Does Corporate Governance Affect Managerial Optimism? Evidence from NYSE Panel Data Firms

Ezzeddine Ben Mohamed · Amel Baccar ·
Richard Fairchild · Abdelfettah Bouri

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Abstract Previous research in behavioral corporate finance has demonstrated that managerial optimism has an explanatory power and it can explain observed distortions in corporate decisions. What makes it special is its being a major source of investment cash flow sensitivity and it can affect the firm value since it causes overinvestment or overinvestment (Heaton in *Financ Manag* 31(2):33–45, 2002; Malmendier and Tate in *J Financ* 60(6):2661–2700, 2005a, *Eur Financ Manag* 11(5):649–659, 2005b; Pacific-Lin et al. in *Basin Financ J* 13:523–546, 2005; Huang et al. in *Pac Basin Financ J* 19:261–277, 2011). However the behavioral corporate finance literature is still silent about the ability of corporate governance mechanisms to affect the CEOs' optimism bias. In this paper, we present an original essay that aims to discuss the determinants of managerial optimism by adopting a corporate governance framework. We concentrate especially on the effect of

Ezzeddine Ben Mohamed is a PhD Student at the University of Sfax Tunisia. He is a member of the Unit of Research Corporate Finance and Financial Theory (COFFIT).

E. Ben Mohamed (✉) · A. Baccar · A. Bouri
Unit of Research Corporate Finance and Financial Theory (COFFIT), University of Economics
and Management of Sfax, P.O. Box 1088, 3018 Sfax, Tunisia
e-mail: benmohamed.ezzeddine@yahoo.fr

A. Baccar
e-mail: emel_baccar@yahoo.fr

A. Bouri
e-mail: Abdelfettah.Bouri@fsegs.rnu.tn

Present Address:
E. Ben Mohamed
Mlichette, 5046 Monastir, Tunisia

R. Fairchild
School of Management, University of Bath, Bath, BA2 7AY, UK
e-mail: mnsrf@management.bath.ac.uk

corporate governance mechanisms regarding this bias. We construct a managerial optimism using the “Net Buyer” criterion as developed by Malmendier and Tate (J Financ 60(6):2661–2700, 2005a) and we regress directly the optimism measure to some well-documented mechanisms of corporate governance. We also explore the effect of some CEO’s personal characteristics on the emergence of managerial optimism. Departing from a sample of American manufactures’ firms, we find strong evidence concerning the effect of internal corporate governance structure on managerial optimism bias.

Keywords Managerial optimism · Corporate governance mechanisms · Behavioral corporate governance

Introduction

In the standard finance literature, corporate governance is assumed to be a good solution to solve agency problems that may derive from the potential conflict of interest between directors and officers on the one hand and shareholders on the other (Fama 1980; Fama and Jensen 1983; Jensen and Meckling 1976). Departing from a traditional assumption that tries to explain corporate distortions with reference to two standard explanations: the agency problems and the asymmetric information problems, even if managers are rational due to the market imperfections and the agency conflicts, we can observe distortions in corporate decisions.

The combination between agency conflicts (Fama 1980; Fama and Jensen 1983; Jensen and Meckling 1976), managerial entrenchment (Shleifer and Vishny 1989) and managerial opportunism reinforced by the asymmetric information hypothesis (Myers and Majluf 1984) can explain some observable distortions such as overinvestment. The existence of overinvestment problems is largely explained by the existence of market frictions. In this framework, the role of corporate governance is to delimit the discretionary strategies of managers. The absence of well architected corporate governance mechanisms may contribute to the existence and the robustness of the “empire-building hypothesis”. The empire-building hypothesis constitutes one of the most important problems in corporate governance literature. According to this theory, CEOs will tend to increase the investment project under their control in order to increase the firm’s size and to escape from shareholders’ control. As it is prescribed by Jensen (1986), in the presence of free cash flow, managers may overinvest and so they can accept a negative net present value project.

The aim of the existence of effective corporate governance mechanisms is to eliminate or reduce the effect of the agency conflicts (Marnet 2004) and asymmetric information on CEO’s decisions. In other words, its objective is to neutralize the effect of well documented problems in corporate finance and especially the agency conflicts. In sum, the aim of corporate governance in previous year was oriented to resolve agency problems and distortions in corporate decisions that result from it or from markets imperfections.

A key feature in the standard corporate finance literature is that managers are supposed to be rational. But what happens if we revise this restrictive hypothesis and criticize the managerial rationality story? If we claim that managers are not fully rational, then we proceed from the standard corporate finance to the behavioral one.

