

# BOARD CHARACTERISTICS AND FINANCIAL PERFORMANCE IN THE INSURANCE INDUSTRY: AN INTERNATIONAL EMPIRICAL SURVEY

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## Abstract

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There are few studies in the literature on how the characteristics of boards of directors affect the performance of insurance companies. The purpose of this research is to investigate the characteristics of a company's board that can have a significant impact on financial performance in the insurance sector. For this purpose, we performed a dynamic pooled regression model to test the impact of a wide range of board-specific factors. The survey has been conducted on an international sample of 119 listed insurance companies operating in the period 2009-2019. The sample includes companies from three geographical areas: North America, Europe and Asia. Our findings provide evidence that board structure and board independence are the most relevant governance factors, with a potentially positive impact on insurers' market performance. These findings indirectly outline the opportunity for insurance companies to improve corporate fair value by strengthening internal governance models through effective board policies, an adequate qualification of board members and a well-balanced membership of the board. At the same time, there is still room for improvement as regards the level of board independence by strengthening internal governance policies in order to maintain an adequate number of independent and non-executive board members. The study upgrades the evidence arising from the existing literature by providing new elements to support a deeper understanding of the effects of insurance companies' board characteristics on financial performance. Empirical results may also have important implications for both managers and policy makers.

**Keywords:** Insurance Companies, Corporate Governance, Board of Directors, Board Committee, Financial Performance

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## 1. INTRODUCTION

Although the interest in corporate governance practices has been widespread among economists since the early 1900s, the topic has become more and more relevant in the light of fraud scandals in the United States and the recent financial crisis. These events have revealed uncertainties regarding the role of supervisors, business models and risk exposure assessment, but above all regarding the characteristics and operating profiles of the companies' board. To date, the challenging global economic environment still highlights the need to improve management practices in order to achieve a resilient corporate structure (Tricker, 2019).

Academic studies outline the role of good corporate governance practices in reducing agency problems while maximizing shareholders' wealth (Carter, Simkins, & Simpson, 2003). Corporate governance regulates the relationships between the senior management, the board of directors, the shareholders and other stakeholders and aims to settle a firm's structure and tools to achieve and monitor business goals (OECD, 2015). Sound governance practices facilitate decision-making and can improve business strategy and long-term performance (Bhagat & Bolton, 2008).

The topic is particularly significant in the case of insurance companies and, more generally, in the financial intermediaries' sector, as confirmed by the post-financial crisis reforms that have affected the financial sector, focusing on the solvency of intermediaries and on the central position of their internal governance models.

In the insurance industry, default conditions are mostly linked to the financial distress arising from management's inability to address risk exposure. The instability of the insurance sector may have a negative impact on a wide range of stakeholders and on the financial system itself. That is why regulators have developed a new risk-based solvency framework, as was the case with Solvency II in the European Union (Directive 2009/138/EC).

Although there is no universal governance model, it is possible to set supporting principles to make management activities and processes transparent and effective in the interest of stakeholders (OECD, 2015).

In this context, the company board plays a key role. The insurance companies' board evaluates the insurer's maximum acceptable risk, while monitoring minimum capital requirements according to the actual risk assumed, approves risk management policies, is responsible for audit activities and defines adequate requirements for board members and top management. As well, the board must clearly define the governance system, while monitoring internal organisational structure to ensure efficiency, effectiveness and transparency (OECD, 2017).

The lack of a clear structure and of a consistent size of the board may encourage abuses of shareholders (Baysinger & Butler, 1985), while its well-defined structure reveals a significant link with performance (Datta, 2018; Markonah, Sudiro, Surachman, & Rahayu, 2019), although not in a completely systematic way since financial metrics can also be affected by other factors (Klein, 1998).

