

The Evidence of Management Motivation to Revalue Property Plant and Equipment in Tunisia

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Abstract

This article deals with the relationship between emotions and accounting methods. Specifically, it examines the links between cognitive biases and use of assets revaluation. Indeed, in order to improve the explanatory power of the positive theory of accounting we integrated the behavioural dimension in the analysis of accounting choices: our goal is to show the role of these biases on the choice of revaluation (negativity through the loss of optimism and complacency). All four cognitive biases were measured means of a questionnaire consisting of several items. The selected sample is composed of 120 Tunisians managers. Our results suggest that the presence of a revaluation is always positively correlated with the executives' suggestibility in relation to the behavioural biases.

Keywords: loss aversion, optimism, overconfidence, assets revaluation.

Introduction

Companies have long engaged in a results management. Indeed, without violating accounting rules, managers have the opportunity to influence the form and content of financial statements by taking advantage of gaps in their accounting and managerial discretion (Barton, 2001). The aim of these accounting manipulations was intentionally deviate the results reported to a desired level in order to capture personal gain to mislead investors or to influence contracts dependent on accounting numbers. The financial literature advances several motivations for earnings management. Some refer to the positive theory of accounting (Watts and Zimmerman, 1986), based on the use of accounting numbers to handle contractual issues, and relate mainly to the debt contract (Defond Jiambelvo, 1994, Dichev and Skinner, 2002), the contract compensation (Gaver and al, 1995) and political costs.

The study of assets revaluation is part of research in positive theory of accounting. The positive theory focuses on the analysis of accounting choices observed within firms. Research in the positive theory of accounting consists mainly of two families work (Cormier, 2002): Studies testing the assumptions of the political contract Accounting theory (initiated by Watts and Zimmerman, 1978) and studies on information contained in accounting numbers. The study is part of the revaluation so clearly in the positive current accounting.

Work from the positive theory looked for explanatory factors of the revaluation (contractual, political costs, signs Dumontier and Raffournier, 1988; Saada, 1995; Thauvron, 2000 Mard, 2006; Piera, 2003).

However, revaluation choice is at the CEO discretion, one can legitimately question the motivations of a practice which has no direct impact on cash flow.

Our idea is inspired by the behavioural approach and aims to demonstrate the role

of emotional biases in accounting choice. Some elements of literature on emotional intelligence and job performance may provide us with clues to support our intuition and will serve as a basis for our research.

1. Hypotheses to be tested

The analysis of the revaluation practice is traditionally discussed in reference to the characteristics of firms. The few empirical studies have identified the view that the revaluation practice is always positively correlated with: restrictive covenants in loan agreements, investment opportunities of firms, asset specificity and firm size (Piera, 2003).

However, CEO enjoys considerable latitude as to choice of accounting policies and methods of a company whose practice of revaluation.

Moreover, CEO objectives pursued can be broken down between a search for security or survival and a desire for growth or acceptance of risk (Julien and Marchesnay, 1987). These objectives justified his accountants' choices whose practice of assets revaluation.

In this context, managers can use the flexibility afforded by accounting variables to manage the results to their advantage. The aim of these accounting manipulations was to avoid the violation of restrictive clauses of the contracts of debt that would be costly, benefit from lower funding costs that could result in additional debt and reduce the perceived risk of Bankruptcy. The objective of this part is to enrich the theory of positive accounting theory by introducing the dimension in accounting analysis of the determinants of asset revaluation (loss aversion, optimism and overconfidence). For that it is expedient to introduce the one hand, the main assumptions of the positive theory of accounting and to show the impact of behavioral biases on the choice of the leader of the revaluation of the other.

1.1. The Alternative Theory: Positive Accounting Theory and Signals Theory

Henderson and Goodwin (1992: 78-79) reported that there are three main unfavourable effects of upward revaluation on the financial statements. First, lower reported profits result from an increase in depreciation expenses from depreciable asset revaluation. Second, lower gains on the sale of the revalued assets come from an increase in its revaluating amount. Third, some financial ratios decrease. Return on total assets (ROA) is reduced due to the decrease in reported profits and the increase in the value of assets. Return on equity (ROE) is also reduced due to the decrease in reported profits and the increase in shareholders' equity.

