

BOARD, GOVERNANCE AND FIRM PERFORMANCE: ARE FINANCIAL INTERMEDIARIES DIFFERENT?

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Abstract

Drawing on Agency Theory this article investigates the relationship between board size and European firms' performance. The focus is on the implicit differences between financial and non-financial firms. In particular the paper addresses the following questions: does board size influence firm performance? Is financial intermediaries' corporate governance different from that of non-financial companies? The study analyses the governance of the largest listed European companies which make up the Eurotop 100 index. Companies come from 12 different countries and are subject to different regulatory and self-discipline codes. Referring to the Eurotop index the focus is on the relation between the overall size of the board of directors and the level of performance measured as Tobin's Q and Return on Assets. Diverging results emerge depending on the typology of the firm. In particular, results suggest that for non-financial companies large boards negatively influence firm performance, whereas financial intermediaries seem to be different because of the non-relation between their board size and performance.

Keywords: Corporate Governance; Board Size; Financial Intermediaries; Two-tier Board Structure; Europe.

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Introduction and motivation

The recent financial and economic crisis refuelled the debate on corporate governance (OECD 2009a; 2009b; 2009c; 2009d). In particular, as concerns financial intermediaries, in many countries, recent measures aimed at supporting the economy and banks have attached particular importance to governance practices.

Board composition plays an important role in corporate governance where the objective is to formulate specific structures aligning the interests of management and suppliers of capital (Rose, 2005).

Though coordinated measures at European level have often been suggested, corporate governance systems in Europe remain quite different: in some countries there is the one-tier system and in others the two-tier system²⁸. Given

the importance attributed to corporate governance by regulatory and supervisory authorities, financial intermediaries and especially banks are highly interested in choosing the appropriate governance structure. Indeed, many large financial groups in Europe have recently adopted the *two-tier board* governance structure. While some highlight its advantages, others emphasize the risks of the possible overlapping of functions and roles across different governance layers and of the plethoric multiplication of seats on the boards. The latter implicitly refer to the problems arising from large boards identified by agency theory and discard other possible approaches identified in more recent literature that emphasises the importance of a behavioural approach in board of directors studies (Ees, Gabrielsson, & Huse, 2009; Huse, 2003; Huse, Hoskisson, Zattoni, & Viganò, 2009). This paper pursues a threefold objective:

- a. the analysis of the relation between board size and firm performance;
- b. the investigation of the peculiarities of the corporate governance of financial intermediaries as concerns board size;
- c. the identification, on the basis of international evidence, of elements which

²⁸ There are three different possible structures reflected through the board of directors: the *one-tier board* system, typical of the UK, Spain and many other countries; the *vertical two-tier* system, typical of Germany and of the Netherlands in the case of large companies; and countries such as France and Italy in which companies may choose between different models.

may improve the legislative and self-regulatory framework particularly focusing on the implications that the adoption of the *vertical two-tier* model may have in banks and insurance companies.

The paper draws on the assumption that for financial intermediaries the governance system is all the more important not only because intermediaries are basically in the business of risk acceptance but also due to their special role within the economy in the aggregation and transfer of financial resources.

Basing on agency theory, it seems interesting and useful to address the following research questions:

1. Does board size have an influence on the level of corporate performance?
2. Is the corporate governance of financial intermediaries and banks different from that of other kinds of firms?
3. What is the relationship between board size and firm performance in financial intermediaries?

Prior studies often refer to a single country and a lack of studies that provide international surveys emerges. Moreover, there are few published papers that study the effectiveness of European boards of directors (Denis & McConnell, 2003). To fill this gap, the analysis is conducted on data (from 12 different European countries) extracted in 2007, for companies in the Eurotop 100 index, representative of the largest European listed companies.

Moreover, previous research tends to focus either on non-financial companies or on banks on the assumption that banks are different. Contrary to these studies the present paper investigates the impact of board size on firm performance, taking into account the peculiarities of the corporate governance of financial intermediaries. To date, there are many studies on corporate governance, yet only few of them focus on corporate governance of financial intermediaries (e.g., Adams & Mehran, 2005; Belkhir, 2009; Caprio, Laeven & Levine, 2007; Macey & O'Hara, 2003; Staikouras, Staikouras & Agoraki, 2007), even though the key aspects of corporate governance are just as crucial for financial intermediaries and especially for banks (Andres & Vallelado, 2008).