The behavioral corporate finance is a new direction of research that incorporates CEOs' psychological biases and emotions into their decision making process (Fairchild 2005; Baker et al 2012; Shefrin 2001). In contrast to the standard corporate finance literature, behavioral corporate finance one supposes that managers are not fully rational (Shefrin 2001). They are normal and as such they may make sub-optimal decisions. This approach is imposed and it should be developed since it can offer an original explanation concerning corporate decisions' distortions (Heaton 2002; Baker et al 2012; Fairchild 2008).

Heaton (2002) initiates an open debate concerning the effect of managerial optimism on corporate investment decision. With a simple corporate finance model, he theoretically demonstrates that in the case of managerial optimism, firm's investment will be strongly sensitive to internal funds.

Managerial optimism leads to investment cash flow sensitivity, optimistic managers will refuse to invest in positive NPV when the internal liquidity is short. This is because they always believe that their firms are unevaluated and so rising external finance will be costly. Optimistic CEOs will always prefer internal financing funds among other external sources. They also overinvest when cash flow is ample and they may have a suboptimal corporate investment strategy by accepting negative NPV projects (Malmendier and Tate 2005a, b; Lin et al 2005; Huang et al. 2011; Campbell et al 2011). Managerial optimism pushes CEOs to be more innovators but this will be conditioned by internal cash flow availability.

This means that the observed distortions in the corporate governance decisions are not only the result of traditional factors. Even with the absence of agency conflicts and asymmetric information problems, we can document for distortions such as the case of corporate investment. Managers will over or under-invest regarding their optimism level and the availability of internal cash flow. Such result highlights the fact that managers' psychological bias constitutes potential factors that may push them to take sub-optimal decisions and to increase observed corporate distortions, as a result.

Now, an interesting question is to discuss the determinants of managerial optimism. It is a crucial way to isolate what contributes to the emergence of managerial optimism? Even if optimism bias is closed to the manager personality, it will be a difficult task to propose a model for this unobservable bias. In what follows, we endeavor to detect the potential determinants of managerial optimism by testing the impact of CEOs' personal characteristics and firm's corporate governance mechanisms concerning the existence of such a bias.

Our primary goal is to investigate the effect of some well-documented internal governance mechanisms on the existence of optimism bias. Is corporate governance able to reduce the optimism bias? We aim to determine the optimal corporate governance structure that can succeed to weed out the appearance of CEOs'

optimism bias. Even if the CEOs' personal characteristics such as age and career may affect optimism bias, it will be very difficult to explore such a result. It will be more practical and logical to modify or adjust the corporate governance mechanisms than to nominate new CEOs that apparently have desirable characteristics that may neutralize the emergence of an excessive optimism that help them to be more rational.

Theoretical basis of this study derives from previous empirical studies in the domain of investment cash flow sensitivity under managerial optimism. The work of Huang et al. (2011) has demonstrated that the agency costs increase the effect of managerial optimism on investment cash flow sensitivity. This is a source of motivation to propose that corporate governance mechanisms may have a great impact on managerial optimism.

Even if the financial literature is silent about the existence of an explicit impact of corporate governance mechanisms on managerial optimism, there are implicit recognitions on the potential role of these mechanisms to delimit the CEOs' irrationalities that derive from their psychological biases. In their paper, Malmendier and Tate (2005b) discuss the implications of the evidence of managerial effects on corporate investment. They initiate a debate concerning the installation of powerful governance mechanisms that will be able to reduce managerial irrationalities that derive from his optimism bias. However, they only briefly evoke the important role of the board of directors while others important mechanisms are absent in their discussion.

A seductive question that comes to the fore is the new role of corporate governance with irrational or normal managers.

This paper contributes to the existent literature at different levels: (1) it is the first paper that try to discuss the effect of corporate governance mechanisms on managerial optimism. (2) It investigates as well the determinants of managerial optimism by testing the effect of some personal characteristics of CEOs on optimism bias existence. (3) Finally, it opens a new original debate concerning the ability of corporate governance to delimit managerial distortions by eliminating or reducing the effect of optimism bias.

The remainder of this paper is organized as follows: in the first section, we provide a review of the literature on the potential effect of corporate governance and some CEOs personal characteristics on managerial optimism. The second section deals with methodological details, the empirical model and variables' measurement. Section three presents data. Section four summarizes our empirical findings. Section five is oriented to discuss corporate governance's implications of our work. Finally, section six offers concluding remarks.

Literature Review

Corporate finance literature is still silent about the potential effect of corporate governance mechanisms on controlling the CEOs' psychological bias and emotions. Beyond its traditional role, we put special emphasis on the potential effect of corporate governance mechanisms on managing CEO's optimism. We concentrate

on this bias since a wave of recent empirical papers in the behavioral corporate finance literature demonstrates that the optimism bias has a great impact on explaining corporate irrationalities (Heaton 2002; Malmendier and Tate 2005a, b, 2008; Campbell et al. 2011; Lin et al. 2005).