Also, the achievement of business results' may

be influenced by the board composition, that is the presence of a number of independent directors (Abu-Risheh & Al-Sa'eed, 2012; Bouteska, 2020; Freire, Carrera, Auquilla, & Hurtado, 2020), the establishment of committees dedicated to risk management (Ames, Hines, & Sankara, 2018; Magee, Schilling, & Sheedy, 2019) and the gender diversity within the board (Birindelli, Dell'Atti, Iannuzzi, & Savioli, 2018; Dah, Jizi, & Kebbe, 2020; Pavić Kramarić, Aleksic, & Pejic-Bach, 2018). Anyway, from the existing literature emerge contrasting results on the relationship between corporate governance and corporate performance, highlighting that not all the elements underlying the company's board profile may have a critical influence on business performance.

The purpose of this research is to investigate the relationship between a wide range of board characteristics and corporate performance in the insurance sector. We believe our findings provide a significant contribution to the understanding of the most relevant board features and of their impact on insurers' market value.

The structure of the paper is as follows: Section 2 develops the literature review, with a particular focus on studies regarding board structure, board diversity and independence and board committee; Section 3 describes sample construction, data source, scoring methodology and the statistical model; Section 4 reports the main results of the empirical methodology. Finally, Section 5 summarizes the findings of the study and their implications.

## 2. LITERATURE REVIEW

Corporate governance is a system that ensures the firm's management takes place in the interests of ownership. The board is at the heart of the decision-making and control system. Among the main activities, the role of the board consists in guiding the company towards the pursuit of strategic objectives, as well as measuring corporate performance and evaluating the contribution of the main activities to the firm's value.

As told, in this study we explore the importance of several board features and their link with insurance companies' performance. The first characteristic qualifying the board structure widely discussed in previous studies is *board independence*, which is the percentage of independent and non-executive directors within the board.

Although the definition of independent and non-executive directors differs among jurisdictions, is usually qualified as "non-executive" a member of a company's board who is not involved in the daily administration of the company (i.e., is not an executive manager) and is not employed by the company (or by the group of which it is part), while an independent director is a member of the board who is not a representative (or a family member) of significant shareholders and who has no direct or indirect business relation with the company (or with the group of which it is part). In a stricter sense, to be qualified as really independent, a director also needs to be a non-executive member of the organization, so that the two terms often overlap with each other.

The presence of non-executive and independent

directors is commonly considered a sound governance practice. Being discharged of the day-to-day management of the organization and with no personal interest in the company, (non-executive) independent directors are expected to provide an unbiased and objective viewpoint to the board, at the same time effectively monitoring executive directors and senior managers in the interest of shareholders.

Despite the large emphasis on board members' independence, along with other board features, there is no univocal opinion in existing research regarding the relationship between the presence of non-executive and independent directors and a company's performance.

For listed companies, some scholars find that a board of directors made up mostly of independent directors certainly contributes to reducing conflicts between shareholders and senior management, making monitoring much more effective and efficient. A board of directors is considered desirable and can be defined as "independent" just when it's made up of at least 50% independent directors (Klein, 2002). However, the empirical results are conflicting with the relationship between independent directors and corporate performance. Although board independence may have a positive effect on a company's profitability, in some cases these advantages are found only among large companies, whose financial resources make it easier to recruit expert independent directors compared to smaller companies.

Also, the positive relationship between performance and board independence is more evident for those companies where the costs related to agency problems are much higher than the costs of appointing endogenous directors and where it's, therefore, necessary to mitigate the potential conflicts arising from the separation between corporate ownership and control (Knyazeva, Knyazeva, & Masulis, 2013; Liu, Miletkov, Wei, & Yang, 2015). In other studies, the link between board independence and corporate value creation is not statistically significant (Black & Kim, 2012).

Although the presence of independent directors makes it possible to reduce agency problems, there are also disadvantages linked to the effectiveness of their monitoring and consultancy tasks. Unlike executive board members, involved in the day-to-day management of the organization, non-executive directors possess less knowledge and skills than the one required by the company in which they operate. Therefore, the effort to acquire specific information is very high and could weaken internal controls' efficiency.

