the performance of the firm. The results of the studies are mitigated and little conclusive. Most researchers are limited to suppose the CEO power without wondering about the managerial characteristics which contribute to the genesis of this power. The taking into account of these characteristics supposes that each type of aspect, related to the CEO specificity, is an indicator taking part in the reinforcement of the managerial power and consequently on its effect on the performance of the firm. The previous works have been explored in the developed countries and neglect the implication of this evidence on the emergent countries. The incentive of this study essentially consists in checking if the theoretical predictions remain valid in the Tunisian context and to establish the relation between the power of CEO and the performance of Tunisian firm.

This research is thus interested in answering the following question: "What are the impact of managerial power and the personal characteristics of the CEO on the performance of Tunisian firm?"

This paper is structured of the following manner. In second, we reveal the theoretical framework assumptions formulated as for the specificity of the CEO and the repercussion of managerial power on the

performance of the firm. In third, we expose the methodological elements and the empirical models used in order to test the relations released on the Tunisian firms.

II. Theoretical framework and formulation of assumptions

On the basis of the theoretical foundations, we are going to put the accent on the CEO specificity as whole of sociological, personal and professional type aspects. Besides, we are going to clear a series of relative theoretical assumptions relating to the effect of the CEO power on the performance of the firm.

1. CEO specificity

The new orientation of managerial theory is interested in the study of the CEO specificity. It recommends the analysis of all variables that constitute it as well as their effects on certain aspects of the CEO behaviour. Indeed, the CEO specificity doesn't only take account of the professional expertise but it includes the culture and the CEO values. This new tendency is adopted in the empirical works of Bertarnd and Schoars (2002) putting the accent on the CEO dimension. In the same way, Malmendier, Feel and Yan (2005) approve their theoretical concepts by the CEO characteristics.

Nevertheless, the functions of the CEO knew an evolution after the increased changes that touched the structure of the business and the accentuation of economical complexity. Therefore, the CEO characteristics are important as the level of the firm allowing clarifying the decision of the firm. This change, affecting the firm, have emerged the managerial power that appears through the evolution of the CEO characteristics. A review of the principal study carrying on the CEO specificity enabled us to identify several criteria linked to the aspects that contribute to the formation of managerial characteristics.

Sociological aspects

While referring to the recent theoretical literature, the CEO specificity depends essentially on the sociological aspects. In this frame, some studies looked into the distinction between male and female characteristics of the CEO (Zapalska, 1997, Denis, Robert, Kunkel and Denis, 2004). They showed that the CEO men are competent, active, independent, confident, objective and responsible whereas the CEO women have more emotion, dependence, sensitivity and consideration. The survey of Baber and Fabbri (2006) announces that the proportion of CEO women is weak compared to the CEO men. Butterfield and Parent (2002) insist on the act that the most competent CEO and exercising the most power are the men. On the contrary, the CEO women are more interested in the improvement of professional quality without distrusting of managerial power.

Besides, the managerial literature envisages the age like a necessary quality identifying the CEO sociological aspect. Barker and Mueller (2002) and Buchhotz and al., (2003) estimate the effect of managerial age on the intentions of CEO. In this sense, an old CEO does not interest to adopt the innovation and to adhere to the new ideas. Whereas , a young CEO is interested in taking more risk and initiative (Hambrick and Mason, 1984). He can appear more flexible as for the change to the new practices than an old and more aged CEO. Tsai and al., (2004) pretend that managerial influence expressed by the CEO power is strong in firm having young CEO. These companies give a great importance to the strategic and financial goals and adopt a similar behaviour of the firms in the developed countries. Managerial literature considered the family situation of CEO as a fundamental specificity relating to the sociological aspects. Sponholtz (2006) supports the idea according to which the married CEO becomes attached to the stability since they take into account their families at the moments of decisions making.

Personal aspects

The personal aspects of CEO are reflected in his ability of creation and innovation like in its capacity of exploration, vision and forecasting future opportunity. On the one hand, the CEO, endowed with a certain power, has a higher ability of reasoning. He explains and negotiates the decisions and judgments with the internal and external members in the firm. He clarifies, verifies and interprets the technical procedures and financial reports since he knows the concepts, the foundations and the necessary principles for their analysis (Healey and Palepu, 2001). On the other hand, the visionary CEO must be able to prejudge and to anticipate the environment for future changes. The study of Legohérel and al., (2004) confirms the CEO capacity to predict the future in the company by favouring more flexibility.

Professional aspects

The dependent professional aspects to the CEO are notably the professional experience, the level of instruction and the seniority. These aspects are considered as being the most substantial dimension as for the CEO specificity and also most studied in the literature. Nevertheless, a CEO having a high level of instruction has a great capacity to treat, to transfer information and to innovate rather than CEO has a weak instruction level (Gottesman and Morey, 2005). As several studies suggest it, notably that of the Hambrick and Futkomi (1992), each CEO has a repertory to know how to make acquirement at the time of his previous experience.

The functional knowledge represents an important attribute forming the base of the professional experience and consequently an important indicator for competences of the CEO. Thus, the professional experience reinforces the

managerial power. Since Cyert and March (1963), the literature supported that leaders having passed long periods in organizations have relatively limited perspectives, a base of narrow knowledge and conduct a restricted research. These leaders are more tied to stability and efficiency of the strategies (Chaganti and Sambharya, 1987). Besides, leaders having a short seniority have the tendency to pursue strategies related to the differentiation of products of the market or the innovation.

Capacities of the CEO

The CEO capacities became an essential preoccupation in managerial literature. They are expressed by the specialized training that leaders acquire through the performance of their duties. They are thus estimated like strategic orientations in their works. Besides, the analysis of the CEO capacities is explained by the birth of social relation maintained between the CEO and parts allying in the firm. The emergence of this relation is at the profit of the firm sine it procures more of flexibility, adaptability with customers and other recipients.

2. Relation between the power of the CEO and the performance of the firm

The power is defined as being the degree of influence affecting the organizational performance. Indeed, the leader having the power is the one which his decision has a strong implication on the performance of the firm (Adams, Almeida and Ferreira, 2003). This opinion is also shared by Daily and Johnson (1997). They advance that the efficient presence of CEO in the firm permits him to detain the part the most important of the power. In this same vision, CEO exercise their powers from a combination between the own components of the organization and those relative to the personal characteristics. However, the growth of the firm is not determined solely by the economics factors but also by the own human parameters to CEO (Daviedson, 1989). Therefore, the personal objectives are not dissociated objectives of the firm (Bamberger, 1983, Miller and Toulouse, 1986, O'Farrells and Hitchinses, 1988).

Besides, the personal qualities of the CEO remain an essential contribution for the capacity of innovation and development of the firm performance. (Laursen and Foss, 2003). Cosh et al., (2006) enunciated that the amplitude of the performance of the firm increases when it is realized by a group of managerial human resources rather when it is carried out by each resource individually. In the same way, the firms favouring managerial structure have a meaningful effect on efficiency of the performance and the process of innovation.

2.1. Impact of CEO seniority on the performance of the firm

One source of managerial power comes from the relation between managerial seniority and the organizational performance. Allgood and Farrell (2000) highlight that the CEO power increases when the CEO seniority increases. More specifically, Gibbons and Murphy (2002) and Milbourn (2003) advance that the long seniority is indicatory of the CEO higher ability. On the empirical level, it has been noted that the CEO seniority is associated to the superior performance of the firm (Dennis and Dennis, 1995). The drawn findings of the works of Tsai and al., (2004) confirm this perspective. Rajgopal and Zhang (2005) show that the CEO reputation, expressed by its seniority in the firm is a significant factor representing the increase of the performance. Therefore, we suggest the following assumption:

Assumption 1: the seniority of the CEO is related positively to the performance of the firm.

2.2. Impact of the CEO age on the performance of the firm

In order to better clarify the CEO power, Joos, Leone and Zimmerman (2003) put the accent on the relation between the age of the CEO and the complexity of the firm. They announce that the old CEO are employed in firm of larges sizes and of complex nature. In this sense, Datta, Rajagoplan and Zhang (2003) predict that age exercises the influence on the strategic direction of the firm. This positive impact is also confirmed by studies of McCelland and Baker (2004) and Rajgopal and Zhang (2005). In particular, the young CEO become more tolerant faced with the uncertainty and more open to the adoption of decision which incorporates the risk. They have more energy, dynamism and good will to accept the change. On the contrary, Hambrick and Mason (1984) are interested in the young CEO. They pretend their lack of experience and their ability to acquire and to mobilize the necessary resource with the intention of reaching high level of performance. These authors distinguish a negative relation between the age of the CEO and the performance of the firm. According to Musteen, Barker and Baeten (2005), the old CEO become more rigid and will have more difficulties in order to accept the new ideas. In reference to the agency theory, interests of the CEO and shareholders are aligned only when the CEO attains the retirement age. In this age, The COE can not improve their personal wealth or maximise the value of their equities in an effective way. Nevertheless, as this relation between the CEO age and the performance of the firm is not decided on the theoretical plan, we anticipate the following assumption:

Assumption 2: more the CEO advances in age, more the relation becomes positive (negative) with performance of the firm.

2.3. Impact of the level of instruction of the CEO on the performance of the firm

The high level diploma obtained by the CEO stimulates the growth of the firm. This impact denotes that the type of studies pursued by the CEO has a positive impact on the growth of the firm. Several previous studies (Storey and al., 1989 and Westhead,

1995) confirm this positive relation. In this context, Bertrand and Schoar (2002) and Datta, Rajagoplan and Zhang (2003) support that CEO having acquired a level of well structured instruction manage their firms toward of new strategic directions. However, Gotteman and Movey (2005) provide that the CEO cognitive capacity is positively jointed to the performance of the firm. In this case, CEO enjoying a strong intelligence are more ready to react in the process of information than those having a weaker level. These authors also reveal that the level of instruction is presented like a strong indicator of the social prestige. In the same way, they suppose that the performance of the firm is influenced when the CEO advances in his career thanks to the social networks. So we adopt the following assumption:
Assumption 3: the level of instruction of the CEO is positively related to the performance of the firm.

2.4. Impact of the CEO style on the performance of the firm

According to Janssen (2002), every CEO reaches the professional network of the firm independently of his style. Whereas, the survey of Delmar (1999) states that there is a negative relation between the style of the CEO and the growth of the firm. In spite, the performance of the firm directed by a CEO man is not differed excessively form that directed by a CEO women (Kalleberg and Leicht, 1991). Musteen, Barker and Baeten (2005) supported that managerial literature was interested in the kind of the CEO only with nomination and representativeness of women in positions of direction. Contrary to the CEO man, the CEO women defy obstacles related to the education and even to the environment of work. In spite of this point of view, the qualified CEO remains always dominated by the traditional male characteristics. Consequently, we choose the following assumptions:
Assumption 4: the man (women) CEO influence positively (negatively) the performance of the firm.

2.5. Impact of the CEO professional experience on the performance of the firm

Several studies found that managerial experiences have a positive incidence on the growth of the firm (Dunkelberg and Cooper, 1982, Smith and White, 1987 and Storey and al., 1989). More recently, Milbourn (2003) indicates that more the experience is longer, more it is reflected favourably on the managerial ability. Moreover, The COE who serves the firm for a long time holds a high share of power because he has influence on the board's members. Therefore, a departure of the CEO having some specialized knowledge and experience can impose costs for the firm because of the lack of efficiency. According to the against current, Gasse (1982) affirms that there is a negative but also a positive relation. Although the professional experience solves the organizational problems, it blocks the creativity and the degree of adaptability of the CEO in the firm. However, the recent study of Herrmann and Datta (2006) explores these same types of links in an international environment. The results of their studies point out that managerial experience confides to the CEO more of confidence in order to opt to the diversification but it procures more risk and develop the problem of asymmetry of information. Therefore, we consider the following assumption:
Assumption 5: the CEO experience is positively (negatively) related to the performance of the firm.

III. Methodology

The objective of this survey consists in validating the assumptions formulated by the theoretical analysis. For this reason, we are going to advance the necessary methodological elements for the empirical analysis of this research. In a first stage, we present the sample of firms considered and we define the retained variables in the analysis. In second stage, we expose the found results and we issue our conclusions.

1. Collection of data and constitution of the sample

In order to test empirically the effect of managerial power on the performance of the firm, we proceeded to the selection of the sample composed by 32 Tunisian enterprises during a period of 6 years going from 2000 to 2005. So, we used a sample panel of 192 observations. The financial data are collected from the BVMT and CMF. We also had recourse to the financial statement, the annual reports and prospectuses of the different firms constituting the sample of our analysis.

2. Measure of variables

We used two types of performance measures: financial performance (MTB) and accounting performance (ROA) as explained variables. Besides, the explanatory variable is the index of managerial power (IP). Nevertheless, the indication is not sufficient to explain the impact of managerial power on the performance of the firm. For this reason, we integrated in the model a group of control variables that change according to characteristics corresponding to the CEO and to the firm.

Performance of the firm

By referring to several studies, we are going to retain 2 indicators of performance.
MTB it: Market to Book: this ratio permits to value the financial performance of the firm. We can approximate this ratio bye the market value on the book value of assets. According to Milgrom and Roberts (1992), the level of financial performance depends on managerial contribution and efforts of the CEO on the profitability of the firm.
ROA it: Return on Assets: this ratio permits to value the accounting performance of the firm. It represents the profitability of assets. It is defined as the report of the operating profit by the total of assets. Daines (2004), Adams and Santos (2005) use the ROA ratio as a measure of performance.

Index of CEO power

The CEO power is approached by three variables constituting the index (Adams, Almeida and Ferreira, 2004). It is an index that tests the degree of managerial power on the performance of the firm. The three indicatory variables are following:

- $i_{1\ \text{no intern in the council other than the CEO}}$: dummy variable equal 1 if it exist other internal administrator other than the CEO in the council and 0 otherwise. The interpretation of this variable is jointed to the number of interns that influence decision taken by the CEO. In a certain measure, the other internal administrators can be competitors as for the position and the CEO power. For this reason, we consider the following assumption:

Assumption (6.1): the existence (absence) of internal administrators in the council other than the CEO is negatively (positively) related to the performance of the firm.

- $i_{2\ \text{founder of the firm}}$: dummy variable equal 1 if the CEO is the founder of the firm and 0 otherwise. In accordance with managerial literature (Danaldson and Lorsch, 1983, Finkelstein, 1992 and Fahlenbbrach, 2006), a CEO founder has a lot of influence. However, Jayarman and al., (2000), Palia and Ravid (2002) and Adams, Almeida and Ferreira (2006) reveal a positive relation between the founder CEO and the performance of the firm. According to this same optic, Anderson and Reeb (2003) affirm that the founder – CEO has a marginal effect on the ROA. Besides, according to Adams and al., (2003), it is plausible that the variable CEO - founder is correlated to the CEO characteristics. We adopt the following assumption:

Assumption (6.2): there is a positive relation between the founder- CEO and the performance of the firm.

- $i_{3\ \text{concentration of titles of the president of the board and the firm}}$: dummy variable that equals 1 if the CEO is at the same time the president of the board and the firm and 0 otherwise. In the case where the CEO is not the president of the board, it is expected that the CEO does not have the influence and the power on the decision making since the president has an important role in the taking of strategic decisions (Adams, Almeida and Ferreira, 2004). Thus, we envisage the following assumptions:

Assumption (6.3): there is a positive relation between the concentration of titles and the performance of the firm.

The index of managerial power, according to Ghosh and Moon (2005), is numbered from 1 to 5. When the index reaches the value 1 (the value 5) it means that the level of managerial power is low (high). These authors confirm that the latter permit to attenuate mistakes of measures associated to every constituent of the index. Dowell, Shackell and Stuart (2005) use the same scale of measurement relating to the index. They showed that the CEO power depends on several components expressed as follows: on the one hand, it is about the duality of functions that affects negatively the performance in certain cases while it acts positively in other situations. On the other hand, the founder of the firm can imply the same relation. It confirms that the position of the CEO, founder or fulfilling a function of duality, stimulates its power and therefore the performance of the firm. In this setting, we consider the following assumption:

Assumption (6): more the index of the power increases (decreases), more the CEO power becomes positively (negatively) related to the performance of the firm.

3. Variables of control

Variables of control are the additional variables representing factors acting on managerial power and having an influence on the performance of the firm. These variables are given as follows:

ANCD it: the seniority of the CEO: it is about the number of years since the CEO nomination. Some researchers as Shepherd and al., (1997) and Dennis and al., (1997) use the seniority of CEO as proxy. Ghosh and Moon (2005) qualify the seniority by the number of years that the CEO passes in the firm. Their studies release a dependence between the seniority of the CEO and the mechanisms of corporate governance since the CEO having a long duration within the firm will have a big managerial power following his strong influence on the performance.

AGED it: the CEO age: this variable reflects the knowledge and the CEO requirements in the firm since it has been recruited. Indeed, a young CEO can accept the technological development and the new method manipulation more easily than a more aged CEO. This latter will be more disposed to follow formations rather if it is attached to traditional practices which degenerate the performance of the firm. Nevertheless, an old CEO try actively to delay the retirement age since it is associated with the low level of being able.

NIEID it: the level of instruction of the CEO: is considered like a dummy variable which equal 1 if the CEO reaches a graduate level or more and 0 in the contrary case. We are inspired of researches of Gottesman and Morey (2005) for the formulation of this variable. The latter suggest that the level of instruction acts positively on the performance of the firm.

GEND it: the CEO type is estimated like a dummy variable which equal 1 if the CEO is a women and 0 otherwise. The CEO type induces a significant effect on the performance of the firm (Bore and Odean, 2001).

EXPD it: the CEO professional experience: estimated like a dummy variable which equal 1 if the CEO experience is more than 2 years in the firm and 0 otherwise. Herrmanna and Datta (2006) provide that the CEO long experience in the firm develop its cognitive orientation in order to stimulate the performance of the firm.

All retained variables in the models as well as their signs and their incidences on performance of the firm with regard to the formulated assumptions are recapitulated in the following table.

Table 1. The model variables

Variables		Abbreviations		Previous Signs	
Index of power	No intern on the council	IP	i auc	positive / negative	positive/ negative
	Founder of firm		i fond		positive
	Concentration of titles		i con		positive
Seniority of the CEO		ANCD		positive	
Age of CEO		AGED		positive / negative	
Level of instruction of CEO		NIEDD		positive	
Gender of CEO		GEND		negative	
Professionnel experience of CEO		EXPD		positive / negative	

4. Models of evaluation

In this setting of analysis, we took in consideration two models of regressions that are presented below. For every type of regression, we put below in evidence a financial or accounting variable, the index of managerial power and the whole of the control variables defined below. These models of linear regression permit to test assumptions formulated in the theoretical framework concerning the impact of managerial power on the performance of the firm. These two models are presented as follows:

(1) $MTB_{it} = \beta_0 + \beta_1 IP_{it} + \beta_2 NIEID_{it} + \beta_3 GEND_{it} + \beta_4 EXPD_{it} + \beta_5 ANCD_{it} + \beta_6 AGED_{it} + \varepsilon_{it}$

2) $ROA_{it} = \beta_0 + \beta_1 IP_{it} + \beta_2 NIEID_{it} + \beta_3 GEND_{it} + \beta_4 EXPD_{it} + \beta_5 ANCD_{it} + \beta_6 AGED_{it} + \varepsilon_{it}$

i and t indication of explained and explanatory variables correspond to the firm and the period of study respectively with ε_{it} standard residual term and β_j constitute the unknown parameters of the model.

IV. Empirical results

1. Descriptive statistics

After having identified the different variable of the survey, we propose to present their descriptive statistics in the following table:

Table 2. Descriptive statistics concerning variables of the study

Variable	Observation	Average	Standard Deviation	Min	Max
Variables of performance and CEO characteristics					
ROA	192	1.120467	4.089223	-.181	33.8
MTB	192	.885338	1.264892	.054161	14.287
ANCD	192	15.30208	6.678276	3	35
EXPD	192	.9583333	.2003487	0	1
AGED	192	47.04688	7.891469	32	63
GENRD	192	0	0	0	0
NIVEID	192	.75	.4341448	0	1
Measures of CEO power					
i aucun	192	.7708333	.4213955	0	1
i fond	192	.21875	.4144794	0	1
i con	192	.75	.4341448	0	1

A first look on some statistical indicators of sample data summarized in the table above shows that, while basing on measure of managerial power, the CEO occupies the position of the president of the firm and the board at the same time in 75% of the Tunisian enterprises. Besides, the CEO in the companies of the sample is the only intern who sits at the board of directors for 77% of cases. On the other hand, the CEO of the firm is founder only in 21% of cases. In the light of the descriptive statistics of variables which we retained in the analysis, we note that on the period 2000 - 2005, 88% of the Tunisian companies opt for the MTB ratio as measure of the financial performance. Our survey also reveals that the ROA ratio, translating the accounting performance, records a strong variation rising to 408%. This variability is caused by high ratios (ROA) of the Tunisian banks. The descriptive analysis of the CEO characteristics shows that the managerial age of the sample varies between 32 and 63 years. It implies that the majority of these CEO represent a level of experience which reaches 96% on average. Beside, this survey reveals that the level of instruction of these CEO is, in 75% of cases, a graduate level or more. The Tunisian companies of this sample also prove that all CEO, occupying this station, are men.