These studies clarify that managerial optimism is a major source of corporate distortions since it prohibits CEOs to act in a full rational way. It is of interest to explore the new potential role of corporate governance mechanism on resolving distortions that derive from traditional sources such as agency costs and other distortion that arise from behavioral corporate finance literature. This means that those are relative to the errors that CEOs commit.

Paredes (2005) instantiates the concept of “good-faith business errors”. He makes the distinction between managerial errors that derive from bad managerial behaviors such as corruptions, and those caused by managerial psychology and emotions commonly denoted as good-faith errors. This last group of managerial errors is far from traditional explanations, even if managers are not opportunistic and with the absence of agency conflicts and asymmetric information problems, CEOs may take sub-optimal corporate decision under the effect of their optimism biases (Heaton 2002;¹ Malmendier and Tate 2005a). Paredes (2005) formulate the potential role of corporate governance using this interrogation [...] Starting from the premise that CEOs are overconfident, what can be done about it? Countering CEO overconfidence requires more than aligning incentives and motivating the CEO to work hard. He argues that corporate governance can be a product of corporate governance.

By the recognition of the great effect of managerial psychology, especially optimism bias on corporate decisions, corporate governance should move in order to include new mission: the governance of managerial psychology (Paredes 2005). Previous research papers adopt implicit assumption on the potential effect of corporate governance structures to delimit the effect of CEOs’ optimism (Malmendier and Tate 2005a, b; Huang et al. 2011).

In this study, we try to develop some testable predictions in order to give some logical answers, even partial answer, to the next question: Can corporate governance succeed to delimit managerial optimism?

CEO’s Tenure and Managerial Optimism

Graham et al. (2009) initiate a debate concerning the manner of how long a CEO stays in the job could affect the kind of corporate actions he is willing to take. They validate the effect of tenure in corporate policies elaboration. An interesting result that should be explored here is that they find a negative correlation between CEO’s optimism and his tenure and the value of the correlation coefficient that goes into (0.048). A large tenure may offer to manager a good knowledge of his firms and

¹ In his seminal paper on the effect of managerial optimism on corporate investment, Heaton (2002) assume the absence of agency conflicts and asymmetric information problems. Hence, the one source of distortion in corporate decisions will come from managerial optimism.

make him in a comfortable situation since it may have a good relationship with the internal and the external environment agents such as employees and borrowers.

Tenure will mean also a good experience in the domain of firms' management and his ability to resolve problems that can emerge during his tenure. This can make him more optimistic. Regarding this short theoretical development concerning the effect of CEO's tenure and his optimism level we can formulate the following prediction.

H₁: A long CEO's tenure can increase his optimism level.

CEO's Ownership and Managerial Optimism

It has been demonstrated that CEOs ownership can reduce the corporate investment distortions while optimism increases the investment cash flow sensitivity. CEO's ownership is used as a proxy of managers' risk aversion. This means that when a manager is holding in his firms, he will have more risk averse. Managers that have a large holding in their firms run a great risk. They invest their human capital and reputations and they should have risk averse to avoid any potential default that causes the loss of their reputation.

CEOs' ownership may be a strong potential corporate governance mechanism that can succeed to reduce managerial optimism. The argument here is that in the case of owner's managers, the risk aversion will act in an opposite sense of their optimism bias. Even if managers will be optimistic, their ownership can succeed to reduce this bias in order to minimize some irrational behaviors such as investment cash flow sensitivity. Hence, we formulate the next prediction that ties CEOs ownership with their optimism bias.

H₂: Managerial ownership in their firms will be negatively correlated with CEO's optimism bias.

Ownership Concentration and Managerial Optimism

Ownership concentration supposes the existence of a strong control against the managers' decision and choices. Ownership concentration can reduce managerial optimism since it contributes to the installation of a powerful control system. Managers will feel themselves in uncomfortable situation and that they are under control. Hence, we predict that the ownership concentration can reduce managerial optimism.

H₃: Ownership concentration will be negatively correlated with CEO's optimism bias.

Board Characteristics and Managerial Optimism

The board of directors as a central mechanism of internal corporate governance can affect managerial optimism. The choice of the board of directors' characteristics as potential determinant is motivated by previous research on investment cash flow sensitivity and especially those of Malmendier and Tate (2005a, b). They implicitly

propose that corporate governance can be a solution to delimit managerial irrationalities, especially those that derive from managerial optimism.

The board of directors' efficiency depends on some norms concerning its characteristics (Jensen 1993). In what follows, we develop the possible effect of the board mechanisms on managerial optimism.

Duality and Optimism

Bebchuk et al. (2009) argue that a board of directors is weak if the CEO is also the chair of the board, due to arising conflicts of interest.