The results suggest that the relation between board size and firm performance depends on the typology of the firm. In particular we found that board size negatively impacts firm performance (as measured by Tobin's Q and Return on Assets). This is not true for financial intermediaries where having a larger board does not hamper the level of firm performance.

The contribution of the paper is threefold.

First, it contributes to the debate on corporate governance worldwide by clearly focusing on the specific characteristics of financial

intermediaries. Second, it uses data from different countries contrary to the large part of previous studies that analyse firms of a single country. Finally, the paper provides insights which may be useful to improve the legislative and self-regulatory framework.

The paper is structured as follows: the second section summarises the main literature and illustrates the hypotheses; the third section describes the methodology and the fourth the results of the analysis. The main results are discussed in the fifth section. Conclusions and future research directions are presented in the last section.

Literature review and hypotheses development

The most discussed issue regarding boards and governance is whether the composition of the board has a positive or negative effect on the performance of the firm. A great deal of research has been conducted on this relationship over the years, following several theoretical approaches (Daily, Dalton & Cannella, 2003). The most frequent approach is agency theory (Fama & Jensen, 1983; Jensen & Meckling, 1976) that focuses on the monitoring role of the board of directors.

In the literature on boards, two commonly investigated issues are the size of the board and its composition and independence (John & Senbet, 1998). In this study, we address the issue of board size.

The empirical literature concerning the relationship between board size and financial performance is relatively large (for a survey of the literature see, for example, Adams, Hermalin & Weisbach, 2010; Johnson, Daily & Ellstrand, 1996). However, these studies are not conclusive. This is due to the fact that the relationship between board of directors and firm performance is not simple and direct and it cannot be covered by any single approach (Nicholson & Kiel, 2007). There is a need to better explore this relationship.

This paper focuses on the link between an important corporate governance issue, such as the size of the board, and firm performance.

Board size and firm performance

The size of corporate boards has received much attention particularly given prominent business failures of large companies. However, there does not seem to be consistent evidence to support that board size or composition affect performance. In fact, while many studies find a positive relation between board size and firm performance (Dalton, Daily, Ellstrand & Johnson, 1998; Forbes & Milliken, 1999; Goodstein, Gautam & Boeker, 1994; Pearce & Zahra, 1992; Van den Berghe &

Levrau, 2004), most researchers have concluded that there is negative correlation between board size and firm performance (Cheng, 2008; Jensen, 1993; Yermack, 1996).

The studies which are relevant to the present analysis follow two opposite views: on the one hand, studies which address board size and composition considering agency theory (Fama & Jensen, 1983; Jensen & Meckling, 1976) and on the other hand studies that adopt a resource dependence approach (Hillman & Dalziel, 2003; Pfeffer, 1972).

From a resource dependence theory larger boards have the potential to provide an increased pool of expertise because their members may have a broader variety of backgrounds and may represent more specialized knowledge and skills (Smith, Smith, Olian, Sims, O'Bannon & Scully, 1994). For this reason, larger boards are better equipped (compared to small boards) to process large amounts of information (Eisenhardt & Schoonhoven, 1990). Moreover, the possibility for boards to draw on a larger pool of expertise may contribute to the quality of the discussions in board meetings (Van den Bergh & Levrau, 2004).

According to agency theory (Fama & Jensen, 1983; Jensen & Meckling, 1976), the board of directors is seen as the instrument shareholders use to monitor top managers. Nonetheless, boards are not always able to play this role adequately, and their lack of effectiveness require more in-depth analysis of some boards issues such as board size and composition. Jensen (1993), however, contends that board size is not unlimited. There exists a turning point where the benefits of an enlarged board will be outweighed by the costs in terms of productivity losses. As size increases, boards may be confronted with some traditional group dynamic problems associated with large groups. In fact, larger boards of directors become more difficult to co-ordinate and may experience problems with communication and organization, a proposition derived from organizational behaviourists (see for instance Eisenberg, Sundgren, & Wells, 1998; Hackman, 1990). Thus, when boards are too large a fruitful debate may be inhibited. Besides, having a high number of board members around the table may hamper the board's ability to identify, extract and use its members' potential contribution. Given the limited time available during board meetings, there might be too many members to hear and/or persuade (Patton & Baker, 1987).