2. Results of evaluation and discussion

To measure the influence of different explanatory variable on the financial performance (MTB) and accounting performance (ROA), evaluations of all models are made on data of panels. It is the question in this case of examining models and to check if this observable individual effect is fixed or random. Before proceeding to the evaluation, we start with modelling the individual effects and identifying the effect associated with period (t). By practising the

necessary analysis, we decide the rejection of the null hypothesis (absence of individual effects). We can thus carry out the analysis of fixed individual and random effects. In our study, the model with fixed effect is significant but remains no favoured. This is due to certain variables of the evaluation which are greatly correlated to the CEO power variables which remains stable one year to another. We must thus use the estimation of the model with random effect. Actually, the principal difficulty which arises within this model comes from the interrelationship between the explanatory variables and the individual effects. To solve this problem, we used the test of Hausman (1978). It is a general test applied to solve many problems of specification in econometrics. It is used to discriminate the fixed and random effect. Thus, this test permits to determine if the coefficients of the two estimators (fixed and random) are statistically different. For the considered sample, every model includes eight explanatory variables, which leads us to conclude that these statistics follow chi2 (eight degrees of freedom). Although the dichotomy variable (GENRD) is not well estimated, the degree of freedom of Chi2 relative to every model becomes equal to seven. Following the null hypothesis H_0 of correct specification, these statistics are asymptotically distributed according to Chi2 (seven degrees of freedom). If the probability of statistical H is higher than the degree of confidence, we reject the null hypothesis. Therefore, we privilege the adoption of fixed individual effect. With reference to our survey, the probability of the statistics of Hausman for the two empirical models (1) and (2) don't reach the threshold of 10% which is the degree of confidence. While referring to these results, we reject H_0 of absence of correlation between the individual effects and the explanatory variables. Thus, we must adopt the model with fixed effect. For better results, we can fix our analysis on another statistical perspective that of the corrections of errors with predicted signs. We must check the absence of bias related to economic measurements by trying to correct them if they exist.

In this setting, we apply the test of Breusch-Pagen to test the problem of hetroscedasticity. In term of analysis, the probability of Fisher implies that the two empirical models endure the problem of hetroscedasticity. This problem is also confirmed by the high level of R^2 which is about (0.4174) and (0.5539) for the two respective models (1) and (2). The method of GLS (General Least Square) seems the most suitable solution to correct some problem concerning the fixed and random effect model. From this estimate, we note an improvement at the level of the significance of the variables.

The second problem is the multicolinearity which is present when the explanatory variables are significantly correlated between them. To justify the absence of this relation between these variables, we proceeded by the evaluation of the VIF (Variance Inflation Factor): $VIF = 1 / (1 - R^2)$ and tolerance = 1 / VIF. More the value of VIF is large, more the variable becomes collinear. So VIF exceeds 1 (VIF > 10) then this variable will be considered as greatly collinear. According to the calculations carried out, all variables of the model didn't reach 5 (the average of VIF is 2.12). Therefore, the model in its totality doesn't suffer from a problem of multicolinearity. In a more explicit way, The VIF of the variables constituting the CEO power doesn't exceed 2, which confirms the absence of muticolinearity. Concerning the variables of control, the only variable which varies between 4 and 5 is the seniority but it doesn't present a serious problem of colinearity. Besides, we calculated the coefficient of correlation of Pearson presented in the matrix of correlation. According to these coefficients, we note there is not a strong relation between variables and then we confirm the absence of mutlicolinearity in accordance with the results of VIF.

Table 2. Results of evaluation of the MTB model with correction of errors

Variables	Previous Signs	coefficients	t	Signification (P>t)	VIF	1 /VIF
Constant		0.8279158	1.71	0.087*		
i Auc $_{it}$	(+)/(-)	-0.2535872	-0.59	0.555	1.28	0.779296
i Fond $_{it}$	(+)	0.4744521	2.12	0.034**	2.08	0.480361
i con $_{it}$	(+)	-0.0400835	-0.24	0.812	.25	0.802044
NIVEID $_{it}$	(+)	-0.0485253	-0.39	0.699	1.56	0.639320
EXPD $_{it}$	(+)/(-)	0.3301389	0.62	0.537	1.16	0.862063
ANCD $_{it}$	(+)	-0.0221763	-0.70	0.485	4.36	0.229555
AGED $_{it}$	(+)/(-)	0.00507	-0.39	0.789	3.12	0.320047
R^2= 0.0237 ; Wald Chi2 (7)= 3925.34 ; Prob>Chi2 = 0.0000 ;Average VIF = 2.12						

*, **, *** significance level respectively of 10%, 5%, 1%.

The table above shows that results of regression between the financial performance (MTB) and the CEO power are significant to a level of 96% with Wald Chi2 rinsing to (3925.34).

Coefficients of indicatory variables constituting the index are in accordance with our assumptions (6.1) and (6.2). We notice that the variable (i fond) is the only significant variable to the level of 96% but of contrary signs to (i auc); positive and negative respectively. The signs of these variables are approved by the literature. Contrary, the variable (i con) is negative and no significant. The coefficient of this variable contradicts the hypothesis (6.3). For the first measure of managerial power, when another

internal administrator other than the CEO seats on the board, he becomes participant in the decision making. For this reason, Adams, Almeida and Ferreira (2004) consider that the CEO in the presence of other internal administrators in the board detains a weak part of power. Concerning the second measure, the founder CEO is always favoured since he detains the power. Whereas for the third measure, the literatures gives out that the manager who is at the same time president of the board and the firm has an important role in the decision making. The drawn conclusion of the literature, for this last measure, does not coincide with results approved in this study. We can note that managerial index has a positive coefficient but not significant statistically. It implies that the Tunisian CEO acquire their power through the title of founder when it doesn't exist any internal administrators in the board another than the CEO. Although this CEO doesn't detain the duality title, this power comes to improve the financial performance of the firm. The global result is conforming with our discounted results and with those shown by Adams and al., (2004). By referring to the theory of the agency, the reinforcement of the COE power favours its rooting. In this case, the power has a negative effect on the performance of the firm. Contrary to our hypothesis (3), the level of instruction of the CEO has a negative impact and no significance on the performance of the firm. This result is not coherent with the previous studies. This allows the leader to attach more importance to the activities of the firm in order to reach positions of force granting him with more power. To this consideration, Gotteman and Movey (2005) predict the importance of the level of instruction of the CEO. On the one hand, results of our survey reveal that the CEO experience acts positively on the financial performance of the Tunisian enterprises. What corroborates with results of Gosh and Moon (2005). This latter announces that the high part of the power is assigned to the CEO the more talented and most experienced to encourage a better performance of the firm. On the other hand, it appears that the CEO age doesn't affect the performance of the firm and doesn't exercise a significant influence. This result validates the assumption (2). In a more explicit way, the old CEO doesn't accept the new idea integration and stay inflexible to the new techniques that the firm need to contract. Results of Musteen, Baker and Baetens (2005) agree to this alternative. We point out that the age group of managers, tending towards the retirement age, affects negatively the performance of the Tunisian firms of our sample.

Table 3. Results of evaluation of the ROA model with correction of errors

variables	Previous Signs	coefficients	t	Signification (P>t)	VIF	1 /VIF
constant		0.0673749	0.03	0.973		
i Auc $_{it}$	(+)/(-)	0.9469486	2.49	0.013***	1.28	0.779296
i Fond $_{it}$	(+)	-1.20411	-2.20	0.028**	2.08	0.480361
i con $_{it}$	(+)	0.4818373	1.37	0.172	1.25	0.802044
NIVID $_{it}$	(+)	1.879567	2.10	0.036**	1.56	0.639320
EXPD $_{it}$	(+)/(-)	-6.463972	-1.82	0.069*	1.16	0.862063
ANCD $_{it}$	(+)	0.0716454	1.97	0.049**	4.36	0.229555
AGED $_{it}$	(+)/(-)	0.0831897	2.47	0.014***	3.12	0.320047
R^2 = 0.1527; Wald Chi2 (7)= 583.64; Prob>Chi2 = 0.0000; Average VIF= 2.12						

*, **, *** significance level respectively of 10%, 5%, 1%.

The table above shows that results of regression, between accounting performance (ROA) and CEO power, are meaningful with Wald Chi2 rising to (583.64). The two variables (i auc) and (i con) constituting the index of power are determinants. However their coefficients release the same signs expected following our assumptions. Only the indicating variable (i fond) does not confirm our forecasts. Although, the coefficient of this variable is significant. Results show that the absence of other internal administrators is the most meaningful variable affecting the performance of the firm. We can conclude that the index of the power acts positively on the accounting performance of the Tunisian firms. In other terms, COE holding power is constrained to improve the performance of the firm to which he belongs. Moreover, the high level of performance released by the firm becomes in favour of the CEO. This latter can, consequently, reinforce its position within the firm. According to our estimations, the level of instruction of CEO is related significantly and positively to accounting performance (ROA) of the firm. It is not the case with the financial performance (MTB) analyzed previously. Indeed, the result announcing the presence of positive relation supports those of Gottesman and Morey (2005).

With regard to the CEO age, results are not conclusive as for the negative association with the performance of the firm. The coefficient of this variable is significant and positive. It leads us to adopt the assumption (2). This assumption announces that more the COE advances in the age, more the link with the performance becomes positive when he adopts a risky behaviour. This result has been proven by several authors as McCelland and Baker (2004) and Rajgopal and Zhang (2005). According to these authors, the CEO adopting a risky behaviour and

encouraging the opening to the change improves the performance of the firm. As regards the experience of CEO, results indicate that this variable plays an inefficient role on the determination of high level of performance. Thus, we adopt the hypothesis that indicates a similar effect between managerial experience and the firm performance. On the other hand, the CEO seniority is an element that amplifies the performance of the firm. Indeed, more the CEO becomes an old partner in the firm more the performance of the firm rises. For this reason, the Tunisian firms prefer to preserve their old CEO in order to arrive to a better profitability. To keep them, The Tunisian firm is constrained to motivate the managers and to regenerate a better remuneration.

3. Synthesis of results

The following table synthesizes all the estimates released before with predicted and observed signs as well as their significances for the two performance types of MTB and ROA.

Table 4. Table of synthesis (MTB) and (ROA)

Theory	Variables	Previous Signs	Results of MTB (sign and significance)	Results of ROA (sign and significance)
Index of power	i_{1con} : concentration of titles	(+)	(-) and no significative	(+) and no significative
	$i_{2\ fond}$: founder of the firm	(+)	(+) and significative to 96%	(-) and significative to 97%
	$i_{3\ auc}$: no other intern administrator on the council other than the CEO	(+) / (-)	(-) and no significative	(-) and significative to 98%
CEO characteristics	Seniority	(+)	(-) and no significative	(+) and significative to 95%
	Age	(+) / (-)	(+) and no significative	(-) and significative to 98%
	Gender	(-)	-	-
	Instruction level	(+)	(-) and no significative	(+) and significative to 96%
	Experience	(+) / (-)	(+) and no significative	(-) and significative to 93%

V. Conclusion

The objective of this survey consists in determining the impact of managerial power and the CEO personal characteristics on the performance of the Tunisian firms. Based on the theoretical explanations, the two approaches have been explored in this framework. The first approach concerns the CEO specificity that includes competences, capacity and managerial characteristics. These characteristics are discerned by the CEO sociological, personal and professional aspects. The second approach explains the relation between the power of the CEO and the performance of the firm. It is considered complementary to the first one because the COE power is only translated through these characteristics. According to these theoretical foundations, we elaborated assumptions related to the nature of relations and associations that exists in the study. To test the validity of our theoretical assumptions, we developed two empirical models in the form of regressions applied to a sample of 32 Tunisian companies for a period of 6 years (2000 - 2005). These models change structure according to the nature of performance. The results of this empirical analysis reveal that the CEO power acts of two manners. For the financial performance, the relation is positive and significant. For the accounting performance, the relation is positive but not significant. This positive association increases when the characteristics of the manager constitute an integral part in the management power. In order to better test the models and to get the best results, these characteristics are inserted under shape of additional or control variables. These results approve the suggestions underlined notably by Adams, Almeida and Ferreira (2004) and Dowell, Shackell and Stuart (2005), according to them, the CEO power is formulated form the duality, the concentration of titles and the position of founder of the firm. More specifically, the performance of the firm progresses only in presence of managerial human resources (Cosh, Fu, House and Huges, 2006). Our study does not exclude the presence of some limits. Indeed, the specific characteristics integration as explanatory variables in the empirical model raises some difficulties of approximation. It rather concerns the variables that express the CEO sociology depending on his future vision of problems or his choice of stability if he is father of family.

References

1. Adams R.B. Almeida H. Ferreira D. (2003), Founder - CEOs and Firm Performance, New York University Working Paper.
2. Adams R.B. Almeida H. Ferreira D. (2003), Powerful CEOs and their Impact on Firm Performance, New York University Working Paper.
3. Allgood S. Farrell K.A. (2003), the Match between CEO and Firm, the Journal of Business, Vol. 76, pp: 317-341.
4. Anderson R.C. Reeb D.M. (2003), Founding Family Ownership and Firm Performance: Evidence from S&P 500, Journal of Finance, Vol. 58 (3), pp: 1301-1329.
5. Baker G. Gibbons R. Murphy K.J. (2002), Relational Contracts and the Theory of the Firm, Quarterly Journal of Economics, Vol. 117 (1), pp: 39-84.
6. Barber B.M. Odean T. (2001), Boys Will be Boys: Gender, Overconfidence and Common Stock Investment, Quarterly Journal of Economics, Vol. 116, pp: 261-292.
7. Barker V.L. Mueller G.C. (2002), CEO Characteristics and Firm R&D Spending, Management Science, Vol. 48 (6), pp: 782 – 801.

8. Berger P. Ofek E., Yermack D. (1997), Managerial Entrenchment and Capital Structure Decisions, Journal of Finance, Vol. 52, pp: 1411-1438.
9. Berle A. Means C. (1932), the Modern Corporation and Private Property, New York, NY: Macmillan.
10. Bertrand M. Mullainthan S. (2003), Enjoying the Quiet Life? Corporate Governance and Managerial Performance, Journal of Political Economy, Vol. 111, pp: 1043-1075.
11. Bertrand M. Schoar A. (2003), Managing with Style: The Effect of Managers on Firm Policies, Quarterly Journal of Economics, Vol. 118, pp: 1169-1208.
12. Butterfield D.A. Parent J.D. (2002), Gender and Managerial Stereotypes: Have the Times Changed? Journal of Management, Vol. 28 (2), pp: 177-193.
13. Chaganti R. Sambharya R. (1987), Strategic Orientation and Characteristics of Upper Management, Strategic Management Journal, Vol. 8, pp: 393-401.
14. Cyert R.M. March G. (1963), a Behavioural Theory of the Firm, the American Economic Review, Vol. 54 (2), pp: 144-148.
15. Daines R. (2001), Does Delaware Law Improve Firm Value? Journal of Financial Economics, Vol. 62, pp: 525-558.
16. Datta D.K. Rajagoplan N. Zhang Y. (2003), New CEO Openness to Change and Strategic Persistence to Moderating Role of Industry Characteristics, Journal of Management, Vol. 14 (2), pp: 101-114.
17. Davidson C. Bardin S. Blachere G. (1989), Information Education and Expert Systems, Building Research and Practice, Vol. 17 (4), pp: 11-15.
18. Delmar F. (1999), Entrepreneurial Growth Motivation and Actual Growth A Longitudinal Study, Research on Entrepreneurship, 25-26 Novembre, Londres.
19. Denis D.J. Denis D.K. (1995), Performance Changes Following Top Management Dismissals, Journal of Finance, Vol. 50, pp: 1029-1057.
20. Denis D.J. Denis D.K. Sarin A. (1997), Agency Problems, Equity Ownership, and Corporate Diversification, Journal of Finance, Vol. 52, pp: 135 - 160.
21. Dennis M.R. Kunkel A.D. (2004), Perceptions of Men, Women and CEOs the Effects of Gender Identity Social Behaviour and Personality, an International Journal, Vol. 32, pp: 155-172.
22. Donaldson G. Lorch J. (1983), Decision-Making at the Top, Basic Books, New York.
23. Dunkelberg W.G. Cooper A.C. (1982), Patterns of Small Business Growth, Academy of Management Proceedings, pp: 409-413.
24. Fahlenbrach R. (2006), Founder-CEOs and Stock Market Performance, Warton School, Working Paper.
25. Finkelstein S. (1992), Power in Top Management Teams: Dimensions, Measurement and Validation, Academy of Management Journal, Vol. 35, pp : 505 - 538.
26. Gasse Y. (1982), L'entrepreneur Moderne : Attributs et Fonctions, Revue française de Gestion, Vol.7 (4), pp : 3-10.
27. Ghosh A. Moon D. (2005), Auditor Tenure and Perceptions of Audit Quality, the Accounting Review, Vol. 80 (2), pp: 585-612.
28. Gosh A. Fu X. Hughes A. (2005), How Much Does Informality in Management Matter for SME Innovation, Award Winning Paper, European Best Paper Award.
29. Gottesman A.A. Morey M.R. (2005), Does a better Education make for better Managers? An Empirical Examination of CEO Educational Quality and Firm Performance, www.ssrn.com.
30. Hambrick D.C. Fukutomi G.D. (1991), the Seasons of CEOs Tenure, Academy of Management Review, Vol., 16, pp: 719-742.
31. Hambrick D.C. Mason P.A. (1984), Upper Echelons: The Organization as a Reflection of its Top Management, pp: 193-206.
32. Healey P.M. Palepu K.G. (2001), Information Asymmetry Corporate Disclosure and the Capital Market: A Review on the Empirical Disclosure Literature, Journal of Accounting and Economics.
33. Hermann P. Datta D. (2006), CEO Observable Experiences: Implication for Choice between International Acquisitions, Joint Ventures and Greenfield Investments, Journal of Management Studies, Vol. 7 (1).
34. Janssen, F. 2002. Les Déterminants de la Croissance des PME : Analyse Théorique et Etude Empirique auprès d'un Echantillon d'Entreprises Belge. Thèse de doctorat : Université Jean Moulin Lyon 3.
35. Jayaraman N. Khorana A. Nelling E. Covin J. (2000), CEO Founder Status and Firm Financial Performance, Strategic Management Journal, Vol. 21, pp: 1215-1224.
36. Jensen M. Meckling W.H. (1976), Theory of a Firm: Managerial Behaviour, Agency Costs and ownership structure, Journal of Financial Economics, Vol. 3, pp: 305 - 360.
37. Joos P. Leone A.J. Zimmermann J.L. (2003), Selecting CEOs: Matching the Person to the Job, University of Rochester, Working Paper.
38. Kalleberg A.L. Leicht K.T. (1991), Gender and Organizational Performance: Determinants of Small Business Survival and Success, Academy of Management Journal, Vol. 34, pp: 136-161.
39. Laursen K. Foss N.J. (2003), New HRM Practices, Complementarities and the Impact on Innovation Performance, Cambridge Journal of Economics, Vol. 27 (2), pp: 243-263.
40. Logohérel P.H. Callot P.H. Gallopel Peters M. (2004), Personality Characteristics, Attitude toward Risk and Decisional Orientation of Small Business Entrepreneur: A Study of Hospitality Managers, Journal of Hospitality and Tourism Research, Vol. 28, pp: 109-120.
41. Malmendier U. Tate G. (2003), CEO Overconfidence and Corporate Investment, Working Paper, Stanford University and the University of Pennsylvania.
42. Malmendier U. Tate G. Yan J. (2005), Corporate Financial Policies with Overconfident Mangers, Working Paper, Stanford University.
43. McClelland P. Barker V.L. (2004), Cemented in Power: An Empirical Examination of How Increasing CEO Age and Ownership Control Interact to Reduce Firm Performance in Publicly Traded Firms.
44. Milbourn T. (2003), CEO Reputation and Stock Based Compensation, Journal of Financial Economics, Vol. 68, pp: 233-262.
45. Milgrom P. Roberts M. (1992), Economics, Organization and Management, Prentice-Hall International, Englewood Cliffs (New Jersey).
46. Miller D. Toulouse J.M. (1986), Chief Executive Personality and Corporate Strategy and Structure in Small Firms, Management Science, Vol. 32 (11), pp: 1403-1432.
47. Miron E. Erez M. Naveh E. (2003), Does Cultural Matter? The Moderating Effect of Culture on the

Relationship between Individual Characteristics and Innovation, Quality and Efficiency, the Academy of Management.
48. Musteen M. Barker V.L. Baeter V.L. (2005), CEO Attributes Associated with Attitude toward Change: The Direct and Moderating Effects of CEO Tenure, Journal of Business Research, Vol. 59, pp: 604-612.
49. O'Farrell P.N. Hitschens D.W.N. (1988), Alternative Theories of Small Firm Growth, A Critical Review in Environment and Planning, Vol. 20, pp: 1365-1383.
50. Palia D. Ravid S.A. (2002), the Role of Founders in Large Companies: Entrenchment or Valuable Human Capital? www.ssrn.com.
51. Storey D. Watson R. Wynarizyk P. (1989), « Fast Growth Small Business: Case Studies of 40 Small Firms in Northern England, Department of Employment, Research Paper n°67, cité par Storey (1994).
52. Westhead P. (1995), Survival and Employment Growth Contrasts between Types of Owner-Managed-High Technology Firms, Entrepreneurship Theory and Practice, Vol. 20, pp: 5-27.
53. Zapalska A. (1997), a Profile of Woman Entrepreneurs and Enterprises in Poland, Journal of Small Business, Vol. 35 (4), pp: 76-81.