The duality in corporate governance is the case where the same person assures two titles; CEO and chairman of the board. Jensen (1993) argues that the separation between the post of CEO and chairman of the board improve the ability to control of directors. The association of management (decision) and supervision function can increase managerial optimism. This is because in the case of the duality of functions, CEO will be at the same time a decision maker and a controller. This will open the door to apply his optimism bias if it exists.

H₄: *Duality will be positively correlated with CEO's optimism bias.*

Board Independence and CEO's Optimism

It has been relatively an old question the effect of board independence on its performance. Waves of studies report a positive effect of board independence on effective monitoring of CEOs to ensure a convergence of their interests to those of shareholders. It is a key step to make executives effectively pursue shareholder rather than self-interests. In sum, the literature in corporate finance documents that the existence of independent managers can perform CEOs' monitoring tasks in more efficient manner (Fama 1980; Fama and Jensen 1983; Eisenherdt 1989).

Independent directors, as they were described by Jensen (1983), are assumed to act as if they are external experts. They will do their best in order to obtain additional terms. We predict that if managers are optimistic, the existence of a powerful independent board should reduce managerial irrationalities.

Even if managers are affected by their optimism bias and so they may act in less rational manner such as running investment cash flow sensitivity (Malmendier and Tate 2005a, b; Lin et al 2005; Huang et al 2011; Campbell et al. 2011), the existence of an independent board of director may largely reduce these effects by opposing the optimism bias.

As it is discussed earlier, the board independence is a strong signal to its performance. It may affect managerial optimism since it will exert a strong control on the manner he will opt to manage the firm and all his decisions and strategies. What reduces the optimism level is the fact managers may feel themselves under control.

H₅: *An independent board of directors should be negatively correlated to managerial optimism.*

Board Size and CEO's Optimism

The size is one of the most important characteristics that can affect board of directors' effectiveness. Lipton (1992) and Jensen (1993)' studies constitute the base of the board size effect on its effectiveness literature. According to Jensen (1993), a small size of the board can positively affect its task. A small board can prohibit CEOs against opting suboptimal decisions. Some studies corroborate this result. Hermalin and Weisbach (1988) confirm that a large number of directors in the board can make it less effective than small boards.

A small board may avoid many problems that can emerge when its members increase. However, the optimal board size is still an unresolved debate. Lipton (1992) propose to limit the board size into seven or eight members while Malmendier and Tate (2005a) assume that a board with less than twelve members can act in an effective way. The Lipton (1992) argument is that, in the case of large boards there will be some problems such as less meaningful discussion. This is because when expressing opinions within a large group, it will cause time consumption, difficulties and may cause also a lack of cohesiveness on the board.

Empirical results on the effect of the board size on firms' performance, profitability and value support the negative effect of large boards (Yermack 1996; Eisenber et al. 1998).

Regarding this literature review showing that small boards can generally manage to eliminate or reduce some problems such agency costs by aligning the CEOs interest to that of firms and they can also reduce the effect of managerial optimism. This is because with small boards, managers find themselves under a strong control and so this will affect negatively his optimism bias. Hence, we predict a negative correlation between optimism and board independence.

H₆: *A large size of the board of directors will negatively be correlated to managerial optimism.*

Optimism and CEOs Personal Characteristics

Since the absence of theoretical framework that explicitly expresses the possible effect of personal characteristics by directly proposing some logical determinants, such as CEOs' age, financial and technical education. Financial education (FE) and technical education (TE) variables are closer to the CEOs making decision process and they are well documented in the field of investment-cash flow sensitivity under behavioral corporate finance (see Malmendier and Tate 2005a).

The potential relationship between optimism and these variables is difficult to predict. Beginning with the age effect, we predict a negative sign between managerial optimism and his or her age. This is a simple implication of the age effect: the manager's age may be associated with CEO's experience. In other words, an increasing of CEO's age can lead him to be more rational and so it can negatively affect the optimism bias existence and level. Second, financial and technical education can also lead to a decreasing of managerial irrationalities, including the optimism bias; hence, we predict a negative correlation between CEOs' financial or technical education and their managerial bias.

As it is mentioned before, we cannot develop a solid hypothesis since there is no published previous paper that offers the possibilities nor to follow it when predicting the sign of the relationship between these variables and optimism nor the possibility to compare our potential results with previous ones.

H₇: CEO's age is negatively correlated with his optimism bias.

H₈: CEO's financial education can lead manager to be more rational and it can reduce managerial optimism.

H₉: CEO's technical education can succeed to reduce managerial optimism.

