Economics Bulletin

Volume 34, Issue 4

Does managerial overconfidence matter in explaining debt financing policy?

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Abstract

We investigate the role of managerial overconfidence in shaping corporate debt financing policy. Using a sample of 229 small French companies listed during 2003–2012, we show that overconfident owner–managers opt for less levered financing structures than their non-owner peers. Additional analysis shows that owners–managers are less likely to use debt in the presence of growth opportunities. Managers who are optimistic about future performance consider their firms to be undervalued and prefer internal financing to external capital markets that are considered highly costly. They consequently adopt a pecking order preference in financing decisions, particularly when they perceive the new projects as value increasing.

Citation: Sabri Boubaker and Taher Hamza, (2014) "Does managerial overconfidence matter in explaining debt financing policy?", *Economics Bulletin*, Vol. 34 No. 4 pp. 2324-2339.
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Submitted: August 11, 2014. **Published:** November 05, 2014.

1. Introduction

In their seminal paper, Modigliani and Miller (1958) highlight the conditions under which the value of a firm is independent from its financial policy. While these conditions are unrealistic, the authors provide an excellent starting point for analyzing the financial decisions of firms. In their "correction" article, Modigliani and Miller (1963) reviewed their earlier position by introducing corporate taxes to explain capital structure. They show that firms may prefer debt to equity financing, since the tax deductibility of interest payments enhances equity value. Moreover, they suggest the existence of an optimal level of debt that maximizes firm value. These studies have been the milestone of several theories of capital structure, such as static trade-off theory (Myers, 1984), pecking order theory (Myers and Majluf, 1984; Shyam-Sunder and Myers, 1999), and market timing theory (Baker and Wurgler, 2002). However, despite much research, the financial choices of many public firms remain puzzling, motivating many researchers to focus on the psychological aspects of managerial financial decisions and to account for certain anomalies.

This strand of research gave birth to what has become known as behavioral finance, which focuses on the impact of managerial irrationality and behavioral biases on firms' financial policies. Some studies have attempted to examine the influence of managerial behavior and in particular the degree of managerial confidence on financial decisions and capital structure (Malmendier et al. 2007). The present study extends this line of research by focusing on the overconfidence of managers, which can be seen as an overestimation of judgmental accuracy or an underestimation of the variance of random processes (Ben-David et al. 2007).

Overconfidence grows more strongly under uncertainty when actions that are undertaken require significant managerial expertise and when decision feedback and information interpretation are slow or ambiguous (Griffin and Tversky, 1992; Russo and Schoemaker, 1992). Thus, the characteristics of managerial decisions and the specific attributes related to the management function may justify greater overconfidence among managers. March and Shapira (1987) consistently find differences between managerial decision making and the prescriptions of standard decision making theory. They state that managers perceive risk as largely controllable and attribute this controllability to their competence and to the information they hold. Managerial incentives can also exacerbate overconfidence. Indeed, overconfident managers engage much more effort than rational managers that contributes to reduce agency costs, which increases firm value (Pathan, 2009).

Our work examines the impact of managerial ownership as a measure of overconfidence on the debt levels of small French listed companies. Higher CEO ownership comes along with greater CEO power and an ability to impose her views on the firm's decisions, leading to a more overconfident behavior (Brown and Sarma, 2007, Pathan, 2009). The choice of the French context is motivated by at least two reasons. First, apart from the US context, studies on the behavioral determinants of capital structure are scarce. Second, the French corporate landscape is dominated by

firms with concentrated ownership (e.g., Boubaker, 2007). Therefore, it provides an excellent laboratory for studying the impact of overconfident owner–managers on capital structure choices.

Our analysis takes as a starting point the studies of Malmendier and Tate (2005). These authors provide evidence of overconfidence among manager–entrepreneurs who strengthened their position in their firms' capital (Leland and Pyle, 1977). To investigate the role of managerial overconfidence in shaping corporate debt financing policy, we use a sample of 229 small French listed companies over the 2003–2012 period and test a dynamic model to explain debt financing behavior. We show that overconfident owner–managers opt for less levered financing structures than their non-owner peers. We also provide evidence that owner–managers are less likely to use debt in the presence of growth opportunities. One possible explanation is that managers who are optimistic about future performance consider their firms to be undervalued, preferring internal financing to external capital markets. They adopt a pecking order preference in financing decisions, particularly when they perceive new projects as value increasing. The preference of overconfident managers for internal financing suggests that they overweigh private information that confirms their prior beliefs and overestimate their ability to interpret this information (Heaton, 2002; Malmendier et al. 2011). They ascribe successful results to their own abilities but consider negative results to be due to bad luck or the environment (Shefrin, 2002).

