

# CORPORATE GOVERNANCE AND MANAGERIAL RISK-TAKING IN TUNISIA: AN AGENCY PERSPECTIVE

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## ABSTRACT

*Drawing on agency theory, the study contends that internal governance mechanisms in Tunisia have not enough power to promote challenging activities. Our results adhere with agency theory predictions: Majority shareholders invest in risky activities lying on a managerial risk-taking orientation. These investments increase shareholders' value, but not necessarily stakeholders' one.*

**KEYWORDS:** *Managerial risk-taking, Agency theory, corporate governance*

## 1. INTRODUCTION

In today's rapidly changing and highly uncertain markets, firms ought to be entrepreneurial and thus willing to take risks so as to survive, grow and thrive. Firms pursuing high Entrepreneurial Orientation need to deal with the potential down-side to taking risks. For instance, companies generating new products, based on technological innovation typically take risks as the demand for the new product is unknown (Wu, 2008). The effects of adopting risky attitude on performance have been researched extensively. However, little is known about what really may influence managerial risk-taking. We adhere with agency theorists who argue that corporate governance mechanisms can play an important role in influencing and promoting managerial risk-taking (Wiseman & Gomez-Mejia, 1998; Zahra, 2005; Naldi et al., 2007; Wu, 2008).

Building on agency theory predictions, we explain, in this article the relationship between corporate governance and managerial risk-taking within the Tunisian context, as a case study in a developing market. We adhere to the large literature developed since Jensen and Meckling (1976) and Fama and Jensen (1983) who suggest that a firm's risk-taking is influenced by its ownership structure and more generally by its governance design. Our research attempts answering to the following question: What are the main features of the corporate governance system in the Tunisian listed companies? Do corporate governance schemas encourage or on contrary discourage Tunisian managers to adopt riskier strategies? This question leads us to scrutinize in which way and how corporate governance components, as a part of firms' structure, influence managerial attitudes towards risk in a context of a developing economy.

The Tunisian government tries to improve the legal and the regulatory framework of the Tunisian Stock Exchange to enhance the number of the listed companies. Also, it tries to strengthen laws that protect shareholders' interests and to improve firms' governance practices in order to develop the adherence degree of Tunisian companies into the Entrepreneurial Orientation and improve the firms performance and competitiveness (Belanes and Hachana, 2009). Despite these improvements, Tunisia still faces the

challenges of broader privatisation and the liberalisation of the Investment Code to increase foreign investment. Besides, in Tunisia, just like other emerging and developing countries, external mechanisms may not develop well and the corporate governance takes place mainly through internal mechanisms.

So, building on these insights, we combine elements of the most relevant corporate governance attributes (the ownership and the board of directors' structures as well as the audit quality) framing to explain managerial risk-taking behaviour. It allows us to enhance and extend the agency-based corporate governance literature on managerial risk-taking, especially in a developing economy context. Our survey wishes to be the first study interested in this frame in Tunisia. It is worth noting that this work is more a case study in a developing market than it is a test of managerial risk-taking that could be generalized to other markets.

The contribution of this paper is threefold. First, this study suggests an econometrically sound approach to modelling managerial risk-taking. It is the first paper, to our knowledge, to construct a multi-dimensional proxy revealing the intensity of managerial risk-taking. Second, we point out four distinctive features of the corporate governance system in Tunisia. Third, we use panel data regression to investigate the influence of corporate governance on managerial risk-taking. Such an econometric technique is adapted for countries in which the number of listed companies is very small.

The rest of this article is organized as follows: the next section describes the corporate governance system in Tunisia. The subsequent section provides the theoretical background and develops the research hypotheses. Section 4 describes the data and measures used in the empirical design. Then, the article presents the empirical results and the final section concludes.

## 2. 2. THE FEATURES OF THE TUNISIAN GOVERNANCE SYSTEM

Tunisia has recently succeeded to maintain a high average growth rate of 5.8 % and to be ranked the most competitive country in the Africa continent and the 32<sup>nd</sup> worldwide (Khanchel, 2007).

<b>Table 1: Tunisia published ROSC Reports</b>	
<b>ROSC REPORTS</b>	<b>DATE OF PUBLICATION</b>
Report on Banking Supervision	June, 17, 2002; January, 29, 2001 and September, 30, 1999
Report on Monetary and Financial Policy Transparency	June, 17, 2002; January, 29, 2001 and September, 30, 1999
Report on Data Dissemination	January, 29, 2001 and September, 30, 1999
Report on Securities Regulation	June, 17, 2002; January, 29, 2001 and September, 30, 1999
Report on Insurance Supervision	June, 17, 2002
Report on Payment Systems	June, 17, 2002
Report on Fiscal Transparency	January, 29, 2001 and September, 30, 1999
Financial System Stability Assessment (FSSA)	June, 17, 2002

Source: Saidi, 2005

Reforms to increase the pace of privatisation, simplification of tax structures and a prudent approach to debt have helped this developing country to lessen governmental control and progress. Besides, Tunisia has adopted new reforms that strengthened its financial sector regulations through on-going structural adjustment programs.

But above all, Tunisia has made important progress over the last years in order to enhance the corporate governance quality and improve the investor and minority shareholder protection although corporate governance laws or best practices have not been implemented. In fact, Tunisia has not finalized and published a corporate governance survey. However, there are two levels of influence on Tunisian corporate governance. First, the company law sets out the legal framework for all Tunisian firms (*Droit des Sociétés*). Second, there is series of listing requirements that are applied to the listed firms on the Tunisian Stock Exchange, namely the Financial Act 94-117, the Securities and Exchange Committee (*Conseil du Marché Financier*) regulations, the Commercial Code (*Code du Commerce*) and the Tunis Stock Exchange Code (*Règlement Général de la Bourse*). Besides, as mentioned in the table 1, Tunisia has completed and published Reports on Observance of Standards and Codes (ROSC Reports) according to the International Monetary Fund (IMF) and the World Bank (Saidi, 2005).