The Methodology, Model and Variables Definition and Measurement

Our model directly regresses managerial optimism proxy to corporate governance mechanisms and to personal characteristics of CEOs. This will offer the possibility to concern the observable determinants of managerial optimism. Our main objective is to explore what factors from the corporate governance mechanism can affect managerial optimism. If yes, these will be interesting results since we can open the door for future research on optimal governance structure that may succeed to reduce the undesirable effect of managers' irrationalities such as the investment cash flow phenomenon. We use a panel data technique and our model is fully described by Eq. (1).

$$\begin{aligned} Optimism_{it} = & \theta_0 + \theta_1 Age_{it} + \theta_2 FE_{it} + \theta_3 TE_{it} + \theta_4 Tenure_{it} + \theta_5 CEOowner_{it} \\ & + \theta_6 Ownershipconc_{it} + \theta_7 Duality_{it} + \theta_8 Boardsize_{it} \\ & + \theta_9 Boardindependence_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

The managerial optimism is measured by a proxy ($Optimism_{it}$) as it is well described above. However, in this investigation of the determinants of managerial optimism, we only use a proxy for managerial optimism in the base of a modified "Net Buyer" criterion. Departing from Malmendier and Tate (2005a) proposition, we propose a modified version of managerial optimism proxy. Following the existent literature in the domain, we calculate the net position of CEO at the end of each one of his 5 years in his/her tenure. We will then affect 1 if he/she is a net buyer and 0 elsewhere. Finally, we add the value of this measure during CEO five first year and we divide by five. Our new final measure will be a value that belongs to the interval [0, 1].

This modified measure offer the possibility to obtain a more appropriate results since it help us to overcome the problem of the logistic regression method. In the case of a logistic regression, we take only into consideration the presence or not of an optimism bias while with this new measure we can also include the intensity of this bias. This measure can be simply described as a combination between Malmendier and Tate (2005a) measure and that of Campbell et al (2011). In their paper Campbell et al. (2011) construct a level of managerial optimism. They affirm that it is of interest to study the effect of managerial optimism on CEOs turnover among three different level of optimism: high, moderate and weak level.

We will not use the second proxy for managerial optimism that is based on CEOs salaries because the compensation strategy can be considered as a governance

mechanism. We would like here especially to capture the effect of corporate governance mechanisms on the existence of CEOs' optimism. As such it is a logical methodological way to exclude this second proxy.

In this empirical investigation we follow previous studies in the corporate governance and corporate finance literature in order to measure our variables. *Age* represents the CEOs' age. Financial education (*FE*) is a dummy variable that indicates whether CEOs have a financial education or a special education such as MBA (Malmendier and Tate 2005a). Technical education (*TE*) is a dummy variable that will be equal to one if a CEO has a technical education or an engineering cycle (Malmendier and Tate 2005a). The tenure (*Tenure*) is measured by the number of years a CEO has in his actual post as a Chief Executive Officer. The CEO's holding in his firm is represented by the variable (*CEOowner*) which is measured by his detention percentage in his firms. The ownership concentration is also untitled blockholders ownership. It is directly measured by the percentage of share held by shareholders owning 5 % or more. Following Zajac (1994), we measure the duality by a dummy variable (*Duality*) that indicates whether the CEO is always the chairman of the board of directors or not. Therefore, it will be equal to one a firm's CEO also served as a chairman of the board, and zero otherwise. Quasi-unanimity in the corporate finance literature is to measure the board size directly by the number of its directors. The board independence is measured as the number of the independent directors. The Thomson Financial Data Base includes a sub-data base, the Thomson Reuters-Officers and Directors, and we can find a suitable classification that is already made by the service of Thomson Financial Data Base.

Data Description

In this essay we use public American manufacturer firms that are traded at the NYSE stock market. The former contains 51 firms. This size may be reduced when in some case because we can find that some variable may be not available for all these firms. We use the Thomson Financial data base to construct our variables. Namely, we use the Thomson World-scope and the SEC (Security Exchange Commission) to collect data about the variables in our model.

The SEC Financial data base and the Thomson Reuters-Officers and Directors data base offer a detail description of CEOs current position and his career in the firm. It offers also the start date of the title. It also includes a short biography which is very interesting to obtain precise idea about CEOs. The corporate governance variables are from SEC Financial data base and Thomson Reuters-Officers and Directors. In order to construct proxy for managerial optimism we use Thomson Financial Insider Transaction data base to construct a measure of managerial optimism.