The internal governance of financial companies generally differs from that of non-financial companies due to certain needs related to economic and financial stability targets. Thus, if the composition of the board might have a weak relationship with the performance of non-financial companies, in the case of bank and insurance companies the adoption of sound governance practices is encouraged by both shareholders and supervisory authorities (Adams & Mehran, 2012; Liang, Xu, & Jiraporn, 2013; Zhou, Owusu-Ansah, & Maggina, 2018). In some cases, the independence of the board may also be compromised by the interference of supervisory authorities, typically in

the case of poor bank performance (Barth, Caprio, & Levine, 2004; Li & Song, 2013).

Other studies reveal a negative relationship between the increase in the number of independent directors and companies' performance. In fact, an increasing number of independent board members can add to the costs of a company in terms of strict monitoring on the corporate body. Added to this is the possibility that the independent directors may pursue objectives of their own interest or act in the interest of other companies in which they are involved (Musleh Alsartawi, 2019). Another factor that may negatively affect a financial company's performance is the choice to include independent members on their boards only to comply with regulatory or market requirements (Pathan & Faff, 2013).

In insurance companies, given the high degree of opacity of their activities, implementing sound and effective governance models is even more necessary. Also for insurance companies, the relationship between board independence and business performance appears to be of little significance, while the professional contribution of independent members could, on the contrary, have negative effects on the assumption of business risks (Adams & Jiang, 2016; Alhassan & Boakye, 2020; Boubakri, 2011; Elamer, AlHares, Ntim, & Benyazid, 2018).

The second board feature discussed in existing research is *board size*. Many studies document that smaller boards are expected to be more effective at monitoring and controlling firm governance. Larger boards may have a greater specialization and expertise, but they can bring a higher cost in terms of coordination problems and of slowing down of decision-making processes, with negative effects on firm value (Ahmed, Hossain, & Adams, 2006; Birindelli et al., 2018; De Andres, Azofra, & Lopez, 2005; Jensen, 1993; Lee & Filbeck, 2006; Lipton & Lorsch, 1992). On the contrary, a smaller board size can be more successful in its role of firm monitoring. Although most of the empirical evidence shows that there is an inverse relationship between corporate value and board size, it might depend on the company sector. In the case of financial intermediaries, such as banks, larger boards may have a positive effect on performance through a more effective manager monitoring (De Andres & Vallelado, 2008; Belkhir, 2009).

The third board characteristic often debated within academic literature is *gender and cultural diversity* within the board. A number of studies state that board diversity entails less risk for shareholders due to higher monitoring, but this varies according to board size and composition. Some researchers found that a diversified board of directors invests more in potentially riskier R&D projects due to the increased efficiency of the board, which is more focused on long-term business value. On the other hand, the time required to react to market needs could be slower in the case of more diversified boards and this is an important limit, especially in times of severe crisis. However, the positive effects of board diversity on corporate performance remain stable as long as the costs of establishing such a group do not outweigh the benefits. The academic literature reveals several interpretations regarding the impact of board diversity on performance.

The presence of independent foreign directors, not resident in the country where the company is based, may strengthen board expertise and views. International skills and backgrounds within the board are particularly useful in overseas expansion operations and cross-border acquisitions. On the other hand, geographical distance, which could limit board meetings attendance, could weaken board monitoring and control activities, also causing negative reactions from the market (Masulis, Wang, & Xie, 2012). Many studies found that greater participation of women or minorities within the board may have a positive effect on a company's value (Bernile, Bhagwat, & Yonker, 2018; Birindelli et al., 2018; Carter et al., 2003). Many studies claim that the presence of women among directors can bring positive results in terms of greater control, with fewer accounting errors and higher profits and performance. However, although boards with higher female participation are characterized by greater involvement in the decision-making process and more effective monitoring, the effects on performance are not always positive, because of excessive control and a potential increase in internal conflicts. Therefore, the empirical analyses do not lead to enough robust results to affirm that the presence of women on the board can definitely lead to better performance (Adams & Ferreira, 2009; Arun, Almahrog, & Ali Aribi, 2015; Clatworthy & Peel, 2013; Nguyen, Locke, & Reddy, 2015).