Despite all these regulatory efforts, effective implementation of governance reforms in Tunisia need to be restructured, ameliorated and intensified. In fact, Tunisian stock market still suffers from poor liquidity compared to other MENA and emerging markets. Statistics for the emerging countries from S&P<sup>1</sup> show that the Tunisian stock exchange has the lowest market volume as the Lebanese stock exchange in comparison to other MENA stock exchanges. Compared to other emerging markets, we note also that Tunisian market has the same market volume as Bangladesh and Bulgaria. Furthermore, Tunisian stock market has the lowest market depth<sup>2</sup> (10%) in MENA stock exchanges Besides, investor protection index (IPI) indicates that Tunisian level of investor protection is lower than other economies from MENA region such as Turkey, Jordan, Egypt and Lebanon and other emerging markets like China (Loukil *et al.*, 2009).

Building on insights provided by some specificities of the Tunisian governance system, we try to explore the association between corporate governance and managerial risk-taking. Before analysing empirically this link, we provide our conceptual framework inspired largely from the agency theory.

### 3. CORPORATE GOVERNANCE AND MANAGERIAL RISK-TAKING: CONCEPTUAL FRAMEWORK AND HYPOTHESES

Agency theory is characterized by its emphasis on the risk attitudes of principals and agents (Barney and Hesterly, 1996). Specifically, principals are considered risk neutral in their preferences for individual firm actions, since they can diversify their shareholdings across multiple firms. Conversely, since agent employment security and income are inextricably tied to one firm, agents are assumed to exhibit risk aversion in decisions regarding the firm in order to lower risk to personal wealth. However, agent risk aversion creates opportunity risk costs for risk-neutral principals who prefer that agents maximize firm returns (Jensen and Meckling, 1976; Baysinger, Kosnik and Turk, 1991; Shleifer and Vishny, 1997; Wiseman and Gomez-Mejia, 1998, Gray and Cannella, 1997). This “risk differential” (Beatty and Zajac, 1994; Coffee, 1988) between principals and agents creates a moral hazard problem. To mitigate such managerial myopia, shareholders need to resort to the corporate governance, with either incentive or supervisory mechanisms, to align the risk differentials between themselves as principals and the managers as agents (Zahra, 1996) and thereby enhance risk-taking orientations.

It is no hope to investigate seriously the impact of corporate governance mechanisms on managerial risk-taking if we limit ourselves to only one governance attribute. For this reason, the corporate governance and managerial risk-taking relationship is revealed in this paper through the association between respectively ownership structure, board of directors’ commitments, audit quality and managerial risk-

taking.

### 3.1 The effect of ownership structure on managerial risk-taking

Agency theory conceived the firm as a shareholder-maximizing enterprise. Therefore, majority shareholders are prone to incite the managers to pursue growth-oriented innovation and search new opportunities. Such objectives aim at improving the firm performance but require more managerial risk-taking (Jensen and Meckling, 1976). The agency theory highlighted the strategic consequences that conflicts between shareholders and managers can produce, in term of managerial risk-taking and growth. However, this conflict is not only the result of a divergence in the risk profiles of shareholders and managers, but comes also from intrinsic motivation and employee creativity (Dewett, 2007). Besides, as the manager's ownership claim falls, his incentive to devote significant effort to creative activities, such as searching out new profitable ventures, falls (Jensen and Meckling, 1976). He may in fact avoid such ventures simply because it requires too much trouble or effort on his part to manage or to learn about new technologies. Avoidance of these personal costs and the anxieties that go with them can result in the value of the firm being substantially lower than it otherwise could be.

***Hypothesis 1: Following agency theory predictions, majority shareholders, exert pressure on managers to pursue riskier strategies.***

The State shareholding in developing countries is usually associated with an intensive intervention of the government, as an attempt to protect these shareholders. It requires henceforth more mastery and control of any risk that the firm may face so as to preserve the firm value and perpetually improve it.

***Hypothesis 2: State ownership discourages managerial risk-taking.***

In addition to the State, many wealthy families hold the main share capital of Tunisian listed firms. Scholars disagree regarding to what extent family firms constitute an organizational context that supports or constrains an Entrepreneurial Orientation and therefore managerial risk-taking (Zahra, 2005). On the one hand, family firms are often characterized as conservative and resistant to change and introverted (Hall et al., 2001). This mainly stems from the fear to squander a generations- family wealth and jeopardize the family name and reputation (Bartholomeusz & Tanewski, 2006).

***Hypothesis 3: Family controlled firms are risk-averse in Tunisia.***

### 3.2 The effect of board commitment on managerial risk-taking

Agency theory already points out that boards of directors exist to monitor managers on behalf of shareholders and ensure that their interests are pursued (Jensen & Meckling, 1976). Under the agency framework, previous studies and regulators argue that, in order to accomplish their monitoring function, boards should be small and should include mainly non-executive/independent directors with a split of the roles of the Chief Executive Officer (CEO) and the Chairman (Fama and Jensen, 1983).

Board directors must be deeply and personally involved in the decision process. Commitment thus provides one of the most important ingredients of the mindset needed to be entrepreneurial and consequently take risks. Board commitment is a critical success factor when a firm uses risk-taking activities to rive its performance (Sharman, 2002).

***Hypothesis 4: The commitment of Tunisian board members induces managerial risk-taking.***

### 3.3 The impact of the audit quality on managerial risk-taking

The presence of an auditor is a measure of transparency that can have a potential effect on managerial risk-taking. Because internal auditors have primary responsibilities related to risk identification and assessment, they are likely to be interacting with senior management on corporate risk-taking implementation issues (Beasley et al., 2005). Despite presenting some limitations, most of those studies classify the largest international accounting firms, now known as the Big Four firms, as high quality auditors. It is possible that firms committed to engaging such high quality auditors also are more

committed to managerial risk-taking (Beasley et al., 2005). Firms that are audited by Big Four audit firms are more likely to be further in managerial risk-taking deployment.