Annex 1. Correlations

		ROA	MTB	i_aucun	i_fondat	i_con	ancd	aged	nved	genr	expd
ROA	Pearson Correlation	1	-,008	-,028	-,138	,086	-,019	,053	,155*	.(a)	-,306**
	Sig. (2-tailed)		,913	,703	,057	,234	,797	,464	,032	.	,000
	N	192	192	192	192	192	192	192	192	192	192
MTB	Pearson Correlation	-,008	1	-,076	,120	,017	,042	,026	-,048	.(a)	,043
	Sig. (2-tailed)	,913		,295	,098	,813	,560	,718	,512	.	,558
	N	192	192	192	192	192	192	192	192	192	192
i_aucun	Pearson Correlation	-,028	-,076	1	-,191**	-,143*	-,303**	-,327**	,143*	.(a)	,258**
	Sig. (2-tailed)	,703	,295		,008	,048	,000	,000	,048	.	,000
	N	192	192	192	192	192	192	192	192	192	192
i_fondat	Pearson Correlation	-,138	,120	-,191**	1	,073	,610**	,258**	-,393**	.(a)	,110
	Sig. (2-tailed)	,057	,098	,008		,316	,000	,000	,000	.	,128
	N	192	192	192	192	192	192	192	192	192	192
i_con de	Pearson Correlation	,086	,017	-,143*	,073	1	-,093	,123	,056	.(a)	-,120
	Sig. (2-tailed)	,234	,813	,048	,316		,199	,090	,444	.	,096
	N	192	192	192	192	192	192	192	192	192	192
ancd	Pearson Correlation	-,019	,042	-,303**	,610**	-,093	1	,731**	-,559**	.(a)	,103
	Sig. (2-tailed)	,797	,560	,000	,000	,199		,000	,000	.	,154
	N	192	192	192	192	192	192	192	192	192	192
aged	Pearson Correlation	,053	,026	-,327**	,258**	,123	,731**	1	-,510**	.(a)	,107
	Sig. (2-tailed)	,464	,718	,000	,000	,090	,000		,000	.	,139
	N	192	192	192	192	192	192	192	192	192	192
nved	Pearson Correlation	,155*	-,048	,143*	-,393**	,056	-,559**	-,510**	1	.(a)	-,120
	Sig. (2-tailed)	,032	,512	,048	,000	,444	,000	,000		.	,096
	N	192	192	192	192	192	192	192	192	192	192
genr	Pearson Correlation	.(a)	.(a)	.(a)	.(a)	.(a)	.(a)	.(a)	.(a)	.(a)	.(a)
	Sig. (2-tailed)	.	.	.	.	.	.	.	.		.
	N	192	192	192	192	192	192	192	192	192	192
expd	Pearson Correlation	-,306**	,043	,258**	,110	-,120	,103	,107	-,120	.(a)	1
	Sig. (2-tailed)	,000	,558	,000	,128	,096	,154	,139	,096	.	
	N	192	192	192	192	192	192	192	192	192	192

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
a Cannot be computed because at least one of the variables is constant.

ABNORMAL RETURNS: ECONOMETRIC PROBLEMS OR PSYCHOLOGICAL BIAS?

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Abstract

To validate the existence of abnormal returns, the most of empirical studies use the event study methodology which examines the behavior of firms' stock prices around corporate event. However, this methodology was been the source of several limits. Some defenders of efficiency theory assert that the abnormal returns are due to the event study methodology failures and econometric problems. However, partisans of behavioral finance demonstrate that the abnormal returns are due to psychological bias. The main purpose of this paper is to verify if the abnormal returns resulting from the event study methodology are due to econometric problems or to psychological bias generated by irrational investors' reactions. For the econometric bias, five problems are studied: the choice of market index; the missing observations; the abnormal returns normality, joined hypothesis; and the variance volatility in the event window. Results show that abnormal returns are far from being due to the event study methodology failures and econometric bias. For the psychological problems, based on trading volumes, the results show negative and significant abnormal returns (investors' under-reaction); a strong positive correlation between abnormal returns and abnormal trading volumes and a significant causal sense between them. So, abnormal returns are due to psychological bias.

Key words: abnormal returns, emergent market, econometric problems, psychological bias

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1. Introduction

Efficiency theory constitutes a dominate approach used to explain financial market's dynamic. This makes it possible to provide stable and significant results in the explanation of firms' stock returns. However, it is submit to several criticisms. Behavioral finance researches criticized the basic hypothesis of this theory: the investors' rationality. Other researches criticized the existence of abnormal returns on several financial markets that the efficiency theory is unable to explain their persistence.

To validate the existence of abnormal returns, the most of empirical studies use the event study methodology which examines the behavior of firms' stock prices around corporate event. However, this methodology was been the source of several limits.

Some defenders of efficiency theory affirmed that the abnormal returns are due to the event study methodology failures and econometric problems. Nevertheless, partisans of behavioral finance demonstrate that the abnormal returns are due to psychological bias.

In this paper, our interest is to study the source of abnormal returns: are they due to econometric problems or to psychological bias? To achieve this goal, we proceed as follows. In section 2, we present specific and general econometric failures of abnormal return. In section 3, we demonstrate that abnormal returns are due to psychological problems. And section 4 summarizes the results.

2. Abnormal returns and econometric problems

2.1. Methodology of detection abnormal return

In this section, we describe the sample and the methodology for detection of abnormal return. Our sample is composed by 119 dividends distribution announcement events of firms quoted on the Tunisian Stocks Exchange (TSE) for the period January 1999-December 2005. We divide the sample into two groups. The first is composed by the securities of the firms which form the TSE index and the second by the securities of the firms which form the TUNINDEX index. Our basic event is the dividends distribution. The event window is composed by 11 months: 5 months before the date of event and 5 months afterwards. The estimate window is composed by 30 months. Event studies examine the behavior of

firms' stock prices around corporate events. Abnormal return is the difference between the observed return and the predicted return:

$$AR_{i,t} = R_{i,t} - E\left(R_{i,t} / X_t\right) \quad (1)$$

Where $AR_{i,t}$: Abnormal return on the security i for time period t relative to the event, Observed return on the security i for time period t relative to the event, Normal return on the security i for time period t relative to the event, is given by estimating the Security Market Line ($R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$). The abnormal return becomes equal to:

$$AR_{i\tau} = R_{i\tau} - \hat{\alpha}_i - \hat{\beta}_i R_{M\tau} \quad (2)$$

The Mean Cumulative Abnormal Returns (MCAR) calculated on the event window for the firms which form the TSE index (Panel A) and the firms which form the TUNINDEX index (Panel B) are presented in the table below:

Table 1. Mean Cumulative Abnormal Returns (MCAR)

	Panel A		Panel B	
	MCAR	t-stat	MCAR	t-stat
-5	- 0.0133	1.7941	-0.0021	0.3574
-4	- 0.0149	0.1647	0.0068	1.0916
-3	- 0.0112	0.6579	0.0095	0.4663
-2	-0.0077	0.5475	0.0034	0.9305
-1	0.0013	1.5670	0.0146	1.7362
0	-0.0350	5.7639	-0.0181	4.5048
1	-0.0622	3.7144	-0.0339	2.1528
2	-0.0663	2.6003	-0.0299	1.6468
3	-0.0670	1.9109	-0.0246	0.7997
4	-0.0594	1.2299	-0.0264	0.2620
5	-0.0589	0.0961	-0.0409	2.5574

From the table 1, we can conclude:

- The investor reaction starts at the date 0 for the two panels. It is proportionately intense for the panel B; however, it is smaller than the panel A.
- The Mean Cumulative Abnormal Returns are significant for the event window [0, 2] for the panel B against event window [0, 3] for the panel A.
- The TSE inefficiency for the semi-strong form efficiency (panel A and panel B).
- The sensibility of the event study methodology to the choice of market index (we use the same methodology for the same market, the same period and almost the same data base (the difference between components of the TSE and TUNINDEX index is almost small in our data base).
- The sign of the Mean Cumulative Abnormal Returns for the two panels is negative; this means that the observed return is lower than the normal (predicted) return. Investors under estimate securities prices. This under-estimation is the cause of the MCAR negative sign and the under-reaction approved in our event study. We remind that this under-reaction was identified after the dividends level announcement event.

2.2. Abnormal returns and econometric problems

Several studies have documented that the event study methodology exhibits an econometric bias. In this section, we present the most important problems illustrated in the financial literature and solutions that we took to remedy to some of them.

2.2.1. Specific failures

The choice of market index

Brown and Warner (1980) show that use of the Equally Weighted Index is more likely to pick up abnormal performance than use of the Value-Weighted Index. Such a finding is consistent with the argument that the returns on randomly selected securities are on average more highly correlated with the Equally Weighted Index than the Value-Weighted Index. If for a majority of sample securities the precision with which β and hence residuals are measured is higher with the Equally Weighted Index, abnormal performance would be easier to detect using that benchmark.

To examine the sensitivity of our results to the choice of market index, we use two indexes: one is Equally Weighted Index (TSE index) and another is no (TUNINDEX) index).Results show that the use of Equally Weighted Index reduces the level of abnormal returns but not eliminate them. We can so conclude that the abnormal returns found in our study are not due to the problem of the choice of market index.

The missing observations

To solve this problem, we have use the Brown and Warner (1985) methodology which consists in using only the available data, by taking away the missing periods and the periods which succeed them, in order to preserve the sample size and not to affect the periodic returns real values.

2.2.2. General failures

Econometric problems presented as general failures are the MCAR normality, the jointed hypothesis and the method of composed abnormal returns (BHAR) and the MCAR autocorrelation and heteroscedasticity.

Problem of MCAR normality

To test the hypothesis of existence abnormal return, the empiric studies use the statistical tests that suppose the normality of return. Brown and Warner (1985) affirm that the abnormal returns are not normally distributed. To check this hypothesis, we use the Skewness and kurtosis coefficients:

Table 2. Distribution of abnormal return

	Skewness	kurtosis	Jarque Bera
PANEL A	0.39870	5.248806	16.408475
PANEL B	0.63263	6.457315	18.098114

1. Skewness:

$$v_{1,A} = \left| \frac{S-0}{\sqrt{6/N}} \right| = 3.24 > 1.96$$

$$v_{1,B} = \left| \frac{S-0}{\sqrt{6/N}} \right| = 4.11 > 1.96$$ ith: N represent the number of observations

2. Kurtosis:

$$v_{2,A} = \left| \frac{K-3}{\sqrt{24/N}} \right| = 6,103 > 1.96$$

$$v_{2,B} = \left| \frac{K-3}{\sqrt{24/N}} \right| = 6,42 > 1.96$$

3. Jarque Bera > 5.99 for two panels

The following table shows that the MCAR are not normally distributed. The value of Student test are generally erroneous to solve this problem, we based on nonparametric tests. The methods most often employed are the sign test and the rank test.

The sign test compare proportion of positive and negative abnormal returns during event period. The Z statistic is given as follow:

$$z = \frac{w - N\hat{\rho}}{[N\hat{\rho}(1-\hat{\rho})]^{1/2}} \quad (6)$$

Where,

w is the number of securities which have a positive MCAR during event period.

N is the securities number.

P is the proportion of positive abnormal returns observed during the estimate period. It is defined as:

$$\hat{\rho} = \frac{\sum_{i=1}^{N} \frac{\sum_{i=1}^{T1} S_{i,t}}{L}}{N} \quad (7)$$

Where $S_{i,t}$ is the sign of abnormal returns on the security i for time period t relative to the event.

$$S_{i,t} = \begin{cases} 1 \text{ si AR}>0 \\ 0 \text{ si AR}<0 \end{cases} \quad (8)$$

For the application of rank test, it is necessary to transform the abnormal return by their ranks (Ki) on the period combines the estimation window and event window (Ti):

$$K_{i,t} = rang(RA_{i,t}) \quad (9)$$

Under the null hypothesis of the abnormal return:

$$\overline{K_t} = 0.5 + T_i/2 \quad (10)$$

The statistic of null hypothesis is defined as:

$$R = \frac{\sum_{i=1}^{L} \frac{1}{N} \sum_{i=1}^{N} (K_{i,t} - \overline{K_t})}{\sqrt{\sum_{i=1}^{L} S^2(\overline{K_t})}} \quad (11)$$ With:

$$S(\overline{K_t}) = \sqrt{\frac{1}{T} \sum_{t=1}^{T} \frac{1}{N^2} \sum_{i=1}^{N} (K_{i,t} - \overline{K_t})^2} \quad (12)$$

Table 3. Mean Cumulative Abnormal Returns and non parametric test

	Panel A			Panel B		
	MCAR	t-sign	t-rang	MCAR	t-sign	t-rang
-5	- 0.0133	10.2974	1.5903	-0.0021	0.0000	0.3929
-4	- 0.0149	-5.7208	0.1634	0.0068	-9.7980	1.0759
-3	- 0.0112	-5.7208	0.6922	0.0095	-9.7980	0.4865
-2	-0.0077	-3.2418	0.5416	0.0034	5.3072	0.9075
-1	0.0013	-8.3905	1.6412	0.0146	-8.3691	1.8051
0	-0.0350	10.4881	5.7864	-0.0181	9.7980	4.3652
1	-0.0622	10.2974	3.3993	-0.0339	6.1237	2.3132
2	-0.0663	5.9115	2.1929	-0.0299	-6.7361	1.6740
3	-0.0670	2.6697	1.8067	-0.0246	-9.7980	0.7955
4	-0.0594	10.4881	1.2757	-0.0264	-5.9196	0.2800
5	-0.0589	-4.3102	0.0789	-0.0409	1.1286	2.2423

The sign test used in our study shows that the abnormal returns remain significant. So, we can conclude that the significant abnormal returns are not due to an econometric problem related to the statistic tests used which supposes the abnormal returns normality.

Joined hypothesis and BHAR method

In section 2.1 we presented the general method for detection of abnormal return (used by most empiric studies). This method based on the Security Market Line to calculate the normal return. The model market is only verified when the market is efficient. This problem is called "*Joined hypothesis problem"* to remedy this problem, we use the BHAR methodology

In recent years, following the works of Ikenberry, Lakonishok, and Vermaelen (1995), Barber and Lyon (1997), Lyon et al. (1999), the buy-and-hold abnormal returns approach, BHAR, has been widely used. Mitchell and Stafford (2000) describe BHAR returns as "the average multiyear return from a strategy of investing in all firms that

complete an event and selling at the end of a prespecified holding period versus a comparable strategy using otherwise similar non-event firms. An appealing feature of using BHAR is that buy-and-hold returns better resemble investors' actual investment experience than periodic rebalancing entailed in other approaches to measuring risk-adjusted performance. The joint-test problem remains in that any inference on the basis of BHAR hinges on the validity of the assumption that event firms differ from the "otherwise similar non-event firms" only in that they experience the event.

The researcher implicitly assumes an expected return model in which the matched characteristics perfectly proxy for the expected return on a security. Since corporate events themselves are unlikely to be random occurrences, there is a danger that the event and nonevent samples differ systematically in their expected returns notwithstanding the matching on certain firm characteristics. This makes matching on expected returns more difficult, especially in the case of event firms experiencing extreme prior performance.

The buy-and-hold abnormal returns (BHAR) are defined as:

$$BHAR_{i,t} = \prod 1+R_{i,t} - \prod 1+R_{m,t} \quad (13)$$

The BHAR method is used to check if the MCAR are null. Barber and Lyon (1997) and Lyon, Barber and Tsai (1999) recommend the use of this method even if it is submitted to several bias (the survivor bias, the asymmetry bias).

We suppose that BHAR is normally distributed. Student's test is presents as follows:

$$test - statistique = BHAR_{i,t} \Big/ \sigma(BHAR_{i,t}) * \sqrt{N} \quad (14)$$

Where, N is the number of observation used for calculate BHAR

$$\sigma^2(BHAR_{i,t}) = \sum_{t=1}^{30} (BHAR_{i,t} - \overline{BHAR}_{i,t})^2 \quad (15)$$

The results of our study are represented in the following table:

Table 4. The abnormal return and BHAR methodology

	Panel A		Panel B	
	BHAR	t-test	BHAR	t-test
-5	0.0448	1.1677	0.0524	0.3357
-4	0.0456	0.4512	0.0135	1.1291
-3	0.0432	1.6459	0.0029	0.4564
-2	0.0422	**-2.3459**	0.0023	1.0930
-1	0.0906	**4.1254**	0.0433	**2.6233**
0	0.1011	**4.8342**	0.0128	1.5048
1	0.1455	**4.0221**	0.0507	**2.1418**
2	0.1481	**3.3329**	0.0096	1.6468
3	0.1434	**3.4587**	-0.0039	0.6799
4	0.1618	1.8563	0.0174	0.2453
5	0.1912	-0.7456	0.0281	2.6675

We can conclude that the MCAR are statistically significant during the period [-1, 1] for the two panels A and B. This result shows the TSE inefficiency and the abnormal returns generated by the MCAR methodology are far from being due to econometric problems.

MCAR and the variance volatility in the event window

Much of the event study literature is based on a Security Market Line relating the return on an individual asset to the return on a market index and an asset-specific constant. The parameters in this model are assumed to be stationary, i.e. constant over time. Several studies (e.g., Hsu (1977; 1982)), however, have found this to be an unreasonable assumption. Further, Chen and Keown (1981) have demonstrated that non-stationarity in a stock beta coefficient can lead directly to an overestimate of the unsystematic risk parameter. Although most traditional event study methods assumed a constant variance through both the pre- and post-event periods, some, like Brown and Warner (1985), have noted that if the variance is underestimated, the test statistic will lead to rejection of the null hypothesis more frequently than it should. Recently, a number of papers, including those by Connolly (1989) and Schwert and Seguin (1990), have analyzed the importance of adjusting for autoregressive conditionally heterskedastic (*ARCH*) effects in the residuals obtained from the conventional Security Market Lines. It is argued that the ability to reliably form statistical inferences can be seriously compromised by failing to consider the *ARCH* error structure. Since the *ARCH* effect has been shown to be significant in many financial series, we take this into consideration in our model by applying the generalized autoregressive conditionally heterskedastic *GARCH* (1, 1) model to the error or residual term.

The GARCH (1, 1) model is made up of two equations: The first is the mean equation which is based on the Security Market Line, and the second is the conditional variance equation:

$$R_{it} = \alpha_i + \beta_i Rm_t + \varepsilon_t \quad (16)$$

$$\delta_t^2 = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \beta_{t-1}^2 \quad (17)$$

Normal return is given by the equation:

$$NR=\hat{\alpha}_i+\hat{\beta}_i Rm_t \quad (18)$$

The parameters α_i and β_i are estimated, for each security and each event, by the maximum likelihood estimator on the window out event.