One of the characteristics that can have an impact on the proper functioning of the board is certainly the annual *frequency of meetings*. This factor can be a valid indicator that allows us to understand whether the board is active or passive in terms of its impact on strategic decisions and on the correct performance of business processes (Gabrielsson & Winlund, 2000). However, while some researchers place importance on the number of meetings, others highlight its quality in terms of change management and its capacity to prevent future problems (Masulis et al., 2012; Rodriguez-Fernandez, Fernandez-Alonso, & Rodriguez-Rodriguez, 2014). In addition, too many meetings could have a negative impact on the value of the company by negatively affecting the decision-making process (Ma & Tian, 2009). Numerous studies confirm not only that the reduced frequency of board meetings is related to better corporate performance (Arosa, Iturralde, & Maseda, 2013; Johl, Kaur, & Cooper, 2015; Lipton & Lorsch, 1992; Vafeas, 1999) but it is also the expression of the stability of the company, of the lack of conflicts between chief executive officers (CEOs) and managers and of a correct management system (Jensen, 1993). However, there is no lack of theories that, on the contrary, underline the need for a higher frequency of meetings to improve the effectiveness of monitoring activities (Boivie, Bednar, Aguilera, & Andrus, 2016; Useem & Zelleke, 2006). In order to understand its relevance and assess its actual impact on company performance, this characteristic must be evaluated together with other components relating to the structure of the board of directors (García-Ramos & Díaz, in press). Within financial corporations, given the complexity of their activities, the role of the board of directors is even more relevant. Once again, research studies show opposite findings (De Andres & Vallelado, 2008): on the one

hand, academic literature finds a positive relationship between the frequency of board meetings and corporate performance (AlQudah, Azzam, Shakhatareh, & Mahmoud, 2019; Datta, 2018; Eluyela et al., 2018; Fekadu, 2015) while, on the other hand, some researches state that a higher number of meetings may negatively affect companies' performance (Battaglia, Curcio, & Gallo, 2014; Eburn & Emmanuel, 2019).

Finally, the renewed attention to corporate governance debate has also inspired a number of studies focusing on the structure of *board committees*: their number and tasks, their independence level, the embodied professional skills and the frequency of meetings. These characteristics can determine the effectiveness of the committee and the impact on firms' performance.

Many studies state that an independent audit committee is an important governance tool enhancing the quality of financial information and public disclosure (Arniati, Puspita, Amin, & Pirzada, 2019; Christensen, Kent, Routledge, & Stewart, 2015; Ghafran & O'Sullivan, 2013; Rahman, Meah, & Chaudhory, 2019). However, doubts remain regarding the influence of the audit committee's independence level on monitoring activity. Although audit committee is crucial for large companies, in some cases researchers did not find a statistically significant relationship between the audit committee's independence level and companies' performance or even found a negative relationship (Ben Barka & Legendre, 2017; Kamaludin, Ibrahim, & Sundarasan, 2020). Anyway, these findings are not homogeneous and may vary from country to country due to different cultural and institutional settings (Rahman et al., 2019; Zhou et al., 2018).

In the case of financial companies, a large size of the audit committee and the presence of foreign members seem to have a positive a negative impact on profitability, given the lower knowledge compared to that of an internal auditor and the higher probability of multiple committees membership (Almoneef & Samontaray, 2019; Haris, Yao, Tariq, Javaid, & Ul Ain, 2019). Finally, the audit committee efficiency seems to have no effect on companies' financial performance in post-crisis periods, when the economic recovery is very slow and investor confidence is low (Agyemang-Mintah & Schdewitz, 2018).

### 3. DATA AND METHODOLOGY

The survey has been conducted on an international sample of 119 listed insurance companies operating in the period 2009-2019. All the data have been collected from the Thomson Reuters database.

The sample includes companies from 12 countries, belonging to 3 geographical areas: North America, Europe and Asia. Insurance companies from North America are 65 (USA 58; Canada 7), representing 54.6% of the whole sample, while 31 insurers come from Europe (the United Kingdom 12; Switzerland 6; Italy 4; France 3; Germany 3; Netherlands 3) and 23 from Asia (China 7; Japan 6; South Korea 6; Taiwan 4).