The empirical evidence supports this last assertion by showing an inverse relationship between firm value and the size of the board (Eisenberg et al., 1998; Yermack, 1996). Yermack (1996) presents evidence that small boards of directors are more effective, and that companies with them achieve higher market value.

According to this last strand of literature we hypothesizes that:

Hypothesis 1. There is a negative relationship between board size and firm performance.

Board size and firm performance in financial intermediaries

Studies on governance of financial intermediaries mainly focus on banks. These studies are considered relevant for the purposes of the present study since banks and insurance companies are: i) active in the risk acceptance business, ii) strongly regulated and capital constrained and iii) offer products which may be substitutes. There are many studies which support the idea that banks should be subject to particular governance provisions due to their greater regulation compared to other sectors (Busta, 2007; Caprio & Levine, 2002; Levine, 2003), or their operating characteristics, namely the deposit guarantee fund, deposit insurance and the systemic risks deriving from the management of payment systems and the transmission of monetary policy (Macey & O'Hara, 2003). Studies which in general show that governance is affected by industry also indirectly support the idea that intermediaries are different (Black, Jang & Kim, 2006; Gillian, Hartzell & Starks, 2003).

Focusing on bank corporate governance, there are a number of recent studies conducted in the financial sector that investigate the influence of board size on banks' performance (e.g., Adams & Mehran, 2005; Belkhir, 2009; Staikouras *et al.*, 2007). In a study of 58 large European banks, Staikouras *et al.* (2007) show that large boards influence negatively bank profitability. On the other hand, Adams and Mehran (2005) did not find a negative relationship between large boards and performance in US banking firms. Likewise and Belkhir (2009), in a study of 174 US financial companies, does not find a positive relationship between board size and performance (measured by Tobin's Q). Additionally, a study on the US context does not find any significant relation between board size and composition and performance (Belkhir, 2006). The numerous arguments supporting the non relation between board size and bank performance lead us to the following:

Hypothesis 2. In financial intermediaries there is no relationship between board size and firm performance.

Methodology The sample

The main objective of this paper is to investigate the relationship between board size and performance in European financial and non-

financial firms. To this aim, we use data from the largest listed European companies which make up the Eurotop 100 index, representative of several industries but in any case comparable in terms of size and complexity. Companies considered come from 12 different countries and are therefore subject to different regulatory and self-discipline codes.

The financial data are drawn from Bloomberg whereas company and board data are hand collected from the official documentation present on the companies' websites (Articles of Association, Corporate Governance codes, Annual reports and other official documentation). The independent variable (board size) is measured in 2005 and the dependent variables (Tobin's Q and ROA) are measured in 2007. Indeed, it seems logical to think that the effect of board size on firm performance requires time; it will not appear immediately, but after a delay. As suggested by Hitt, Tihanyi, Miller and Connelly, (2006), we use a two-year lag for the purpose to overcoming the problems of causality inherent in cross-sectional data (Salomon & Shaver, 2005). Moreover, for the purposes of the present paper the dynamic perspective is obviously preferable to the static perspective of cross-sectional analysis.

Among the 100 European firms included in the analysis 67 are not financial firms and 33 are financial firms (banks and insurance companies).

Non-financial firms have on average a market capitalization of 52,327.29 million euro (Std. deviation 34,652.73) and on average Total assets of 66,672.02 million euro (Std. deviation 53,015.87). 24% of the firms have a two-tier governance system and the rest have a one-tier system. The average board size is of 18.85 members with an average of 11.68 independent directors.

Compared to non-financial firms, financial firms in the Eurotop index have a similar average market capitalization of 54,811.63 million euro (Std. deviation 29,915.21) and far higher average Total assets of 738,779.33 million euro (Std. deviation 453,411.79). 33% of the financial firms has a two-tier governance structure and the rest has a one-tier system. The average board size is of 20.61 members of which an average of 12.78 is independent.

The variables

In the literature on governance and banking, ROA and Tobin's Q are two of the most commonly-used firm performance variables (Adams, Almeida & Ferreira, 2009; Adams & Mehran, 2003). Accordingly we use these two variables as dependent. Bloomberg has been the primary source of information.

ROA is calculated as net income divided to average assets. Tobin's Q is calculated as the market value of a company divided by the value of the company's assets.