The reminder of the paper is structured as follows. Section 2 reviews the relevant literature that investigates the impact of overconfidence on the choice of financial structure. Section 3 presents the sample selection, methodology, and empirical results. The last section concludes the paper.

2. Literature review

A growing body of literature focuses on the impact of managerial behavioral bias on firms' financial decisions. Traditional theories of capital structure have omitted the impact of managerial traits on firms' financial policies (Hackbarth, 2004). It is only recently that researchers have attempted to examine the influence of decision makers' behavior on the financial decisions of their firms. Proponents of behavioral finance argue that people exhibit systematic biases in their beliefs that can lead to irrational behavior. The bias of overconfidence, as well as optimism and narcissism, constitute central aspects of the current literature in behavioral corporate finance. Heaton (2002) shows that the use of free cash flow is likely to mitigate the social loss generated by the perception of risky securities as undervalued and by the overestimation of investment projects. The author documents that managerial optimism leads to a preference for internal funds that can be socially costly. Thus, optimistic managers may decline positive net present value projects, believing that the cost of external finance is simply too high. Malmendier and Tate (2005) examine the sensitivity of firms' investment to cash flows. The authors show that this sensitivity is likely to increase in a high financial constraint context and when external financing becomes necessary. Unlike Malmendier and Tate (2005) and

Heaton (2002), Hackbarth (2004) was particularly interested in modeling the choice of capital structure as part of trade-off theory and in comparing the decisions made by an overconfident CEO and those of a rational manager. The author finds that managers with risk and/or growth perception biases tend to underestimate the default probability and hence choose higher debt levels and more frequently issue new debt. Hackbarth also finds that overconfident managers increase equity when market valuations are high, confirming the predictions of market timing theory.

Using a direct measure of overconfidence and optimism, Ben-David et al. (2007) recently confirmed Malmendier and Tate's (2005) findings. They show that, when internal funds are insufficient, long-term debt is preferred as a financing source. Ishikawa and Takahashi (2010) find a negative relation between managerial overconfidence and the probability of issuing equity in the public market. This finding is in line with that of Malmendier et al. (2011), who show that overconfident CEOs, believing that their company is currently undervalued, act more conservatively in their access to external capital markets. As a result, they prefer internal financing to debt and debt to equity. Fairchild (2007) shows that, in the absence of growth opportunities, overconfident managers overestimate their abilities and consequently the probability of high profits, which encourages them to choose a highly leveraged capital structure. The author also shows that overconfident managers reduce the use of debt in the presence of growth opportunities because they perceive new projects to be value increasing. Studying the French context, Oliver and Mefteh (2010) decompose the measure of industry sentiment into a common investor confidence component and a unique manager confidence component. They find a negative effect of industry sentiment on leverage. This finding is not in line with the prediction that overconfident managers underestimate the probability of financial distress and therefore issue more debt than their rational peers. The authors explain this result by the importance of the investor confidence component over the manager confidence component.

3. Methodology and results

3.1. Sample and choice of context

Our initial sample consists of all French firms listed on the Paris stock exchange over the period 2003–2012. We exclude financial firms, as well as those with missing ownership and financial data. Moreover, we exclude large companies, which are more likely to be widely held (i.e., low CEO ownership). To address this concern, we remove firms whose market capitalization is more than 500 million euros. Our final sample includes 229 small French listed companies and, as reported in Table 1, only 50 of them have owner–managers who hold a controlling ownership stake. Ownership data are collected from firms' annual reports and financial data are drawn from the Worldscope database. The ESI data are from the European Commission website whereas the ISM data from the Institute of Supply Management website.