Table 1 generates a summary of descriptive statistics. Optimistic CEOs in our sample are in general optimistic (the means of the optimism variable is equal to 0.83). This will offer an interesting framework to isolate the determinants of managerial optimism. The means of CEOs' tenure (14.37) means that managers in

Table 1 Descriptive statistic summary

	O	CEOowner	Ownershipconc	IND	Age	Duality	FE	TE	Boardsize	Tenure
Mean	0.83	0.04	0.01	7.33	53.46	0.74	0.68	0.46	16.83	14.37
Median	1.00	0.01	0.00	7.00	53.00	1.00	1.00	0.00	17	12.00
Maximum	1.00	0.42	0.21	15.00	95.00	1.00	1.00	1.00	34	59.00
Minimum	0.00	0.00	0.00	4.00	37.00	0.00	0.00	0.00	8	7.00
SD	0.38	0.08	0.02	2.32	8.14	0.44	0.47	0.50	4.65	7.31
Observations	431	431	431	431	431	431	431	431	431	431
Cross sections	51	51	51	51	51	51	51	51	51	51

O: managerial optimism measured by a modified “Net Buyer” criterion. Age: CEO’s age. FE: a dummy variable that indicates if manger have a financial education or not. TE: a dummy variable that indicates if manager have a technical education. Tenure: the number of year that CEO’s have in his current position as Chief Executive Officer. Boardsize: it is measured by the number of its directors. Duality: a dummy variable that s equal to 1 if a CEO is also the chairman of the board of directors and 0 value in the case of a separation between them. Board independence (IND) this variable indicates if the board is dominated by independent directors. It is determinate directly by the number of independent directors. The insiders ownership, it is defined as the percentage of insiders holding in the firm

the sample have a long tenure. This also can contribute to the robustness of our optimism bias measure. As it is discussed by Malmendier and Tate (2005a), CEOs with long tenure may constitute a solid base for the construction of a proxy of managerial optimism. This is because when CEOs have a long tenure; their internal transactions are closed to their optimism bias than other motivations such as signaling problems or liquidity motivation. Firms in our sample have boards that are relatively large (the means of board size is around 17 members) and a moderate independence (the mean of the independent members is around 7 members while the means size of the board is 17) and these boards are dominated by the existence of CEOs who also are chairman of the boards.

Results

Table 2 reports the result of our model using a pooled panel. We apply a Hausman Test in order to specify if you will adopt a random effect model or a fixed effect one. The result of this test is against the use of the random effect model. So, we use a panel fixed effect model and we use an OLS regression. Our methodology is similar to that of Bertrand and Schoar (2003).

CEO's age is negatively correlated with his optimism bias ($\theta_1 = -0.019$ and t -statistics = -42.61). This means that an increasing of CEOs' age should decrease the probability of the existence of optimism bias. As it is mentioned by Shefrin (2001), personal risk aversion appears to increase with age and it may decline after the age of 70. As it observed here, the mean of CEOs' age in our sample is around the 53 years, this can justify the negative relationship between age and optimism. We link here between CEOs ages and their optimism bias. When CEOs' ages

Table 2 Results of regressions of model 5 panel fixed effect, OLS regressions

Dependent variable: managerial optimism	
Variables	Coefficients
Intercept	1.78 (64.73)***
Age	-0.019 (-42.61)***
FE	-0.009 (-0.55)
TE	-0.041 (-3.26)***
Tenure $\times$ 100	0.154 (1.74)*
CEOowner	-3.03 (-12.08)***
Ownershipconc	-0.29 (-3.92)***
Duality	0.013 (0.80)
Boardsize	0.045 (3.01)***
Boardindependence	-0.01 (-4.52)***
Adjusted R ²	0.22
Number of observations	431

***, ** and * denote that results are significant at the 1, 5 and 10 % levels

increase his risk aversion increase and so the optimism bias may be reduced or neutralized.

The CEO's education may also affect the managerial optimism bias. Our results report a negative correlation between managers' financial education and optimism ($\theta_2 = -0.009$ and $t\text{-statistic} = -0.55$) but this relationship is not significant. CEOs' technical education (TE) seems to have a negative and significant impact on the presence of managerial optimism bias as well, ($\theta_3 = -0.041$ and $t\text{-statistics} = -3.26$). One potential explanation is that CEOs' education and especially engineering course can make managers more rational and so the probability with which they present optimism bias will be poor.

CEO's tenure can contribute to the emergence of CEO's optimism. The coefficient of correlation between optimism bias and tenure is positive and significant at ten percent level ($\theta_4 = 0.0015$ and $t\text{-statistics} = 1.74$). It seems that the increase of CEO's tenure will be associated with the emergence of an optimism bias. The tenure implicates that CEO will have a good knowledge about his firm and the market where he operates; this may make him more optimistic.

As a result, the tenure has not only contributed to the corporate decisions' distortions by the bias of managerial entrenchment (that will normally exist if CEOs have a long tenure) but also with the increasing of his optimism level. So, the CEO's long tenure can explain investment distortions in a direct manner by affecting managerial optimism whose effect is well documented in increasing investment cash flow sensitivity.