The model GARCH (1, 1) supposes that the variance is not constant during the period of time and consequently the security risk changes with a new event. The Student statistic takes in consideration the evolution of the volatility. We note T as the statistic of abnormal returns test which is given by the relation below:

$$T_{it}=\frac{AR_{it}}{\delta_{it}} \quad (19)$$

The variance δ_{it} is calculated on the event window by the equation:

$$\delta_{it}^2=\hat{\alpha}_0+\hat{\alpha}_1 AR_{i,t-1}^2+\hat{\beta}_{t-1}\delta_{t-1}^2 \quad (20)$$

The parameters are estimated by the model GARCH (1, 1) on the window out event. Under the null hypothesis, the T statistic follows a normal law centered reduced.

If abnormal returns will be reduced, compared to the first study, we can affirm that a part of the TSE inefficiency can be explained by the existence of a no linearity which we must take on account during our research and in the construction of the TSE environment.

Table 5. MCAR and the Security Market Line with volatility GARCH (1, 1)

	Panel A		Panel B	
	MCAR	T-stat	MCAR	T-stat
-5	0.1912	-0.7456	0.0281	2.6675
-4	-0.0133	0.6452	-0.0021	0.3574
-3	-0.0149	0.7698	0.0068	1.0916
-2	-0.0112	0.6579	0.0095	0.4663
-1	-0.0077	0.5475	0.0034	0.9305
0	0.0013	1.5670	0.0146	1.7362
1	**-0.0350**	**3.7639**	**-0.0181**	**4.5048**
2	**-0.0622**	**2.7144**	**-0.0339**	**2.1528**
3	**-0.0663**	**2.0003**	**-0.0299**	**1.6468**
4	**-0.0670**	1.2109	-0.0246	0.7997
5	-0.0594	1.2299	-0.0264	0.2620

The table 4 shows that:

- The level of MCAR has reduced compared to the event study based on the security Market Line. This reduction allows us to confirm the variation of volatility on the event study. This result assumes that the MCAR level, resulting from the event study based on the Security Market Line, is due to the econometric problems related to the no stability of the securities systematic risk on the event window.
- In spite of the amelioration of the event study methodology, by introducing the systematic risk variation on the event window, the MCAR exist usually and there are significant for the two panels A and B.

3. Abnormal returns and psychological bias

In this section we will try to see if the abnormal returns are due to psychological bias. we verify if the abnormal return are descended to abnormal movements of investors. through trading volumes. Specifically we test if the movements of abnormal return are accompanied by abnormal movements trading volume (Ping. McInish and Wongchoti, 2007). The validation of existence a relation between abnormal return and abnormal trading volume permits to conclude that abnormal returns are due to psychological bias

Behavioral finance considers that the trading volumes have an important informational content on the investor's psychological studies. They are used as a proxy for some measures like overconfidence. This theory shows a strong relationship between abnormal returns and trading volumes which validate psychological bias. [Statman and Thorley, 1999; Odean, 1998…].

The importance of trading volumes led numerous studies interested of the relation between the volume and event; these studies find in a big majority. a variation of trading volume to information announcement. Among these studies one can mention: Copeland (1979) Mai and Tchemeni (1994) Harris and Gurel (1986).

3.1. Methodology

In the literature of financial market microstructure an elevated trading volume is generally associated to the receipt of information (Bolster. J. and M. (1992) Kyle (1985) and Darrat. Zhong and Cheng (2007)).

Lately, Hauser, Kedar-Levy, Pilo and Shurki (2006) studied the effect of public information on trading volumes and the impact of these last on the

speed of price adjustment. Smith Shepherd and Douglas (2004) validated the existence of the abnormal volumes on the Chinese market. following the announcement of a public event.

Our methodology consists to adapt the event study based on the prices to an event study based on the trading volume .The interest of this study is to verify if abnormal returns are synchronized with abnormal trading volumes.

Several volume definitions were used in the event studies. We use in our study the number of securities exchanged noted "V".

Mai and Tchemeni (1995) argue that variables logarithmic transformation is most adapted to identify abnormal trading volumes because it improves observations normality. The variable becomes LOGV: log (1+V).

Let V_{it} : volume of security i for time period t. V_{mt} : number of market mean volume. t_0 : event date. $t \in [-L-c,-c-1]$: estimate period for time period . $t \in [-c,+c]$: event window. In our study L= 60 and c= 15.

Abnormal trading volume is calculated by the difference between observed trading volumes toward a norm:

$$AV_{it} = V_{it} - \varphi_{i,t} \quad (21)$$

$\varphi_{i,t}$ can be defined as security volume during estimate period out of event. This norm is so a constant and the abnormal trading volume is given by:

$$AV_{it} = V_{it} - \frac{1}{L}\sum_{\tau=-c-1}^{-c-L} V_{i\tau} \quad (22)$$

In our study we choice the model that adjusts the norm $\varphi_{i,t}$ to security Market Line:

$$\varphi_{i,t} = \alpha + \beta V_{mt} + \varepsilon_t \quad (23)$$

Abnormal volume is so defined as:

$$AV_{it} = V_{it} - (\hat{\alpha} + \hat{\beta} V_{m,t}) \quad (24)$$

The Mean cumulative Abnormal Trading Volume of all securities at the period t ($MCATV_t$) is given by:

$$MCATV_t = \frac{1}{N}\sum_{i=1}^{N} AV_{it} \quad (25)$$

We also calculate the volume dispersion for estimate period:

$$MAVS = \sqrt{\frac{1}{L-1}\sum_{t=-c-1}^{-c-L}(MAV_\tau - \frac{1}{L}\sum_{\tau=-c-1}^{-c-L} MAV_\tau)^2} \quad (26)$$

To measure the event impact on trading volumes the ratio of mean volumes to standard deviation form a Student statistic:

$$MAVS = \sqrt{\frac{1}{L-1}\sum_{t=-c-1}^{-c-L}(MAV_\tau - \frac{1}{L}\sum_{\tau=-c-1}^{-c-L} MAV_\tau)^2} \quad (27)$$

$$\frac{MAV_t}{MAVS} \rightarrow T(N-1)$$

This statistic shows volumes normality securities independence and constant dispersion. To give more robustness for tests we propose another measure of standard deviation.

$$MAVS_t = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(AV_{it} - MAV_\tau)^2} \quad (28)$$

3.2. Results

In the literature of the financial markets microstructure a high trading volume is generally associated with the information reception (Ding. McInish and Wongchoti, 2007). Several empirical researches studied the impact of public event announcement on trading volumes (Bolster, et al.1992 and Kyle, 1985).

Recently, Hauser Kedar-Levy, Pilo and Shurki (2006) examine the effect of public information on trading volumes and their impact on the prices adjustment speed. Smith, Berger and Douglas (2004) validate the existence of abnormal trading volumes on the Chinese market after the announcement of public event.

To study the effect of our dividends distribution announcement on trading volumes we use the same method of event study methodology based on the MCAR.

Table 6. MCATV

	Panel A			Panel B		
	MCATV	T-stat	T-sign	MCATV	T-stat	T-sign
-5	0.0316	0.2037	0.0000	0.0040	0.0525	1.2339
-4	-0.0652	0.4830	0.8165	0.0131	0.0989	-0.2847
-3	0.1112	1.0734	-2.4495	-0.0488	0.6137	9.9662
-2	0.3340	1.2345	-2.4495	-0.1627	1.3715	10.5357
-1	**0.5774**	**1.9075**	**2.4495**	-0.0786	1.8904	3.7017
0	**0.5319**	**2.2143**	**2.6330**	**-0.1144**	**1.9938**	**8.2577**
1	-0.0489	0.8529	-1.6330	**-0.3331**	**2.5161**	**10.3458**
2	-0.0077	0.0962	-2.4495	**-0.4836**	**2.5117**	**9.7763**
3	0.0854	0.4760	0.0000	**-0.6239**	**1.9307**	**9.9662**
4	-0.1373	1.2476	2.4495	-0.7020	0.6070	9.9662
5	-0.1650	0.1047	-0.8165	-0.7514	0.3910	9.7253

From the table 6 we can conclude a difference in the results given by panel A and panel B:

- For the panel A, the investor reaction stars at the date -1 and finishes at the event date and the trading volume are significant only for the event date (difference with results found on abnormal returns). So, the abnormal returns are due to the econometric problems.
- For the panel B, the investor reaction stars at the event date, the negative sign of Mean Cumulative Abnormal Trading Volume (under-reaction) justify the negative sign found on abnormal returns (under estimation) and the trading volume are significant for the event window [0.3] (similar results found on abnormal returns). So, the abnormal returns are due to psychological problems materialized by trading volume.

To validate our results, we have study the correlation and the causality test between the MCAR and the MCATV.

For the correlation between MCAR and MCATV we have found the results below:

Table 7. Correlation between MCAR and MCATV

	MCAR Panel A	MCAR Panel B
MCATV	0.765097692	0.831512

We can conclude that the MCAR and MCATV are strongly correlated except the panel B MCAR and the MCATV in TND.

For the causality test between the MCAR and the MCATV, our aim is not to verify a specific sense (which causes the other). but only to verify the existence of such sense to validate the idea that the MCAR are due to psychological problems.

The causality test is formulated as follows:

$$\begin{bmatrix} MCAR_t \\ MCATV_t \end{bmatrix} = \begin{bmatrix} \alpha_{MCAR,t} \\ \alpha_{MCATV,t} \end{bmatrix} + \sum_{i=1}^{r} \begin{bmatrix} \beta_{MCAR,t} \\ \beta_{MCATV,t} \end{bmatrix} \begin{bmatrix} MCAR_{t-i} \\ MCATV_{t-i} \end{bmatrix} + \varepsilon_t \quad (29)$$

The results are presented in the following table:

Table 7. Causality test between the MCAR and the MCATV

	Lag 1	
	Test 1	Test 2
Panel A: TSE index		
MCATV	0.08186	0.02839
Panel B: TUNINDEX index		
MCATV	0.07006	0.00104
Test 1:MCAR causes MCATV		
Test 2: MCATV causes MCAR		
A test is validate if p-value is less than 0.05		

This table shows that there is a significant sense of causality between the MCAR and MCATV so we can affirm that the MCAR are due to psychological problems.

We remind that under reaction suggests that the market prices under react to information on short-term horizon. Consequently, information is integrated slowly into the prices.

Cutler, Poterba and Summers (1991) demonstrate that, for a number of returns index. there is a positive returns auto-correlation on short-term horizon. The positive returns correlation is interpreted as the under-reaction influence on the market prices which must be neutralized slowly afterwards.

Barberis. Shleifer and Vishny (1998) declare that the market prices under-reaction for a bad or good signal means that the expected security return after the first reaction is higher if the signal announces good news:

$$E\left[\tilde{R}_{t+1} / \tilde{s}_t = G\right] > E\left[\tilde{R}_{t+1} / \tilde{s}_t = B\right] \quad (30)$$

For our study the results of MCAR auto-correlation are presented as follow:

Table 8. MCAR auto-correlation

Panel A	Panel B
0.778	0.649
0.451	0.362
0.116	0.157
-0.165	-0.056
-0.412	-0.326
-0.475	-0.466
-0.347	-0.302
-0.238	-0.262
-0.137	-0.179

The results show that the MCAR are positively correlated before the event date. and they are negatively correlated after this date. This result confirms the investors' under-reactions.

4. Conclusion

In this paper we have try to check if the abnormal returns resulting from the event study methodology are due to the econometric problems or to the psychological bias generated by irrational investors reactions.

To achieve this goal, we presented in a first section an event study. Based on the Mean Cumulative Abnormal Returns as measure of abnormal returns, we have found significant abnormal returns.

In the next section we have exanimate if the significant abnormal returns have due to econometric bias. For that, we studied the specific and general failures of the methodology. We have conclude that the MCAR of our study are not due to the problem of index choice and also not due to the statistic tests which suppose their normality, their correlation and the variance volatility in the event window. As a result, we have concluded that the abnormal returns are not due to econometric problems.

In the end section, we have exanimate if the significant abnormal returns have due to psychological bias. Based on trading volumes as

measure of psychological bias, we have found negative significant abnormal returns (the investors' under-reaction) a strong positive correlation between MCAR and MCATV and a significant causal sense between them. So, we have concluded that the abnormal returns result from event study methodology is so far being due to econometric problems but to the psychological bias.

References

1. Keown, J. Pinkerton, and P. Bolster, (1992) "Merger Announcements, Asymmetrical Information, and Trading Volume: An Empirical Investigation." *Journal of Business Finance and Accounting*, 19, 901–910.
2. Barber, B. and Lyon, J. (1997) "Detecting long-run abnormal stock returns: The empirical power and specification of test statistics", *Journal of Financial Economics*, 43, 341- 372.
3. Barberisn, N. Shleifer, A. and Vishny, R. (1998) "A model of investor sentiment" *Journal of Financial Economics*, 49, 307-343.
4. Brown, S. and Warner, J. (1980) "Measuring security price performance" *Journal of Financial Economics*, 8, 205-258.
5. Brown, S. and Warner, J. (1985) "Using daily stock returns: The case of event studies" *Journal of Financial Economics*, 14, 3-31.
6. Cutler, Poterba and Summers (1991) "Speculative Dynamics" *The Review of Economic Studies*, 58, 529-546.
7. Darrat, Zhong and Cheng (2007) "Intraday volume and volatility relations with and without public news", *Journal of Banking & Finance*, 31, 9, 2711-2729
8. Ding. McInish and Wongchoti (2007) "Behavioral explanations of trading volume and short-horizon price patterns: An investigation of seven Asia-Pacific markets". *Pacific-Basin Finance Journal*. In Press.
9. Hauser, Haim Kedar-Levy, Batia Pilo and Itzhak Shurki (2006) "The Effect of Trading Halts on the Speed of Price Discovery", *Journal of Financial Services Research*, 83-99.
10. Kothari, S. and J. Warner (1997) "Measuring long-horizon security price performance. *Journal of Financial Economics*, 43, 301-339.
11. Kyle, Albert S. (1985) "Continuous actions and insider trading" *Econometrica*, 54, 1315-1336.
12. Lyon, J. B. Barber and C. Tsai (1999) "Improved methods of tests of long-horizon abnormal stock returns" *Journal of Finance*, 54, 165-201.
13. Mai et Tchemini (1996) "Etude d'évènement par les volumes : méthodologies et comparaison". *Cahier de recherche*. CEREG. Université de Paris-Dauphine.
14. Ng and Wu (2007) "The trading behavior of institutions and individuals in Chinese equity markets" *Journal of Banking & Finance*, 31, 9, 2695-2710
15. Odean, T. (1998) "Are investors reluctant to realize losses?" *Journal of Finance*, 53, 1775-1798.
16. Statman, Thorley and Vorkink (2004) "Investor Overconfidence and Trading Volume" Working paper, Santa Clara University.

DID CULTURE HAVE AN IMPACT ON TUNISIAN CORPORATE GOVERNANCE SYSTEM?

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Abstract

Numerous research works on corporate governance have been undertaken while only few attentions have been devoted to the study of cultural component. The aim of this research is precisely to contribute to the necessary renewal of corporate governance by attempting to highlight some crucial features and issues related to the impact of culture on Tunisian corporate governance system. Based on cultural dimensions of Hofstede (1980), we try to identify the impact of culture on Tunisian corporate governance system. We argue that the characteristics of Tunisian corporate governance system such as ownership concentration, inactivity of hostile takeover market, one–tier board system, limited transparency of information and underdevelopment of financial market, reflect the Tunisian culture.

Keywords: Corporate governance, national culture, corporate governance mechanisms, Hofstede (1980)

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I. Introduction

In the past few years, corporate governance has become a popular area of discussion owing to the fact of reforms done on corporate governance and the proliferation of the codes of best practices around the world.

Indeed, the fall of Stock markets, the bankruptcy of enterprises, the doubtful practices and the abuses of accountants indicate that the economic system as a whole points out distress signs. Whereas some failures result from fraudulent manipulations of accountants, several enterprises are confronted to conflicts of interests, inexperienced managers or to inequality of rights of votes.

Such scandals and bad practices contributed to throw back the interest of researchers and academicians for the corporate governance system. We note that rules and policies established concerning corporate governance system could not prevent the implementation of destructives strategies for the stakeholders. This state of fact, therefore, leads us to think on the evolution about the study of corporate governance.

If corporate governance system is mainly developed within the financial literature, a bibliographic research would show that it makes today the object of a strong attention on behalf of jurists, economists but also of political analysts and sociologists. In fact, the cultural component receives more and more attention. A large body of literature does confirm the evidence that culture is crucial in determining the differences of the governance systems between countries. Based on divergence of corporate governance systems, the researchers conclude that economic and legal practices are rooted, shaped and affected by national culture.

The impact of culture on corporate governance system has been extensively carried out in recent years. Therefore, our survey follows the recent research that is interested in the study of the impact of cultural features on corporate governance system, by analyzing the Tunisian context.

In Tunisia, some important reforms have been undertaken, notably in the level of financial, fiscal and accounting system. Besides, the Tunisian company undergoes, like all other countries, the weight of history, institutions and cultural values and thus there is interest to wonder about the impact of these cultural dimensions on mechanisms of Tunisian corporate governance system.

Our main objective research is to determine the link between the culture and the characteristics of Tunisian corporate governance system. The remainder of this paper is organized as follows. In section 2 we discuss the debate concerning the cultural variable. In section 3, we analyse the impact of culture on corporate governance system. In section 4, we present our study of the impact of Tunisian culture on corporate governance system and in section 5 we conclude the paper.

II. The Cultural Variable: A Controversial Subject

There has been a renewal of interest in culture among researches following the increasing interest demonstrated with regard to the notion of ethics brighten up by the financial scandals and the recent abyssal losses. We notify also that in spite of the deplored efforts, the researchers don't manage to express a clear definition of the culture. In fact, the concept of culture is one of the most difficult to define.

Trompenaars (1994) affirms even that the definition of culture is in itself a cultural product. Besides, Merry (1998) declares that the construction of a definition for an anthropological concept proves to be difficult. Gudykunst and Kim (1992) conceive the culture like a system of knowledge shared by a group of relatively big individuals.

Porter and Samovar (1994) rather have see culture as a cumulative deposit of knowledges, experiences, beliefs, values, attitudes, sense, hierarchies, religions, notions of time and what individual's group possesses during the generations. Whereas, Hofstede (1980) defines the culture like a collective programming of the mind that distinguishes the individuals of a group from another.

In short, no consensus has been found between the researchers of different disciplines treating the culture. Indeed, no unique definition or formulation of the culture does exist.

Harrisson and Huntington (2000) consider that culture is one of the most fundamental determinants of economic success and if the personality is the basis of the study of human behaviour, culture should be the basis of research looking to understand the motors of the collective behaviour (Bollinger and Hofstede, 1987).

It is admitted, extensively, that the culture has a significant impact on the economic performance. Whereas, several researchers confirm this hypothesis, others are sceptical. Indeed, the cultural variable constituted a debate among the researchers.

One of the main theoretical contributions to the relation between the culture and the economic development is the Weber' theory (1930) that demonstrates that culture is an important determinant of economic institutions. He explains the economic prosperity of England, in the beginning of the Capitalism in the nineteenth century, by the economic role played by the moral values in the industrial revolution.

The advent of Capitalism or the transition to modernity, especially in the West is explained, according to him, by religious ideologies. But the thesis of Weber (1930) has been criticized by several researchers who refuted the superiority of economic performance of Protestant to Catholics (Fukuyama, 1995).

The religious ethics played an economic role in the history of nations, notably western one. However, it remains to clarify the part of the religion and the part of the political, economic, social and cultural conditions favourable to the emergence of economic prosperity.

The culture could seem an explanation of the Asian performance, in the continuity of the works of Weber (1930), but we note that the researchers who take the work of Weber (1930) as a basis, such as Bond and Hofstede (1988), are sometimes those who explain the success of Asia of the East by the importance of Confucianism, whereas Weber (1930) consider it as a reason of the Asian decline. This example is revealing of the difficulties to define the sense of causality between a cultural aspect and an element of the economic development.

The notion that culture matters to economic development is undergoing a strong revival as the emergence of new institutional economy. In fact, North (1990) recognizes the importance of the cultural values in the economic study. Indeed, North (1990) specifies that an economic model that doesn't contain any ideological components cannot explain appropriately why institutional changes occur or not.