[Insert Table 1 about here]

3.2. Econometric specifications

To investigate the impact of overconfident owner–managers on capital structure, we refer to previous studies that analyze firms' financial decisions (e.g., Shyam-Sunder and Myers, 1999) and estimate the following model:

$$D_{it} = \beta X_{it} + \lambda_t + \alpha_i + \xi_{it} \quad (1)$$

where the dependent variable, D_{it}, is the ratio of the total debt to total assets of firm i at time t; X_{it} is the set of explanatory variables outlined below; λ_t is a vector of year dummies; α_i represents the industry fixed effects, and ξ_{it} is an error term. However, previous studies highlight the limits of the static model, which considers debt as a random variable (Jalilvand and Harris, 1984; Ozkan, 2001; Fama and French, 2002; Flannery and Rangan, 2006), and propose to analyze the dynamic aspects of the capital structure. Based on these studies, we estimate the following partial adjustment model:

$$D_{it} = (1-\alpha)\, D_{it-1} + \alpha.\beta.X_{it} + \lambda_t + \alpha_i + \varepsilon_{it} \quad (2)$$

where α is the coefficient of adjustment. To test this model, we use a dynamic panel data estimation model and pay particular attention to the endogeneity issue that arises from the two-way causal relation between firm leverage and independent variables such as profitability and firm growth (Lang et al., 1996; Margaritis and Psillaki, 2007). The most prominent way to address the issue of simultaneous determination and other sources of endogeneity (e.g., omitted-variable bias and errors in variables) is to use the generalized method of moments (GMM) difference estimators proposed by Arellano and Bond (1991). By using the dynamic approach, the lagged dependent variable engenders a correlation between specific individual effects and explanatory variables. The system GMM estimator (GMM-SYS) overcomes these problems by combining a set of equations.[1] In this system, one estimates the equation in first difference where the lagged independent variables in level are used as instruments. A second set of equations in levels uses variables in first differences as instruments (Blundell and Bond, 1998). Lastly, we use the Sargan test of overidentifying restrictions to check the validity of instruments and the Arellano and Bond's serial correlation test to verify whether errors exhibit second order serial correlation.

3.3. Variables definitions and descriptive analysis

We use CEO ownership in a context of small French listed firms as a proxy for overconfidence. Indeed higher CEO ownership in small firms indicates greater CEO power, leading to CEO overconfidence as long as she overestimates her capacity to impose her view and to influence business performance (Brown and Sarma, 2007; Pathan, 2009). Moreover, overconfident CEOs are more inclined than other to underestimate their firms' idiosyncratic risks (Niu, 2010). Managerial ownership is considered significant if it exceeds 35% of firm ownership. We also consider an

[1] "System GMM estimator" (GMM-sys) is the augmented version of GMM summarized in Arellano and Bover (1995) and fully developed in Blundell and Bond (1998).

alternative proxy provided by the European commission, namely, the Economic Sentiment Index (CONF-ESI) based on the attitudes and judgments of economic agents in various economic sectors about the firm, its industry, and the economy as a whole (see, e.g., Mefteh and Oliver, 2010).[2] In addition, we introduce the manufacturing and non-manufacturing ISM (i.e., PMI: Purchasing Managers Index) provided by the Institute of Supply Management as a proxy measure of the management overconfidence.[3] ISM indicators constitute the most relevant leading indicators and reflect the opinion of firm purchasing managers about the future of the economic activity. We select the value of the index in December each year. [4]

[Insert Table 2 about here]

Table 2 shows that sample firms have, on average, important growth opportunities (MTB is 2.12) and exhibit low leverage ratios (Mean BOOKLEV is 27.6%). On average, tangible assets amount to 29% of total assets. Sample firms largely cover financial risk through their tangible assets, which act as a guarantee for creditors. In addition, these firms present lower profitability (EBITDA to total assets is on average 4%). The mean CONF-ESI value is 100.67 points, close to the historical average level in the Eurozone (100 points). Besides, CONF-ISMM and CONF-ISMNM are on average at a level of 50.13 and 50.52, respectively, indicating a low economic growth.

[Insert Table 3 about here]

Table 3 reports low correlation coefficients between the independent variables. The maximum value inflation factor is 1.10 indicating that multicollinearity does not seem to be a serious issue in our study.