The ownership structure has a great impact on the existence of CEO's optimism bias. Our empirical validation reports a negative effect of CEO's ownership in his firm's capital ($\theta_5 = -3.03$ and $t\text{-statistics} = -12.08$). As it is mentioned before, the CEO's holding in his firm can emerge as a risk aversion bias for CEOs. This is because when managers have also a large holding in their firms' stock, they will be reluctant to make decision that is not rational. When making a corporate decision such as the firms' investment policy, their risk-aversion will have an opposite impact to that of the optimism bias. They will take a special care to their firms' decisions because any default or irrational choice or decision can lead to the firm's default and in this case CEOs will then lose their job and reputation.

Another interesting empirical finding is that insiders holding in their firms have a great influence on the existence of a managerial optimism bias, ($\theta_6 = -0.29$ and $t\text{-statistics} = -3.92$). Insider ownership makes CEOs more controlled and so the probability that they may escape from the control mechanisms will be poor. They will focus on the interest of firm in order to have an additional mandate. By definition, insiders' ownership is the percentage of share that is held by insiders. The directors and all other insiders should develop collaboration in order to exert a strong control against CEOs to act in a rational way and so contribute to the firm's performance.

The board characteristics seem to have an explanatory power in justifying the existence of managerial optimism bias. In this study we investigate the potential effect of three characteristics of the board: duality, board size and its independence. These variables are well documented in the corporate governance literature since the seminal work of Jensen (1993).

An attractive result is that these characteristics have an opposite effects on managerial optimism bias. The duality of the board positively affects the existence of optimism bias, but this coefficient is not significant. In a board where decision and control missions are put in the hands of one person (CEO), managers will see themselves as the one responsible for their firm and so this may push them to be optimistic. It seems that the association between the decision and control functions in a firm contributes to the emergence of a managerial optimism bias that can explain some observed irrationalities such as investment cash flow sensitivity (Malmendier and Tate 2005a, b; Lin et al 2005; Huang et al. 2011; Campbell et al 2011).

As it is predicted above, the board size affects positively the presence of managerial optimism bias and the result is significant at the first percent level. This means that an increasing in the number the boards' members will open the door to the installation of an optimism bias, ($\theta_8 = 0.045$ and t-statistics = 3.01). To the best of our knowledge, this is the first study that discusses the effect of board's characteristics on the presence of managerial optimism bias. In interesting result here is that large boards are less effective and they may not succeed to avoid or reduce managerial irrationalities that may derive from CEOs' optimism.

Finally, our results validate our theoretical prediction that stipulates that the board independence can reduce managerial optimism bias. The coefficient between the board independence and the proxy for managerial optimism is negative and significant at the one percent level ($\theta_9 = -0.01$ and t-statistics = -4.52). One possible potential the explanation is that when the board of directors is dominated by independent directors, CEO will be more rational and he will tend to make rational decision and he will try to reduce the impact of his psychological bias such as optimism in his decision making process.

Even if CEOs will be optimistic, an independent board can reduce the effect of managerial irrationalities by limiting the effect of their optimism bias. Optimistic CEOs will be aware that if they will follow their psychological bias and optimism they can opt for suboptimal decisions and so a strong internal corporate governance mechanism such age independent board of directors can participate in their revocation.

Corporate Governance Implications

In sum, this study is an endeavor to isolate some possible determinants of managerial optimism that can influence managerial optimism bias and affect its existence. Firms should pay a great attention to their corporate governance mechanisms in order to avoid managerial irrationalities and especially those that derive from optimism bias.

Firms should architect their corporate governance structure in a way that may reduce the negative effects of managerial optimism bias and especially those relative to investment cash flow sensitivity. Ownership structure can be a key to avoid managers' irrationalities that derive from their optimism bias since our results indicate that managerial optimism decrease with the CEO's ownership and the insiders' holding in their firms.

This may be a difficult task since firms may not be able to fully control its ownership structure. For example, insiders holding in a firm are still normally a personal decision of an insider. Only firms may contribute to incite CEOs to participate in the capital of their firms by adopting an appropriate incentive remuneration plan.

However, firms still have a strong tool to deal with this problem; it is the board of directors' characteristics. It will be an easy task now that firms can adopt effective boards that are able to reduce the negative impact of CEOs' optimism on corporate policies. Firms should advance the independence of their board in a special manner in order to guarantee their performances and so they will be able to align the interest of managers to that of shareholders. Our results imply that independent boards are able to reduce managerial optimism bias so they may reduce also its undesirable effects.

In other words, to overcome the negative effect of managerial optimism especially in the domain of investment-liquidity sensitivity is to reduce the size of the board of directors. Regarding the corporate governance literature, small boards can be effective and they may resolve some problems related to the asymmetric information problems or the agency conflicts. This study also argues that small boards can influence the emergence of managerial optimism bias as well.

Conclusion

In this paper we advance an original essay that aims to discuss especially the effect of corporate governance mechanisms and some CEO's personal characteristics on the existence of managerial optimism bias. Departing from a sample of manufacturer American firms traded at the NYSE stock exchange, we have demonstrated that effective internal corporate governance's mechanisms can apply a great impact on the existence of managerial optimism. If corporate governance mechanisms are strong enough, they can prohibit CEO's to be affected by their optimism bias.