***Hypothesis 5: The auditor, either internal or external, is positively associated with managerial risk-taking.***

#### 4. DATA AND EMPIRICAL METHODOLOGY

Data used is gathered from three sources: the official bulletins of the Tunisian Stock Exchange, the annual reports of the Council of Capital Market, and the annual reports of the Tunisian listed firms. The missing data is provided by the firm through either a questionnaire or an e-mail. It is worth noting here that Tunisian firms that are non-quoted in the Tunisian Stock Exchange are not compelled to reveal the needed information. For such reasons, the survey was restricted to the 46 listed Tunisian companies. The period of study covers ten years, from 1999 to 2008. Moreover, combining cross-section and time series data is worthwhile as it provides a wealth of information.

##### 4.1 Variables and measures

Three kinds of variables are collected: financial and accounting variables for constructing the managerial risk-taking score, the corporate governance variables and control ones.

###### 4.1.1 Managerial risk-taking variables

Several financial proxies were used to approach managerial risk-taking such as the fluctuations of ROE or ROA (Coles et al., 2006; Wright et al., 2007; Kose et al., 2008), stock returns risk (Coles et al., 2006; Wright et al., 2007; Kose et al., 2008) and debt-to-equity ratios (Coles et al., 2006; Wright et al., 2007; Kose et al., 2008). From a management perspective, risk-taking means the extent to which the management is willing to engage in behaviours with *uncertain* and *significant* outcomes for the firm (Gilley et al., 2002). Therefore, managerial risk-taking can also be revealed through groundbreaking new ventures, the firm innovation, the research and development expenditures (Coles et al. 2006; Zahra, 2005; Dewett, 2007; Naldi et al., 2007; Wu, 2008).

However, appreciating managerial risk-taking with only financial measures led to controversial findings (Gilley et al., 2002). Three main facts can explain this inconsistency. First, managerial risk-taking is a multi-dimensional construct that can not be resumed in one feature (Gilley et al., 2002). Second, behaviour is too complex to be measured by only a financial model or measurement (March and Shapira, 1987). Third, the relationship between entrepreneurship and risk-taking is a context specific (Zahra, 2005; Wu, 2008).

Table 2 : Managerial risk-taking variables	
VOLT	the annual mean of daily volatility of stock return
MBV	the market-to-book-value
GRASS	the growth rate of assets
R&D	% of R&D expenditures on total assets
D_BCP	total debt divided by book value of capital
D_MCP	total debt divided by market value of capital
SC_MRSKT	the factor score

Therefore, we perform a factor analysis on six items. The factor score takes into account both financial and strategic dimensions. We select three financial: the stock return volatility (VOLT) and two debt-to-equity ratios (DBCP and DMCP) which respectively measure the total debt to the book value of capital



and total debt to the market value of capital. In order to have an exhaustive construct, we add three strategic components: the research and development expenditures (R&D), the market to book value (MBV), the annual rate of growth of total assets (GRASS).

We applied to these six items a factor analysis using principal axis extraction and a varimax rotation in SPSS (Ford *et al.*, 1986). Using a theory-based approach, we specified one factor while conducting the analysis. In fact, Entrepreneurial literature predicts that managerial risk-taking is a multi-dimensional construct (Gilley *et al.*, 2002; Zahra, 2005; Wu, 2008). Table 2 summarizes the six variables making up the global score of managerial risk-taking.

#### 4.1.2 Corporate governance variables

In order to point out the main attributes of corporate governance in Tunisian firms, we do take into account all the features of the ownership structure, the board commitment and the audit quality. We gather 18 variables related to corporate governance. We apply a second principal component analysis to draw up the most relevant attributes of corporate governance within the Tunisian listed companies.

Table 3 presents the variables used to describe the Tunisian corporate governance features.

ISH	the % of capital retained by the first shareholder
MAJSH	the % of capital retained by the three major shareholders
INSDSH	the % of capital retained by the insider shareholders
MGRSH	the % of capital retained by the manager
FFAMSH	the % of capital retained by the founder family shareholders
STASH	the % of capital retained by the State-owned shareholders
INSTSH	the % of capital retained by the institutional shareholders
FORSH	the % of capital retained by the foreign shareholders
NBDIR	the number of directors
NDUALITY	a dummy variable and equal 1 whenever the CEO is not the chairman of the board of directors
INDDIR	the % of independent directors
FFAMDIR	the % of the founder family directors
STADIR	the % of the public directors
INSDDIR	the % of the insiders
INSTDIR	the % of the institutional directors
FORDIR	the % of the foreign directors
CTAUDIT	a dummy variable that equals 1 whenever there is an audit committee within the firm
BIG4	a dummy variable that equals 1 whenever the external auditor belongs to a big 4

*Ownership structure:* To approach ownership structure of Tunisian firms, we measure the percentage of

capital retained by the first shareholder (1sh), the three major shareholders (majsh), the insider shareholders (insdsh), the manager (mgrsh), the founder family shareholders (ffamsh), the State-owned shareholders (stash), the institutional shareholders (instsh) and the foreign shareholders (forsh). We also include three dummy variables 1shfam, 1shsta and 1shfor that equal 1 when the first major shareholder is respectively a family, the State, a foreign institution.

**Board commitment:** To verify the board commitment, we evaluate the split of the functions of the CEO and the chairman with a dummy variable (nduality) which is equal to 1 whenever the CEO is not at the same time the board of directors' chairman and zero otherwise. The size of the board is proxied through the variable (nbdir) that measures the number of the directors. We include also variables measuring respectively the percentage of independent directors (inndir), the founder family directors (ffamdir), the public directors (stadir), the institutional directors (instdir), and foreign directors (fordir).

**Audit quality:** Audit quality is revealed through two dummy variables (ctaudit) and (big4). ctaudit is a dummy variable that equals 1 whenever there is an audit committee within the firm. Big4 is a dummy variable that equals 1 whenever the external auditor belongs to a big 4.

