

MANAGERIAL ENTRENCHMENT: MODEL AND IMPACT ON THE SHAREHOLDERS' WEALTH

Nejla Ould Daoud Ellili*

Abstract

The aim of this paper is to measure the degree of the managerial entrenchment and to study its impact on the performance of the firm. The model of the entrenchment's degree is based on both the personal characteristics of the manager and on the ownership structure of the firm. According to our empirical studies carried on 815 firms during the period 2001-2004, the entrenchment's degree depends significantly on the age and on the tenure of the manager as well as on the relative power of the managerial ownership.

Moreover, the relationship between the managerial entrenchment and the performance of the firm is not linear. It takes the form of a harmful entrenchment then of a beneficial one as the entrenchment's degree increases. This result shows that the managerial entrenchment is not always harmful to the shareholders' wealth. Empirically, by exceeding a certain critical level (0.81), the managerial entrenchment becomes beneficial to the shareholders.

Keywords: Corporate Finance, Agency Theory, Ownership Structure, Managerial Entrenchment, Shareholders Wealth, Panel Data

*Department of Finance, College of Business Administration, Abu Dhabi University, UAE

Tel: +971-2-5015720

Email: nejla.ellili@adu.ac.ae

1. Introduction

The conflict of interests between the shareholders and the managers due to the separation between the ownership and the control of the firm (Berle and Means, 1932) was the subject of several studies in corporate governance (Jensen and Meckling, 1976; Williamson, 1988; Morck, Shleifer and Vishny, 1988).

In fact, the managers can act in the detriment of the shareholders' wealth and adopt strategies of entrenchment in order to be maintained in their position. The entrenchment's phenomenon is relatively recent in the framework of the organizations' theories such as the theory of agency (Jensen and Meckling, 1976) and the theory of the transactions' costs (Williamson, 1988). The entrenchment supposes that the managers seek to accumulate their power in their firms in order to obtain larger freedom, to preserve their position and to increase their compensation.

The agency theory is largely developed by Jensen and Meckling (1976). These authors define the agency relationship as a contract by which one or several people (principal) engage another person (the agent) to act on his/her behalf. According to this theory, the managers are supposed to maximize their utility in terms of wealth and non pecuniary advantages. The control of the managers' behavior is ensured by various disciplinary systems (such as: the

ownership structure, the financial policy, the board of directors...)

The theory of the transactions costs is interested in contracts between agents (Williamson, 1985). These contracts are qualified by incomplete since they define only the general framework without specifying all the details. This incompleteness offers the advisability to each contractor to injure his/her partner. According to this theory, Williamson argues that the board of directors is not always an effective control mechanism since it could be affected by the managers who are seeking to protect their human capital. According to this idea, the manager is considered as a principal asset renting his/her human capital to the shareholders.

The entrenchment theory (Morck, Shleifer and Vishny, 1988) supposes that the managers seek to get revenues in detriment of the firms' partners. It also supposes that the managers are able to neutralize the various control mechanisms in order to increase their power such as the discretionary latitude. The notion of the managerial entrenchment is strongly related to the notion of the "Moral Hazard" that could motivate the different agents to not respect all the clauses of a contract especially if they are not constrained and if the contract enables them to improve their personal situation (Brousseau, 1993). In addition, an entrenched manager could protect him/herself against the risk of dismissal. In fact, he/she could make the

shareholders accept some decisions not maximizing their wealth.

Castanias and Helfat (1992) suppose that the manager can create revenues and share them with the shareholders, a part of these revenues is related to the human capital of the managers. Whereas, the takeovers are not considered any more as a governance mechanism but a device allowing the companies to maintain the most qualified managers.

The analysis of the managerial entrenchment has a principal obstacle which is the measure of the managerial entrenchment degree. Indeed, the real managers' motivations to undertake certain actions are not observable, in particular, if their effects are the reduction in the control or the increase of the managers' discretionary space. Consequently, the managerial entrenchment strategies could be explained by the managerial opportunism. The impact of the managerial entrenchment on the performance of the company is not clear because the decrease of the corporate performance resulting from a strategic action could be explained by many factors, such as: an awkwardness of the manager, an unfavorable environment, or a resistance from the staff... It would be interesting to isolate the effect of the actions undertaken by the managers on the shareholders' wealth. Although all these difficulties, it seems to us interesting to try to find a measure of the managerial entrenchment degree and to study its impact on the shareholders' wealth.

This paper will be interested in modeling the managerial entrenchment degree and then in studying the relationship between the performance of the firm and the managerial entrenchment. This relationship is non linear (Pigé, 1999) and remains to identify the degree from which the entrenchment becomes beneficial to shareholders. The managerial entrenchment, such as defined by Castanias and Helfat (1992) can be characterized by a positive influence on the performance of the firm. Once the measure of the entrenchment is identified, we will study the relationship between the managerial entrenchment and the performance of the firm. This paper contributes to the financial literature, by trying on one hand to measure the entrenchment's degree based on both the manager's personal characteristics and on the ownership structure of the firm and on the other hand to study the relationship between the managerial entrenchment and the performance of firm.

The remainder of this paper will be presented as following. In the second section, we will expose the review of the literature while distinguishing the Anglo-Saxon models from the French ones (the list is far from being exhaustive). In the third section, we will try to measure the managerial entrenchment degree based on both the manager's personal characteristics and on the ownership structure of the firm. The objective is to determine a concrete measure of the managerial entrenchment and to test its impact

on the shareholders' wealth. The fourth section will be devoted to the presentation of the empirical analysis. The empirical results will be the subject of the fifth section. The sixth section will be devoted to the study of the relationship between the managerial entrenchment and the performance of the firm. The conclusion of our article will be presented in the seventh section.

2. The review of the literature

The managerial entrenchment was the subject of several international studies such as the initial Anglo-Saxon models (Jensen and Meckling, 1976; Morck, Shleifer and Vishny, 1988; Shorts and Keasy, 1999; Hillier and McColgan, 2001) (2.1) and the French models (Charreaux, 1997; Paquerot, 1997; Pigé 1999) (2.2).