Although there are some disadvantages, many firms decide to revalue their assets. In order to examine the hidden motivations for this accounting procedure, positive accounting is applied.

1.1.1. Positive Accounting Theory

In summary, positive accounting theory is applied to explain the motivations for asset revaluation. It means that the firms will change their accounting methods to recognize their assets from historical cost to fair value in order to minimize their contracting costs. The asset revaluation can be used as a tool to lower the debt/equity ratio in order to avoid default costs (debt hypothesis). Upward revaluations help avoid violations of debt covenants (Whittred and Chan, 1992; Brown, et al., 1992), and improve the firm's borrowing capacity by reporting a lower leverage ratio (Brown et al., 1992; Cotter and Zimmer, 1995; Lin and Peasnell, 2000; Jaggi and Tsui, 2001). Moreover, it is also used as a signal to indicate growth opportunity as well as liquidity problem.

1.1.1.1. Leverage Hypothesis

To avoid default costs, managers have incentives to adopt accounting procedures that enable them to get around debt covenants that are generally represented in terms of debt/equity ratio such as increasing assets, reducing liabilities, increasing revenue, and decreasing expenses etc. The asset revaluation is an accounting procedure that can be used to increase shareholders' equity for as long

as the asset is held. Management decides to revalue in order to avoid a technical default that incurs debt violating costs or renegotiation costs. For this reason, a firm with a higher in debt ratio is expected to revalue its assets. (Begley, 1990 ; Brawon , Izan and Loh; 1992; Nichols and Buerger, 2002; Richardson et al (2002) ;Piera, 2004, 2007).

1.1.1.2. The previous losses Hypothesis

To avoid past losses, CEO are encouraged to use assets revaluation to create a special reserve revaluation to improve equity. Whittred and Chan (1992), Cotter and Zimmer (1995) on the other hand, found that companies, which revalued their fixed assets were those that experienced declining cash flows from operations as well as an increase in secured debts (Janes, 2003 ; Stulz et Shin, 2000).

1.1.1.3. Firm Size Hypothesis

Managers of large firms apply assets revaluations to reduce the return on equity and on assets as well as the potential capital gains obtained from sales of assets, and thereby reduce their political costs (Zimmerman, 1983; Gaeremynck and Veugelers, 1999 ; Piera, 2004;).

1.1.2. Signals Theory

Signaling hypothesis is constructed from the information asymmetry which causes inappropriate investment decision of investors. Information asymmetry means the differences in the quantity and quality of a firm's information available to a firm's manager which is compared with the information that is available to others, especially investors. The asset revaluation can be applied as a signal of future performance of the firm in order to resolve information asymmetry and eliminate underinvestment problem. Kim (2001) argues that the choice of accounting policy reflects the agency conflicts within the firm and information asymmetry in favor of the officer. Accounting choices (including assets revaluation) are used as a signal of future performance of the company and the effectiveness of its CEO (Richardson, 1998; Paek and Press, 1997, Gull and Jaggi, 1998; Chaney and Lewis, 2000, Chen and Chung 2002;...).

1.2. CEO BEHAVIOURAL BIAS AND ASSETS REEVALUATION

1.2.1. CEO loss aversion and assets revaluation

Schleifer and Vishny (1989) argue that managers opt for revaluation (increasing their firms' size) in a twofold reduction of personal risk and roots. This allows them to build a social recognition within and a good reputation among shareholders.

Tondeur (2002) adds that leaders opt for assets revaluation with the objective of minimizing the restrictive clauses in contracts for loans and the risk of bankruptcy of their firms.

One explanation is that the individual, by nature, seeks to maximize and improve well-being constantly (Helliard et al, 2005; Albouy et Schatt, 2010 ; Nasic et Weber, 2008). It is particularly annoying to see its financial assets to deteriorate in each period. Individuals working in the financial world have already met most of its needs and tend to self-esteem that wishes to satisfy (Maslow, 1989). So any leader could be threatened by the loss of social status seeks to enhance its work at the head of his company through an accounting choices such as assets revaluation.