Therefore, an increasing number of research puts in evidence the influences of culture on different variables as the system of control of management (Chow, Kato and Shields, 1994 ; Harrison and *al*., 1994 ; Chow, Shields and Wu, 1999), independence of external auditors (Yamamura and *al*., 1996; Patel and Psaros, 2000), models of decision making (Adler and Boyacigiller, 1999 ; Harrison, 1993), remuneration system and right to vote of the employees (Van de Vliert, 2001; Au and Thomas, 2003), practices of remuneration (Markham, Scott and Townsend, 1990; Rogovsky and Schuler, 1998) and the styles of leadership (Park and Yi, 2003).

Thus, progressively, the cultural component brings in the theoretical preoccupations of the firm management and the corporate governance system.

III. The Corporate Governance: A Cultural Construct

The development of research comparing different systems of corporate governance showed that in order to understand their variety as well as their logic of operation, it is necessary to take in account the institutional structure as the nature of legal, political and cultural systems.

Indeed, the researchers recognize to the quasi-unanimity, that variation of corporate governance practices is explained by differences of responsibility degree allocated to the state, the investors, and the social elites and to the ideology (Proffitt, 2003). Therefore, the setting up of a particular system of corporate governance depends on the national culture of the country (Salacuse, 2003; Dore, 2005).

McCarthy and Puffer (2002) explain that the American corporate governance system reflects the values of individualism, independence and the sanctity of the property rights. When scandal of Enron,

threatened the values of America that constitute the foundation of the corporate governance system, the proposed legal reforms aimed to reaffirm these values. Thus, they aim to protect the rights of shareholders from abuse of managers, auditors and financial analysts.

Whereas the main French cultural values are egalitarianism, the hierarchy and respect of authority (Calori and *al.*, 1997). McCarthy and Puffer (2002) add that the French corporate governance system depends mainly on internal mechanisms of governance as the board of directors and that French cultural values are reflected in behaviour of mangers within the firm and thus appear in the mechanisms of corporate governance.

While the German managers consider that performance is a primordial value and they exhibit a high autonomy and insurance (Brodbeck and *al*., 2002). McCarthy and Puffer (2002) specify that, as the case of France, within the German corporate governance system, internal mechanisms of control play a fundamental role. This state of fact seems to reflect the societal culture of Germany that is based on the autonomy.

Therefore, the American, German and French governance systems are visibly affected by the cultural features of every country. The consideration of the concept of culture and its impact on mechanisms of corporate governance system, was almost absent in academic research. But, we note a renewal of interest concerning the cultural perspective of the corporate governance.

3.1 The New Cultural Awarness Of The Corporate Governance

Toward the end of the years 1990, corporate governance was not only an academic research topic but it becomes a major preoccupation in the programming of the powerful economic actors to the national and international level. In fact, there was a more and more widespread awareness of a better explanation of corporate governance system in general and of the importance of cultural differences in particular.

In the United States, investors and in particular institutional investors include foreign shares within their portfolio to take advantage of the profits that they can offer. For the investors, corporate governance becomes a permanent topic within their program and after some years of experiences they recognize also the importance of cultural differences for the efficient management of their portfolio.

An important example is given by CalPERS, the largest American pension fund that puts in evidence that cultural differences prevent implementation of elaborated methods for the improvement of corporate governance of American firms (Andre and Thomas, 1998). Therefore, CalPERS establishes principles of corporate governance taking into account concept of the culture (Crutchley, Hudson and Jensen, 1999).

As the OECD, the IMF and the World Bank also recognize the importance of cultural variable in corporate governance system (Licht, 2001). Indeed, Iskander and *al*. (1999) affirm that some cultural and institutional changes are more than necessary if we want to establish a new governance structure based on transparent relations between enterprises, government and banks.

Also, theory of corporate governance has been dominated by the approach of principal - agent (Cai and Tylecote, 2004) and the fundamental feature of agency theory is the divergence of interests between managers (agent) and owners (principal). These last cannot completely control the activity of first, notably because of an informational asymmetry (Jensen and Meckling, 1976).

Cai and Tylecote (2004) affirm that the main limitation of the approach principal-agent is that in practice, shareholders do not constitute the only one and unique party that is interested in performance of the firm and that the agents are probably subjects to some values and moral constraints.

Hansen (2004) signals also the relevance of the role of culture since the challenge nowadays is to determine if the program of reforms of corporate governance system stays mainly a program on paper or if it is effectively implemented. In fact, the cultural norms can either reinforce these reforms or block them.

In sum, the studies reveal a clear sensitivity of corporate governance system to the unique important national feature that is the culture.

3.2 The Cultural Analysis Of Corporate Governance System

Recently, several studies demonstrated that cultural features play a major role in the determination of evolution of corporate governance system. In fact, La Porta and *al*. (1997) study the role played by trust and social capital aligning on the works of Putnam (1993) and Fukuyama (1995).

Whereas, Stulz and Williamson (2003) look to evaluate the influence of religion on the financial development by distinguishing the rights of shareholders from those of creditors and find that religion influences only the rights of creditors and that countries to Catholic predominance protect less creditors and resort less to financing by debts.

Besides, Guiso, Sapienza and Zingales (2003) note that in countries where populations are more religious, the approval of capitalism is more important. In addition, Eisenberg (1995) stipulate that social norms play an important role in management of actors of the firm concerning corporate governance.

Licht (2001), considering that the national culture is the main determinant of the governance system, proposes to refer to concepts and methods of cross cultural psychology to evaluate the cultural differences between nations and their effects on corporate governance system. He explain that culture

can be analyzed based on a set of derivative hypotheses of theories of the cultural dimensions of Schwartz (1990) and Hofstede (1980, 1991). The explanatory power of national cultural profiles is tested by Licht and *al*. (2003).

The failure of the corporate governance system constitutes a future threat for the firms. Certainly with an efficient corporate governance system, the enterprises will have a competitive advantage on the markets and this efficiency can be achieved by the adoption of a set of principles, laws and regulations.

Several efforts have been devoted for the formulation of more elaborate and complete principles of corporate governance often imported of the developed countries. But, these regulations and reforms are certainly threatened by the socio-cultural system.

3.3 Transfert Of Corporate Governance System And Cultural Dysfunction

Hofstede (1994) notes that for the same problem: diagnosis, recommended solution and the way to solve this problem is different and depends strongly on the cultural dimensions.

Indeed, the transfer of practices and theories of management without taking account of cultural context in which they must apply presents a real danger. Harrison (1992) as well as Chow and *al*. (1997) stipulate that the individuals belonging to different cultures act differently to the level of management practices. Therefore, a corporate governance system that can be efficient within an environment can be as inefficient or even dysfunctional within another environment (Chow, Kato and Merchant, 1996).

Certainly, the debate on internationalization and the convergence of corporate governance system, in particular the convergence on the American system, are also in game (Profitt, 2003). The attempts of transposition from a country to another of practices within firms are today greatly contested (Guillen, 2000).

Indeed, McNulty, Roberts and Stiles (2005) affirm that national cultures create different paths to the level of reforms of corporate governance system. Although the law can strengthen the institution of corporate governance system, culture can also undermine the succeeded transfer of some elements of another system of corporate governance (Buck, 2003). Black (1990) explains even that the role played by the law within corporate governance is minimal and that national culture can block such transfer.

Besides, Batten and Lu (2001) add that culture constitutes the source of difficulties encountered at the transfer of elements of corporate governance system. In fact, the researchers even speak of a shock of transfer, as the regulations governing a country can be dysfunctional or even rejected within another country because of the historic and cultural differences (Milhaupt, 2001; Berkowitz, Pistor and Richard, 2003).

In the same vein, Gorga (2003) affirm that institutional change depend on the cultural or ideological changes and he declares that persistent cultural features can even impede these changes with regard to corporate governance, insofar as some inefficient elements persist in spite of efforts deplored to improve the efficiency of corporate governance system principles.

In these circumstances, the groups of interests and control have tendency to defend" the status quo" (Davis and Thompson, 1995). In the same way, HassabElnaby and Mosebach (2005) affirm that national culture permit to reject or to accept the mechanisms put in place to control the costs of agency.

Thus, the United Kingdom resist to the European attempts to impose a board of work, in order to promote the involvement of employees and collectivism within the English enterprises (Buck, 2002). Facing a German culture presenting a weak tolerance of the hierarchical distance and a collectivism and an uncertainty avoidance moderately elevated (Hofstede, 1980), the American tempted to introduce the corporate governance system based on market to replace the German system, found on families, banks and the suppliers and break the relationship between the firms and the state. But these attempts fail being rejected by German culture and its institutions (Buck, 2002).

Certainly, Russia is considered as an example of resistance to reforms imposed by the Anglo-Saxons. These reforms have been established in a national context characterized by a culture reflecting a higher tolerance of power distance as well as a level raised of collectivism and uncertainty avoidance (Buck, 2002). These cultural attributes encouraged the preservation of Russian institutions and the influence of state survived the attempts of imposition of a corporate governance system based on the market.

The resistance of Japan to the reforms of corporate governance system can also be explained by institutional context based on a national culture characterized by a high uncertainty avoidance, collectivism and power distance (Hofstede, 1980). Buck (2002) affirms that a relational corporate governance system emerged to Japan that is coherent with the Japanese culture.

In sum, As Jacoby (2001) indicates, it is difficult to a country to borrow a particular practice and to hope that it acts in a similar way when it is transplanted in a different context.

IV. The Influence Of The Culture On Tunisian Corporate Governance System

Tunisia, like emergent countries, is at an important crossroad in this new century, one century that Tricker (2000) qualifies of century of governance. Although to a more reduced scale, the financial skids

that some Tunisian enterprises knew these last years (notably Batam) sow the doubt in the mind of financial actors. Indeed, Tunisia adopted new reforms to reinforce the regulation of financial sector and to improve the corporate governance system.

In this optic, Tunisia is endowed with legal instruments as the code of commercial societies (2000) that is inspired extensively of the code of German commerce.

Besides, the deep modernization of the Tunisian stock market instituted by the law n° 94-117 of November 14, 1994 proved to be a necessity to answer the needs of economic development, as well as to the opening of Tunisia on the outside implying a structure of market therefore in conformity with the international norms. The reform consisted in replacing a system based on the financial intermediation by a system governed by the conditions of the market.

Also, since 1996, Tunisia adopted a new charter of accounting to align on the international norms. The Tunisian accountant system is in all point in conformity with the system accountant IASC and it is strongly inspired of the one of OECD countries.

To be able to bring lighting on the Tunisian cultural model, we based our study on the four measurements cultural of Hofstede (1980): Power distance, individualism / collectivism, masculinity / femininity and uncertainty avoidance.

At the same time, Mediterranean, Arab-Moslem and African, Tunisia knew along its history various cultural contributions: Berber, Carthaginian, Roman, Arabic, Turkish and European, notably French. Its personality remains, nevertheless, essentially marked by the Arab-Moslem contribution in which the Islam instituted a system of values permitting the evolution of the behaviour of the individuals.

Indeed, the religious beliefs constitute a fundamental pillar of the culture. Thus, Tunisia is impregnated of the oriental dimension that constitutes the main component of its history. It is then quite legitimate to deduce the cultural dimensions of Tunisian society from the dominant origin: the Arab-Moslem.

4.1 The Power Distance

The Islam is spiritually egalitarian as all humans are equal in front of God. However, the Islam is socially unequal as the social distinctions that it institutes such as the subordination of women to men, considered necessary to maintain order and morality within the society.

This social inequality reflects, in a large extent, the Arabic pre-Islamic practices where the social hierarchy in the tribes was very pronounced (Kabasakal and Bodur, 2002). So, since the inequality between humans settles on the basis of piety and knowledge, the Islam notes the existence of social classes and the material inequality.

The arabo-moslem culture whose Tunisian personality is issued exposes a strong power distance where power is founded on the family, since the most fundamental structure of the Tunisian society, as the whole Arab-Moslem world, is the family. So in the family, the culture of obedience is well marked, it is centred on the father who detains an absolute power. Indeed, Sfayhi (2005), studying the father's role in Tunisian society, recognizes him an exceptional power.

4.1.1 Concentrated Ownership Structure/Strong Power Distance

In Tunisia, the ownership structure is very concentrated. The performance of the enterprise increases with the presence of a majority shareholder. The managers are obliged to increase the performance of the firm in the presence of a large shareholder (Omri, 2003).

The Tunisian culture, exposing a strong power distance, has the tendency to appreciate the power and success and therefore the power of majority shareholders since the concentration of ownership structure puts in evidence an inequality, to the level of power, between majority and minority shareholder and accentuates the power to the hands of the large investors.

Indeed, the major shareholder, within the listed Tunisian firms, can control the managers and the management of the firm due to the power that he detains. Whereas minority shareholder has neither power nor means to make it. The minority shareholders within Tunisian governance system are rarely capable to abuse their position because of the control done by the large shareholders.

4.1.2 Structure Of The Board / Strong Power Distance

The Tunisian corporate governance system is characterized by complex relationship between manager, large and minority shareholders. In this case, the problem of agency is oriented towards the relation between large shareholders-minority shareholders rather than between managers-shareholders.

Indeed, seen the domination of majority shareholders in Tunisia, the control of activities of the managers cannot be done by internal mechanisms as the board of directors and the agreements between the shareholders.

The structure of the board of directors of the Tunisian listed firms also reflects the Tunisian culture. In Tunisia, the board of directors is leaded by a president of the board of directors who is also the chief executive officer of the firm. This cumulative function to the level of board of directors of Tunisian listed firms can reflect the large hierarchical distance characterizing the Tunisian culture. Indeed, the fact to accumulate the functions of the chief executive officer and the president of the board reveals a strong authority and concentration of power within this mechanism of corporate governance.

4.2 Individualism / Collectivism

If individualism took in west a big flight, this notion has never been recognized in the Moslem world, because the individual, according to the Islam, is living within an important community and that must renounce to all selfish tendency. In the Western societies, the decline of family widened to the profit of nuclear families, confronted the tendency toward individualism.

The individuals became more and more independent and parental ties less and less important. Whereas in the oriental societies, the individual acquires his values in a group of adherence as the family.

To the level of this dimension as the previous, the main source of cultural value is the family. Although the family became nuclear (Sfayhi, 2005) confronting the tendency thus toward individualism, the Tunisian society stays rather collectivist. In fact, the family constitutes the dorsal thorn of the Tunisian society.

4-2-1 Concentrated Ownership Structure / Collectivism

Concerning the identity of shareholders, we note that the structure of property in Tunisia is concentrated between the hands of the state, the banks and families. The foreign investors have important involvements as well in the banking sector (10,1%) that in the non banking financial institutions (4,2 %). Nevertheless, their involvement is negligible in the sector of service (1,7 %) and same absent in the commercial sector.

[Figure 1 About Here]

The concentration of ownership on the hands of families reflects the communal mind of the Tunisian society insofar as within the collectivist cultures, the desire to accumulate resources for the profit of family and the community is more intense contrary to the individualistic cultures that can encourage the diversification.

Within the Tunisian society, the individual exists as member of a group, in other words, of a family. Of this fact, the family stays an element of basis of the Tunisian society since it forms the first cell in which emerges the individual and it is obvious that this last is influenced by the cultural values and the beliefs shared by its family's members.

4.2.2 Inactivity Of Takeover Market / Collectivism

As we stipulated it previously, the Tunisian capitalism is characterized by a concentrated ownership structure ad that the majority shareholders have a great impact on the Tunisian governance system.

These shareholders permit to reduce the manager's entrenchment and to increase the turnover in case of bad performance. In Tunisia, the hostile takeovers are practically impossible and they are not part of the control mechanisms within the corporate governance.

The dominance of collectivism in the Tunisian society can explain the inactivity of takeover market. Indeed, hostile takeovers are encouraged by cultures that put forward the individual values on the collective values as the security and the stability. Certainly these values are seeking by majority shareholder within the Tunisian firms which perpetuate his domination for the control of firm and therefore the majority shareholders make the market of hostile takeover inexistent in Tunisia.

4-2-3 Predominance Of Not Listed SME / Collectivism

In 2001, the number of listed firms rose respectively to 1100 and 55 enterprises in Egypt and Morocco whereas in Tunisia it is only 46 (Ayogu, 2001). Nevertheless, the number of the Tunisian listed firms increased from 14 in 1994 to 45 in 2003 (Annual Report of the Tunisian Stock Exchange, 2003).

We note, therefore, that the Tunisian firms grant little interest to the Stock market t; their familial character and their small size are often advanced to explain this phenomenon. Indeed, the Tunisian enterprise remained to a great majority controlled by a founding father or by a family in which the relations are based on confidence and confidentiality. We can conclude therefore that the Tunisian enterprise, because of its familial character, doesn't have a confidence in the outside and prefer not to be listed. Certainly, the Tunisian economy is integrated within a network forged by the families in which the members of family are worthy of confidence.

Being given that the Tunisian society exposes a strong power distance, the manager, reflecting tacitly the father's image in the family, possesses an absolute and legitimate power allowing him to exercise his authority to preserve the prestige as well as his reputation. Such father in the family, the manager of Tunisian firms protects and indicates the path to follow reflecting thus the communal mind of the Tunisian society.

4.3 Masculinity / Feminity

The Islam improved the woman's statute considerably in relation to the conditions pre- Islamic but it maintained some inequalities in relation to the man, insofar as this last is considered as the chief of family and his protector. Indeed, the Moslem culture recognizes the principle of social inferiority of the woman. Of this fact, the arabo-Moslem culture whose Tunisian society is descended is a masculine culture.

In spite of the fact that Tunisia is distinguished by the legal statute of woman and their integration in the economy and the society, the Tunisian society is rather masculine but to strong dose of femininity.

Indeed, the rate of women managers passed from 12% in 1992 to 14% in 1998. Also, in 1998, 5,24 % of the women are executives managers and 9, 93% directors (National Report of the Ministry of Woman and Family, 1999).

4.3.1 Ownership Concentration / Masculinity

The Tunisian society being a masculine society considers thus success and power as fundamental values and exhibits a differentiation of roles between men and women, therefore, a shape of inequality reflected in the majority shareholder predominance within the listed Tunisian firms. Indeed, the concentration of ownership puts in inscription a rupture between the minority and majority, a tendency to affirmation of oneself and to the exercise of power. Thus, the concentration of power produced by the concentration of ownership can be assigned to the masculinity of the Tunisian society.

4.3.2 Structure Of Board / Masculinity

The fact to accumulate the functions of the CEO and the president of the board reveals a strong authority within this mechanism of corporate governance. Besides, this cumulative function reflects the dominance and the control expressed by the masculinity of the Tunisian society.

More, in Tunisia, as we stipulated it before, the structure of ownership is concentrated on the hands of families which can reduce the role of board of directors as mechanism of control of manager insofar as the board of directors of most Tunisian listed firms is only composed of members of the controlling family. These practices within the Tunisian listed firms reinforce centralization and can undermine the control exercised by the board of directors.

4.4 The Uncertainty Avoidance

The Arab-Moslem countries have in general a weak uncertainty control. The religion helps to alleviate the feeling of anxiety but doesn't counterbalance the present growth of this dimension due to the political, economic, social and technological evolutions. These evolutions provoke a feeling of uncertainty and insecurity.

The most prominent fact in the analysis of the Tunisian legal context is the largest number of new reglamentations that govern various aspects of economic context reflecting thus a very elevated control of uncertainty within the Tunisian society.

On an economic level, the reforms touched several domains as the liberalization of investment, outside exchanges, fiscal reform, modernization of the banking sector, reform of the financial market. All seems as nothing is let without control.

4.4.1 Non Development Of Financial Market / Strong Uncertainty Avoidance

Since several years, the Tunisian financial market has been endowed with texts and regulations, allowing it to be compared favourably to the developed countries. However, the Tunisian stock market remains lethargic.

In spite of measures taken to develop the stock market, the evolution of issue of public offer (Figure 2) remains modest in relation to the debt (Figure 3) as means of financing of the Tunisian economy.

[Figure 2 About Here]
[Figure 3 About Here]

So the Tunisian economy stays an indebt economy and the recourse to the banking loan is discerned as the most comfortable alternative. In Tunisia, the main sources of fund, even for the Tunisian listed firms, are generally the debt. The recourse to the stock market like source of financing is not frequent. Indeed, the transparency required of a society when it goes public the public can constitute an obstacle for the enterprises in a Tunisian society characterized by a strong control of uncertainty that puts early the preservation of a large internal security.