Regarding business, about 42% of the companies operate in the property and casualty insurance industry, 33.6% of the insurers fall within the life and health insurance sector, 21% are

multiline insurance companies and brokers and 3.4% are reinsurance companies. We have chosen not to eliminate reinsurance companies given their limited number in the sample and after verifying that the empirical model results are not significantly affected by the presence of reinsurers.

The empirical analysis is based on a dynamic pooled regression model designed to test the effects on insurance companies' performance of a wide range of board-specific factors. Namely, to investigate the relationship between financial performance and board characteristics we developed a model composed of 26 explanatory variables regarding board features, combined into four major survey area: 1) board committee (i.e., presence and features of board committee); 2) board structure (i.e., board structure policies, board diversity, background and skills of board members, board member affiliations and individual re-elective mechanism); 3) board independence (i.e., board independence policies, the share of independent and non-executive board members and CEO-Chairman separation); and 4) board operativity (i.e., number of board meetings, board meetings attendance and disclosure). Table 1 shows the association between the four survey areas and the 26 board feature variables, while Table 2 defines the meaning of each variable.

**Table 1.** Survey area and board feature variables

Survey area	Variable
Board committee	Audit committee
	Audit committee expertise
	Audit committee non-exec. member
	Audit committee independence
	Nomination committee
	Nomination committee non-exec. member
	Compensation committee
	Compensation committee non-exec. member
	Compensation committee independence
	Corporate governance committee
Board structure	CSR sustainability committee
	Board experience policy
	Board diversity policy
	Board background and skills
	Board diversity
	Board member affiliations
	Board individual reelection
Board independence	Board specific skills
	Board independence policy
	Independent board members
	Non-executive board members
	Strictly independent board members
Board operativity	CEO-Chairman separation
	Number of board meetings
	Board meeting attendance
	Board attendance

**Table 2.** Meaning of board feature variables

Variable	Meaning
Audit committee	Presence of an audit board committee
Audit committee expertise	At least one "financial expert" on the audit committee (within the meaning of Sarbanes-Oxley)
Audit committee non-exec. member	Percentage of non-executive board members on the audit committee
Audit committee independence	Percentage of independent board members on the audit committee
Nomination committee	Presence of an audit nomination committee
Nomination committee non-exec. member	Percentage of non-executive board members on the nomination committee
Compensation committee	Presence of a compensation board committee
Compensation committee non-exec. member	Percentage of non-executive board members on the compensation committee
Compensation committee independence	Percentage of independent board members on the compensation committee
Corporate governance committee	Presence of a corporate governance board committee
CSR sustainability committee	Presence of a CSR sustainability committee
Board experience policy	Adoption of a policy regarding adequate experience on the company's board
Board diversity policy	Adoption of a policy regarding the gender diversity of the company's board
Board background and skills	Company's disclosure on the professional experience or skills or the age of its board members
Board diversity	Percentage of board members that have a cultural background different from the location of the company
Board member affiliations	An average number of other corporate affiliations for the board members
Board individual reelection	Board members individually subject to re-election
Board specific skills	Percentage of board members who have either industry-specific or a strong financial background
Board independence policy	Adoption of a policy regarding the independence of the company's board
Independent board members	Percentage of independent board members
Non-executive board members	Percentage of non-executive board members
Strictly independent board members	Percentage of strictly independent board members
CEO-Chairman separation	Separation between the CEO and the chairman of the board
Number of board meetings	Number of board meetings during the year
Board meeting attendance	Average overall attendance percentage of board meetings
Board attendance	Company's disclosure about the attendance of the individual board members at board meetings

For each of the four major survey areas, we elaborated an "ad hoc" indicator score. Given the presence of both qualitative and quantitative data, the metric of each item preliminarily required the conversion of qualitative information into quantitative data. For items with binary outcomes, we adopted a dichotomous scoring approach, with

mutually exclusive scores of 0 (when the company is not compliant with the item or in the case of lack of the relative information) and 1 (when the company is compliant with the item). Differently, for ordinal variables, we elaborated a graduated scoring based on the interval scales described in Table 3.