Cressy (2000) also postulates that the higher level of wealth or financial health of a company is growing risk aversion has its individual level decrease. In other words, the manager opted for a revaluation of assets by valuing the assets of his company in order to minimize the degree of loss aversion to his house and with partners from the firm. This choice provides a safety margin needed to achieve strategic objectives.

Finally, the leader through the asset revaluation indicates the performance of his firm and reduces the takeover. This kind of conservatism is a way to thwart a potential loss of control (Barberis and Thaler, 2002). This shows that the loss aversion of the manager is positively correlated with the choice of the assets revaluation. Hence it is necessary to set up the following hypothesis:

H1: the more CEO is risk aversion, the more he opted for assets revaluation.

1.2.2. CEO optimism and assets revaluation

Heaton (2002) emphasizes that leader's optimistic estimate that the market assesses the value of his shares. This optimism builds a sense of involvement of leaders and encourages them to overstate the assets of their firms (Gervais et al, 2002). This promotes the practice of assets revaluation.

Hackbarth (2004) adds that CEO optimistic tends to use debt rather than equity. This leader was optimistic interest to report their good management through its easy to use debt (Fairchild, 2007 ; Robin et Yun, 2011 ; Malmendier et al 2010). In this context, we can consider the interest of leaders is to reassure creditors choosing accounting methods that reduce the apparent level of debt. The revaluation of assets, increasing the value of equity and assets reduces the level of indebtedness of the firm, whether in relation to the amount of capital or assets.

Leaders optimistic future performance of their firms tend to engage in positive revaluations to reduce the political costs that their company supports it, since it allows them to reduce the return on assets and equity, and the potential gain resulting from the resale of assets (Missonier, 2003).

Parfet (2000) shows that the ability of a company to present a stable and predictable performance is a sign of good management. So all optimistic leader seeks to show that good management through its accounting choices whose practice of revaluation. Therefore, it is interesting to suggest the following hypothesis :

H2: the more CEO is optimistic, the more he opts for assets revaluation.

1.2.3. CEO Overconfidence and assets revaluation

Hawinks et al (2001), stresses that decisions over investment resulting from

overexposure to media executives need to be first choice as a thought-driven procedural logic or at least in the computational interest of shareholders. In other words, every CEO overconfident on seeking ways to restore its human's capital with the assets revaluation.

Bouchie and Vernier (2009), adding CEO overconfident will be subject to confirmation bias which will lead him to seek information that confirms prior beliefs in light of past experience. This implies that any leader overconfident on research accounting choices that confirm its forecast that the practice of assets revaluation.

An executive receives much more confident about investment opportunities (Baker et al, 2004; Heaton, 2002 Malmendier and Tate, 2005). The funding of these growth opportunities requires the use of external financing (debt) expensive. So to meet the expectations of creditors in terms of financial strength, the leaders opted for assets revaluation.

Malmendier and Tate (2005) argue that overconfidence is a negative attitude that influences the capacity assessment of the alternatives for any individual as the overstatement of private information (Fairchild, 2007 ; Chuang et al,2009 ; Hirshleifer et al,2010 ; Ben-David et al,2010 ;...). This implies that a leader chosen automation complacency revaluation of assets affine respect the principle of reliability and adequacy of financial information of their firms. This development leads us to test the following hypothesis:

H3: *the more CEO is overconfident, the more he opts for assets revaluation.*

2. Sample formation and variable measurement

2.1 The Tunisian legal

The Tunisians have been two schemes Revaluation

- Revaluation legal what applied to assets and liabilities as an index that represents the increase in the general level of prices. For depreciable assets the new value is equal to the difference between the original value

revalued and depreciation which are regulated by legal texts.

- The second regime is the regime of free revaluation which is not regulated by laws, it follows essentially a practice inspired the reassessment law.

The Finance law 2000 prohibits the re-evaluation and legal basis of this law can Tunisian companies charged that the revaluation free. However, Accounting Standard **No. 5** which addresses the tangible assets provides only the case of downward revaluation of fixed assets, promoting respect for the principle of prudence.