Certainly, the Tunisian enterprise did not really have until now need to resort at the Stock market to finance its development since the banking financing always offered the resources of which it has need, with less constraints and in all discretion, whereas financing through the financial market requires the publication of a prospectus with degree of disclosure of information very elevated.

4.4.2 Limited Transparency Of Information / Strong Uncertainty Avoidance

Information stays as the basis of all activities on the financial markets. Certainly, the quality and regularity of the relative financial information on the financial market is the best guarantor of the transparency of the transactions and the credibility of firms. However during these last years, several enterprises don't always respect all authorized arrangements concerning regularity and transparency of the financial information. Indeed, in 2003, six listed firms are faltering concerning communication and publication of the financial states (Communiqué of the Financial Market Council, 2004) whereas in 2004, ten enterprises don't publish their financial states (Communiqué of the Financial Market Council, 2005).

We note within the Tunisian society, an increasing control of the uncertainty. This behaviour also touched the enterprises. Indeed, the non respect of rules of transparency of financial information by some Tunisian listed enterprises or even the non clarity of the information given can be assigned to the strong control of uncertainty of the Tunisian society.

Certainly, an enterprise that goes public to raise funds on the financial market that benefits from the confidence of the investors, must be transparent. Nevertheless, to be protected against the risk and to surround the uncertainty, some Tunisian listed firms prefer not to reveal any financial information often harmful for their image within the financial market.

V. Conclusion

The aim of this paper is to study the impact of Tunisian corporate governance system. We explained first the debate concerning cultural variables. The economic developments don't presuppose the existence of formal institutions as the laws and the rights of property but as some norms and social values. Than, we studied the corporate governance system through a cultural approach. We stipulate that culture can enrich the research on corporate governance permitting than to better understand the mechanisms of governance established in a country.

On the hand, culture can impede the maximisation of the profit permitting thus a good corporate governance system. On the other hand, the cultural norms can reinforce the control groups and can represent an obstacle to the institutional changes.

Finally, based to the cultural dimensions of Hofstede (1980), we tried to detect the impact of national culture on the Tunisian corporate governance system. We explain that the predominance of the majority shareholding, the one-tier board of directors, the rarity of hostile takeovers, the stagnation of financial market and the limited transparency of information reflect strong power distance, increasing control of the uncertainty, masculinity and collectivism of the Tunisian society.

Certainly, the concept of culture is undoubtedly one of the most difficult to study and therefore few research advances towards operational modelling of the impact of cultural variable on corporate governance system. So, this paper brings a first lighting on the cultural analysis of corporate governance in Tunisian that it will be thereafter deepen while moving towards the establishment of a model permitting to test empirically the impact of culture on all mechanisms of corporate governance.

References

1. Adler, N. and Boyacigiller, N. (1999) "The parochial dinosaur: Organizational science in a global context", *Academy of Management Review*, *16*(2): 262-290.
2. Annual Report of the Central Bank of Tunisia, 2003.
3. Annual Report of the Tunisian Stock Exchange, 2003.
4. Au, K. and Thomas, D. C. (2003) "The effect of cultural differences on behavioural responses to low job satisfaction", *Journal of International Business Studies*, 34(1): 40-52.
5. Ayogu, M. D. (2001) "Corporate governance in Africa: The record and policies for good corporate governance", *African Development Review*, 13(12): 308-330.
6. Batten, J. and Lu, J. (2001) "The implementation of OECD corporate governance principles in post-crisis Asia", *The Journal of Corporate Citizenship*, 4: 47-62.
7. Berkowitz, D., Pistor, K. and Richard, J. F. (2003) "Economic development, legality and the transplant effect", *European Economic Review*, 47(1): 165-195.
8. Black, B. S. (1990) "Is corporate law trivial?: a political and economic analysis", *North western University Law Review*, 84: 542-597.
9. Bollinger, D. et Hofstede, G. (1987) *Les différences culturelles dans le management*, Les éditions d'organisation.
10. Bond, M.H. and Hofstede, G. (1988) "The Confucius connection: from cultural roots to economic growth", *Organizational Dynamics*, 17: 5-21.
11. Brodbeck, F. C., Frese, M. and Javidan, M. (2002) "Leadership made in Germany. Low on compassion , high on performance", *Academy of Management Executive*, 16(1):16-29.
12. Buck, T. (2002) "Corporate governance, path dependence and neo-institutionalism: business history and modern Germany", *Discussion Paper, UNIBHI.*
13. Buck, T. (2003) "Modern Russian corporate governance: Convergent forces or product of Russia's history", *Journal of World Business*, 38: 299-313.
14. Cai, J. and Tylecote, A. (2004), "China's SOE reform and technological change: a corporate governance perspective", *Asian Business and Management*, 3: 57-84.
15. Calori, R., Lubatkin, M., Very, P. and Veiga, J. F. (1997) "Modelling the origins of nationally-bound administrative heritages: a historical institutional analysis of French and British firms", *Organization Science*, 8(6): 681-696.
16. Chow, C. W., Shields, M. D. and Wu, A. (1999) "The importance of national culture in the design of and preference for management controls for multinational operations", *Accounting organizations and Society*, 24: 441-461.
17. Chow, C. H., Harrison, P., Lindquist, T. and Wu, A. (1997) "Escalating commitment to unprofitable projects: Replication and cross-cultural extension", *Management Accounting Research*, 8 (3): 347-361.
18. Chow, C. H., Kato, Y. and Shields, M. D. (1994) "National culture and the preference for management controls: An exploratory study of the firm-labor market interface", *Accounting, Organizations and Society*, 19(4): 381-400.
19. Chow, C. H., Kato, Y. and Merchant, K. A. (1996) "The use of organizational controls and their effects on data manipulation and management myopia: A Japan vs. US comparison", *Accounting, Organizations and Society*, 2(2): 175-192.
20. Crutchley, C., Hudson, C. and Jensen, M. (1999) "The shareholder wealth effects of CalPERS'activism", *Financial Service Review*, 7(1).
21. Davis, G. F. and Thompson, T. A. (1995) "A social movement perspective on corporate control", *Administrative Science Quarterly*, 39(1): 141-173.
22. Dore, R. (2005) "Deviant or different? Corporate governance in Japan and Germany", C*orporate Governance: An international Review*, 13(3): 437-446.
23. Eisenberg, M. A. (1995) "The limits of cognition and the limits of contract", *Stanford Law Review*, 47: 211-236.
24. Fukuyama, F. (1995) *Trust*, Free Press.

25. Gorga, E. C. R. (2003) "Does culture matter for corporate governance? A case study of Brazil", *Working Paper, SSRN*.
26. GudyKunst, W. B. and Kim, y. Y. (1992) *Communicating with strangers: an approach to intercultural communication*, McGraw Hill.
27. Guillen, M. (2000) "Corporate governance and globalization: Is there convergence across countries?", Advances *in International Comparative Management*, 13: 175-204.
28. Guiso, L., Sapienza, P. and Zingales, L. (2003) "People's opium? Religion and economic attitudes", *Journal of Monetary Economics*, 50: 225-252.
29. Hansen, J. (2004) "Business Ethics: Platitude or commitment?". Ethics Matters. Center For Business Ethics, Bentley College.
30. Harrison, G. L. (1993) "Reliance on accounting performance measures is superior evaluative style: The influence of national culture and personality", *Accounting, Organizations and Society*, 18: 319-339.
31. Harrisson, L. E. and Huntington, S. P. (2000) *Culture matters: how value shape human progress*, Basic Books.
32. Harrison, G. L., McKinnon, J. L., Panchapakesan, S. and Leung, M. (1994) "the influence of culture on organizational design and planning and control in Australia and the United States compared with Singapore and Honk Kong", *Journal of International Financial Management and Auditing*, 5 (3): 242-262.
33. HassabElnaby, H. R. and Mosebach, M. (2005) "Culture's consequences in controlling agency costs: Egyptian evidence", *Journal of International Accounting, Auditing and Taxation*, 14(1): 19-32.
34. Hofstede, G. (1980) *Culture's consequences: international differences in work –related value*, Beverly Hills: Sage Publishing.
35. Hofstede, G. (1991) *Cultures and organizations: Software of the mind*, McGraw-Hill: London
36. Hofstede, G. (1994) *Vivre dans un monde multiculturel*, Les éditions d'organisation.
37. Iskander, M., Meyerman, G., Gray, D. F. and Hagan, S. (1999) "Corporate restructuring and governance in East Asia", *Finance and Development*, 36(1): 42-45.
38. Jacoby, S. M. (2001) "Corporate governance in comparative perspective: Prospects for convergence", *Comparative Labor Law and Policy Journal,* 22(1) : 5-32.
39. Jensen, M. C. and Meckling, W. H. (1976) "Managerial behaviour, agency costs, and ownership structure", *Journal of Financial Economics*, 13: 305-360.
40. Kabasakal, H. and Bodur, M. (2002) "Arabic cluster: A bridge between East and West", *Journal of World Business*, 37(1): 40-54.
41. La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. (1997) "Legal determinants of external finance", *Journal of Finance*, 52: 1131-1150.
42. Licht, A. N. (2001) "The mother of all path dependencies: toward a cross-cultural theory of corporate governance systems", *Delaware Journal of Corporate Law, 26*(156):147-205.
43. Licht, A. N., Goldschmidt, C. and Schwartz, S. H. (2003) "Culture, law and corporate governance", *Working Paper, SSRN*.
44. Markham, E., Scott, K. D. and Townsend A. M. (1990) "An examination of country and culture based differences in compensation", *Journal of International Business Studies*, 21(4): 667-678.
45. McCarthy, D. and Puffer, S. (2002) "Corporate governance in Russia: Towards a European, US or Russian model?", *European Management Journal*, 20(6): 630-640.
46. McNulty, T., Roberts, J. and Stiles, P. (2005) "Undertaking governance reform and research: Further reflections on the Higgs review", *British Journal of Management*, 16: 99-107.
47. Merry, S. E. (1998) "Law, culture and cultural appropriation", *Yale Journal of the Law and Humanities, 10: 101-129.*
48. Milhaupt, C. J. (2001) "Creative norm destruction: The evolution of non legal rules in Japanese Corporate Governance", *University of Pennsylvania Law Review*, 149(6): 2083-2129.
49. National Report of the Ministry of Woman and Family, 1999.
50. North, D. (1990) "Institutions, institutional change and economic performance", *Press of the university of Cambridge.*
51. OCDE, 1999, "Principes de l'OCDE relatifs au gouvernement d'entrepris ".
52. Omri, A. (2003) "Systèmes de gouvernance et performance des entreprises tunisiennes", *Revue Française de Gestion, 29(142): 85-100.*
53. Park, S. and Yi, J. (2003) "Cross-cultural differences in decision making styles: a study of college students in five countries", *Social Behaviour and Personality: an International Journal*, 31(1): 35-48.
54. Patel, C. and Psaros, J. (2000) "Perceptions of external auditors' independence: some cross-cultural evidence", *The British Accounting Review*, 32(3): 311-338.
55. Porter, R. E. and Samovar, L. A. (1994) "An introduction to intercultural communication", International Thompson Publishing.
56. Proffitt, W. T. (2003) "Gouvernance des entreprises : La construction d'un champ social par la loi Américaine", *Finance Contrôle Stratégie,* 6(4) : 133-154.
57. Putnam, R. (1993) "Making democracy work: civic traditions in modern Italy", *Princeton University Press.*
58. Rhodes, M. and Van Apeldoorn, B.(1998) "Capital unbound? The transformation of European corporate governance", *Journal of European Public Policy*, 5: 406-427.
59. Rogovsky, N. and Schuler, R. S. (1998) "Understanding compensation practices variations across firms: The impact of national culture", *Journal of International Business Studies*, 29(1): 159-177.
60. Salacuse, J. W. (2003) "Corporate governance, culture and convergence: Corporations American style or with a European touch?", *European Business Law Review*, 14(6) : 825-832.
61. Schwartz, S. H. (1990) "Individualism-collectivism-Critique and proposed refinements", *Journal of Cross-Cultural Psychology*, 21(2): 139-157.
62. Sfayhi, N. (2005) "Adolescentes tunisiennes et représentations de l'homme et du père au TAT", *Pratiques Sociologiques.* 1(1) : 29-46.
63. Stulz, R. M. and Williamson, R. (2003) "Culture, openness, and Finance", *Journal of Financial Economics*, 70(3): 313-349.
64. Tricker, R. I.(2000) "Valedictory editorial: So long and thanks for all the fish", *Corporate Governance*, 8(4): 403-405.

65. Trompenaars, F.(1994) *L'entreprise multiculturelle*, Maxima : Paris.
66. Van de Vliert, E. (2001) "Thermoclimate, culture and poverty as country-level roots of workers'wages", *Journal of International Business Studies*, 32(2): 369-377.
67. Weber, M. (1930) *The protestant ethic and the spirit of capitalism*, Harper Collins.
68. Yamamura, J. H., Frakes, A. H., Sanders, D. L. and Ahn, S. K. (1996) "A comparison of Japanese and US auditor's decision-making behaviour", *The International Journal of Accounting*, 31(3): 347-364.

Appendices

Figure 1. Identities of shareholders of the Tunisian listed firms (2002)

Types of investors	Banks	IFNB	industries	Commerce	Services
state	18,8	6	19,8	48,2	23,5
Banks	7,6	20,2	24,2	11	22,1
insurances	11,8	16,3	7,6	10,3	11,1
Foreign investors	10,1	4,2	4,2	0	1,7
Individual investors	5,3	1,6	4,5	11	13
Legal persons	7,4	18,5	19,4	10,8	3
Families	39	33,2	20,3	8,7	25,6
Total	100	100	100	100	100

Source: Statistics of the Tunisian stock exchange, 2002

Figure 2. Evolution of IPO in MD

Years	2000	2001	2002	2003
Shares	113	155	43	128
Bonds	154	297	233	95
Total	267	452	276	223

Source: site of the Financial Market Council

Figure 3. Credits in MLT counted by the Power station of the risks in MD

Years	2000	2001	2002	2003
Credits	8308	9583	8608	8287

Source: Financial statistics of the Central Bank of Tunisia

DOES MANAGERIAL ENTRENCHMENT MATTER IN RISK TAKING? EVIDENCE FROM THE TUNISIAN CONTEXT

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Abstract

Building on agency and prospect theory views, many researchers have analyzed the executive risk-taking behavior. They have usually put in evidence the role of the mechanisms of corporate governance. In this research, we try to point out that even managerial entrenchment does matter. We consider the non financial firms that are listed in the Tunisian Stock exchange during the 1996 - 2006 period. To reveal the managerial risk taking, we apply factor analysis so as to construct a global index. To find out the impact of managerial entrenchment on risk-taking, we consider the ownership of the manager, his experience within the firm as well as his age. The size of the firm is also worth investigating while exploring managerial risk taking. The results are somewhat robust to different specifications. They may enhance and extend the agency-based corporate governance literature on executive risk-taking. But above all, they may shed some light on the emerging markets context namely the Tunisian one.

Keywords: Managerial Risk Taking, Managerial Entrenchment, Prospective Theory, Agency Theory, Tunisian Firms

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I. Introduction

Managerial Risk Taking is at the theory core of corporate finance. It is one of the most debated topics in the finance literature and becomes particularly more pronounced after the scandals of Enron, Worldcom, Global Crossing and other well-known companies. Healy and Palepu (2003) asserted in this vein that the main reason behind these bankruptcies is the dangerous and even deceitful strategies of managers for their own benefits. Risk management theory provides several rationales as to why shareholders may view corporate hedging favorably. Tax incentives and reduction of underinvestment/distress costs are commonly cited rationales for hedging by publicly held corporations. However, that is the firms' managers who actually make the risk management decision. Therefore the risk-taking incentives of managers may be an important determinant of corporate hedging policy according to Smith and Stulz (1985) and Tufano (1996). Nonetheless, most prior works deal with risk management rather than managerial risk taking which is the purpose of this paper. Indeed, this paper contributes to the corporate hedging literature by analyzing the determinants of managerial risk-taking and especially by focussing on the impact of the entrenchment of the CEO on his risk taking.

Agency theory already put in evidence the gap in the risk taking of both agent (manager) and principal (shareholder). While the principal is indifferent towards risk as he can diversify his wallet through several firms, the agent is mainly risk averse. Donaldson (1961) and Williamson (1963) noted that manager' career and remuneration are tied to the firms' welfare. That's why the manager often manifests his risk aversion and is tempted to restrict his risk taking. Such attitude may create opportunity costs for the investor who prefers that the agent maximizes the enterprise value by incurring more risks. This hypothesis was approved of by several theoreticians mainly Morck, Schleifer and Vishny (1988) and Garen (1994). This gap between attitudes towards risk according to Tufano (1996), Dionne and Triki (2004) and Roger (2005), may feed interests conflicts between the two sides and hence agency problems.

Many researchers have devised theories and provided empirical evidence regarding the determinants of managerial risk taking. Tosi and Gomez-Mejia (1989), Beatty and Zajac (1994) and Gomez-Mejia (1994) outlined that the challenge is to institute a reliable governance system that is susceptible to align the interests of managers and shareholders. Thanks to such governance system, managerial risk taking will satisfy not only manager's interests but also the shareholders' ones. Later, Wiseman and Gomez-Mejia (1998) proposed a

behavioral agency model. According to them, behavioral theory bloomed and developed regardless of agency theory although they are complementary. Their model tried to reconcile between these two theories. On one hand, their model emphasized the efficiency of governance mechanisms dedicated to improve and control managerial risk taking by the principal. On the other hand, it highlighted the psychological and behavioral side of this very specific managerial decision.

However, entrenchment theory stipulated that governance mechanisms are not sufficient enough to compel the management to behave in favour of shareholders interests and restrict the empire building efforts of managers. Piggé (1998) explained that managerial entrenchment reveals the agent willing to overcome the principal control, at least partially, in order to build up some personal advantages namely special rewards and remuneration. Further more, manager can increase the dependence of the firm's partners on him and his skills. Management can even reduce the impact of corporate governance which obviously aims at restricting his authority and controlling his decision. There are in fact a wide range of entrenchment strategies followed by the manager to fulfil such objectives. Alexandre and Paquerot (2000) asserted for instance that investment policy may constitute a pertinent tool for managerial entrenchment. By taking up some risky projects that are specific and suitable to his skills, the manager increases the firm risk but above all the dependence of the firm on him. Besides, manager can increase his entrenchment by making the information not easily accessible or also by building some relational networks, either formal or not.

In sum, many theories may contribute in explaining managerial risk taking. Not only agency but also prospective theories were the main references. But little is known about what really may influence managerial risk taking. We are yet to understand completely the factors that drive this managerial decision and the manner in which these factors interact. Entrenchment theory was a little bit neglected although it may offer further explanations and recommendations. This paper wants to contribute to the relatively limited literature on managerial risk taking. This is the main purpose of this paper.

But above all, the justification of this paper is to continue carrying the debate into the realm of emerging markets. Researchers have almost focused on the private sector in a few developed countries. Therefore, a fairly detailed, if incomplete, picture is available. No doubt, not only managerial risk taking but also managerial entrenchment are expected to deviate from the norms that have been long accepted in developed ones. Our survey wishes to be the first study focusing on this frame in Tunisia.

In particular, the Tunisian case presents at least four interesting features that make its study relevant in terms of policy recommendations for this country and others in the Middle East and North Africa region. First, most Tunisian managers seem to be risk averse and scarcely undertake risky projects. According to a recent survey led by the Council of Capital Market, Tunisian managers would rather opt for secure and certain investments such as accounts savings, Treasury bills than receipts in risky reinvestments such as the SICAR, the mutual funds and stocks despite the various measures granted by authorities so as to promote such financial products. Second, most Tunisian firms are still family corporations and presents highly concentrated ownership and opaque ultimately identification. Thus, managers have tendency to preserve the maximum of opacity on the family's business. Third, Tunisians managers can not yet be rewarded by stock options. Therefore, stock options can neither constitute a managerial incentive nor reveal managerial risk aversion. Fourth, the Tunisian Stock Exchange witnessed several reforms especially the introduction of an electronic system for transactions in phase with international standards and this innovation is expected to have an impact on the way firms set their investment and indebtedness policies which are thoroughly tied with managerial risk taking.

More above, this paper suggests an econometrically sound approach to modelling managerial risk taking. It is the first paper, to our knowledge, to construct a global index revealing the intensity of managerial risk taking and the pioneer work to reveal the impact of managerial entrenchment on risk taking within the Tunisian firms.