**Table 3.** Score scales for ordinal variables

Variable	Score scale
Audit committee non-exec. member	If <=10% = 0 If >10% and <=30% = 0.2 If >30% and <=50% = 0.4 If >50% and <=70% = 0.6 If >70% and <=90% = 0.8 If > 90% = 1
Audit committee independence	
Nomination committee non-exec. member	
Compensation committee non-exec. member	
Compensation committee independence	
Board specific skills	
Independent board members	
Non-executive board members	
Strictly independent board members	
Board meeting attendance	
Board diversity	If <= 10% = 0 If > 10% and <= 25% = 0.4 If > 25% and <= 40% = 0.8 If > 40% = 1
Board member affiliations	If <= 0.5 = 1 If > 0.5 and <= 1.5 = 0.8 If > 1.5 and <= 3 = 0.4 If > 3 = 0
Number of board meetings	If <= 6 = 0 If > 6 and <= 10 = 0.4 If > 10 and <= 14 = 0.8 If > 14 = 1

Individual scores have then been combined into an overall category score for each of the four survey areas, which has been computed as the simple average of the scores assigned to the variables included in each category. Finally, category scores have been rescaled to make all the elements lie between 0 and 100.

The four combined scores are assumed as possible predictors of insurers' performance. As a dependent variable, we used the market-to-book ratio (*MB*), which relates the firm's market price with the book value of its equity. We indeed believe the market-to-book ratio is a good proxy of a company's overall performance since it is based on both historical accounting data and forward-looking market metrics.

On the side of the explanatory indicators, we also added two firm-level control variables, the *ROE* (return on equity), given the impact of a company's economic performance on its market-to-book ratio, and the total equity-to-total assets ratio (*ETA*), as a proxy of a company's leverage, given the link between the market-to-book ratio and a company's risk exposure.

The regression model takes the following form:

$$\begin{aligned}
 MB_{i,t} = & a + b_1BCS_{i,t-1} + b_2BSs_{i,t-1} + \\
 & + b_3BIs_{i,t-1} + b_4BOS_{i,t-1} + b_5ROE_{i,t} + \\
 & + b_6ETA_{i,t} + \varepsilon_{i,t}
 \end{aligned}
 \tag{1}$$

where *MB* (that is the market-to-book ratio) is the dependent variable, *a* is the intercept,  $b_{1-6}$  are the regression coefficients, *BCs* is the board committee score, *BSs* is the board structure score, *BIs* is the board independence score, *BOs* is the board operativity score,  $\varepsilon$  is the random error term, *i* and *t* are indices for observation units (insurance companies) and time (years).

As shown in the equation, board scores are lagged values  $X_{i,t-1}$  of observed exogenous predictors  $X_i$ . We allowed for lagged board scores predictors

since we expect shifting in internal governance take longer to reveal their effects on corporate performance.

As stated before, all the data required by the regression model have been collected from the Thomson Reuters database. We excluded a number of insurers due to the lack of data. We also imposed a minimum of at least four years of available data in order to include companies in the study. Our final sample consists of 1,070 company-year observations.

Preliminarily to the regression analysis, a series of diagnostic tests have been performed to check possible multicollinearity issues. Then, the regression model has been performed both on the sample as a whole and at a regional level in order to verify if there is any geographical difference in the investigated relationships.

**Table 4.** Mean values of the variables used in the regression model

	Whole sample	North America	Europe	Asia
Market-to-book ratio	1.627	1.619	1.604	1.676
Board committee score	83.02	88.74	88.21	61.29
Board structure score	66.34	70.15	66.08	57.00
Board independence score	60.40	66.81	60.49	43.93
Board operativity score	42.11	41.15	49.49	34.35
Return on equity	9.324	7.585	10.91	11.57
Total equity-to-total assets ratio	17.14	23.16	12.04	8.842

Table 4 provides the mean values of the variables used in the regression model. Insurance companies' mean market-to-book ratio is 1.627, with a small geographical heterogeneity. Board variables show a high level of disclosure and good governance practices for the committee score (83.02 for the whole sample). Board structure and board independence are scored, respectively, 66.34 and 60.40, while board operativity shows the lowest score (42.11).