#### **4.1.3 Control variables**

We select the firm size as a control variable. It is approximated by the napierian logarithm of the book value of total assets. 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. As long as the firm grows, its wealth increases and so does its ability to manage bigger and riskier projects. The managers of small firms will be then more risk averse. Nevertheless, Sathe (2003) considers that larger companies might resist change and innovation because of their bureaucratic organisations. In fact, new ventures and radical innovation are expected to detailed and iterative reviews; which may stifle entrepreneurial ventures.

## **4.2 Econometric modelling**

Our empirical research is made up of three main steps. At first, we apply a principal component analysis with one factor to the six variables related to managerial risk-taking so as to construct a factor score of managerial risk-taking. Second, we apply another principal component analysis to corporate governance variables to draw out the main features. Third, we apply panel data regression to analyze the impact of corporate governance on managerial risk-taking.

### **4.2.1 Constructing the managerial risk-taking score**

A factor analysis using principal axis extraction and a varimax rotation in SPSS (Ford et al., 1986) and specifying one factor is applied to six variables related to managerial risk-taking, namely the stock return volatility, MBV of total assets, R&D, the annual rate of growth of total assets and two debt ratios. This method enables us to summarize the pattern of correlation within these variables in one factor score. This factor score represents the managerial risk-taking score. There is a multitude of tests to approve of the robustness of the factor analysis: The total variance explained reveals whether the factor model is fit. Besides, the Kaiser-Meyer-Olkin test reveals whether the partial correlations among variables are small. Moreover, the Bartlett's test of sphericity tests whether the correlation matrix is an identity matrix. Finally, the reliability analysis studies the properties of measurement scales and the composing items.

### **4.2.2 Measuring the corporate governance factors**

We apply a principal component analysis to the 18 corporate governance variables reported above. In order to draw the relevant features of corporate governance in the Tunisian listed firms, we consider 18

variables. However, to scrutinize which corporate governance feature contributes the most to promote managerial risk-taking; we cannot analyze the direct impact of all of these variables in one regression for two main reasons. First, the corporate governance variables are correlated; which might alter the estimations. Secondly, introducing a lot of regressors would decrease the degrees of freedom in the regression. Therefore, we apply a principal component analysis to the corporate governance variables mentioned above. This method 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. We use the same tests reported above to test the robustness and the appropriateness of the modelling factor.

#### 4.2.3 Testing the impact of corporate governance on managerial risk-taking

We apply panel data to test the impact of the corporate governance factors on the managerial risk-taking score. The firm size sets as a control variable. More specifically, we will test the following equation:

$$\text{Managerial risk-taking} = F(\text{Governance characteristics, Firm size}).$$

It is worth combining cross-section and time-series data because the concept that we search to explain (managerial risk-taking) varies over time and the time-series dimension of the variables of interest provides a wealth of information ignored in cross-sectional studies. Besides, pure cross-section regression leads to biased estimates because the firm-specific error term is likely to contain unobserved firm effects. The assumption that the regressors and the error term  $\epsilon_{it}$  are not correlated is then violated. Moreover, the use of panel data allows increasing the sample size and 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.

## 5. RESULTS AND ANALYSIS

Three sets of results will be displayed and discussed in this section: those corresponding to the managerial risk-taking score, the corporate governance features and finally the empirical association between corporate governance and managerial risk-taking for the specific case of Tunisian listed firms.

### 5.1 Empirical evidence on the managerial risk-taking score

Table 4 provides some descriptive statistics for the variables making up the global score of managerial risk-taking.

Table 4 points out the overall stability of the values of listed firms on the Tunisian Stock Exchange. The dispersion indicator VOLT is on average 1.7 per cent. This is due indeed to the stiff rules enacted by the Tunisian Stock Exchange and the Council of Capital Market. Such rules have cultivated risk aversion of managers. An additional striking result is the very low rate of research and development expenditures which is around 2.5 per cent of total assets. Innovation requires managerial risk-taking, which is not likely to be forthcoming unless managers receive appropriate incentives or pressures to overcome their naturally short sighted tendencies. Tunisian managers may reduce R&D to ensure that they would meet their short-term targets, even if they believe that the cut will destroy long-term value.

Besides, both the rate of MBVA and the annual rate of growth of total assets are quiet modest, on average respectively 8.57 and 2.46; which confirms that Tunisian managers are risk-avoiders. As mentioned by Wu (2008) when lacking intrinsic motives or extrinsic pressure to pursue such risky projects, managers reduce their innovative efforts to lower their personal costs. This is typically the case of



Tunisian managers.

Statistics	Minimum	Maximum	Mean	Median	Std Dev
VOLT	0.000	0.216	0.017	0.014	0.017
MBV	0.159	1 139.21	8.565	1.017	87.075
GRASS	-0.401	1.391	0.074	0.057	0.148
R&D	0.000	2.098	0.025	0.001	0.158
D_BCP	-12.047	45.041	4.438	1.986	5.582
D_MCP	0.001	42.948	5.1356	2.273	6.947
SC_MRSKT	-0.134	12.985	0.000	-0.087	1.000

More above, table 4 emphasizes 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 (Coles et al.,2006) it may not be the case in the Tunisian context as firms are compelled to borrow to finance their investments. They have not another alternative source of financing.

It is worth mentioning that all of these proxies are adopted from the previous literature. However, most prior theoretical and empirical work on managerial risk-taking makes use of several different proxies to measure risk-taking. In our study, we are going to construct a unique global score that takes into account all of these proxies. Table 5 approves of the robustness and the reliability of the constructed score.

Items	Factor 1	Communalities
VOLTE	0.000	1.000
MBV	1.00	1.000
XCEACTIF	-0.002	1.000
IMMINC	0.000	1.000
D_CP	0.000	1.000
D_CB	0.000	1.000
Total variance explained		100%
KMO Measure of Sampling Adequacy		0.497
Bartlett's test of sphericity (sig)		0.000
ANOVA's test of reliability (sig)		0.019

Table 5 shows that the total explained variance is around 100 per cent. It should be noted here that we specified while conducting the factor analysis 100 iterations as a maximum number of iterations for convergence for both extraction and rotation. Likewise, the total explained variance has increased to 100%. Besides, we specified one factor as the entrepreneurial literature predicts that managerial risk-

taking is a multi-dimensional construct. (Gilley et al., 2002; Zahra, 2005; Wu, 2008). The ANOVA's test approves of the reliability of the constructed score.