The remainder of this paper is organized as follows. Section II describes the conceptual framework and details the working hypotheses. Section III presents a brief overview of the methodology and data used. Section IV sums up the empirical results. Section V concludes.

II. Conceptual Framework And Working Hypotheses

Theoretical work in risk management suggests that corporate taxes, costs of underinvestment and financial distress, managerial motives, and information asymmetry may provide a value-maximizing corporation with rationales to alter risk according to Smith and Stulz (1985), Froot et al. (1993) and Leland (1998). However, the prior empirical work in managerial risk taking makes use of several different proxies to measure risk management.

On one hand, some researchers namely Dionne and Triki (2004), Beasley et al. (2005), Davies et al. (2005) and Coles et al. (2006) evaluated the risk taking of the manager through his payment in stock options. These researchers approved of the arguments of Coffee (1988), Hoskisson and al. (1991) and Mehran (1995) that a manager rewarded accordingly to the firm performance, his risk aversion decreased and would prefer risky projects with increasing variance. However, this argument did not enjoy the unanimity according to Beatty and Zajac (1994).

Some researchers of whom Shavell (1979) suggested that when the manager supports too much risk, he became excessively risk averse in spite of stock options. Besides, it seems that the manager payment is rather a determinant than a measure of managerial risk taking. In addition, managers are not yet rewarded with stock options in the Tunisian Stock Exchange.

On the other hand, some researchers notably Zahra (2005) linked the risk taking of manager to the risk of the company given that the manager is the decision maker. Therefore, Chen and Steiner (1999), Beasley et al. (2005), Kose et al. (2005) and Coles et al. (2006) asserted that business diversification was abundantly used in financial literature as indication of a moderate and careful risk taking. Other researchers of whom Crutchley and Hansen (1989), Rogers (2005), Davies et al. (2005) and Coles et al. (2006) estimated the risk taking of manager by expenses in research and development and capital expenditures. As for Zahra (2005), he evaluated it through the partnership strategies at the national scale and abroad, the conquest of new local or foreign markets and the investments in new technologies. We can not exploit such measures for lack of data in the Tunisian Stock Exchange.

Based on prior theoretical and empirical work in risk management, we are going to consider other seven proxies and construct a global index to assess managerial risk taking within the Tunisian Stock Exchange. First of all, managers would rather select riskier projects so as to generate more internal funds to finance the new opportunities of investments. Gay and Nam (1999), Knop et al. (2002), Rogers (2005), Dionne and Triki (2004), Davies et al. (2005) and Coles et al. (2006) gave evidence that managerial risk taking is then justified as a means to avoid the underinvestment problem. A common proxy for investment opportunities is the market-to-book ratio (MBV) and it is positively correlated with managerial risk taking. We also consider the intensity of investment (INV). It is predicted that the more persevering investment policy is, the more risky managerial decisions are. External financing is much more expensive than internal one. Similarly, firms with greater rate of growth that needed funds to preserve their growth and profitability ought to incur more risks. Besides, we refer to the indebtedness ratio (LEV). This measure was used by Myers (1977), Chen and Steiner (1999) and Coles et al. (2006) who asserted that managerial risk taking can be reveald through an aggressive indebtedness policy. Chen and Steiner (1999) noted in this regard that excessive debts increase the risk of bankruptcy. It is the financial leverage that leads to a non diversifiable managerial risk. It is expected that the more hard-line managerial risk taking is, the higher the indebtedness ratio is. Three proxies are used for the debt ratio: LEV1, LEV2 and LEV3 which measure the total debt to respectively book value of capital; the market value of total assets and the book value of total assets. The fifth variable is the volatility of the return on equity (ROE). According to Chen and Steiner (1999), Guay and Nam (1999) and Coles et al. (2006), such volatility translates the risk taking of the manager as estimated and felt by the financial market through the fluctuations of the firm value. It is estimated that the more managerial risk taking increases, the more this volatility increases. Additionally, we consider the volatility of the return on assets (ROA). It is an approximation of the risk of the exploitation operations and reveals the manager's strategy according to which he behaves, risky or moderate. This was held by Leuz and al. (2003), Cebenoyan and Strahan (2004) and Kose et al. (2005) who suggested in this respect that the management of results allows the leaders to hide the real profitability of the company. One foresees that the more intensive managerial risk taking is, the higher this volatility is. Finally, we apply the factor analysis so as to construct a global index of managerial risk taking that would reconcile between these four aspects of managerial decisions.

H1: All else equal, managerial risk taking are positively correlated with the opportunities growth, investment intensity, the indebtedness ratio and the volatility of both ROE and ROA.

The manager, as an agent, aims at being the best entrenched, in order to reduce the risk of being dismissed. Although this is the main objective of managerial entrenchment, the CEO may also misuse corporate assets for his own benefits at the cost of outside investors and accumulate personal rewards and remunerations. The CEO is expected to maximise his risk taking in order to maximise the firm value. However, he may reduce his risk taking and even opt for a quiet life according to Windram (2005). The nature of the relation between managerial entrenchment and risk management is in fact complex. There is a large variety of strategies that would increase the level of managerial entrenchment through specific investments, information manipulation and relational networks. However, the level of managerial entrenchment does depend on many factors that are specific to the manager himself. Broadly speaking, the participation of the manager into the capital, his experience within the firm as well as his age, all of these factors are expected to influence the managerial entrenchment. Therefore, we will test the impact of these factors on managerial risk taking so as to reveal the impact of the entrenchment of manager on his risk taking. Beyond that, various arguments do bear on the issue.

Building on agency theory, the participation of the manager into the capital of the firm would align executives' and shareholders' interests and hence a convergence. Jensen and Meckling (1976) hypothesized in this vein that that agency costs associated with manager-owner conflicts increase with the degree of the separation of ownership and control. When the manager is the sole equity owner of a firm, there is no separation of ownership and control; and hence no agency problems. The manager

is thus motivated to optimise his risk taking so as to maximise the firm value. However, recent empirical researches namely those of Davies et al. (2005) put in evidence a non linear relationship between managerial ownership and corporate value. This has been attributed to the onset of managerial entrenchment, which results in a decrease of corporate value for increasing levels of managerial holdings. Davies et al. (2005) proposed a new structure that accounts for the effect of conflicting managerial incentives, and external and internal disciplinary monitoring mechanisms. Specifically, for low levels of managerial ownership, external discipline and internal controls or incentives will dominate behavior as suggested by Fama (1980) and Jensen and Ruback (1983). At intermediate levels of managerial ownership, management interests begin to converge with those of shareholders. However, managers may, at this level of holdings, maximise their personal wealth through increasing perquisites and guaranteeing their employment at the expense of corporate value. Indeed, even though external market controls are still in place, these and the effect of convergence of interests are not strong enough to align the behavior of management to shareholders. This lack of discipline provides evidence of a deficiency in incentives for managers to maximise shareholder value at this level of ownership. As levels of managerial equity ownership grow, objectives converge further to those of shareholders. Nevertheless, at ownership levels below 50%, managers do not have total control of the firm and external discipline still exists. Managers are likely still subject to discipline from external block shareholders. At levels above 50% ownership, managers have complete control of the company. Although atomistic shareholders are unlikely to have been able to in influence managers at far lower levels of ownership than this, there is always a possibility that a cartel of blockholders, allied with minority shareholder's rights may be able to mount a challenge to management if they fail to make decisions in shareholders' best interests. Thus, we expect a non linear relationship between managerial ownership and managerial risk taking. As a proxy to managerial ownership MOWN, we measure the percentage of capital the CEO holds.

H2: All else equal, the relationship between managerial ownership and managerial risk taking is not linear in the Tunisian Stock Exchange.

Managerial entrenchment does also depend on his experience as a chairman as well his experience before being nominated a chairman within the firm. Empirical research has not straight highlighted its impact on managerial risk taking. It is a little bit confusing. Indeed, Chaganti and Sambharya (1987) assumed that creativeness and originality shrink as long as the manager gets more experienced. Consequently, one hypothesizes that managerial risk taking would reduce with experience. Furthermore, Loomes et al. (2003) and Li et al. (2004) suggested that risk aversion raise with experience. Likewise, one expects that managerial risk taking would decrease with the CEO experience. However, we can not distinguish whether his experience before being nominated chairman or as a chairman within the firm. Agency theory stipulated in this framework that when the CEO is also the chairman, the capabilities of the board to monitor the CEO are weaken. Brickley et al. (1997) argued that there are also costs associated with having two persons holding the CEO and chairman posts. But, they find no evidence that firms with separate persons holding the CEO and chairman posts perform better. In contrast, Pi and Timme (1993) found that firms with one person holding both posts have less cost efficiency and performance than those with two persons holding the two titles. As a proxy, we count the experience of the manager before being nominated as a chairman (MEXPBF) and his experience as a chairman (MEXPAF). We test whether the relation between the experience of the CEO and managerial risk taking is negative in Tunisia.

H3: All else equal, the experience of the CEO is negatively correlated with managerial risk taking in the Tunisian Stock Exchange.

How should the CEO' age influence managerial risk taking? The most popular view among the financial advisors is that as the investors get older their choices become less risky and more rationale. In recent years, several other researchers examine optimal portfolio choice as a function of the investment horizon within different economic frameworks and under different assumptions. For example, Benzoni, Collin-Dufresne, and Goldstein (2006) found that a young investor should invest more into the risky asset because cointegration generates a high correlation between returns to human capital and market returns. As long as the investor gets older, his portfolio's allocation should shift from primarily equities to a balanced portfolio and then to a primarily bond portfolio. Gollier (2002) provided a theoretical foundation to the notion of time diversification and deduce an argument that sustains the folk wisdom suggesting that younger people should invest more of their wealth in risky assets. The basic idea has its roots in the prospective theory. King and Leape (1987) noted in this frame that older mangers are more mature and risk averse. They added that daring, audacity; overconfidence, inventiveness and creativity are thoroughly tied with youth. As a proxy, we assess the manager age (MAGE) through three values: 1, 2 and 3 which mean respectively that the CEO age is less than 40 years, between 40 and 60 years and finally over 60 years. The CEO age is hypothesized to be negatively correlated with managerial risk taking.

H4: All else equal, the age of manager is negatively correlated with his risk taking in the Tunisian Stock Exchange.

Smith and Stulz (1985) suggested that the costs of managerial risk taking are proportional to the firm size. In particular, larger firms should have easier

access to external capital markets and can borrow at better conditions. Even the conflicts between creditors and shareholders are more severe for smaller firms rather than larger ones. Besides, larger firms tend to be more diversified and their cash flows are more regular and less volatile. Thus, larger firms should be more willing to undertake riskier projects. The managers of small firms will be then more risk averse. Besides, Howard (1988) noted that as the firm grows, its wealth increases and so does its ability to manage bigger and riskier projects. Dionne and Triki (2004), Beasley et al. (2005) and Walls (2005) approved of such results and concluded that managerial risk taking is a heavy burden for small firms. As surrogate to size, we use the total assets value (LNSIZE) and it is expected to be positively correlated with managerial risk taking.

H5: All else equal, larger firms incur more risks. We expect that the degree of managerial risk taking will be positively associated with the size of the firm in the Tunisian Stock Exchange.

III. Data And Empirical Methodology

A. Data

The data used is provided by the Tunisian Stock Exchange and the Council of Capital Market through respectively their official bulletins and their annuals reports covering the period 1996 to 2006. The data relative to the determinants of managerial entrenchment are collected through a questionnaire destined to the managers of the Tunisian listed firms. Tunisian firms that are non-quoted in the Tunisian Stock Exchange are not compelled to reveal the needed information. For such reasons, we can not spread the survey for all Tunisian companies. Besides, most prior work, however, implicitly recognizes differences in determinants in financial decisions between financial and non financial firms. That's why we ought to exclude financial firms from the analysis. The period of study covers eleven years, from 1996 to 2006, which appears a period long enough to smooth out variables fluctuations. Moreover, it should be pointed here that combining cross-section and time series data is worthwhile as it provides a wealth of information. The use of panel data allows increasing the sample size and hence the gain in degrees of freedom which is particularly relevant when a relatively large number of regressors and a small number of firms are used which is our case here.

[Insert table 1 about here]

In table 1, some relevant descriptive statistics are provided for the variables that are used to evaluate the impact of managerial entrenchment. For instance, the average age of Tunisian managers is between 40 and 60 years. Most of them were not hired by the firm before being nominated a chairman. They are usually directly nominated without having any prior experience within the firm. In addition, half of the managers have occupied this post for more or less 5 years. However, there are some managers who are chairmen for 30 years. An important stylized fact on Tunisian listed firms is the too low managerial ownership. In fact, managerial ownership is on average around 3% which is too low. But above all, half of the considered managers detain about 1,7% of the capital of the firm they run. Such figure may reveal that managerial ownership can not incite managers to incur risks as it is in major empirical researches. More above, as managerial risk taking may be influenced by firm size; we also exhibit its descriptive statistics. We should point out that most non financial firms that are listed in the Tunisian stock exchange have the same size which would eliminate the bias due to size.

[Insert table 2 about here]

In addition, we provide in table 2 the descriptive statistics of the variables making up the global score of managerial risk taking. Table 2 shows a very low rate of investment which is around 13% of total assets. The rate of MBV is also too small which confirms the risk aversion of Tunisian managers. They usually do not look for new investments that may be risky. An additional striking result is the high leverage ratio. Total debt is on average 3,1 times the book value of equity. The total debt may even represent more than the half of total assets. Although a high rate of indebtedness witnesses of a risky behaviour, it may not be the case in the Tunisian context as firms are compelled to borrow to finance their investments. They have not an alternative source of financing. Another important stylized fact on Tunisian firms is the volatility of the firms listed in the Tunisian Stock Exchange. The dispersion indicators of the volatility of both ROA and ROE approve of such volatility. Finally, table 1 shows a low average rate of the score of managerial risk taking which confirms the risk averse attitude of most managers of the listed firms in the Tunisian Stock Exchange.

B. Operational Model

The following regression equation is estimated to provide bearing on the remaining hypotheses indicated above (H2 through H5):

$$RISK_{i,t}=f+a_1MOWN_{i,}+ MOWN^2_{i,t}+a_3MOWN^3_{i,t}+ bMEXBF_{i,t}+cMEXAF_{i,t}+dMAGE_{i,t}+eLNSIZE_{i,t}+\varepsilon_{it}$$

where: RISK ≡ Global index of managerial risk taking obtained after applying factor analysis to seven variables which are MBV, INV, LEV1, LEV2, LEV3, VROA and VROE; where: MBV is Market-to-book-value; INV is Total investments deflated by total assets; LEV1 is Total debt divided by book value of capital; LEV2 is Total debt divided by the market value of total assets; LEV3 is Total debt divided by the book value of total assets; VROA is Standard deviation of ROA for a three-year period;

VROE is Standard deviation of ROE for a three-year period; MOWN is % of Managerial ownership; MEXBF is Managerial experience before being nominated a chairman; MEXAF is Managerial experience as a chairman; MAGE is the Age of manager; it equals 1 if it is less than 40 years, 2 if it is between 40 and 60 years and finally 3 if it is over 60 years; LNSIZE is Logarithm of the value of total assets.

C. Econometric Modelling

Prior theoretical and empirical work in managerial risk taking makes use of several different proxies to measure risk taking. In our study, we are going to select seven proxies that are suitable to the Tunisian context and to construct thereafter a global index to evaluate managerial risk taking within the Tunisian Stock Exchange. Factor analysis and specifically Principal Components Analysis is applied to construct this global index.

In fact, factor analysis attempts to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables. Factor analysis is often used in data reduction to identify a small number of factors that explain most of the variance that is observed in a much larger number of manifest variables. It can also be used to generate hypotheses regarding causal mechanisms or to screen variables for subsequent analysis; for instance to identify collinearity prior to performing a linear regression analysis. Principal Components Analysis specifies the method of factor extraction. It is used to form uncorrelated linear combinations of the observed variables. The first component has maximum variance. Successive components explain progressively smaller portions of the variance and are all uncorrelated with each other. Principal components analysis is used to obtain the initial factor solution. It can be used when a correlation matrix is singular. While carrying out a factor analysis, one should precise the method of rotation. Five methods of rotation are available, including direct oblimin and promax for non orthogonal rotations. We opt for promax rotation as we have many variables that are not necessary correlated and we need at the end once factor. Promax Rotation is indeed an oblique rotation, which allows factors to be correlated. This rotation can be calculated more quickly than a direct oblimin rotation which is a method for oblique (non orthogonal) rotation. When delta equals 0 (the default), solutions are most oblique. As delta becomes more negative, the factors become less oblique. So, the promax Rotation is more useful for large datasets.

Moreover, pure linear give inconsistent estimations as recent empirical works approve of a non linear relationship between managerial ownership and managerial risk taking. This accounts for the effect of conflicting managerial incentives, and external and internal disciplinary monitoring mechanisms. However, many kinds of models are suggested namely quadratic and cubic according to the context. Thus, we make a comparison between linear, quadratic and cubic models applied to the Tunisian context. It seems that the cubic model is the most appropriate. Table 3 summarizes this comparison.

[Insert table 3 about here]

The ANOVA table tests the acceptability of the model from a statistical perspective. The F, df1, df2, and Sig. columns summarize the results of the F test of model fit. The significance value of the F statistic is less than 0.05 for all of the three models, which means that the variation explained by each model is not due to chance. While the ANOVA table is a useful test of the model's ability to explain any variation in the dependent variable, it does not directly address the strength of that relationship.

The model summary table reports the strength of the relationship between the model and the dependent variable. Not only the multiple correlation coefficient, R, but also the coefficient of determination, R Square, and the Adjusted R Square approve of the fact that the cubic model provides the best estimations. In fact, these statistics, along with the standard error of the estimate, are most useful as comparative measures to choose between two or more models.

Moreover, the coefficients table points out that managerial risk taking decrease, then increase and finally decrease with managerial ownership. All the variables associated with managerial ownership are significant and are respectively negative, positive and negative; which confirms the curve relationship between managerial risk taking and ownership.

In addition, the curve fit chart gives us a quick visual assessment of the fit of each model to the observed values. From this plot, it appears that the cubic model better follows the shape of the data than the linear and the quadratic models.

[Insert figure 1 about here]

The curve fit chart shows that the cubic model follows the observed data points fairly well during the observed time period. However, because of the positive cubic term in the model, the curve is turning upward at the end of the observed time period, so it is highly unlikely that this model fits very well.

IV. Empirical Results

Two sets of results will be displayed and discussed in this section: those corresponding to the construction of the global index of managerial risk taking and those dealing with the impact of managerial entrenchment on managerial risk taking.

[Insert Table 4 about here]

In table 4, we present the empirical results of the Principal Component Analysis which is pursued to construct the score of managerial risk taking,

RISK. It seems that the rate of total debt to book value of capital, LEV1, and total debt to market value of total assets, LEV2, are the most eminent factors of the global score. The ratio of MBV and INV as proxies to respectively growth opportunities and investment intensity are less eminent; the ratio of total debt to book value of total assets, LEV3, as well. However, the volatility of both ROA and ROE are meaningless. But above all, all these dimensions of risk are positively correlated with the global factor score RISK which confirms the first hypothesis. Besides, table 3 shows that the total explained variance is above 76,6%; which approves of the robustness of the score. Besides, the Kaiser-Meyer-Olkin test, which tests whether the partial correlations among variables are small, as well as the Bartlett's test of sphericity, which tests whether the correlation matrix is an identity matrix, both tests indicate that the factor model is appropriate. The reliability analysis (Cronbach's Alpha) which studies the properties of measurement scales and the items that compose the scales also approves of the fittingness of the factor model.

[Insert table 5 about here]

Table 5 recapitulates the regression results for the impact of managerial entrenchment on managerial risk taking. The model is globally robust. The results in table 5 reveal that the coefficients relative to managerial ownership are all significant but above all respectively negative, positive and negative. This provides strong support for the non linear relationship between managerial ownership and managerial risk taking. This result is in line with those of Davies et al. (2005) who put in evidence the effect of conflicting managerial incentives, and external and internal disciplinary monitoring mechanisms. Specifically, for low levels of managerial ownership, external discipline and internal controls or incentives will dominate managerial behaviour. At intermediate levels of managerial ownership, management interests begin to converge with those of shareholders. However, the lack of disciplinary control over poorly performing management may strengthen management's ability to pursue sub-optimal corporate policies at intermediate ownership levels. As levels of managerial equity ownership grow, objectives converge further to those of shareholders. Nevertheless, at ownership levels below 50%, managers do not have total control of the firm and external discipline still exists. Managers are likely still subject to discipline from external block shareholders. It should be pointed here that managerial ownership in the non financial firms listed in the Tunisian stock exchange does not exceed 30%.