The independent variable is board size calculated as the number of directors.

The control variables are total assets (as proxy of firm size), market capitalization (which is another measure of firm size), governance system (a dummy variable that is coded 1 when the governance system is two-tier; 0 when the governance system is one-tier) and the number of independent directors.

Multiple linear regression analysis

Multiple linear regression analysis was used to test the hypotheses. In particular we split the sample into two sub-samples (financial and non-financial firms). For each of the two samples we made a hierarchical analysis with two steps. In the first step, we run the regressions of Tobin's Q and ROA on the control variables (Model I) and in the second step, we run the regressions entering the independent variable in addition to the control variables a (Model II).

Results

Table 1 and Table 2 present correlations for the dependent, independent and control variables in the two sub-samples.

Insert Table 1 about here

Insert Table 2 about here

Intercorrelations among independent variables were generally low thereby minimising the problem of unstable coefficients (because of collinearity) in the linear regression models. Also the VIF test suggests that multicollinearity does not defect results.

We used SPSS to run the regression analysis. The results of the regression analysis are presented in Table 3 (for non-financial firms) and in Table 4 (for financial firms).

Insert Table 3 about here

Insert Table 4 about here

The results for the non-financial firms are reported in table 3. Model I, on the left side of the table

regressed Tobin's Q on the control variables, the adjusted R² is .22. Model II regressed Tobin's Q on the control variables and the independent variable (board size), the adjusted R² is .28.

Model I, on the right side of the table, presents the regression of ROA on the control variables, the adjusted R² is .14. Model II regressed the ROA on the control variables and the independent variable (board size), the adjusted R² is .21.

The results for the financial firms are reported in Table 4. Model I, on the left side of the table, regressed Tobin's Q on the control variables, the adjusted R² is .12. Model II regressed Tobin's Q on the control variables and the independent variable (board size), the adjusted R² is .14.

Model I, on the right side of the table regressed ROA on the control variables, the adjusted R² is .09. Model II regressed the ROA on the control variables and the independent variable (board size), the adjusted R² is 0.11.

Discussion

The board of directors has long been linked to the reduction of agency problems brought about when managers pursue their own interests at the shareholders' expense. This view is articulated by (Fama & Jensen, 1983; Jensen & Meckling, 1976), who argue that boards of directors can reduce agency costs by separating the management and control aspects of decision making, where control involves ratification and oversight of decisions made by management.

In this paper we have attempted to examine the influence that board size exerts on firm performance following an agency theory approach. We tested hypotheses on the relations between board-size and firm performance for two sub-samples: non-financial firms (H1) and financial firms (H2). In particular, we hypothesize that for non-financial firms larger boards may impact negatively on firm performance, while for financial firms board size does not influence performance.

We found a negative and significant relationship between board size and performance in non-financial firms (the R² is .21). The key argument to better explain this result can be found in agency theory (Fama & Jensen, 1983; Jensen & Meckling, 1976). Agency theory is the most important theoretical framework used to link board characteristics and firm performance (Daily et. al., 2003). Following agency theorist, when a board gets too big, agency problems increase. Directors are then less effective in monitoring managers. Previous empirical results clearly support this proposition and suggest that board size and firm value are negatively correlated (Eisenberg et al., 1998; Yermack, 1996).

This view is also confirmed by Lipton and Lorsch (1992) who argue that directors normally do not criticize the policies of top managers or hold candid discussions about corporate performance. These problems are more pronounced with larger boards. Moreover, when the board is too large, problems of coordination/communication arise. For larger boards, it is more difficult for the firm to arrange board meetings and for the board to reach a consensus. As a result, larger boards are less efficient and slower in decision-making. Lower efficiency in the decision-making process of course influences the level of firm performance.

The effect of board size on the performance of financial intermediaries is less clear. The second hypothesis we tested relates board size and firm performance in a sub-sample of financial firms. The results support our hypothesis suggesting a non correlation between board size and performance for financial intermediaries. This result may be explained looking at banks and financial firms as "special" institutions generating distinct corporate governance challenges (Staikouras et al., 2007).

Financial institutions undertake a number of services that are indispensable for the functioning of modern economy and economic growth. In general terms, financial intermediaries provide access to payment systems, generate liquidity and facilitate transactions by reducing transaction/participation costs and information asymmetries and performing a risk-management role through the offering of financial products which enable consumers to address economic uncertainties by packaging, hedging, pricing and sharing risks (Levine, Loayza & Beck, 2000).