Looking at the three geographical subsamples, insurance companies from North America are the ones with the highest governance scores regarding board committee, board structure and board independence, followed by the European companies, which are the most virtuous in terms of board operativity. Asian insurers are lagging behind American and European companies in the field of disclosure and sound governance practices.

#### 4. RESULTS AND DISCUSSION

Table 5 presents the results of the regression model applied to the whole sample as well as at the three different regional areas.

In the whole sample regression, both the board structure (*BSs*) and the board independence (*BIs*) exhibit a positive regression coefficient which is statistically significant (highly statistically significant, in the case of *BSs*, and moderately significant, in the case of *BIs*). The regression coefficients of the other board features' scores (i.e., board committee and board operativity scores) turn out not to be statistically significant. Finally,

both the control variables confirm the expectations regarding their relationship with performance.

Once controlling for differences across a geographic area, the North America sub-sample confirm board structure score and board independence score have a strong positive link with the market-to-book ratio, which is statistically significant at the 1% level for both the scores, while the European sub-sample shows a highly significant positive correlation just for the board structure score.

Regression results for Asian insurers are quite different: no significant relationship between the board structure score and market-to-book ratio, a positive and statistically significant effect of the board committee score and a negative regression coefficient for the board independence score with a good statistical significance. We suspect that the low sample size could have somehow affected the regression results for the Asian sub-sample.

The board operativity score is confirmed to be unrelated to the market-to-book ratio in all regions.

**Table 5.** Results of the regression model

	<i>Whole sample</i>	<i>North America</i>	<i>Europe</i>	<i>Asia</i>
<i>BCs</i>	-0.00003 (-0.0127)	0.0017 (0.2902)	-0.0004 (-0.06981)	0.008*** (4.328)
<i>BSSs</i>	0.0109*** (4.340)	0.0115*** (2.829)	0.0126*** (2.813)	0.0042 (1.618)
<i>BIs</i>	0.0041* (1.701)	0.0137*** (3.794)	0.0064 (1.203)	-0.0057** (-2.05)
<i>BOs</i>	-0.0015 (-0.8114)	-0.0047 (-1.369)	-0.0008 (-0.2752)	-0.0008 (-0.3696)
<i>ROE</i>	0.0316*** (9.975)	0.0071* (1.857)	0.0913*** (14.26)	0.0514*** (6.673)
<i>ETA</i>	0.0145*** (4.876)	0.0223*** (5.920)	0.0139 (1.581)	-0.0215** (-2.508)
Constant	0.1764 (0.8969)	-0.6107 (-0.935)	-0.6817 (-1.420)	0.7462*** (4.542)
Std. error	1.2712	1.2761	1.2448	0.6176
<i>R</i> <sup>2</sup> overall	0.1638	0.1137	0.5125	0.3359
Adj <i>R</i> <sup>2</sup>	0.1585	0.1026	0.5013	0.3146
F-test	30.7213	10.222	45.906	15.7617
Prob. > F	8.55e-34	1.18e-10	3.12e-38	1.28e-14
N. of obs.	948	485	269	194

Notes: \* denotes significance at 10% ( $p < 0.1$ ), \*\* denotes significance at 5% ( $p < 0.05$ ), \*\*\* denotes significance at 1% ( $p < 0.01$ ). Numbers in parentheses below each coefficient show *t*-statistics.

Regression results suggest that board structure is the most relevant governance lever in the insurance industry, with a potentially positive impact on insurance companies' performance. This means that the stock market particularly appreciates companies:

- adopting effective board structure policies, aiming at maintaining an adequate and well-balanced membership of the board in terms of members' experience and expertise, gender diversity (adequate female representation on the board) and cultural diversity (races, religions and cultures represented on the board);
- whose board members have industry-specific expertise or, at least, a strong financial background;
- whose board members are individually subject to re-election (no locked-structure);
- considering interlocking directorates when coming to board recruitment so not to have its members simultaneously serving on multiple boards;

- publicly disclosing a detailed individual profile for each board member (professional background, technical skills, age, etc.).