3.4. Dynamic model Estimation and robustness tests

Table 4 presents the results of the dynamic model estimation of debt using the Arellano-Bond system GMM estimator. The GMM approach permits the identification and evaluation of the adjustments costs of debt financing policy.

[Insert Table 4 about here]

We regress book leverage on the explanatory variables after including lagged leverage as an additional independent variable. Baker and Wurgler (2002) argue that the analytic model of debt should control for lagged leverage to obtain a more precise impact of other variables. Lagged debt is expected to be positive to confirm the existence of adjustment costs toward a target debt ratio (Shyam-Sunder and Myers, 1999; Ozkan, 2001). We regress, therefore, the dependent variable (BOOKLEV) on the two behavioral variables, namely managerial overconfidence

[2] The Economic Sentiment Indicator (ESI) is a composite indicator made up of five sectoral confidence indicators with different weights namely, industry, services, consumer, construction and retail trade.

[3] Purchasing Managers Index (PMI) is a composite indicator of the economic health of the manufacturing sector, based on 5 major indicators: new orders, inventory levels, production, supplier deliveries and the employment environment.

[4] All variables are defined in the Appendix.

(CONF-MO) and market timing (EFWAMB) along with the set of explanatory variables defined above. The regression results show a negative and significant relation (at the 1% level) between managerial ownership (CONF-MO) and book leverage. This means that overconfident managers consider their firms to be undervalued and prefer internal financing sources to external capital markets, considered highly costly. They adopt a pecking order preference in their financing decisions when investments are value-increasing. Hence, overconfident managers have incentives to reduce their debt and maintain sufficient cash flow to finance new projects. These results are consistent with those of Oliver and Mefteh (2010) in the French context and in contrast to several studies such as Hackbarth (2004), Fairchild (2005), and Ben-David et al. (2007), who show a positive association between managerial overconfidence and leverage. In that case, and since overconfident CEOs prefer debt over equity, most past external financing decisions with overconfident CEOs may explain higher current leverage ratios (Malmendier and Tate, 2007).

We show also that the market timing indicator (EFWAMB) is positively associated with the book leverage. French firms do not seem financially flexible to take advantage of market windows of opportunity to reduce debt and issue equity. This result is different from those of Baker and Wurgler (2002) and Hovakimian (2006) who argue that managers of firms with high EFWAMB are more likely to issue equity than debt and that the changes in leverage induced by equity market timing persist. However, Hovakimian (2006) underline that "*transactions with strong timing patterns either have no significant lasting effect on leverage or their effect on debt ratio implies a positive rather than a negative relation between EFWAMB and leverage*".

As for the control variables, tangibility is positively related to book debt as in Rajan and Zingales (1995), Shyam-Sunder and Myers (1999), Frank and Goyal (2003), and Hovakimian (2006). This finding is also consistent with the predictions of the trade-off theory (Nguyen and Boubaker, 2009). Lastly, the signs of the market to book and operational risk are positive for small French listed companies.

To check the robustness of our findings to alternative proxies of managerial overconfidence, we use the Economic Sentiment Index (CONF-ESI) and the manufacturing and non-manufacturing ISM Indices (CONF-ISMM and CONF-ISMNM) instead of managerial ownership. The results lead to similar conclusions.

3.5. Dynamic model Estimation: Test of high versus low growth potential firm.

We divide firms into two subsamples according to whether the market-to-book ratio is greater or lower than one to analyze the effect of managerial overconfidence on leverage depending on the level of growth opportunities.

[Insert Table 5 about here]

Several conclusions could be drawn from Table 5. First, the coefficient of the lagged variable (LAGBKLEV) is positive and statistically significant at the 1% level, confirming the existence of adjustment costs. This result corroborates that of Dang et

al. (2012). The results also show that the coefficients of all the proxies for managerial overconfidence (ESI, ISMM, and ISMNM), remain negative and statistically significant. However, the degree of significance varies with the level of growth opportunities. In the presence of growth opportunities, managerial overconfidence negatively affects the ratio of debt. Managers are encouraged to minimize their debt to maintain sufficient cash flow to finance new projects perceived as value increasing. The relation is statistically insignificant, however, in the absence of growth opportunities. These results are consistent with those of Fairchild (2007), who indicates that overconfident managers issue more debt in the presence of low growth opportunities than when growth opportunities are important.