Both the Kaiser-Meyer-Olkin test and the Bartlett's test confirm that the score is appropriate. The reliability analysis studying the properties of measurement scale and the composing items also approves of the fittingness of the factor model. Such result reveals that both strategic investments (measured by growth rate, R&D expenditures, MBV) and financial policies (approached by debt ratios and stock return volatility) contribute to explain the managerial risk-taking.

## 5.2 Empirical evidence on corporate governance features

We provide in table 6 the descriptive statistics relative to the corporate governance variables submitted in a principal component analysis.

Table 6 : Descriptive statistics of corporate governance variables					
Statistics	Minimum	Maximum	Mean	Median	Std Dev
ISH	0.000	1.090	0.492	0.500	0.225
MAJSH	0.000	1.000	0.636	0.655	0.195
INSDSH	0.000	0.984	0.602	0.641	0.221
MGRSH	0.000	0.320	0.028	0.000	0.060
FFAMSH	0.000	0.976	0.180	0.000	0.293
STASH	0.000	0.937	0.204	0.000	0.265
INSTSH	0.000	0.897	0.295	0.285	0.253
FORSH	0.000	0.662	0.159	0.057	0.199
NBDIR	5.000	15.000	9.848	10.000	2.072
NDUALITY	0.000	1.000	0.234	0.000	0.424
INDDIR	0.000	0.556	0.084	0.000	0.133
FFAMDIR	0.000	1.000	0.176	0.000	0.287
STADIR	0.000	1.000	0.273	0.091	0.327
INSDDIR	0.000	1.000	0.373	0.400	0.215
INSTDIR	0.000	1.000	0.373	0.400	0.215
FORDIR	0.000	0.636	0.150	0.091	0.180
CTAUDIT	0.000	1.000	0.418	0.000	0.494
BIG4	0.000	1.000	0.403	0.000	0.491

Tunisian firms are typically controlled by one dominant shareholder which can be either families or State (Omri, 2003). Recently, Tunisian stock market attracts an increasing amount of foreign funds thanks to a favorable investment environment. In fact, statistics reveals that foreign participation in market capitalization increase from 21.39% on 2001 to 28% on 2007. Indeed, foreign investors may freely purchase up to a maximum of 50% and without restriction the shares of listed or unlisted Tunisian

companies. Hence, foreign blockholder ownership is higher in Tunisia than in other Arab countries such as Oman, Egypt and Jordan (Omran *et al.*, 2008).

Table 6 reveals that most of the capital is retained by the first shareholder. Moreover, the first three shareholders retain around 65 per cent of the capital. For this reason, we consider as the first three shareholders as major shareholders. It should be pointed also that the first shareholder belongs to the founder family for 36 per cent, is a State-owned shareholder for 38 per cent and is a foreign investor otherwise. Thus, it is worth investigating the shareholding of the founder family, the State, the foreign investors and actually the institutional shareholders.

Table 6 points out that about 27 per cent of the capital is owned by the families and 67 per cent of it belongs to the founder families. Besides, respectively 20 per cent and 16 per cent of the capital on average are held by the State and foreign investors. Such statistics remind of the importance of the Tunisian Investment Code which tries to establish better conditions promoting investments and attracting further foreign investors. The institutional shareholding is as well important and is around 30 per cent.

Table 6 also recapitulates the descriptive statistics of the board of directors. The number of directors is between 5 and 12, which is in line with the Tunisian code of commercial firms. It puts in evidence the scarce attendance and even the absence of independent directors in the board. It is on average 8 per cent but is 0 per cent for most Tunisian firms. These dependent directors likely belong either to the family (35 per cent on average) or to the State-owned companies (27 per cent on average) or also to financial domestic institutions (40 per cent on average) or foreign institutions (15 per cent on average). Another important stylized fact on Tunisian firms is that 77 per cent of managers are also the board's chairman. Given that the majority of Tunisian firms are family owned ones, we agree with Bartholomeusz and Tanewski (2006) who argue that family firms are considerably more likely than non-family firms to allow the CEO and the chairperson roles to be occupied by the same person. Together, these findings suggest that families maintain a close locus of control with little opportunity for external discipline. However, it is interesting mentioning that the part of capital held by the manager is too tiny and is around 2.8 per cent.

Table 6 reports the descriptive statistics relative to the audit quality. On average, 42 per cent of Tunisian listed firms have an audit committee. This figure shrinks to 26.8 per cent for non-financial firms versus 55.6 per cent for financial firms. Additionally, about 40 per cent of external auditors belong to a big 4. Additionally, such percentage falls to 33.8 per cent for non-financial firms versus 46.3 per cent for financial firms.

A principal component analysis is applied to all of these corporate governance variables in order to emphasize the most relevant features of the corporate governance in the Tunisian context.

The results summarized in table 7 wholly hold up the fittingness of the factorial analysis. The total explained variance is above 60 per cent which confirms that our results are globally satisfying. Besides, both the Kaiser-Meyer-Olkin test and the Bartlett's test of sphericity approve of the factor model's robustness.

<b>Table 7 : Construction of the corporate governance factors</b>				
	Factor 1	Factor 2	Factor 3	Factor 4
ISHSTA	-0.886			
ISHFAM	.880			
STADIR	-0.860			
STASH	-0.833			
FFAMSH	.746			
FFAMDIR	.744			
MGRSH				
INDDIR				
ISHFOR		.938		
FORSH		.735		
FORDIR		.728		
INSTSH		.657		
INSIDIR		.655		
MAJSH			.898	
ISH			.858	
INSDSH			.719	
NBDIR				
BIG4				.986
Total variance explained			61.926%	
KMO Measure of Sampling Adequacy			0.607	
Bartlett's test of sphericity			0.000	

To summarize, the corporate governance system can be split into four poles in the Tunisian listed firms: the firm founders (either the State or a family), the institutional firms (either domestic or foreign), the major shareholders and insiders, and finally the external auditor. To analyze the impact of corporate governance on managerial risk-taking, we consider these four factors instead of the 18 variables collected before.