2.1. The Anglo-Saxon models

The majority of studies in the Anglo-Saxon literature use "proxy" variables to measure the managerial entrenchment. The common measure used in those studies was the managerial ownership. Indeed, the managerial ownership was studied according to two divergent points of view in the corporate governance literature, if we consider the paper of Jensen and Meckling (1976), on one side, and the ones of Fama and Jensen (1983) and of Morck, Shleifer and Vishny (1988) on the other.

Jensen and Meckling (1976) affirm that an important managerial ownership ensures the alignment of the interests of the managers on those of the shareholders. If the managers hold an important percentage of the ownership in their firms, they would be more concerned by consequences of their actions on their wealth (the hypothesis of *the convergence of the interests*). This hypothesis confirms that an important percentage of managerial ownership will be associated with a high value of the firms. According to Jensen and Meckling (1976), the high managerial ownership will limit the managers in:

- Getting benefit from their position;
- Expropriating the shareholders' wealth;
- Consuming private benefit; and
- Taking decisions not maximizing the value of the firm.

The hypothesis of "the convergence of the interests" was criticized by Fama and Jensen (1983) who affirm that the managerial ownership could influence negatively the agency relationship. In fact, the managerial ownership would cause significant agency costs. Fama and Jensen (1983) affirm that, instead of reducing the problems of managerial opportunism, the managerial ownership could entrench the current manager and increase the agency costs. By having a high percentage of the capital, the manager would be able to neutralize the mechanisms

of control which would reduce the performance of the firm.

Morck, Shleifer and Vishny (1988) affirm that a high managerial ownership increases the ability of the managers in making decisions not maximizing necessarily the value of the firm but improving their own wealth and their job security (the hypothesis of *the managerial entrenchment*).

The empirical results of the relationship between the managerial ownership and the value of the firm diverge. Demsetz and Lehn (1985) and Demsetz and Villalonga (2001) do not find a significant relationship between the level of the managerial ownership and the value of the firm. In the regressions of Demsetz and Lehn (1985), there is not any significant relationship between the operating performance and ownership concentration. According to them, the costs associated to the managers' control depend on the environment stability. More is the environment is stable, less are the costs. Moreover, their empirical results confirm that the ownership structure does not have any significant effect on the value of the firm. Demsetz and Villalonga (2001) use the method of the Double Least Square in order to take in account the possible endogeneity of the ownership structure. Their empirical results affirm that the ownership structure is endogenous and it is always selected to maximize the performance of the firm.

In the same spirit of research, Holderness and Sheehan (1988), Morck, Shleifer and Vishny (1988), McConnell and Servaes (1990), Shorts and Keasy (1999) and Hillier and McColgan (2001) find a nonlinear relationship between the managerial ownership and the performance of the firm. In general, these studies confirm that a weak managerial ownership ensures the alignment of the interests of the managers on those of the shareholders whereas a high managerial ownership leads to the managerial entrenchment.

Hermalin and Weisbach (1988) find a positive relationship between the value of the firm and the managerial ownership for a level of ownership ranging between 0% and 1%, then negative between 1% and 5%, positive between 5% and 20% and finally negative for more than 20%.

Morck, Shleifer and Vishny (1988) confirm that the nonlinear relationship is due to the coexistence of two contradictory hypotheses: «the convergence of the interests "and "the managerial entrenchment ". The piece-wise regressions show that the Q of Tobin increases if the manager holds between 0% and 5%, decreases if the manager holds between 5% and 25%, then increases if the manager holds more than 25%. These authors chose arbitrarily the two breakpoints basing on the regulation of the SEC (Securities Exchange Commission). This regulation requires the legal disclosure of the contributions higher than 5%. To determine the breakpoint of 25%, these authors

were based on the result of Weston¹ (1979) stipulating that beyond 20-30%, a takeover cannot succeed.

McConnell and Servaes (1990) find a curvilinear relationship between the value of the firm and the managerial ownership. The Q of Tobin increases initially up to the managerial ownership reaches 38%, and then decreases if the ownership becomes concentrated between the hands of the manager.

Shorts and Keasy (1999) study the relationship between the managerial ownership and the performance of 225 British firms during the period 1988-1992. Their results show that the relationship between the two variables is curvilinear and the British managers become entrenched with a level of ownership ranging between 16% and 42%. Comparatively with the results of Morck et al. (1988), in U.K, the managers become entrenched with a higher level of ownership higher those in U.S.A. This result could be explained by the difference between the governance systems imposed in each country.

Kole (1995) affirm that the difference between the results of Morck et al. (1988) and those of McConnell and Servaes (1990) depend on the differences in size of the analyzed firms. The first sample contains only 371 companies of big size whereas the second contains 1173 companies in 1975 and 1093 in 1986. Kole adds that on average, the level of the managerial ownership necessary to the entrenchment is positively related to the degree of ownership concentration.

In the extension of the previous research, Hillier and McColgan (2001) set up a polynomial model relating the managerial ownership to the performance of firms (measured by Q of Tobin). Their empirical results show that there are five distinct intervals:

- 1- An interval of a weak managerial ownership [0 - 7.01%] where the different mechanisms of control dominate the managerial behavior and ensure the maximization of the firm value (Fama, 1980 and Jensen and Ruback, 1983).
- 2- An interval of an intermediate managerial ownership [7.01% - 26%] where the managers start to accumulate voting rights and consequently power in the firm. They can act in detriment to the shareholders' wealth and get benefit from the pecuniary and non pecuniary advantages. This result makes possible the empirical validation of the managerial entrenchment (Morck, Shleifer and Vishny, 1988, and McConnell and Servaes, 1990)
- 3- An interval of a relatively low managerial ownership [26% - 51.4%] where blockholders are able to influence the managerial decisions and to incite the manager to act in their interest and to follow a strategy of firm value maximization (Morck, Shleifer and Vishny, 1988).