4. Conclusions

A growing body of literature has recently emerged advocating managerial behavior as an explanation of capital structure choices. The present study extends this strand of literature by examining the impact of managerial overconfidence on firms' financing decisions in the French context. It investigates the role of managerial overconfidence in shaping corporate debt financing policy. Using a sample of 229 small French listed firms over the 2003–2012 period, we test a dynamic model to explain debt financing behavior. We show that overconfident owner–managers opt for less levered structures than their non-owners peers. Additional analysis shows that owners–managers are less likely to use debt in the presence of growth opportunities. One possible explanation is that optimistic managers consider their firms to be undervalued and prefer internal financing to external capital markets, considered highly costly. They adopt a pecking order preference in financing decisions, particularly when they perceive new projects as value increasing.

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APPENDIX: Variables description

Variables	Name	Measure
Dependent Variable		
BOOKLEV	Book value of debt	Total debt / total assets
Independent Variables		
CONF-MO	Manager overconfidence	Equals 1 if firm i's CEO in year t holds more than 35% of its common shares and 0 otherwise.
CONF-ESI	Economic sentiment index	The ESI is calculated as an index with mean value of 100 and standard deviation of 10 over a fixed standardized sample period.
CONF-ISMM	ISMM: Institute of Supply Management Manufacturing Index.	The ISM index is centred at 50. A manufacturing (non manufacturing) ISM of more than 50, indicates expansion of the manufacturing (non manufacturing) sector, compared to the previous period. Less than 50 (equal to 50), it represents a contraction (no change).
CONF-ISMNM	ISMM: Institute of Supply Management Manufacturing Index.	
SIZE	Firm size	The natural logarithm of total assets.
TANG	Tangibility of assets	The total property, plant and equipment divided by total assets.
PERF	Firm profitability	Calculated as the ratio of earnings before interest and taxes to total assets.
MTB	Market to book value as a proxy of growth opportunities	Ratio of market value of equity/ book value of equity
RISK	Firm operational Risk	The difference between the PERF of the firm and the sample mean.
EFWAMB	Market timing indicator	The external finance weighted average market-to-book (see, Baker and Wurgler, 2002)

Table 1

Sample distribution across industries

This table shows the distribution of the 229 firms across industries

	Global Sample		Subsamples			
			Managerial ownership > 35% of capital		Managerial ownership not significant	
	Firms	%	Firms	%	Firms	%
Consumer Goods	65	28,38%	11	22%	54	30.17%
industry	50	21,83%	11	22%	39	21. 79%
Basic Materials	4	1,75%	2	4%	2	1,11%
Service	47	20,52%	12	24%	35	19,55%
Technology	58	25,33%	13	26%	45	25,13%
Telecommunication	5	2,19%	1	2%	4	2,25%
	229	100%	50	100%	179	100%

Table 2

Descriptive statistics

This table presents a summary statistics of financial and market data of sample firms. All variables are described in the Appendix.

Variables	Mean	Std Dev	5%	Q1	Median	Q3	95%
BOOKLEV	0.276	0.324	0.006	0.05	0.146	0.365	1.04
SIZE (millions €)	137.40	241.32	3.04	18.1	49.05	52.26	557.35
TANG	0.29	0.23	0.02	0.08	0.26	0.45	0.71
PERF	0.04	0.17	-0.22	0.001	0.05	0.09	0.245
MTB	2.12	1.90	0.45	0.89	1.52	2.61	6.38
RISK	0.236	0.164	0.085	0.137	0.162	0.299	0.581
EFWAMB	0.84	2.33	0.015	0.09	0.27	0.66	3.46
CONF-ESI	100.67	10.26	75.2	97.2	102.25	108.2	113.3
CONF-MO	0.17	0.23	0.00	0.00	0.000	0.31	0.70
CONF-ISMM	50.13	5.28	40	46	51.4	53.1	59.1
CONF-ISMNM	50.52	3.86	44	46.2	51.3	53.9	55.9

Table 3

Pearson and Spearman correlation matrix

This table presents the Pearson and Spearman correlation matrix. Pearson (Spearman) correlation coefficients are reported below (above) the diagonal. All variables are described in the Appendix. ***, **, * denotes statistical significance respectively at the 1%, 5% and 10% level.