Table 8 summarizes the four factors making up the corporate governance system in the Tunisian firms.

<b>Table 8 : Corporate governance factors</b>	
ST&FFAM	State and founder family
FORINST	Foreign and institutional shareholders
MAJINS	Major shareholders and insiders
AUDIT	External auditor

### 5.3 The empirical effect of corporate governance on managerial risk-taking

Table 9 recapitulates the regression results about the impact of the corporate governance on Tunisian managerial risk-taking. As a control variable, we add the firm size. The Hausman test is significant and hence the fixed effects model is selected. The fixed effects model is wholly robust with a significant fisher and an  $R^2$  above 79 per cent.

Our results put in evidence that the first factor has a significant and a positive impact on managerial risk-taking. This factor includes both shareholders and directors that stand for the founders of the Tunisian listed firms, namely the State and the wealthy families. Such result reveals three meaningful facts.

First, this result highlights a positive influence of Tunisian State-owned companies on managerial risk-taking which infirm our second hypothesis. This result can be explained as Tunisian government motivates managers to seek new opportunities and invest in research and development so as to promote the economy development and hence the nation prosperity. This result is not in line with the suggestions of La Porta *et al.* (2002) who argue that government ownership of firms politicizes the resource allocation process and reduces efficiency and is associated with slower financial and economic development. Our result is also contrary to the suggestions provided by kose *et al.* (2008) who conclude that low-investor-protection-countries often have low equity market capitalization, interventionist governments, and perhaps strong social interest groups. These "stakeholders" may press managers to avoid risky investments. Interventionist governments and powerful labour groups may prefer corporations to avoid risks because bankruptcy and unemployment are socially disruptive.

<b>Table 9: The impact of corporate governance on managerial risk-taking</b>	
State and founder family	0.594***
Foreign and institutional shareholders	-0.025
Major shareholders and insiders	0.122**
External auditor	0.043
Firm size	-1.376***
Constant	25.795***
N= 414 ; $R^2=0.79$ ; Prob>F=0.00 ; Hausman test : Prob> chi2 = 0.00	
**. ***: Respectively indicate significance level of 5% and 1%	

Second, such result emphasizes that Tunisian family-owned companies encourage adopting challenging and riskier strategies which infirm our third hypothesis. Thus, we agree with Zahra (2005) who invites managers to capitalize on the skills and talents of their family members in promoting entrepreneurship and selective venturing into new market arenas. We join him as we think that family ownership and involvement promote entrepreneurship and managerial risk-taking.

Third, this result makes a sense to the fourth hypothesis. In fact, the first factor includes the presence of founders in the board in addition to their ownership. A more complete view of founders influence in terms of effective decision processes should therefore consider not only the quality of decisions but also team members' commitment to the decision and the firm. Board directors must be deeply and personally involved in the process as they belong to the founders of the firm. Commitment thus provides one of the most important ingredients of the mindset needed to be entrepreneurial and consequently take risks.



Board commitment is a critical success factor when a firm uses risk-taking activities to give its performance (Sharman, 2002). Thus, it seems that the commitment of board members has a positive influence on managerial risk-taking, which approves of the fourth hypothesis.

Besides, we notice that the third factor which represents the influence of both the major shareholders and the insiders, through their either shareholding or belonging to the board of directors. The major shareholders retain the most of capital while the insiders are involved in the firm management. It is worth mentioning that major shareholders and insiders are often confused and mutually dependent in the Tunisian listed firms. The third factor has a significant and positive influence on managerial risk-taking. This result puts in evidence the eminent and positive weight of both major shareholders and insiders on managerial risk-taking. Such result, which confirms our first hypothesis, approves of the Shavel (1979) hypothesis that major shareholders aim at inciting managerial risk-taking in order to enhance the firm performance.

Following agency theory findings, we conclude that majority shareholders are favour to invest in risky strategies aiming to maximize the value created. Their short-term vision and their diversified portfolio enable them to be risk-takers. The agency theory highlighted the divergence in the risk profiles of shareholders and managers. In fact, management in general prefer to steer resources toward more near-term, less risky, more incremental, less profound R&D projects that offer smaller but more certain results. In this sense, management may prefer a more "exploitative" R&D strategy, whereas shareholders prefer an "explorative" R&D strategy (Hill and Snell, 1989). Therefore, innovation requires more managerial risk-taking, and, in turn, depends on the extent to which the interests of managers are aligned with those of shareholders through internal governance (Wu 2008).

However, table 9 reveals that neither institutional and foreign investors nor the auditor have a significant influence on managerial risk-taking, which disapprove of the fifth hypothesis. This result contradicts those of Pearce and Zahra (1992) but corroborates those of Davies *et al.* (2005) who showed that within a strategic perspective, institutional shareholders often judge more appropriate to cooperate with managers. Another explanation of this result is provided by La Porta *et al.* (2000) who consider that investor protection turns out to be crucial because, in many countries, expropriation of minority shareholders and creditors by the controlling shareholders is extensive. When outside investors finance firms, they face a risk, and sometimes near certainty, that the returns on their investments will never materialize because the controlling shareholders or managers expropriate them.

Finally, we notice that the size of the firm does have a significant but a negative impact on managerial risk-taking. Our results approve of the hypothesis of Sathe (2003) but disagree with those advanced by Smith and Stulz (1985). Larger companies in the Tunisian context are less motivated to promote radical innovation and new ventures due to their bureaucratic organizations.