In practice, a paradox occurs in the absence of an accounting standard that clearly addresses this phenomenon we are seeing more and more use of Tunisian firms to the technical revaluation of assets.

2.2 Data sample selection

The empirical tests are based for 120 non financial Tunisia firms for the fiscal years 2007. All financial firms (including banks) are excluded because this industry is regulated and is likely to have fundamentally different cash flow and characteristics. Firms with insufficient data to cognitive biases and financial characteristics. Financial characteristics data are obtained from annual report of the BVMT. Psychological characteristics are collected by the questionnaire.

[See Table 1]

2.3. Measurement of variables

The objective of this section is to determinate whether variable measurement (endogens and exogenesis).

2.3.1. Revaluation choice (dependents variables)

The choice of accounting policy and therefore the technique of revaluation Y is a dichotomous variable that take 1 if the firm opts for a reassessment and 0 if not.

2.3.2-Measuring emotional bias (principals independents variables)

The questionnaire focuses on the score of emotional bias (optimism, overconfidence and lost aversion). The questions were inspired from the questionnaire formulated by Fern Hill society and Industrial Alliance: every item is coded a Likert scale in 5 points ("never accepted =1" à "accepted very well =5").

2.3.2.2. PARTICIPANTS

The sample **Table 2** consisted of 120 Tunisian CEO Representatives 120 firms (70 males, 45 females, 5 unreported), ranging in age from 25 to 58. Once an informed consent was obtained from the participants, test booklets were provided, which included the Fern Hill inventory and a scannable answer sheet. The participants were given an unlimited amount of time to complete the paper based inventory.

[See Table 2]

2.3.3-Control Variables (auxiliary independents variables)

Prior research, suggest a significant association between accounting method, leverage ratios (LEV), previous losses (PL), listing (LFTSE) and firm size (LNSIZE) (Godard, 2001; Missonier, 2003; Mard, 2004; Tondeur, 2000).

2.3.3.1. Leverage ratio

Prior research and empirical studies have found a positive relation between accounting method and leverage ratios. Leverage (LEV) is defined as the ratio of total debts to total debts plus total assets. (Brown and al., 1992).

2.3.3.2. Previous losses

It is a dichotomous variable that take 1 if firms has made a significant previous losses and 0 otherwise. This measure was adopted by Whittred and Chan (1992), Cotter and Zimmer (1995) and Gaeremynck and Veugelers, (1999).

2.3.3.3. Firm size

Firm's size may affect the accounting practice. We measure it's as the log of

firm's total assets (LNSIZE). (Bujadi and Richardson, 1997).

2.3.3.4. Listing firm of the Tunisia Stock Exchange

It is a dichotomous variable that take 1 if firms is listed in the Tunisia Stock Exchange and 0 otherwise.

2.3.4. The model

$$Y = \alpha + \alpha_1 LAV^* + \alpha_2 OP^* + \alpha_3 OVER^* + \alpha_4 LEV^{**} + \alpha_5 PL^{**} + \alpha_6 LNSIZE^{**} + \alpha_7 LFTSE^{**} + \xi$$

Where:

Y: revaluation choice.

LAV: score of lost aversion.

OP: score of optimism.

OVER: score of overconfidence.

LEV: Leverage ratio.

PL : 1 if firm has made previous losses and 0 otherwise

LNSIZE : firm's size.

LFTSE : firm's listed in the Tunisia Stock exchange

ξ : the error.

* Principals variables

** Auxiliary variables

Given that the dependent variable is binary, the appropriate analysis would be an application of logistic regressions. In this study, empirical data will be processed using two analytical techniques: descriptive analysis and multivariate analysis. From these statistical tests, we expect that firms that choose assets revaluation that have debt ratios and sizes of the highest, which carry significant losses earlier and are overconfident-optimistic-loss aversion managers. Also, we expect that companies that do not resort to the practices of fair value, those that are characterized by the presence of rational leaders, are small and have a low debt level (Table 3 summarizes our expectations).