¹ WESTON J. F. (1979). The tender take-over. *Merger and acquisitions*, 74-82

- 4- An interval of a fairly high managerial ownership [51.4% - 75.7%] where the managers hold almost the totality of the firm control. The probability of a hostile takeover is almost zero. This lack of control of the financial market and of the shareholders carries out to the reduction of the firm value.
- 5- An interval of a very high managerial ownership [75.7% - 100%] where the manager becomes almost the sole owner of the firm what carries out to the value firm maximization (Morck et al., 1988; Shorff and Keasy, 1999, Faccio and Lasfer, 1999).

Gul and Wah (2002) examine the effect of the convergence of the interests and of the managerial entrenchment on the accounting informativeness and this by comparing the intervals of managerial ownership already specified by Morck et al. (1988). The accounting informativeness represents the response of the market to disclosure of the accounting incomes and it is measured by the regression coefficient of the financial value on the accounting incomes. These authors find that the informativeness is higher in the intervals of convergence of interests than in those of the managerial entrenchment. Consequently, if the interests of the managers are aligned on those of the shareholders, the accounting incomes will be of better quality since the managers will be less likely to manipulate the financial statements.

McConnell and Servaes and Lins (2004) study the relationship between the managerial ownership variation and the variation of the firm performance (measured by Q of Tobin). They use the curvilinear model already specified in the paper of McConnell and Servaes (1990). Empirically, McConnell et al. (2004) find that the effect of the increase in the managerial ownership on the firm performance is positive in low levels of the ownership and declines as this level increases. The effect becomes, in contrary, negative if the initial level of the managerial ownership is relatively high (around 50%). These results corroborate those of McConnell and Servaes (1990) and affirm that the manager becomes entrenched once he holds 50% of the firm capital.

Ellili (2006) finds that the relationship between the managerial ownership and the performance of the firm is non linear. In fact, it takes the shape of the alignment, then of the entrenchment, then again of the alignment, as the managerial ownership increases. The manager possessing a part of capital between 5.72% and 55.47% is more susceptible to be entrenched and he/she prefers a low ratio of debt to escape both the shareholders' control and the market's pressures of performance.

All these studies consider that the impact of the managerial entrenchment on the firm performance is always negative and it is determined from the interval where the managerial ownership is negatively related to the firm performance.

In the next section, we will expose French models which are based primarily on the description of the managerial entrenchment process and not on the ownership structure of the firm.

2.2. The French models

The French models (Paquerot, 1997; Charreaux, 1997; Pigé, 1999) are based on the description of the managerial entrenchment process in the firm.

Paquerot (1997) supposes that the managers have to carry out various arbitrations to maximize their utility. In addition, the managers should find a balance situation between the power they wish to have in the firm, their reputation on the labor market and the advantages they seek to get. Paquerot supposes also that the reputation of the managers on the labor market does not have any effect on their power of negotiation and the market allocates to the managers a good reputation when their power in the firm is proportional to their merit in terms of performance. In contrary, when the managers have too much power, the labor market sanctions them in reason of their entrenchment. In consequence, the managers seek to optimize their power in their firm taking into account the effects of reputation on the labor market.

The second arbitration sought by the entrenched managers is between their compensation and their job security. The increase in their compensation can encourage their competitors to request the management of the firm and in consequence to cause an internal and external concurrence. To increase, at the same time, their compensation and their job security, Paquerot adds that the managers can invest in specific assets in order to increase the shareholders dependence to their presence.

The third and the last arbitration presented by Paquerot is between the power and the compensation. This author advances that the managers seek to increase their power of negotiation in the firm through their entrenchment, therefore they would be able to increase their compensation.

In the definition of the manager's utility function, Paquerot (1997) takes into his account the power of the managers and their various advantages which they could get from the firm in terms of compensation, advantages or a job security.

When the managers invest in profitable specific assets (acquisitions, internal growth...), they improve their reputation on the labor market and increase their power and their advantages. The not profitable specific investments could produce the same effects since they increase the information asymmetry in the firm and escape the managers from control of the shareholders.

The model presented above shows the various arbitrations carried out by the managers. In addition, the managerial entrenchment strategy is not fixed, it is built day after day as the managers become able to

increase their power in their firm and to develop their human capital. Consequently, the taking into account of the variable time is essential in the entrenchment strategy's models.

Charreaux (1997) affirms also that the entrenchment strategy is not fixed but dynamic. This strategy passes at least by three stages during which the managers try to modify the constraints of the various partners. The first stage is "*the managers' valorization*" during which the managers make their best to show their managerial quality and to gain the shareholders' confidence because they are highly controlled and easily replaceable. In these conditions, the decisions of the managers are attentively observed by the partners.

To increase their value, the managers undertake only the profitable investments to increase the shareholders' wealth. By improving the performance of the firm, the manager start to obtain a capital of reputation that Williamson (1988) considers a specific capital. The manager starts neutralizing the different controls when the various partners become dependent on his presence.

The second stage is "*the control reduction*" during which, the managers try to reduce the control effectiveness such as the installation of specific investments and the increase of the information asymmetry. In addition, the managers can make the information more complex. In this stage, the managers can change the structures of the different controls such us the structure of the board of directors by nominating internal members or strongly dependent on their presence at the top of the firm.

The third and the last stage are "*the increase in consumption*" during which the managers, knowing that the cost of their replacement will be prohibitory for the partners, get benefit from a high compensation or from high advantages. In this stage, the managers have sufficient ability allowing them to set up specific investments not maximizing necessarily the shareholders' wealth. Consequently, their partners are not incited to sanction the entrenched managers since the costs of reorganization resulting from the replacement of these managers are very high.

Pigé (1999) proposes a model measuring the managerial entrenchment by integrating the notion of the membership of the managers in the *relational networks*. According to this author, the manager seeks to increase the degree of his entrenchment by tying relationships with members of the board of directors. With this way, the entrenched manager can free himself, at least partially, of the shareholders' control and guarantee important personal advantages. With this intention, Pigé (1999) proposes a theoretical function of entrenchment to estimate the level of the annual managerial entrenchment including the personal characteristics of the manager (age, tenure and nature of the diplomas). He also proposes an original methodology to estimate the coefficients of this theoretical function, considering that the level of

the managerial entrenchment is, indirectly, reflected in the board of directors' decision to maintain the manager, or in contrary, to replace him. Pigé (1999) uses a sample of 258 French companies' managers during the period 1966-1990. Its model shows that the managers having diplomas from the large French universities such as the ENA, X Mine and X Pont are more likely to have higher degrees of entrenchment.