	BOOKLEV	SIZE	TANG	PERF	MTB	RISK	EFWAMB	CONF-ESI	CONF-MO	CONF-ISMM	CONF-ISMNM
BOOKLEV		-0.4862***	0.2087***	-0.1466***	0.0407	0.0254	0.0848**	-0.0173	0.0083	-0.0480	-0.0300
SIZE	-0.3276***		0.2442***	0.0997***	-0.1823***	-0.0842**	-0.0665*	-0.0667*	-0.1298***	-0.0691	-0.0892**
TANG	-0.0413	0.2465***		0.0075	-0.2442***	-0.0637*	0.0065	-0.0383	-0.2096***	-0.0363	-0.0426
PERF	-0.0804***	0.0780***	0.0171		0.2827***	0.2108***	0.0811**	0.1160***	0.0399	0.1233***	0.1341***
MTB	0.0082	-0.1818***	-0.1413***	0.0210		0.0764**	0.0510	0.3674***	0.2207***	0.3674***	0.4118***
RISK	0.0582**	-0.1410***	0.0132	0.0407*	0.0579**		0.0712**	-0.1727***	-0.0289	-0.2304***	-0.2088***
EFWAMB	0.0058	-0.0514**	0.0786***	0.0001	-0.0081	-0.0251		-0.0251	-0.1727***	-0.0045	0.0086
CONF-ESI	-0.0196	-0.0625***	-0.0144	0.0126	0.1196***	-0.0664***	-0.0005		0.0713**	0.7491***	0.7802***
CONF-MO	-0.0120	0.0278	-0.0684**	0.0115	-0.0006	0.0877***	-0.0066	0.0118		0.0698	0.0831**
CONF-ISMM	-0.0089	-0.0643***	-0.0265	0.0238	0.0935***	-0.1368***	0.0112	0.8234***	0.0087		0.9401***
CONF-ISMNM	-0.0194	-0.0615***	-0.0278	0.0327	0.1328***	-0.2197***	0.0107	0.7611***	0.0032	0.8089***	

Table 4

Results of the dynamic model estimation: Arellano-Bond system GMM estimator

This table presents the regression results of book leverage on different proxies of managerial overconfidence. All variables are described in the Appendix. ***, **, * denotes statistical significance respectively at the 1%, 5% and 10% level.

Dependent variable : BOOKLEV

		Alternative managerial overconfidence measures		
	(I)	**(II)**	**(III)**	**(IV)**
LAGBKLEV	0,728 (34.94)***	0,405 (14.42)***	0,405 (14.43)***	0,402 (14.38)***
SIZE	-0,095 (-3.23)***	-0,125 (-3.35)***	-0,129 (-3.46)***	-0,135 (-3.61)***
TANG	0,043 (0.33)	0,445 (2.16)**	0,427 (2.07)**	0,434 (2.11)**
PERF	-1,364 (-5.63)***	0,381 (0,76)	0,430 (0.86)	0,529 (1.05)
MTB	0,014 (2.24)**	0,026 (1.70)*	0,030 (1.97)**	0,035 (2.20)**
RISK	0,004 (0.59)	0,014 (1.22)	0,008 (0.66)	0,002 (0,15)
EFWAMB	0,002 (0.61)	0,001 (3.18)***	0,001 (3.26)***	0,001 (3.28)***
CONF-MO	-0,022 (-2.49)**			
CONF-ESI		-0,004 (-1.76)*		
CONF-ISMMI			-0,010 (-2.48)***	
CONF-ISMNMI				-0,017 (-2.76)***
Intercept	0,497 (3.50)***	0,933 (3.38)***	1,111 (3.90)***	1,487 (3.91)***
N	773	1419	1419	1419
Wald test *p.value*	0.000	0.000	0.000	0.000
Arelleno-bond test for AR(1) *p.value*	0.000	0.000	0.000	0.000
Arelleno-bond test for AR(2) *p.value*	0.570	0.12	0.15	0.15
Sargan test of overidentifying, restrictions *p.value*	0.000	0.000	0.000	0.000
Sargan test excluding group *p.value*	0.998	0.749	0.761	0.765

Table 5

Results of the dynamic model estimation: Arellano-Bond system GMM estimator
High growth versus low growth firms

This table presents the regression results of book leverage on different proxies of managerial overconfidence. Panel A presents the regression results for the subsample of high-growth firms (MTB ratio>1 over a period of 10 years). Panel B presents the regression results for the subsample of low-growth firms (MTB ratio <1 over a period of 10 years). All variables are described in the Appendix. ***, **, * denotes statistical significance respectively at the 1%, 5% and 10% level.