[See Table 3]

3. Empirical results

We will verify the relationship between CEO emotional characteristics and choice of asset revaluation.

3.1. Descriptive analysis

The table 4 above shows the test results of difference of means.

We recall that this test is relevant in determining differences in average variables (relating to accounting choices) between business users and nonusers those of the revaluation of assets. P -value information on the significance of each difference.

The results indicate the presence of a significant mean difference between the two groups in the sample for all variables. Indeed, the variables LAV, OP and OVER successively on cognitive biases Officer (with the loss aversion, optimism and overconfidence officer) show the existence of a significant difference between the two groups.

Note that the leaders choosing the revaluation of assets are averse to losses relative to those not using this accounting technique (at 5%). This result confirms our first hypothesis H1, as well as most empirical studies (Tondeur, 2002; Barberis and Thaler, 2002). These studies have linked the use of cover reassessment of the leader against the risk of bankruptcy and the takeover. This explains why the leader loss aversions are more motivated to manage their risk through assets revaluation.

The results emerge as a positive and significant difference at the 10% between the two groups in the sample for the variable optimistic leader. In fact, leader's revaluation practitioners are more optimistic than non-users of the accounting technique. According to the second hypothesis H2, this result suggests a positive association between optimism and choice of the assets revaluation. Indeed, leaders optimistic tend to go into debt rather than resorting to equity to signal their good management through their easy recourse to debt (Hackbarth, 2004). They reassure creditors interest in choosing accounting methods that reduce the level of debt which the apparent assets revaluation.

Table 4 shows the presence of a positive and significant difference at 5% between the two groups regarding the variable trust officer. Leaders using the revaluation are suggestible to biases of overconfidence more than non-users of this accounting method. This implies the presence of a significant positive correlation between overconfidence and the choice of the leader of the revaluation. Thus, an officer sees a lot more confident about investment opportunities (Baker et al, 2004; Heaton, 2002, Malmendier and Tate, 2005). Funding for these growth opportunities requires recourse to external financing (debt) expensive. So to meet the expectations of creditors in terms of financial strength, the leaders opted for a revaluation of assets.

The results also highlight the presence of a positive and significant difference between the two groups regarding the variables LNSIZE, LEV, PL, LIFTSE (respectively size, debt ratios, and listing previous losses) relating to the financial situation of the company. Consistent with our theoretical predictions of these variables are positively and significantly associated with the choice of the revaluation.

[see Table 4]

3.2. Multivariate analysis

Since the dependent variables are qualitative, an application of logistic regression requires the absence of multicollinearity between the explanatory variables. This phenomenon can be detected by examining the correlation matrix of Pearson. The results of this test, as presented in Table 5, show that the correlation coefficients are significantly smaller than 0.8 which is the line drawn by Kennedy (1985). Hence the correlation between independent variables is acceptable. The Pearson correlation among variables are presented in Table 5.

[Insert Table 5 about Her]

To verify if the results are not affected by a particular variable, several model specifications are available (Table 6). The first model contains behavioral variables related to Leaders (LAV, OP, OVER), four are made by adding a financial variable strongly correlated with the choice of the revaluation (LNSIZE, LEV, PL, LIFTSE). The objective here is to determine

empirically the effect of leader psychological profile on these accounting choices that the assets revaluation.

Overall, the multivariate results confirm those obtained by univariate analysis. Thus, the level of Officer Loss aversion (LAV) is positively and significantly associated with the choice of the assets revaluation (coefficient significant at 1%). This result is explained by the fact that the individual, by nature, seeks to maximize and improve their well-being constantly. So any leader threatened by the risk of loss of social status, seeks to enhance its work at the head of his company through an accounting choice as the revaluation of assets.

The sign of coefficient on OP measuring the manager's level of optimism is consistent with that suggested by the hypothesis H3 (at 1%). Indeed, firms opting for a revaluation of assets are managed by leaders optimistic. These leaders optimistic chosen risky projects which affect the specific risk of the firm (Weber et al, 2007). Hence in order to minimize the risk level of their business leaders from companies with financial constraints opted for a assets revaluation by increasing the value of equity and assets. The interest is optimistic leaders to reassure creditors choosing accounting methods (revaluation) which reduce the apparent level of debt.