This has long been pointed out by the Basel Committee which in 1999 underlined that "banks are a critical component of any economy. They provide financing for commercial enterprises, basic financial services to a broad segment of the population and access to payments systems. In addition, some banks are expected to make credit and liquidity available in difficult market conditions. The importance of banks to national economies is underscored by the fact that banking is virtually universally a regulated industry and that banks have access to government safety nets. It is of crucial importance therefore that banks have strong corporate governance" (Basel Committee on Banking Supervision, 1999).

Financial intermediaries are unique also from a corporate governance perspective (Llewellyn, 2002).

The Basel Committee (2010) noticed that "effective corporate governance practices are essential to achieving and maintaining public trust and confidence in the banking system, which are critical to the proper functioning of the banking sector and economy as a whole. Poor corporate governance may contribute to bank failures, which

can pose significant public costs and consequences due to their potential impact on any applicable deposit insurance systems and the possibility of broader macroeconomic implications, such as contagion risk and impact on payment systems. In addition, poor corporate governance can lead markets to lose confidence in the ability of a bank to properly manage its assets and liabilities, including deposits, which could in turn trigger a bank run or liquidity crisis. Indeed, in addition to their responsibilities to shareholders, banks also have a responsibility to their depositors". Following this view we found that while for non-financial firms board size negatively affects firm performance, for financial firms it seems that board size does not directly affect the performance. This result also appears consistent with previous studies that found no significant relation between board size and performance in banks (Adams & Mehran, 2003; Brewer, Jackson & Jagtiani 2000).

The non-relation between board size and performance in financial firms is a result that confirms the specificity of financial firms respect to non-financial firms. In order to better understand the role of board of directors in corporate performance it is important to consider several aspects, such as the role of information and the board's various duties: control (explained effectively by agency theory), the support of strategy (outlined by resource dependence theory) (Pugliese, Bezemer, Zattoni, Huse, Van den Bosch, & Volberda, 2009), the decision making process and the dynamics inside the boardroom (Forbes & Milliken, 1999; Huse 2007).

Conclusions and future research directions

In this paper we have used the agency theory to explore the influence of board size on firm performance. Two hypotheses were tested on two comparable sub-samples of non-financial and financial large listed European firms. We found that for non-financial firms having larger board negatively influences performance, whereas for financial firms the negative influence is not confirmed.

The paper is thus in coherence with agency theory when analysing non-financial firms but it does not confirm the agency theory for financial firms. Various studies have illustrated that boards of financial firms tend to be larger than boards in non-financial firms (Adams & Mehran, 2003)

The two-tier model leads to a higher number of board members. The agency theory would therefore postulate that this governance system could be negative for firm performance. However, our results suggest that it may in any case prove to be effective, especially for financial intermediaries, where board size may actually be an advantage if

complementary expertise and backgrounds are present on the board. This is consistent with the resource dependence theory of the firm that considers larger boards to be advantageous for the firm. In sum, while for non-financial firms agency theory may be particularly useful in explaining the influence of board size, for financial firms we need to integrate agency and resource dependence perspectives. This integration may contribute to our knowledge of the role of board of directors on firm performance (Hillman & Dalziel, 2003).

This may be particularly relevant for financial intermediaries in consideration that in "Principles for enhancing corporate governance", issued for consultation in March 2010, the Basel Committee focuses on board competence and independence and pays particular attention to board practices and the role of the board in the oversight of risk management. As concerns composition, the proposed principles specify "the bank should have an adequate number and appropriate composition of board members. Unless required otherwise by law, the board should identify and nominate candidates and ensure appropriate succession planning. Board perspective and ability to exercise objective judgment independent of both the views of executives and of inappropriate political or personal interests can be enhanced by recruiting members from a sufficiently broad population of candidates. Independence can be enhanced by including a sufficient number of qualified non-executive members on the board who are capable of exercising sound objective judgment. Where a supervisory board or board of auditors is formally separate from a management board, objectivity and independence still need to be assured by appropriate selection of board members".