The Interest of the model of Pigé (1999) is double. On the one hand, it makes possible to formalize the approach of the entrenchment and based on the concept of relational networks. On the other hand, it allows estimating the impact of the managerial entrenchment on the shareholders' wealth and evaluating its beneficial and negative effects. In addition, the model of Pigé (1999), determines two possible effects of the managerial entrenchment on the performance of the firms. According to this author, the efforts deployed by the entrenched manager are beneficial and allow increasing the performance of the firm. But, by exceeding a certain level of entrenchment, ensuring the reduction of replacement risk, the manager starts to arbitrate more and more in his favor which could reduce the performance of the firm.

In the next section, we will try to measure the degree of managerial entrenchment in combining both the Anglo-Saxon models based on the ownership structure of the firm and the French models based on the description of the managerial entrenchment process.

3. The measurement of the managerial entrenchment degree

The model of the entrenchment presented by Pigé (1999) is limited since it retains a restricted number of variables. It doesn't include the relationship between the managers and the different shareholders of the firm. In our model, we will take in consideration both the relationship between the managers and the directors and the relationship between the managers and the various shareholders (mainly blockholders and the institutional shareholders).

In the absence of a consensus on the effect of the managerial entrenchment on performance of the firm, we will initially try to model the degree of the managerial entrenchment and to study thereafter its effect on the performance of the firm. The first question that we have asked is how to measure the managerial entrenchment. In this section, we suppose that the level of the managerial entrenchment does not depend only on the managerial ownership but also on other variables such as the relative power of the managerial ownership, his age of the manager and his tenure.

In our analysis, we suppose that the level of the managerial entrenchment depends positively on the power relative to the managerial ownership.

H₁: The level of the managerial entrenchment depends positively on the relative power of the managerial ownership.

In the actual analysis, we define the relative power of the managerial ownership by the relationship between the managerial ownership and the total of the blockholders ownership and the institutional ownership.

$$RP = MO / (BO + IO)$$

RP = the relative power of the managerial ownership;

MO = the managerial ownership;

BO = the blockholders ownership and

IO = the institutional ownership.

Mathematically, to avoid the undetermined form of the relative power of the managerial ownership in the companies not having blockholders nor institutional ownership, we transform the preceding formula in:

$$RP = MO / 1 + (BO + IO)$$

In this way, RP is ranging between two extremes values 0 and 1.

- RP = 0 if MO = 0, in this case the manager does not have any relative power to his ownership limiting his entrenchment;

- RP = 1 if MO = 1 (BO + IO = 0), in this case the manager has the totality of the ownership helping him to entrench himself.

According to Eaton and Rosen (1983), the age of the manager reflects his degree of aversion to the risk. According to them, the old managers adopt less risky decisions in order to safe their career. While approaching to the retirement age, the human capital of the manager becomes less mobile discouraging him to leave his firm. The risk constitutes a variable key for the manager in their personal and strategic decision-makings. In addition, the old managers and close to the retirement are more likely to entrench themselves.

In the same spirit of research, McClelland and Barker (2004) find a curvilinear relationship between the age of the manager and the performance of the firm. These authors affirm that the young managers take more risky decisions necessary to the performance of the firm in order to improve their reputation on the labor market. On the other hand, old managers, and more particularly those which approach the retirement age, adopt less risky decisions in order to safe their end of career.

H₂: The level of the managerial entrenchment depends positively on the age of the manager

The number of years that the manager passes in the firm before his nomination can determine his level of entrenchment. Longer the manager passes time in the firm, more he will be able to have implicit contracts with the various partners increasing in

consequence his discretionary space and his informational capital.

We include in our modeling of the managerial entrenchment the variable tenure of the manager as an additional determinant of his level of entrenchment.

H₃: The level of the managerial entrenchment depends positively on his tenure in the firm before being named a Chief Executive Officer.

In our model, we suppose that the initial level of the managerial entrenchment depends on his relative power to the managerial ownership, on his age at the time of nomination as well as on his tenure before the nomination.

$$E_{i,0} = a_1 X_{1(i,0)} + a_2 \log(X_{2(i,0)}) + a_3 \log(1+X_{3,i})$$

$E_{i,0}$: The initial level of the managerial entrenchment;

$X_{1(i,0)}$: The relative power of the managerial ownership at the moment of the nomination;

$X_{2(i,0)}$: The age of the manager at the time of his nomination and

$X_{3,i}$: The tenure of the manager before his nomination.

At the end of the first year, the managerial entrenchment depends on the initial level of the entrenchment, of the accumulation of the relative power to the managerial ownership and on his tenure in the firm as a chief executive officer.

$$E_{i,1} = E_{0,1} + a_4 (X_{1(i,1)} - X_{1(i,0)}) + a_5 \log(t)$$

$X_{1(i,1)} - X_{1(i,0)}$: The variation of the relative power to the managerial ownership

t: The tenure of the manager as a Chief Executive Officer (one year)

At the end of the year t, the level of the entrenchment will depend on the level of the entrenchment at the beginning of the year and the tenure of the manager as a CEO:

$$E_{i,t} = E_{i,t-1} + a_4 (X_{1(i,t)} - X_{1(i,t-1)}) + a_5 \log(t)$$

$$E_{i,t} = a_1 X_{1(i,0)} + a_2 \log(X_{2(i,0)}) + a_3 \log(1+X_{3,i}) + a_4 (X_{1(i,t)} - X_{1(i,0)}) + a_5 \log(1) + a_5 \log(2) + \dots + a_5 \log(t)$$

$$E_{i,t} = a_1 X_{1(i,0)} + a_2 \log(X_{2(i,0)}) + a_3 \log(1+X_{3,i}) + a_4 (X_{1(i,t)} - X_{1(i,0)}) + a_5 \log(1 * 2 * \dots * t)$$

$$E_{i,t} = a_1 X_{1(i,0)} + a_2 \log(X_{2(i,0)}) + a_3 \log(1+X_{3,i}) + a_4 (X_{1(i,t)} - X_{1(i,0)}) + a_5 \log(t!)$$

With:

$X_{1(i,t)} - X_{1(i,0)}$: The accumulation of the relative power to the managerial ownership.