#### 5.4 Robustness checks

Our research has considered both financial and non-financial firms in our analysis. Such choice is motivated by two main reasons. In fact, there is a unique code for commercial firms in Tunisia, which deals with the corporate governance. More above, the number of Tunisian listed companies is so reduced that it might lessen the degrees of freedom and lead to biased estimations. We have further tested the robustness of our estimations by re-estimating the regression after excluding the financial firms and comparing afterwards the results with the first ones.

<b>Table 10: Robustness checks</b>		
	<b>Full sample</b>	<b>Non-financial firms only</b>
State and founder family	0.594***	0.908***
Foreign and institutional shareholders	-0.025	0.120
Major shareholders and insiders	0.122**	0.085
External auditor	0.043	-0.030
Firm size	-1.376***	-1.522***
Constant	25.795***	27.097***
N	414	198
R <sup>2</sup>	0.79	0.87
corr(u <sub>i</sub> , X <sub>b</sub> ); Prob > F	0.000	0.000
all u <sub>i</sub> =0 ; Prob > F	0.000	0.000
Hausman test; Prob>chi2	0.000	0.045
** , ***: Respectively indicate significance level of 5% and 1%		

Table 10 points out that the results roughly remain unchanged. In fact, Tunisian State-owned companies and family owned ones have the same significant and positive influence as found previously. In addition, the firm size has a significant and a negative impact on managerial risk-taking after excluding the financial listed firms. However, the major shareholders and insiders have a non-significant but positive influence on managerial risk-taking in the non-financial listed firms while it used to be significant and positive in the full sample. Perhaps, this is due to the restricted number of the Tunisian non-financial listed firms. Such result would not alter our results. Indeed, the ownership concentration, the preponderance of family holdings and the State holdings leads to the fact that the founders of the Tunisian listed firms are usually the major shareholders and the insiders at the same time.

## 6. CONCLUSION

Our empirical results roughly adhere with agency theory predictions. Majority shareholders invest in challenging activities relying on a managerial risk-taking orientation. These investments increase shareholders' value, but not necessarily stakeholders' value because an expropriation problem can emerge explaining the reticence of institutional and foreign investors in investing in riskier strategies. As mentioned by Jensen and Meckling (1976) the return of the cash flows from projects to investors cannot be taken for granted, and that the insiders of firms may use these resources for their own benefit. Besides, managerial risk-taking requires corporate governance mechanisms; which is not likely to be forthcoming unless managers receive appropriate incentives or pressures to overcome their naturally shortsighted tendencies.

Scholars examining managerial risk-taking have found that governance factors alone provide insufficient explanations of managerial risk preferences (Catanach and Brody, 1993). In fact, governance does not function in isolation and must continually adapt to changing conditions (Strebel, 2004); in particular, some institutional characteristics clearly distinguish the Tunisian corporate governance regime from those

of the Western countries. For example, company boards in Tunisia, despite of the two-tiered design (implying a distinction between managing and supervisory functions), generally have not been considered effective control mechanisms because of their varying degrees of independence and different levels of power balance between boards and top managers.

On the basis of a 46 - listed firm sample observed on one ten – year period spreading from 1999 to 2008 and using the factor analysis method, we construct a global index of managerial risk-taking that combines both strategic and financial aspects of managerial decisions. Our results show that only firm founders and majority shareholders have a significant but above all a positive influence on managerial risk-taking which confirm agency theory predictions. These investors want the manager to pursue growth strategy and search new opportunities in order to enhance the firm performance and improve its competitiveness. However, larger firms appear to be less willing to take risks because of their bureaucratic organisations. Larger companies might resist change and innovation which may stifle entrepreneurial ventures.

Managerial risk-taking is yet puzzling. Little is known about why some organizations embrace entrepreneurial orientation and take risks while others do not. This study provides some initial exploratory empirical evidence that highlights organizational characteristics associated with the corporate governance features. We believe this study provides an initial foundation that can spawn additional research on managerial risk-taking within a developing country. Most studies are often carried in developed countries and recently in some East Asian economies. Our survey wishes to be the first study interested in this frame in Tunisia. It is worth noting that this work is more a case study in a developing market than it is a test of managerial risk-taking that could be generalized to other markets.

## REFERENCES

- Barney, Jay B., and Hesterly, William. (1996). Organizational Economics: Understanding the Relationship Between Organizations and Economic Analysis, In Clegg, S.R., Hardy, C. and Nord W.R. (Eds.), Handbook of organization studies, Sage publications, London, pp. 115-147.
- Bartholomeusz, Simon. and Tanewski, George A. (2006). “The Relationship Between Family Firms and Corporate Governance”. *Journal of Small Business Management*, 44, NO. 2: 245–267.
- Baysinger, Barry D. Kosnik, Rita D. and Turk, Thomas A. (1991). “Effects of Board and Ownership Structure on Corporate R&D Strategy”. *Academy of Management Journal*, 34: 205-214.
- Beasley, Mark S., Clune, Richard. and Hermanson, Dana 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.
- Beatty, Randolph P. and Zajac, Edward 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.
- Belanes, Amel and Hachana, Rym. (2009). “An Operationalization of Managerial Risk-Taking and its Performance Implications in Tunisian Context”. *Journal of Emerging Markets and Finance*, 8, NO.3: 289-314.
- Catanach, Anthony H., Jr., and Brody, R.G. (1993). “Intangible Assets and the Loan Portfolio and Deposit Mixes of Stock Savings and Loans”. *Accounting Horizons*, 7: 12-29.
- Coffe, John C., Jr. (1988). “Shareholders Versus Managers: the Strain in the Corporate Web”. In Coffe J.C., Jr., L. Lowenstein and S. Rose-Ackerman (Eds.), Knights, raiders and targets: the impact of hostile takeovers, New York, Oxford University Press, pp.77-134.
- Coles, Jeffrey L., Naveen, Daniel D. and Naveen, Lalitha. (2006). “Managerial Incentives and Risk-Taking”. *Journal of Financial Economics*, 79: 431-468.
- Davies, J.R., Hillier, D., and McColgan, P. (2005). “Ownership Structure, Managerial Behavior and Corporate Value”. *Journal of Corporate Finance*, 11: 645-660.
- Dewett, Todd. (2007). “Linking Intrinsic Motivation, Risk-Taking, and Employee Creativity in an R&D Environment”. *R&D Management*, 7, NO. 3: 197-208.