The results regarding the impact of overconfidence officer show a positive association and significant (at 5% level) between overconfidence (OVER) of the officer and the assets revaluation. Thus, an officer sees a lot more confident about investment opportunities (Baker and al, 2004; Heaton, 2002, Malmendier and Tate, 2005). Funding for these growth opportunities requires recourse to external financing (debt) expensive. So to meet the expectations of creditors in terms of financial strength, the leaders opted for an assets revaluation.

The firm size (LNSIZE) has a positive and significant influence on the choice of the revaluation. This result is consistent with theoretical developments. Indeed the leaders of large companies are more concerned by the revaluation of their assets to reduce the political costs. This finding is confirmed by research

Gaeremynck and Veugelers (1999),
Missonier (2004).
The leverage ratios (LEV) is associated

positively and significantly (at 1% level) with the choice of the revaluation. This result confirms the predictions of positive accounting theory and suggests that firm's use debts are more than others from the assets revaluation (Whittred and al. 1992; Brown and al. 1992; Cotter et and. 1995; Black al. 1998; Cotter, 1999, Lin and al. 2000). Managers are encouraged to adopt accounting procedures that allow them to circumvent the restrictive covenants limiting the ability to leverage their businesses. Where the assets revaluation is a way to reduce transaction costs of the company.

The regressions show a positive and significant association between the presence of previous losses and the choice of the revaluation (at 5%). This result implies that firms have made significant previous losses are most affected by the revaluation. This finding suggests that the leaders of the Tunisian companies are resorting to revaluation to recover part of the capital lost due to realized losses

Finally, we note the presence of a positive and not significant between the listing of the company (LIFTSE) and the choice of the revaluation. This is explained by compliance with the law regarding disclosure of financial information.

[See Table 6]

CONCLUSION

This article examines the impact of cognitive biases in their choice of accounting methods (revaluation). Exploratory in nature, this work has attempted to fill a gap in research in accounting, with a survey of executives in large private enterprises in Tunisia. Analyses of data collected showed the importance of emotions Tunisian leaders in the explanation of their accounting choices. Indeed, the empirical analysis of the relationship of emotions with the reassessment shows the positive impact of cognitive bias frames Tunisian companies on quality, reliability and relevance of accounting information disclosed. Given the effects and benefits plural

personal, social and professional biases cognitive defects are that it is important to control them.

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Table 1

Sample used in analyses

Initial BVMT sample for 2007 financial firms	50
	(22)
Other non financial firms	117
Insufficient data to psychological characteristics	(12)
Insufficient data to assets revaluation	(13)
Final sample	120

Table 2

Questionnaire participants

		N	Percentages
Age	25-30 years	25	20.83
	31-40 years	31	25.83
	40-49 years	36	30.00
	Over 50 years	28	23.34
Sex	Males	70	58.33
	females	45	37.50
	unreported	5	4.17
Diplomat	Bac	20	16.66
	Bac+2	30	25.00
	Bac+4	60	50.00
	DAS/HDSS	10	8.34

Table 3

Variables description

Class :	Phenomena :	Measure :	Variables :	Predictions :
Dependents variables :				
Accounting Policy Choice	Choice assets revaluation	1 if CEO choice assets revaluation and 0 otherwise		Y
Principals Independents variables :				
Lost aversion	Loss rumination and reputation	Score obtained by the questionnaire	LAV	+
Optimism	CEO overestimate capacity of her firms	Score obtained by the questionnaire	OP	+
overconfidence	CEO overestimate her personal competences	Score obtained by the questionnaire	OVER	+
Auxiliary independents variables:				
Leverage ratios	Disciplining CEO	Leverage ratios = total debts / (total debts + total assets)	LEV	+
Previous losses	Signaled financial situation of the firms	1 if the firms has made previous losses and 0 otherwise	PL	+
Firm Size	Signaled performance of the firms	Ln (total assets)	LNSIZE	+
Listing firm of the Tunisia Stock Exchange	Signaled disclosure quality of the firms	1 if the firm is listed and 0 otherwise	LIFTSE	+