To estimate the coefficients of this theoretical function, we suppose that the performance of the firm is affected indirectly by the degree of the managerial entrenchment. With this intention, we set up, following the paper of Pigé (1999), a logistic regression with a dependent variable "Maintain". It takes the value of 1 if the manager is maintained and

0 if he is replaced during the year. The decision of maintain can be written in the following way:

$$Y_{i,t} = a_6 X_{4(i,t)} + a_7 X_{5(i,t)} + E_{(i,t-1)} + \varepsilon_{i,t}$$

With:

$X_{4(i,t)}$: The financial performance of the firm reflecting the performance of the manager (since the performance of the manager is not directly observable)

$X_{5(i,t)}$: A binary variable which takes the value of 1 if the manager of the firm in question is a director in another firm and 0 otherwise. This variable indicates the crossing possibility of the boards of directors of different firms

$E_{(i,t-1)}$: The level of the entrenchment at the beginning of the year.

The residue of this function corresponds, for one part, with the managerial entrenchment and for another part, with other reasons not taken into account such as the takeover of the firm.

In order to estimate the various coefficients of the theoretical function of the managerial entrenchment, we should carry out, in the first step, a logistic regression. The residues of this regression will be considered as dependant variable of the first equation. Then we will be able to determine the relative weights of the various factors of the managerial entrenchment and consequently to calculate the theoretical level of the managerial entrenchment at the end of the year.

4. Empirical analysis

4.1 Constitution of the sample and the choice of the variables

In our study, we have used several sources of data: the data base of "corporate library" and the annual reports published on Edgar Scan.

The data base of the "corporate library" comprises panel data during the period 2001-2004 of the ownership structure of 1 500 American companies (the managerial ownership, the ownership of the blockholders and of the institutional shareholders), the personal characteristics of the managers such as the age and the tenure and the performance of the firms approximated by the total shareholders return.

We have completed these data with the financial and accounting characteristics of the companies from the annual reports published on Edgar Scan. These characteristics comprise information on the debt level (long-term debts and current debts), the expenditure in research and development, the size of the firms and the volume of their sales. The non availability of accounting and financial data of certain firms decreased the number of companies of our final sample to 815 companies in the period 2001-2004. The Banks, the insurance companies were excluded from our sample because of their specific regulation.

The variables included in our analysis could be divided into two groups:

- 1- Variables of governance;
- 2- Variables relating to the personal characteristics of the managers.

Table 1. Variables of governance

Variables	Notation	Measure
Structure of property		
Managerial ownership	MO	The part of capital held by the manager
Blockholders' ownership	BO	The part of capital held by the external shareholders having more than 5%
Institutional ownership	IO	The part of capital held by the institutional shareholders
The relative power to the managerial ownership	RP	The relationship between the managerial ownership and the sum of blockholders' ownership and institutional ownership

Table 2. Variables relative to personal characteristics of the manager

Variables	Notation	Measure
The age	X_2	$\ln(\text{age})$
The tenure	X_3	$\ln(X_3+1)$

4.2 Descriptive statistics

The descriptive statistics show that the variation of the power relative to the managerial ownership (see appendix 1) is not monotonous. There is a fall during the period 2001-2003 and a rise in 2003-2004.

The age of the manager also knows two types of variations (see appendix 2): a rise in 2001-2003 and a fall in 2003-2004. By comparing between the

variations of the age of the manager and those of the relative power to the managerial ownership, we can note that the two variables vary in an opposite way. This enables us to anticipate that the old managers do not have a high relative power to their ownership and can seek other types of power such as the power of expertise, competence or prestige.

The tenure of the manager does not have remarkable variations except a fall in 2003-2004

when the tenure passed from 10 to 8 years (see appendix 3). This allows us to expect that the managers having a long tenure are generally old and do not have a high relative power to their ownership. The long tenure in the company allows the managers to get benefit from other types of power (board of directors, compensation, and defense against takeover...)

5. Empirical results

The decision of maintain or replacement of the managers is not simply limited to the performance of the manager. It is a complex decision and taking into account many factors measuring the process of the managerial entrenchment. To measure the level of the managerial entrenchment in the companies, we will start by estimating the coefficients of the theoretical function of the entrenchment.

According to our empirical results, the performance of the manager (measured by the total shareholders return) and the crossing of board of directors explain in a very significant way the decision of maintain or of replacement of the manager (see appendix 4).

In the context of the logistic functions, Stata posts the "p-value" of chi 2 evaluating the total significativity of the model. In our case, in the logit with fixed effects, the "p-value" of chi 2 is higher than 5% and the pseudo-R² is very weak. In consequence, the estimation with fixed effects is not very significant. In the logit with random effects, the "p-value" of chi 2 and the pseudo-R² are very high. This result enables us to affirm that the estimation with random effects is better.

Our empirical results show that performance of the manager and the crossing of the boards of directors explain in a very significant way the decision of maintain or of replacement of the manager. The coefficient of the variable performance is positive and significant at 1%. In addition, if the manager is powerful, he is more likely to be maintained so the firm and the shareholders can get benefit from his competences and his know-how. The coefficient of the variable crossing is also positive and significant at 1%. The manager pertaining to a relational network is less likely to be replaced. The relational network can be considered a guarantee against his replacement or an external support in the case of a weak performance.

The dependent variable is very complex because it measures the decision of the board of directors to maintain or to replace the manager. This decision does not depend only on the performance of the manager or on his level of entrenchment but also on many risks related to the manager (for example, his health) and to the firm as well (for example, Industry sector)

Our model is not a probabilistic, it does not determine if the manager will be or not replaced, but

simply allows to explain if such or such variable contributes to maintain the manager (through a strong entrenchment).