The paper offers various contributions. First, it confirms the importance of corporate governance in finance as pointed out by the OECD, that has recently undertaken a process aimed at reassessing its 2004 principles which was concluded in February 2010 with a series of recommendations including board practices and risk management (OECD, 2010), and the Financial Stability Board, that in addition to including corporate governance in the Compendium of 12 key principles for sound financial systems, has on many occasions described the role of bank governance and compensation practices in the excessive risk taking which was among the causes of the current crisis.

Draghi, Chairman of the Financial Stability Board, which has been charged by the G20 to reform financial regulation, has often stated the importance of bank corporate governance. Draghi (2008). "Alongside adequate capital and organization, the third factor of the stability of the banking system is the quality of corporate governance". As mentioned above, the Basel

Committee proposed a reform of its Principles to enhance corporate governance in mid-March for which the consultation period finished in June 2010.

Second, we fill the gap in the literature calling for more studies on governance of financial intermediaries (Andres & Vallelado, 2008). In fact, while prior research considers alternatively on either financial or non-financial firms, the paper includes both types of companies, showing that some differences exist between financial and non-financial firms.

Third, the paper gives an international view using data from the largest listed European companies which make up the Eurotop 100 index whereas most prior studies offer a single country view (Denis & McConnell, 2003).

Fourth, the paper provides useful insight suggesting that for financial firms having larger boards does not necessarily influence performance negatively, hence suggesting that the two-tier system could be positive for financial firms (where it is also actually more widespread) and confirming current approaches by policy makers and principle setters which tend to focus on what the board should do and the necessary competences of board members as opposed to structural characteristics (Bank of Italy, 2008; Basel Committee on Banking Supervision, 2010).

Finally, the paper also indicates that future research in the field of corporate governance should use an integrated theoretical perspective (agency theory and resource dependence theory) in order to enhance our knowledge of the role of boards of directors on firm performance (Hillman & Dalziel, 2003).

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Table 1. Correlation matrix (67 non-financial firms)

** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed).

	Mean	Std. Deviation	1.	2.	3.	4.	5.	6.	7.
1. Market capitalization	52,327.29	34,652.73	1						
2. Total assets	66,672.02	53,015.87	.63**	1					
3. Governance system	.24	.43	-.18	.07	1				
4. Board independence	11.69	3.10	.41*	.26	-.01	1			
5. Board size	18.85	5.19	.08	.29	.49**	.44**	1		
6. Tobin' s Q	1.14	1.05	.06	-.14	-.17	-.12	-.56**	1	
7. ROA	8.08	7.02	.08	-.40**	-.29	-.06	-.37**	.29*	1

Table 2. Correlation matrix (33 financial firms)

** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed).

	Mean	Std. Deviation	1.	2.	3.	4.	5.	6.	7.
1. Market capitalization	54,811.63	29,915.21	1						
2. Total assets	738,779.33	453,411.79	.74**	1					
3. Governance system	.33	.48	-.13	-.13	1				
4. Board independence	12.78	4.29	.35	.01	.27	1			
5. Board size	20.61	5.40	.03	.05	.31	.13	1		
6. Tobin' s Q	.08	.03	-.14	-.19	.03	-.18	-.09	1	
7. ROA	.71	.36	-.20	-.18	.05	-.17	.05	.85**	1

Table 3. Multiple linear regression (67 non-financial firms)

Control and independent variables	Dependent variable: Tobin's Q		Dependent variable: ROA	
	Model I	Model II	Model I	Model II
Market capitalization	.64*	.46*	.47*	.49*
Total assets	.62**	.42**	.56	.62
Governance system	.48*	.47*	.76	.78
Board independence	.31	.37	.32	.39
Board size		-.49**		-.21*
Adjusted R²	.22	.28	.14	.21
F	6.32***	7.62***	3.15***	3.89***

The level of significance is * < .1, ** < .05; *** < .01

Table 4. Multiple linear regression (33 financial firms)

Control and independent variables	Dependent variable: Tobin' s Q		Dependent variable: ROA	
	Model I	Model II	Model I	Model II
Market capitalization	.21	.29	.07	.09
Total assets	.17*	.19*	.42**	.43**
Governance system	.18*	.21*	.65	.68
Board independence	.24	.26	.19	.15
Board size		-.49		.18
Adjusted R²	.12	.14	.09	.11
F	6.29***	7.11***	2.16***	2.19***

The level of significance is * < .1, ** < .05; *** < .01