Table 4

Descriptive Statistics

variables	Revaluating firms				Non-revaluating firms				t-statisticCS p-value
	n	Minimum	Maximum	Mean (S.D)	n	Minimum	Maximum	Mean (S.D)	
LAV	58	0.39483	0.94422	0.6546 (0.64568)	62	0.39720	0.94181	-0.0150 (0.85200)	4.827**
OP	58	0.54740	1.2052	0.7791 (0.96541)	62	0.54592	1.2064	-0.0972 (0.85334)	5.276*
OVER	58	0.16632	0.70741	0.3140 (0.81873)	62	0.16440	0.70933	-0.1229 (0.67507)	3.198**
LNSIZE	58	2.01267	3.69521	13.7126 (2.30759)	62	2.01307	3.69481	10.8587 (2.34235)	6.718*
LEV	58	0.22980	0.34123	0.6089 (0.17582)	62	0.22918	0.34191	0.3234 (0.13055)	10.144*
PL	58	0.26835	0.59762	0.7069 (0.45916)	62	0.26823	0.59734	0.2742 (0.44975)	5.214**
LIFTSE	58	0.05306	0.40071	0.5172 (0.50407)	62	0.05244	0.40131	0.2903 (0.45762)	2.585***

*, **, *** significance at respectively 10%, 5% and 1%.

Table 5

Pearson Correlation

	REV	LAV	OP	OVER	LNSIZE	LEV	PL	LIFTSE
REV	1							
LAV (p- value 2- tailed)	0.406** (0.000)	1						
OP (p- value 2- tailed)	0.437** (0.000)	0.194* (0.034)	1					
OVER (p- value 2- tailed)	0.282** (0.002)	0.034 (0.713)	0.138 (0.132)	1				
LNSIZE (p- value 2- tailed)	0.526** (0.000)	0.300** (0.001)	0.185* (0.043)	0.108 (0.241)	1			
LEV p- value, 2- tailed)	0.683** (0.000)	0.312** (0.001)	0.327** (0.000)	0.193* (0.034)	0.566** (0.000)	1		
PL p- value, 2- tailed)	0.433** (0.000)	0.416** (0.000)	0.183* (0.046)	0.146 (0.112)	0.268** (0.003)	0.367** (0.000)	1	
LIFTSE (p-value 2- tailed)	0.231* (0.011)	0.080 (0.388)	-0.025 (0.787)	0.140 (0.129)	0.113 (0.219)	0.324** (0.000)	0.300** (0.001)	1

*, ** Respectively significant at 10% and 5%.

Table 6

The binary logistic regressions

Variables (expected sign)	Model 1	Model 2	Model 3	Model 4	Model 5
LAV (+)	0.000*** (1.899)	0.001*** (1.714)	0.005*** (1.606)	0.009*** (1.478)	0.009*** (1.493)
OP (+)	0.000*** (1.360)	0.000*** (1.690)	0.002*** (1.471)	0.001*** (1.606)	0.002*** (1.635)
OVER (+)	0.002*** (1.180)	0.004*** (1.169)	0.029** (1.008)	0.034** (1.035)	0.035** (1.035)
LNSIZE (+)		0.000*** (0.613)	0.039** (0.346)	0.019** (0.391)	0.020** (0.398)
LEV (+)			0.001** (7.313)	0.001*** (7.242)	0.003*** (7.034)
PL (+)				0.039** (1.508)	0.052** (1.467)
LIFTSE					0.828 (0.167)
Constant	0.000*** (-1.511)	0.000*** (-9.105)	0.000*** (-9.015)	0.000*** (-10.480)	0.000*** (-10.542)
Cox and Snell ratios R ²	0.383	0.512	0.570	0.586	0.586
X ² of the model	58.031	27.951	15.242	4.653	0.047
- 2 log likelihood	108.191	80.239	64.997	60.345	60.297
N	120	120	120	120	120

, * Respectively significant at 5% and 1%.