In the next step, the residues of the logistic regression can be used to estimate the coefficients of the theoretical function of the entrenchment (see appendix 5).

The estimation of panel data with fixed effects confirms the absence of individual effects. In addition, the test of Chow shows also that there is no structural change in the various groups of data. Consequently, we will consider the pooled estimation that means that we will consider the data as N*T observations panelized and we run a standard regression. The tests of VIF and of Breush-Pagen invalidate the respective presence of the problems of multicollinearity and of heteroscedasticity. On the other hand, the test of Durbin-Watson affirms the presence of the autocorrelation problem. To correct this problem, we will use the method of Cochrane-Orcutt which consists in using a transformed model².

The coefficient of the variable initial relative power to the managerial ownership is positive and significant at 1%. This shows that the manager having a high power related to his ownership at the time of his nomination is more likely to be entrenched in his firm in order to preserve his personal interests.

The coefficient of the variable initial Age is positive and significant at 1%. This means that if the manager is old at the time of his nomination, he seeks to be entrenched in the firm since his chances to find better compensations in other firms are weak.

The coefficient of the initial tenure is positive but non significant. The weak explanatory ability of this variable is not expected since in general, the manager having an important tenure before being named CEO has a good experience.

The coefficient of the variable accumulated power of ownership is positive and significant at 1%. This result indicates that the manager, by cumulating his shares in the capital of the firm, reinforces both his discretionary power in the firm and his power of negotiation.

The coefficient of the variable accumulated tenure is also positive and significant at 1%. This shows that the manager, while advancing in his post, consolidates both his position in the firm and his relational networks.

Before testing the impact of the managerial entrenchment on the performance of the firm, we eliminate from our sample the observations of which the measure of the managerial entrenchment degree is

² The method of Cochrane-Orcutt consists of three stages:

- 1- The estimation of the initial model by the method MCO and the recovery of the residues,
- 2- The calculation of the coefficient of correlation (ρ) between the residues
- 3- The transformation of all variables x_i of the initial model into $(X_{i,t} - \rho X_{i,t-1})$.

negative since this measure indicates that the manager is not still entrenched in the firm. This elimination made us lose 945 observations. For the remainder of the observations, the degree of the managerial entrenchment varies between 0 and 1.85. The value of 0 reflects a null entrenchment whereas the value of 1.85 reflects a high degree of entrenchment. With this manner and in the case of our sample, the degree of the managerial entrenchment is always located in the interval] 0; 1.85].

6. The managerial entrenchment and the performance of the firm

In the financial literature, the effect of the managerial entrenchment on the performance of the firm was a subject of many researches. The results of these researches show two possible effects, namely: the harmful effect and the beneficial one.

The studies of Shleifer and Vishny (1989) and of Morck et al. (1988) show that the managerial entrenchment is harmful, it enables the managers to escape from the control of the shareholders. The managers seek to undertake specific investments to their competences. With this way, the managers reduce competition on the labour market. According to this hypothesis, the managers manage their firms without the constraint of the maximization of the shareholders' wealth.

Castanias and Helfat (1992) affirm that the installation of the specific investments by the managers allows generating revenues profitable to the shareholders. These authors estimate that the accumulation of the managerial capital during his mandate period promises to the shareholders certain profitability from the undertaken projects. In consequence, the managerial entrenchment is not always harmful to the shareholders' wealth. The managers can preserve their position as long as they generate to the shareholders a minimum of profitability.

The study of Stiglitz and Edlin (1992) reinforces the mitigated results on the entrenchment's nature. The managers can increase the revenues by eliminating the competition on the labour market through investments generating a strong asymmetry of information.

After all these contributions, we are unable to know exactly the effect of the managerial entrenchment on the performance of the firm. To determine this effect, we will initially start by measuring the degree of the managerial entrenchment in the firm and study its effect on the performance of firm.

In order to study the impact of the managerial entrenchment on the financial performance of the firms, we use a nonlinear regression whose dependent variable is the performance of firms and the independent variables are the measure of the

entrenchment and the squared measure of entrenchment.

Mathematically, our equation can be written as following:

$$X_{5(i,t)} = \alpha_{i,t} + \beta_1 E_{i,t-1} + \beta_2 (E_{i,t-1})^2 + \mu_{i,t}$$

The empirical results of this equation will be posted in appendix 6. The estimation of the relationship between the managerial entrenchment and the performance of firms with fixed effects and the test of Chow invalidate the presence of the individual effects. Therefore, we consider the pooled estimation. The results posted in appendix 6 show that relationship between the managerial entrenchment and the performance of the firm is nonlinear. This seems to indicate that the managerial entrenchment could be beneficial to the shareholders' wealth. The test of VIF and Wald invalidate the respective presence of the problems of multicollinearity and autocorrelation. In addition, the test of Breush-Pagen confirms the presence of heteroscedasticity. To correct the last problem, we divide all the variables of our model by the variable size defined by the logarithm of the total assets.

The coefficient of the variable entrenchment is negative and significant at 1%. This proves that the entrenchment is harmful to the shareholders' wealth corroborating the results of Morck et al.(1988) and Short and Keasy (1999). While entrenching himself in the firm, the manager will be able to obtain a high freedom allowing him to act to the detriment of the shareholders' interests.

The coefficient of the variable entrenchment square is positive and significant at 1%. This proves that the manager sufficiently entrenched seeks to set up strategies to enrich the firm. Our result corroborates those of Stiglitz and Edlin (1992) stipulating that the impact of the managerial entrenchment on the performance of the firm is positive.