- Fama, E.F., and Jensen, M.C. (1983). "Separation of Ownership and Control". *Journal of Law and Economics*, 26: 301-26.
- Gilley, K. M., Walters, B. A. and Olson, B. J. (2002). "Top Management Risk-Taking Propensities and Firm Performance: Direct and Moderating Effects". *Journal of Business Strategies*, 19, NO. 2: 95-114.
- Gray, Samuel R., and Cannella, Albert A., Jr. (1997). "The Role of Risk in Executive Compensation". *Journal of Management*, 23, NO. 4: 517-540.
- Hall, A., Melin, L., and Nordqvist, M. (2001). "Entrepreneurship as Radical Change in Family Business: Exploring the Role of Cultural Patterns". *Family Business Review*, 14, NO. 3: 193-208.
- Hausman, J. A. (1978). "Specification Tests in Econometrics". *Econometrica*, 46: 1251-1271.
- Hill, C.W.L., and Snell, S.A. (1989). "Effects of Ownership and Control on Corporate Productivity". *Academy of Management Journal*, 32, NO. 1: 25-46.
- Jensen, M.C., and Meckling, W.H. (1976). "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure". *Journal of Financial Economics*, 3: 305-360.
- Khanchel El Mehdi, Imène. (2007). "Empirical Evidence on Corporate Governance and Corporate Performance in Tunisia". *Corporate Governance: An International Review*, 15, NO. 6: 1429-1441.
- Kose, K., Litov, L.P., and Yeung, B.W. (2008). "Corporate Governance and Managerial Risk-Taking: Theory and Evidence", [Available at SSRN: <http://ssrn.com/abstract=687206>]
- La Porta, Raphael., Lopez-De-silanes, Florencio., Shleifer, Andrei., and Vishny, Robert. (2000). "Investor Protection and Corporate Governance". *Journal of Financial Economics*, 58: 3-27.
- La Porta, Raphael., Lopez-De-silanes, Florencio., and Shleifer, Andrei. (2000). "Government Ownership of Banks". *Journal of Finance*, 1: 265-301.
- Loukil, Nadia. Hachana, Rym. and Omri, Abdelwahed. (forthcoming). "Ultimate Ownership and Control, Owner Identity and Stock Market Liquidity: Evidence from Tunisia". *Managerial Auditing Journal*.
- Miller, Danny. (1983). "The Correlates of Entrepreneurship in Three Types of Firms". *Management Science*, 29: 770-791.
- Naldi, Lucia., Nordqvist, Mattias., Sjöberg, Karin., and Wiklund, Johan. (2007). "Entrepreneurial Orientation, Risk-Taking and Performance in Family Firms". *Family Business Review*, 10, NO. 1: 33-47.
- Omran, Mohammed M., Bolbol, Ali., Fatheldin, Ayten. (2008) "Corporate Governance and Firm Performance in Arab Equity Markets: Does Ownership Concentration Matter?". *International Review of Law and Economics*, 28, NO.1:32-45.
- Pearce, John A., and Zahra, Shaker A. (1992). "Board Composition from a Strategic Contingency Perspective". *Journal of Management Studies*, 29: 411-438.
- Saidi, N. (2005). "Corporate Governance in the Arab Countries: Role of the Banking System in Ensuring Transparency and Disclosure". Forum on Corporate Governance in Banks and Financial Institutions in Line with International Standards and Practices, [available at <http://www.gcgf.org/ifcext/cgf.nsf/Content/Home>].
- Sathe, V. (2003). *Corporate Entrepreneurship: Top Managers and New Business Creation*. Cambridge, UK: Cambridge University Press.
- Sharman, Richard. (2002). "Enterprise Risk Management: the KPMG Approach". *Journal of Administrative Management*, 31, NO 3: 26-28.
- Shavel, S. (1979). "Risk Sharing and Incentives in the Principle and Agent Relationship". *Bell Journal of Economics*, 10: 55-73.
- Shleifer, Andrei., and Vishny, Robert W. (1997). "A Survey of Corporate Governance". *Journal of Finance*, 52: 737-784.
- Smith, Clifford., and Stultz, Rene M. (1985). "The Determinants of Firms' Hedging Policies". *Journal of Financial and Quantitative Analysis*, 20: 391-405.
- Strebe, Paul. (2004). "The Case for Contingent Governance". *Sloan Management Review*, 45, NO. 2: 58-66.
- Wiseman, Robert M., and Gomez-Mejia, Luis R. (1998). "A Behavioral Agency Model of Managerial Risk-Taking". *Academy of Management Review*, 23, NO. 1: 133-153.

- Wright, Peter., Kroll, Mark., Krug, Jeffrey A. and Pettus, Michael. (2007). "Influences of Top Management Team Incentives on Firm Risk-taking". *Strategic Management Journal*, 28: 81-89.
- Wu, Hsueh-Liang. (2008). "When Does Internal Governance Make Firms Innovative". *Journal of Business Research*, 61, NO. 2: 141-153.
- Zahra, Shaker A. (1996). "Governance, Ownership, and Corporate Entrepreneurship: the Moderating Impact of Industry Technological Opportunities", *Academy of Management Journal*, 39, NO. 6: 1713–1735.
- Zahra, Shaker A. (2005). "Entrepreneurial Risk-Taking in Family Firms". *Family Business Review*, 18, NO. 1: 23-40.
- Zajac, E., and Westphal, J. (1994). "The Costs and Benefits of Managerial Incentives and Monitoring in Large U.S. Corporations: When is More Not Better?". *Strategic Management Journal*, 15: 121–143.

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### **Notes**

<sup>1</sup> Statistics on 2005 from Lagoarde-Segot and Lucey (2008) study.

<sup>2</sup> The ratio of market capitalization to GDP