Dependent variable : BOOKLEV

Panel A: High-growth firms (MTB>1)

		Alternative managerial overconfidence measures		
	(I)	**(II)**	**(III)**	**(IV)**
BOOKLEV(t-1)	0,76 (36.59)***	0,57 (13.21)***	0,399 (13.03)***	0,41 (13.66)***
SIZE	-0,08 (-2.23)**	-0,13 (-2.07)**	-0,215 (-4.27)***	-0,22 (-4.62)***
TANG	0,032 (1.67)*	0,408 (1.16)	0,47 (1.60)	0,502 (1.93)**
PERF	-1,39 (-5.15)***	-0,329 (-0.43)	0,121 (0.20)	0,139 (0.25)
MTB	0,02 (3.14)***	0,07 (2.38)***	0,030 (1.75)*	0,034 (1.99)**
RISK	0,000 (0.08)	0,009 (0.52)	-0,0004 (-0.03)	-0,006 (-0.44)
EFWAMB	0,000 (0.19)	0,000 (2.03)**	0,000 (2.46)***	0,000 (2.42)***
CONF-MO	-0,02 (-2.99)***			
CONF-ESI		-0,008 (-2.47)***		
CONF-ISMMI			-0,012 (-2.31)**	
CONF-ISMNMI				-0,022 (-2.89)***
INTERCEPT	0,35 (2.03)**	1.289 (2.74)***	1,60 (4.32)***	2.13 (4.50)***
N	631	1068	1068	1068
Wald test *p.value*	0.000	0.000	0.000	0.000
Arelleno-bond test for AR(1) *p.value*	0.000	0.000	0.000	0.000
Arelleno-bond test for AR(2) *p.value*	0.59	0.316	0.106	0.109
Sargan test of overidentifying restrictions *p.value*	0.000	0.000	0.000	0.000
Sargan test excluding group *p.value*	1.000	1.000	0.676	0.996

Panel A: Low-growth firms (MTB<1)

		Alternative managerial overconfidence measures		
	(I)	**(II)**	**(III)**	**(IV)**
BOOKLEV(t-1)	0,316 (14.69)***	0,491 (6.73)***	0,441 (8.86)***	0,455 (9.34)***
SIZE	-0,072 (-7.65)***	-0,062 (-2.67)***	-0,058 (-2.67)***	-0,055 (-2.74)***
TANG	-0,124 (-2.30)**	-0,184 (-1.18)	-0,260 (-1.70)*	-0,218 (-1.56)
PERF	-0,980 (-5.96)***	-0,561 (-1.45)	-0,968 (-2.72)***	-0,954 (-2.83)***
MTB	-0,065 (-3.71)***	-0,053 (-1.08)	-0,045 (-1.04)	-0,060 (-1.42)
RISK	0,001 (0.27)	0,028 (2.78)***	0,022 (2.49)***	0,025 (2.71)***
EFWAMB	-0,043 (-1.06)	-0,120 (-2.45)**	-0,086 (-1.89)*	-0,086 (-1.94)**
CONF-MO	-0,096 (-0.90)			
CONF-ESI		-0,002 (-1.12)		
CONF-ISMMI			-0,005 (-1.29)	
CONF-ISMNMI				0,003 (0.49)
INTERCEPT	0,671 (12.54)***	0,827 (3.45)***	0,863 (3.86)***	0,466 (1.54)
N	148	351	351	351
Wald test p.value	0.000	0.000	0.000	0.000
Arelleno-bond test for AR(1) p.value	0.000	0.000	0.000	0.000
Arelleno-bond test for AR(2) p.value	0.922	0.104	0.124	0.116
Sargan test of overidentifying restrictions p.value	0.000	0.000	0.000	0.000
Sargan test excluding group p.value	0.917	0.92	0.803	0.964