The calculations made on the coefficients of the entrenchment and of the entrenchment square show that the critical level of the managerial entrenchment is 0.81³. In terms of the sample, 64.71% of the companies have managers of which their level of the entrenchment is lower than 0.81. The results confirm that the performance of the firms measured by the total shareholders return is negatively related to the degree of the managerial entrenchment if it is lower than 0.81 and positively related if it is higher than 0.81. Our results invalidate those of the majority of the studies made on the relationship between the performance of the firms and the managerial entrenchment (approximated by the managerial

³ The inflection point of the quadratic function is calculated as follows: let's note Entrenchment by X: $tsr = -33.010 X + 20.050 X^2$. The inflection point is found by deriving y (tsr) by X: dy/dx and in solving the simple equation

ownership). Indeed our results show that the relationship between the two variables is nonlinear. It is negative in a low level of entrenchment and positive in a high one.

7. Conclusion

In our study, we were primarily interested to model the degree of the managerial entrenchment and to study its impact on the performance of the firm.

In this paper, we tried to determine a measure of the managerial entrenchment by using both the personal characteristics of the manager and the ownership structure of the firm. Empirically, the degree of the managerial entrenchment is given starting from the power relative to the managerial ownership, his age and his tenure. These factors related to the personal characteristics of the manager explain the difference in the managers' behavior of the identical firms. Our results show that the performance of the manager and the crossing of the boards of directors constitute important factors of the managerial entrenchment allowing him to decrease the risk of his replacement.

In addition, we found that the managerial entrenchment does not have always a negative impact on the performance of the firm. Our results do not confirm those of Jensen and Meckling (1976), Morck et al. (1988) and of Short and Keasy (1999) affirming that the entrenchment is always harmful to the shareholders' wealth. In fact, the relationship between the performance of the firm and the managerial entrenchment is nonlinear. It takes the form of a negative impact then of a positive one. More particularly, the manager whose degree of entrenchment is weak (<0.81) is more likely to act to the detriment of the shareholders' interests but a manager having a high degree of entrenchment is more likely to manage the firm to the shareholders' benefit. This last result corroborates that of Pigné (1999) while showing that there is a critical point from which the managerial entrenchment becomes beneficial. Castanias and Helfat (1992) also affirm that the shareholders can get benefit from the strategy of the managerial entrenchment in getting benefit from the creation of the specific managerial revenues highly dependent on the knowledge and the competences of the current manager.

One of the limits of this study is the omission of some variables of governance which could be inserted in the theoretical function of the managerial entrenchment such as the composition of the board of directors since the high presence of external directors in the board of the company could limit the strategy of the managerial entrenchment.

References

1. Agrawal, A., & Knoeber, C. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders.

- Journal of Financial and Quantitative Analysis*, 31, 377-397.
2. Agrawal, A., & Mandelker, G. (1990). Broad shareholders and the monitoring of managers, the box of antitakeover charter amendment. *Journal of Quantitative Financial and analysis*, 25, 143-167.
3. Agrawal, A., & Mandelker, G. (1992). Shark repellent & the role of institutional investors in corporate governance. *Managerial and Economics Decision*, 13, 15-22.
4. Berle, A., & Means, G.C. (1932). The modern corporation & private property, 2nd edition, 1956, Macmillan.
5. Brickley, J., Lease, R.C., & Smith, C.W. (1988.) Ownership structure and voting one antitakeover amendments. *Journal of Financial Economics*, 20, 267-292.
6. BROUSSEAU, E. (1993). L'économie des contrats. PUF.
7. Castanias, R.P., & Helfat, C. E. (1992). Managerial and windfall rents in the market for corporate control. *Journal of Economic Behavior and Organization*, 18, 153-184.
8. Charreaux, G. (1997). Le gouvernement des entreprises. Economica.
9. Chen, C.R., & Steiner, T.L. (2000). Tobin' S, managerial ownership, and analyst coverage. *Journal of Economics and Business*, 52, 365-382.
10. Demsetz, H. (1983). The structure of ownership and the theory of firm. *Journal of law and Economics*, 26, 375-390.
11. Demsetz H., & Lehn, K.. (1985). The structure of corporate ownership: & causes consequences. *Journal of Political Economy*, 93, 1155-1177.
12. Demsetz, H., & Villalonga, B. (2001). Ownership structure & corporate performance. *Journal of Corporate Finance*, 7, 209-233.
13. Denis, D., Denis, D., & Sarin, A. (1995). Performance exchanges following signal management dismissals. *Journal of Finance*, 50, 1029-1057.
14. DENIS, D., DENIS, D., & SARIN, A. (1997). Ownership & signal executive turnover. *Journal of Financial Economics*, 45, 193-121.
15. EATON, J., & ROSEN, H.S. (1983). Agency, delayed compensation, and the structure of executive remuneration. *Journal of Finance*, 38, 1489-1505.
16. Ellili, N. O. D., (2006). Managerial entrenchment and performance of firms. SSRN. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=882763.
17. FAMA, E.F., (1980). Agency problems and the theory of the firm. *Journal of Political Economy*, 88, 288-307.
18. Fama, E.F., & Jensen, M.C. (1983). Separation of ownership & control. *Journal of law and Economics*, 26, 301-326.
19. Grossman, S., & Binder, O. (1988). One share-one vote & the market for corporate control. *Journal of Financial Economics*, 20, 175-202.
20. Gul, F., & Wah, L.K. (2002). Insider entrenchment, board leadership structure and informativeness of earning. <http://ssrn.com/abstract=304399>.
21. Harris, M., & Raviv, A. (1988). Corporate capital control contests and structure. *Journal of Financial Economics*, 20, 55-86.