Our study is of interest since it is the first paper that tries to discuss what is the optimal corporate governance structure that can manage to reduce the probability that CEO's will show optimism bias. This will be an interesting way to architect the corporate governance mechanisms in a manner that assures its effectiveness. This may reduce the probability that firm's opted for sub-optimal corporate strategies and reduce distortions.

To ameliorate this work, we should discuss the effect of corporate governance mechanisms on the level of managerial optimism. An excellent way to achieve such task is to refer to the work of Campbell et al (2011) who classifies CEOs into those having high, moderate or low optimism level.

References

- Baker M, Ruback R, Wurgler J (2012) Behavioral corporate finance: an updated survey. In: Eckbo E (ed) The handbook of corporate finance: empirical corporate finance. Elsevier/North Holland, New York
- Bebchuk L, Cohen A, Ferrell A (2009) What matters in corporate governance? *Rev Financ Stud* 22(2):783–827

- Bertrand M, Schoar A (2003) Managing with style: the effect of managers on firm policies. *Quart J Econ* 118(4):1169–1208
- Campbell C, Jhonson S, Rutherford J, Stanley B (2011) CEO confidence and forced turnover. *J Financ Econ* 101(3):695–712
- Eisenber T, Sundgren S, Wells M (1998) Larger board size and decreasing firm value in small firms. *J Financ Econ* 48:35–54
- Eisenherdt M (1989) Agency theory: an assessment and review. *Acad Manag Rev* 14(1):57–74
- Fairchild R (2005) The effect of managerial overconfidence, asymmetric information, and moral hazard on capital structure decision. *ICFAI J Behav Financ* II(4):46–68
- Fairchild R (2008) Behavioral corporate finance: existing research and future directions. *Int J Behav Account Financ* 1(4):277–293
- Fama EF (1980) Agency problems and the theory of the firm. *J Polit Econ* 88:288
- Fama EF, Jensen MC (1983) Separation of ownership and control. *J Law Econ* 26:301–325
- Graham J, Harvey C, Puri M (2009) Managerial attitudes and corporate actions. Working Paper, Duke University
- Heaton JB (2002) Managerial optimism and corporate finance. *Financ Manage* 31(2):33–45
- Hermalin BE, Weisbach MS (1988) The determinants of board composition. *Rand J Econ* 19:589–606
- Huang et al (2011) Agency cost, top executives ‘overconfidence, and investment-cash flow sensitivity: evidence from listed companies in China. *Pac Basin Financ J* 19:261–277
- Jensen MC (1983) Organization theory and methodology. *Account Rev* 58:319–339
- Jensen MC (1986) Agency costs of free cash flow, corporate finance, and takeovers. *Am Econ Rev* 76(2):323–330
- Jensen MC (1993) The modern industrial revolution, exit and the failure of internal control systems. *J Financ Econ* 3:831–880
- Jensen MC, Meckling W (1976) Theory of the firm: managerial behavior, agency costs, and ownership structure. *J Financ Econ* 3:305–360
- Lin Y, Hu S, Chen M (2005) Managerial and corporate investment: some empirical evidence from Taiwan. *Pac Basin Financ J* 13:523–546
- Lipton Lorch (1992) A modest proposal for improved corporate governance. *Bus Lawyer* 48:59–77
- Malmendier U, Tate G (2005a) CEO overconfidence and corporate investment. *J Financ* 60(6):2661–2700
- Malmendier U, Tate G (2005b) Does overconfidence affects corporate investment? CEO overconfidence measures revisited. *Eur Financ Manag* 11(5):649–659
- Malmendier U, Tate G (2008) Who makes acquisitions? CEO overconfidence and the market’s reaction. *J Financ Econ* 89(1):20–43
- Marnet O (2004) Behavioural aspects of corporate governance. *Adv Financ Econ* 9:265–285
- Myers SC, Majluf NS (1984) Corporate financing and investment decisions when firms have information that investors do not have. *J Financ Econ* 13:187–221
- Paredes TA (2005) Too much pay, too much deference: behavioral corporate governance. *Fla State University Law Rev* 32:673–762
- Shefrin H (2001) Behavioral corporate finance. *J Appl Corp Financ* 14:113–124
- Shleifer Andrei, Vishny Robert (1989) Management entrenchment: the case of manager-specific investments. *J Financ Econ* 25:123–140
- Yermack D (1996) Higher market valuation of firms with a small board of directors. *J Financ Econ* 40:185–211
- Zajac EJ, Westphal JD (1994) The symbolic management of CEO compensation. *Adm Sci Q* 39:367–390