Besides, our findings show that the experience of the manager after being nominated a chairman has a significant and a negative impact on managerial risk taking. The more experienced the manager becomes, the less he becomes innovative and creative, and hence more risk averse. This result agrees with the empirical findings of Loomes et al. (2003) and Li et al. (2004) that risk aversion raises with experience. However, the experience of the manager within the firm before being nominated a chairman has not a significant influence on managerial risk taking. The age of the manager, as well, has no significant impact. This result does not confirm the common view that the older we get the more risk averse we become. Finally, the results indicate that managers of larger firms are more prone to invest in risky projects. This finding is consistent with the suggestions of Dionne and Triki (2004), Beasley et al. (2005) and Walls (2005) who concluded that managerial risk taking is a heavy burden for small firms.

V. Conclusion

Many researchers with different streams have worked on risk management and proposed several theories to explain managerial behavior. Nevertheless, managerial risk taking does not truly appeal to researchers. Thus this field is yet puzzling. Many questions are either still unanswered or answered in conflicting ways. Many others remain to be asked. While many earlier studies refer to the governance theory by pointing out the role of internal and external monitoring mechanisms, many recent studies rather emphasize the prospective theory hypotheses. Nonetheless, few researchers have highlighted the impact of managerial entrenchment on managerial risk taking. But above all, the contribution of this paper resides in providing a further insight into both managerial entrenchment and managerial risk taking within the emerging markets and namely within the Tunisian Stock Exchange.

More specifically, we attempt to find answers to the following questions: What are the main indicators of managerial risk taking? What can reveal the managerial entrenchment? What is the impact of managerial entrenchment on managerial risk taking? At first, a Principal Component Analysis is applied to construct a global score of managerial risk taking. This factor analysis puts in evidence that the debts ratios are more relevant than the MBV and the investment ratios. Neither the volatility of the ROA nor the volatility of the ROE are significant. Secondly, we highlight some managerial entrenchment components that may influence managerial risk taking. First, the results indicate a significant non linear relationship between managerial ownership and managerial risk taking. This reveals the effect of conflicting managerial incentives, and external and internal disciplinary monitoring mechanisms. Also, it seems that managerial ownership may incite managers to incur risks and look for new investments. It is high time to promote stock options like in developed countries. Besides, our findings show that the more experienced the manager gets, the more risk averse he becomes. Upon such result, Tunisian authorities are recommended to urge managers not to exceed a certain experience within the same firm so as to

promote the initiative and the creativity. On the other hand, neither the anterior experience of the manager nor his age have a significant influence on managerial risk taking. These two criteria are thus not so eminent while hiring a new manager. Finally, the results indicate that managers of larger firms are more prone to invest in risky projects. Such result would stimulate Tunisian authorities to strengthen the value of listed firms and assist their growth. Last but not least, our findings would be more significant and pertinent if the study covers all non financial firms not only the listed ones.

References

1. Alexandre, H. et Paquerot, M., 2000, «Efficacité des structures de contrôle et enracinement des dirigeants», Finance Contrôle Stratégie, 3(2), 5-29.
2. Beasley, M.S., Clune, R. and Hermanson, D.R., 2005, «Enterprise Risk Management: An Empirical Analysis of Factors associated with the Extent of Implementation», *Journal of Accounting and Public Policy*, 24, 521–531.
3. Beatty, R.P. and Zajac, E.J., 1994, «Managerial Incentives, Monitoring and Risk Bearing: A Study of Executive Compensation, Ownership and Board Structure in Initial Public Offerings», *Administrative Science Quarterly*, 39, 313-335.
4. Benzoni, L., Collin-Dufresne, P. and Goldstein, R.S., 2006, «Portfolio Choice over the Life-Cycle when the Stock and Labor markets are Cointegrated», *Journal of Finance forthcoming*.
5. Brickley, J.A., Coles, J.L. and Jarrell, J., 1997, «Leadership Structure: Separating the CEO and the Chairman of the Board», *Journal of Corporate Finance*, 3, 189-220.
6. Cebenoyan, A.S. and Strahan, P.E., 2004, «Risk Management, capital Structure and Lending at Banks», *Journal of Banking and Finance*, 28, 19-43.
7. Chaganti, R. and Sambharya, R., 1987, «Strategic Orientation and Characteristics of Upper Management», *Strategic Management Journal*, 8, 393-401.
8. Chen, C.R. and Steiner, T.L., 1999, «Managerial Ownership and Agency Conflicts: A Nonlinear Simultaneous equation Analysis of Managerial Ownership, Risk Taking, Debt Policy and Dividend Policy», *The Financial Review*, 34, 119-36.
9. Coffee, J.C., 1988, «Shareholders versus Managers: The Strain in the Corporate Web», In J.C. Coffee, Jr.I. Lowenstein and S. Rose-Ackerman (Eds), «*Knights, Raiders and Targets: The Impact of the Hostile Takeover*», 77-134. New York: Oxford University Press.
10. Coles, J.L., Naveen, D. D. and Naveen, L., 2006, «Managerial Incentives and Risk-Taking», *Journal of Financial Economics*, 79, 431-468.
11. Crutchley, C. and Hansen, R.S., 1989, «A Test of the Agency Theory of Managerial Ownership, Corporate Leverage, and Corporate Dividends», *Financial Management*, 18, 36-46.
12. Davies, J.R., Hillier, D. and McColgan, P., 2005, «Ownership Structure, Managerial Behavior and Corporate Value», *Journal of Corporate Finance*, 11, 645-660.
13. Dionne, G. and Triki, T., 2004, «On Risk Management Determinants: What Really Matters?», *Working Paper*, CIRPEE, 0417.
14. Donaldson, G., 1961, «*Corporate Debt capacity: A Study of Corporate Debt Policy and the Determinants of Corporate Debt capacity*», Boston: Harvard University Press.
15. Fama, E.F., 1980, «Agency Problems and the Theory of the Firm», *Journal of Political Economy*, 88, 288–307.
16. Froot, K.A., Scharfstein, D. and Stein, J., 1993, «Risk Management: Coordinating Corporate Investment and Financing Policies», *Journal of Finance*, 48 (5), 1629–1658.
17. Garen, J.E., 1994, «Executive Compensation and Principal Agent Theory», *Journal of Political Economy*, 102, 1175-1199.
18. Gay, G. and Nam, J., 1999, «The Underinvestment Problem and Corporate Derivatives Use», *Financial Management*, 27, 53-69.
19. Gollier, C., 2002, «Time Diversification, Liquidity Constraints, and Decreasing Aversion to Risk on Wealth», *Journal of Monetary Economics*, 49, 1439-1459.
20. Gomez-Mejia, L., 1994, «Executive Compensation: A Reassessment and a Future Research Agenda», In G. Ferris (Eds.), *Research in Personal and Human Resources Management*, 12, 161-222, Greenwich, CT! JAI Press.
21. Healy, P.M. and Palepu, K.G., 2003, «The Fall of Enron», *Journal of Economic Perspectives*, 17, 27-50.
22. Hoskisson, R.E., Hitt, M.A. and Hill, C.W.L, 1991, «Managerial Risk Taking in Diversified Firms: An Evolutionary Perspective», *Organization Science*, 2, 296-314.
23. Howard, R.A., 1988, «Decision Analysis: Practice and Promise», *Management Science*, 34 (6), 679– 695.
24. Jensen, M.C. and Meckling, W.H., 1976, «Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure», *Journal of Financial Economics*, 3, 305-60.
25. Jensen, M.C. and Ruback, R.S., 1983, «The Market for Corporate Control: the Scientific Evidence», *Journal of Financial Economics*, 11, 5 –55.
26. King, M. A. and Leape, J. I., 1987, «Asset Accumulation, Information and Life Cycle», *NBER Working Papers*, 2392.
27. Knopf, J., Nam, J. and Thornton, J., 2002, «The Volatility and Price Sensitivities of Managerial Stock Option Portfolios and Corporate Hedging», *Journal of Finance*, 57, 801-813.
28. Kose, J., Litov, L. and Yeung, B., 2005, «Corporate Governance and Managerial Risk Taking: Theory and Evidence», *Working Paper*, New York University.
29. Leland, H., 1998, «Agency Costs, Risk Management, and Capital Structure», *Journal of Finance*, 53, 1213-1243.
30. Leuz, C., Nanda, D. and Wysocki, P., 2003, «Earnings Management and Investor Protection: an International Comparison», *Journal of Financial Economics*, 69, 506-527.
31. Li, K., Morck, R., Yang, F. and Yeung, B., 2004, «Firm-Specific Variation and Openness in Emerging Markets», *Review of Economics and Statistics*, 86, 658-669.
32. Loomes, G.C., Starwer, C.V. and Sugden, R., 2003, «Do Anomalies Disappear in Repeated Markets? », *Economic Journal*, 113, 153–166.

33. Mehran, H., 1995, «Executive Compensation Structure, Ownership and Firm Performance», *Journal of Financial Economics*, 38, 163–184.
34. Morck, R., Shleifer, A. and Vishny, R.W., 1988, «Management Ownership and Market Valuation: An Empirical Analysis», *Journal of Financial Economics*, 20, 293– 315.
35. Myers, S., 1977, «The Determinants of Corporate Borrowing», *Journal of Financial Economics*, 5, 147–175.
36. Pi, L. and Timme, S.G., 1993, «Corporate Control and Bank Efficiency», *Journal of Banking and Finance*, 17 (2-3), 515-530.
37. Pigé, B., 1998, «Enracinement des dirigeants et richesse des actionnaires», *Finance Contrôle Stratégie*, 1 (3), 131-158.
38. Rogers, D.A., 2005, «Management Risk-Taking Incentives and Executive Stock Option Repricing: A Study of US Casino Executives», *Financial Management*, 34, 95-121.
39. Shavel, S., 1979, «Risk Sharing and Incentives in the Principle and Agent Relationship», *Bell Journal of Economics*, 10, 55-73.
40. Smith, C., and Stultz, R., 1985, «The Determinants of Firms' hedging Policies», *Journal of Financial and Quantitative Analysis*, 20, 391-405.
41. Tosi, H.L. and Gomez-Mejia, L., 1989, «The Decoupling of CEO Pay and Performance: An Agency Theory Perspective», *Administrative Science Quarterly*, 34, 169-190.
42. Tufano, P., 1996, «Who Manages Risk? An Empirical Examination of Risk Management Practices in the Gold Mining Industry», *Journal of Finance*, 51, 1097-1137.
43. Walls, M.R., 2005, «Corporate Risk Taking and Performance: A 20 Year Look at the Petroleum Industry», *Journal of Petroleum Science and Engineering*, 48, 127-140.
44. Williamson, O.E., 1963, «Managerial Discretion and Business Behavior», *American Review*, 53 (1032), 1047-1051.
45. Windram, R., 2005, «Risk-Taking Incentives: A Review of the Literature», *Journal of Economic Surveys*, 19 (1), 65-90.
46. Wiseman, R.M. and Gomez-Mejia, L.R., 1998, «A Behavioral Agency Model of Managerial Risk Taking», *Academy of Management Review*, 23 (1), 133-153.
47. Zahra, S.A., 2005, «Entrepreneurial Risk Taking in Family Firms», *Family Business Review*, XVIII (1), 23-40.

Appendices

Table 1. Descriptive statistics of managerial entrenchment components

This table presents descriptive statistics for the independent variables used in our estimations. MOWN is the percentage of managerial ownership; MEXBF is the managerial experience before being nominated a chairman; MEXAF is the managerial experience as a chairman; MAGE is the age of the manager; it equals 1 if it is less than 40 years, 2 if it is between 40 and 60 years and finally 3 if it is over 60 years; LNSIZE is the Logarithm of the value of total assets.

		MOWN	MEXBF	MEXAF	MAGE	LNSIZE	MOWN
N	Valid	205	206	206	206	206	205
	Missing	1	0	0	0	0	1
Mean			0,7330	7,7087	2,0971	17,7172	0,0302
Median			0,0000	5,0000	2,0000	17,5982	0,0017
Std. Deviation			2,9353	6,8270	0,5590	0,9203	0,0643
Minimum			0,0000	1,0000	1,0000	16,1481	0,0000
Maximum			30,0000	29,0000	3,0000	21,0159	0,3200

Table 2. Descriptive statistics of managerial risk taking components

This table presents descriptive statistics for the components of the dependent variable RISK used in our estimations. MBV is the market-to-book-value; INV is the total investments deflated by total assets; LEV1 is the total debt divided by book value of capital; LEV2 is the total debt divided by the market value of total assets; LEV3 is the total debt divided by the book value of total assets; VROA is the standard deviation of ROA for a three-year period; VROE is the standard deviation of ROE for a three-year period; RSIK is the factor score.

		MBV	INV	LEV1	LEV2	LEV3	VROE	VROA	RISK
N	Valid		206	206	206	206	206	206	206
	Missing		0	0	0	0	0	0	0
Mean		1,5197	0,2214	3,0863	2,1207	0,5256	0,3367	0,0261	0,0000
Median		1,2786	0,1331	1,7743	0,7732	0,4810	0,2176	0,0171	-[illegible]
Std. Deviation		0,7858	0,3655	3,5185	3,4468	0,3929	0,3478	0,0309	1,0000
Minimum		0,6556	-[illegible]	0,0832	0,0328	0,0436	0,0058	0,0002	-[illegible]
Maximum		7,0994	2,7550	23,8184	24,2568	3,1578	1,9611	0,1805	4,5838

Table 3. Comparison of linear, quadratic and cubic models

This table presents the results of linear, quadratic and cubic regressions. The dependent variable is RISK, the factor score, the independent variable is MOWN, the managerial ownership.

Type of models	**Models summary**			
	R	R Square	Adjusted R Square	Std. Error of the Estimate
Linear	0,187	0,035	0,030	0,987
Quadratic	0,357	0,127	0,119	0,941
Cubic	0,422	0,178	0,166	0,915

ANOVA

		Sum of	df	Mean Square	F	Sig.
Linear	Regression	7,140	1	7,140	7,334	0,007
	Residual	197,638	203	0,974		
	Total	204,778	204			
Quadratic	Regression	26,091	2	13,046	14,748	0,000
	Residual	178,687	202	0,885		
	Total	204,778	204			
Cubic	Regression	36,426	3	12,142	14,497	0,000
	Residual	168,352	201	0,838		
	Total	204,778	204			

Coefficients

		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
Linear	MOWN	2,908	1,074	0,187	2,708	0,007
	(Constant)	-0,085	0,076		-1,123	0,263
Quadratic	MOWN	-9,285	2,826	-0,596	-3,286	0,001
	MOWN ** 2	49,218	10,634	0,840	4,629	0,000
	(Constant)	0,035	0,077		0,453	0,651
Cubic	MOWN	-30,090	6,530	-1,932	-4,608	0,000
	MOWN ** 2	275,975	65,376	4,710	4,221	0,000
	MOWN ** 3	-518,736	147,671	-2,679	-3,513	0,001
	(Constant)	0,130	0,080		1,633	0,104

Figure 1. Graphic of observed, linear, quadratic and cubic models

This figure presents the graphic of observed, linear, quadratic and cubic models. The dependent variable is RISK, the factor score, the independent variable is MOWN, the managerial ownership.

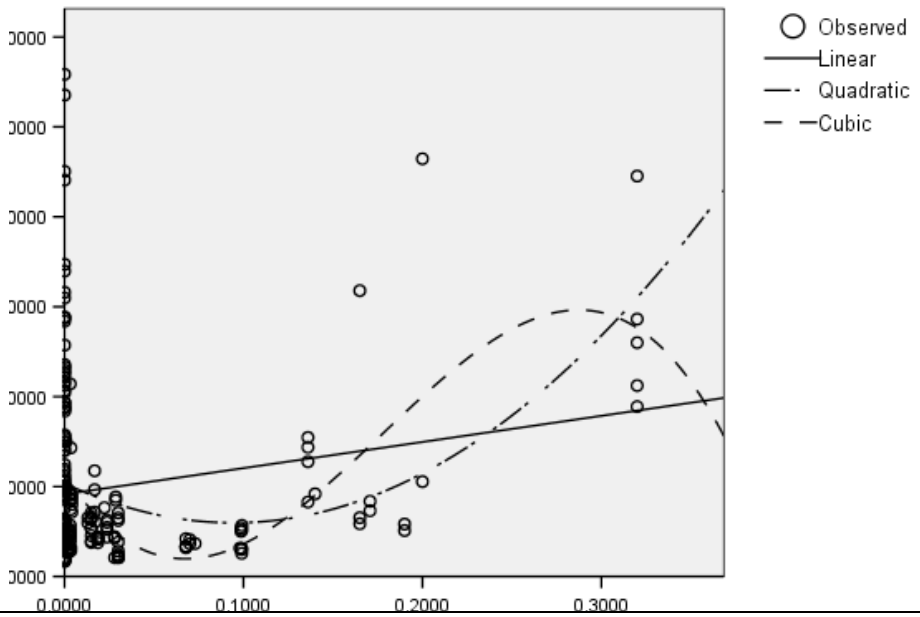

Table 4. Construction of the score of managerial risk taking

This table presents the empirical results of the Principal Component Analysis pursued to construct the score of managerial risk taking RISK.

Component Score Coefficient Matrix(a)

	Component 1
VROA	0,000
VROE	0,000
LEV1	0,572
LEV2	0,543
LEV3	0,006
MBV	0,012
INV	0,001

Rotation Method: equamax with Kaiser Normalization.
a - Coefficients are standardized.

Communalities

	Raw		Rescaled	
	Initial	Extraction	Initial	Extraction
VROA	0,121	0,001	1,000	0,005
VROE	0,001	1,84E-005	1,000	0,019
LEV1	12,380	9,902	1,000	0,800
LEV2	11,881	9,295	1,000	0,782
LEV3	0,154	0,075	1,000	0,483
MBV	0,618	0,085	1,000	0,138
INV	0,134	0,003	1,000	0,022

Total Variance Explained

	Component	Initial Eigenvalues(a)			Extraction Sums of Squared Loadings		
		Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Raw	1	19,361	76,561	76,561	19,361	76,561	76,561
	2	5,079	20,086	96,647			
	3	0,526	2,078	98,725			
	4	0,138	0,545	99,270			
	5	0,111	0,438	99,708			
	6	0,073	0,288	99,997			
	7	0,001	0,003	100,000			
Rescaled	1	19,361	76,561	76,561	2,249	32,126	32,126
	2	5,079	20,086	96,647			
	3	0,526	2,078	98,725			
	4	0,138	0,545	99,270			
	5	0,111	0,438	99,708			
	6	0,073	0,288	99,997			
	7	0,001	0,003	100,000			

a - When analyzing covariance matrix, initial eigenvalues are the same across the raw and rescaled solution.

KMO and Bartlett's Test(a) a - Based on correlations	Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0,717
	Bartlett's Test of Sphericity	301,655	301,655
		21	21
		0,000	0,000

Reliability Statistics	Cronbach's Alpha	N of Items
	0,546	7

Table 5. The determinants of managerial risk taking

This table presents results of the cubic regression. The dependent variable is RISK, the factor score. The dependent variables are MOWN, MEXBF, MEXAF, MAGE and LNSIZE. MOWN is the percentage of managerial ownership; MEXPBF is the managerial experience before being nominated a chairman; MEXPAF is the managerial experience as a chairman; MAGE is the age of the manager; it equals 1 if it is less than 40 years, 2 if it is between 40 and 60 years and finally 3 if it is over 60 years; LNSIZE is the Logarithm of the value of total assets.

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0,646	0,417	0,397	0,7767

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	85,541	7	12,220	20,254	0,000
Residual	119,459	198	0,603		
Total	205,000	205			

Coefficients							
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			B	Std. Error
(Constant)	-8,215	1,090		-7,536	0,000		
MOWN	-30,117	5,571	-1,933	-5,406	0,000	0,023	43,454
MOWN2	303,727	57,576	5,181	5,275	0,000	0,003	327,787
MOWN3	-612,862	132,501	-3,163	-4,625	0,000	0,006	158,884
MAGE	0,006	0,114	0,004	0,055	0,956	0,725	1,380
MEXBF	-0,019	0,021	-0,056	-0,890	0,375	0,745	1,342
MEXAF	-0,031	0,009	-0,211	-3,404	0,001	0,769	1,300
LNSIZE	0,483	0,061	0,444	7,941	0,000	0,940	1,064

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