22. Hermalin, B., & Weisbach, M.S. (1988). The determinants of board composition", *Rand Journal of Economics*, 19, 589-606.
23. Hillier, D. E., & McColgan, P. (2001). Insider ownership & corporate been worth: Year empirical test from the United Kingdom corporate sector. Financial Management Association (FMA) Meeting, Paris.
24. Himmelber, G. C.P., Hubbard, R.G, & Palia, D. (1999). Understanding the determinants of managerial ownership and the link between ownership and performance. *Journal of Financial Economics*, 53, 353-384.
25. Hirshleifer, D. (1993). Managerial reputation and corporate investment decisions. *Financial Management*, Summer, 145-160.
26. Holderness, C.G., & Sheehan, D.P. (1988). The role of majority shareholders in publicly held corporation: year exploratory analysis. *Journal of Financial Economics*, 20, 317-346.
27. Jensen, M.C., & Meckling, W.H. (1976). Theory of the firm, managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3, 305-360.
28. Jensen, M.C., & Warner, J.B. (1988). The distribution of power among corporate managers, shareholders, and directors. *Journal of Financial Economics*, 20, 3-24.
29. Jensen, M.C. (1983). Organization theory and methodology. *Accounting Review*, 58, 319-339.
30. Jensen, M.C. (1986). Agency costs of free cash-flow, corporate finance, and take-over. *American Economic Review*, 76, 323-329.
31. Jensen, M.C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance*, 48, 831-880.
32. Kole, S.R. (1995). Managerial Measuring ownership: A comparison of sources of ownership data. *Journal of Corporate Finance*, 1, 413-435.
33. McClelland, P., & Barker V.L. (2004). The interaction of CEO and the ownership control in publicly traded firms: performance implications ", Working paper, School of Business, University of Kansas.
34. McConnell, J., & Servaes, H. (1990). Additional evidence one equity ownership and corporate been worth. *Journal of Financial Economics*, 27, 595-612.
35. McConnell, J., Servaes, H., & Lins .K. (2004). Changes in insider ownership and changes in the market value of the firm. *CEPR Discussion paper n°4411*, <http://papers.ssrn.com/abstract=560084>.
36. Morck, R. Shleifer, A., & Vishny, R.W. (1988). Management ownership and market valuation. *Journal of Financial Economics*, 20, 293-315.
37. Morck, R. Shleifer, A., & Vishny, R.W. (1990), "Do managerial objectify drive bad acquisitions? *Journal of Finance*, 45, 31-48.
38. Paquerot, M. (1997). Stratégie d'enracinement des dirigeants, performance de la firme et structure de contrôle. *Le gouvernement des entreprises*, Economica.
39. Pffefer, J. (1881). Power in organizations. Pitman.
40. Pound, J. (1988). Proxy contests & the efficiency of shareholder oversight. *Journal of Financial Economics*, 20, 237-265.
41. Pige, B. (1999). Enracinement des dirigeants et richesse des actionnaires. *Finance Contrôle Stratégie*, 3, 131-158.
42. Shleifer, A., & Vishny, R.W. (1986). Broad shareholders and corporate control. *Journal of Political Economy*, 94, 461-479.
43. Shleifer, A., & Vishny, R.W. (1989). Management entrenchment: the box of managers specific investments. *Journal of Financial Economics*, 25, 123-139.
44. Short, S H., & Keasy, K. (1999). Managerial ownership and the performance of firms: Obviousness from the U.K. *Journal of Corporate Finance*, 5, 79-101.
45. Stiglitz, J.E., & Edlin, A.S. (1992). Discouraging rivals, managerial rent seeking and economic insufficiencies. NBER Working Paper, n°4145.
46. Williamson, O.E. (1988). Corporate finance and corporate governance. *Journal of Finance*, 43, 567-591.

APPENDIXES

Appendix 1. Descriptive statistics of the relative power to the managerial ownership (%)

Relative power to the managerial ownership	2001	2002	2003	2004
Mean	1676	1177	5.36	5.84
Standard deviation	1192	1176	7.22	8.53
Minimum	0.00	0.00	0.00	0.00
Maximum	76.82	62.61	54.44	71.65

Appendix 2. Descriptive statistics of the age of the manager

The age of the manager	2001	2002	2003	2004
Mean	54	55	56	51
Standard deviation	8	8	8	8
Minimum	35	56	37	31
Maximum	86	87	88	84

Appendix 3. Descriptive statistics of the tenure of the manager

The tenure of the manager	2001	2002	2003	2004
Mean	9	9	10	8
Standard deviation	9	8	9	10
Minimum	0	0	0	1
Maximum	51	52	53	37

Appendix 4. Explanatory variables of the decision of maintain or replacement of the manager

independent variables		Fixed effects		Random effects	
		Coefficients	Value T	Coefficients	Value T
Performance Crossing	$X_{4(i, T)}$	0.999	0.18	1.011	4.11 ***
	$X_{5(i, T)}$	1.40	1.40	18834	1088 ***
Pseudo-R ²		26.13%		85.58%	
Wald chi2 (2)		2.05		144.08	
Prob > chi 2		0.359		0.000	

*** Significant at a degree of confidence of 1%.

Appendix 5. Estimation of the coefficients of the theoretical function of the managerial entrenchment

independent Variables		Fixed effects		Pooled estimate	
		Coefficients	Value T	Coefficients	Value T
Constant		2.024	5.51 ***	1.271	5.98 ***
initial RP	$X_{1(i,0)}$	0.309	0.32	1.958	2.98 ***
initial Age	$X_{2(i,0)}$	0.014	1.96 **	0.013	3.14 ***
initial Tenure	$\log(1+X_{3,i})$	0.820	2.55 **	0.104	1.41
cumulated RP	$(X_{1(i,0)} - X_{1(i,0)})$	3.951	1024 ***	2.194	7.72 ***
Cumulated Tenure	$\log(t!)$	0.047	5.96 ***	0.018	4.10 ***
		F 42.42 Prob> F 0.000		R ² 75.34 R ² adjusted 73.15 Prob>F 0.000	

** Significant at a degree of confidence of 5%.

*** Significant at a degree of confidence of 1%.

Appendix 6. the relationship between the managerial entrenchment and the performance of the firms

independent variables		Fixed effects		Pooled estimate	
		Coefficients	Value T	Coefficients	Value T
Entrenchment (Entrenchment) ²	$E_{i, T-1}$	-26.065	-3.59 ***	-33.010	-6.20 ***
	$(E_{i, T-1})^2$	15992	2.79 ***	20050	4.01 ***
		F 146.23 Prob> F 0.000		R ² 63,12 R ² adjusted 61.15 F 0.000 Critical level 0.81	

*** Significant at a level of confidence of 1%.