Moreover, the results of the regression model show a statistically significant positive relationship, for both the sample as a whole and the largest geographical sub-sample (that is the North America one), between the market-to-book ratio and the board independence score, which means the stock market recognizes a higher value to insurance companies:

- adopting effective board independence policies, in order to maintain a well-balanced board through an adequate number of independent board members;
- whose board has a high percentage of independent<sup>1</sup>, strictly independent and non-executive board members;
- whose CEO does not serve simultaneously as chairman of the board.

As shown, the board operativity score – which summarizes elements such as the number of board meetings during the year, the average individual attendance at board meetings and the relative company's disclosure – seems to have no impact on insurance companies' performance.

Likewise, the board committee score has a statistically weak effect for both the sample as a whole and the two most representative geographical sub-sample (that are the North American and European ones). This might be due to greater homogeneity of values within the sample as well as to a higher level of compliance of insurers regarding the presence of board committees and their internal composition (members' expertise and percentage of independent and non-executive board members), as confirmed by the median value of the score across the geographical sub-samples.

Our findings regarding the strategic importance of board structure for insurance companies, as well as its positive relationship with corporate performance, seem to clear up, at least partially, the doubts raised by previous studies.

Despite board independence dominate governance studies and rules, larger and listed insurance companies focusing on a well-balanced board's structure, that is a board with a high degree of internal diversity and board members' expertise, achieve better market performance. That is board members' recruitment seems to be more relevant than other board features, such as board independence, board operativity and board committee.

This may not be surprising if one considers the impact of the regulatory framework within the financial sector. By imposing stricter requirements in the field of internal governance and control system, compared to non-financial firms, financial regulators might have reduced the opportunity for governance improvements, while there is still room for improvement in some board features, maybe the ones not thoroughly regulated by governance codes and rules (such as board members' diversity, professional background, technical skills and expertise).

Also, given the high degree of complexity of

<sup>1</sup> Strictly independent board members means board members that are not employed by the company, are not a reference shareholder and have not served on the board for more than 10 years.

their activities, recruiting board members with industry-specific expertise can positively affect insurance companies' performance in the long-run. Likewise, gender and cultural diversity within the board (female representation, races, religions and cultures represented on the board) seem to have a positive impact on profitability, since a diversified board may strengthen board skills and backgrounds while entailing a more effective monitoring and an increased efficiency of the board, which is more oriented to long-term economic performance.

## 5. CONCLUSION

Our findings upgrade the evidence arising from the existing literature by providing new elements to support a deeper understanding of the effects of insurance companies' board characteristics on financial performance.

First, unlike most of the existing literature, we adopted a forward-looking market-based measure of performance since we believe internal governance is not only a question of regulatory compliance but also a lever for shareholder value creation. By using a market performance metric we meant to check if governance practices, namely a company's board model, may affect investors' evaluation regarding insurance companies' future performance and, as a consequence, their actual fair value.

Second, we checked a wide range of board characteristics, which have been elaborated into a novel dataset through an "ad hoc" score model in order to focus our attention on four board-specific survey areas: board committee, board structure, board independence and board operativity.

When analysing the relationship between board characteristics and insurance companies' performance evidence from the empirical model indicates that board structure and board independence are the most relevant governance factor in the insurance industry, with a potentially positive impact on insurers' market value.

These findings indirectly outline the opportunity for insurers to improve corporate fair value by enhancing internal governance practices through effective board structure policies, with the final goal to ensure an adequate qualification of board members and a well-balanced membership of the board, which means solid financial expertise of board members and a satisfactory level of gender and cultural diversity within the board.

At the same time, there is still room for improvement as regards the level of board independence by strengthening internal governance policies in order to maintain an adequate number of independent and non-executive board members. This is particularly true in countries, such as the United States, where corporate governance mechanisms play a central role in mitigating agency costs arising from the separation of ownership and control within companies.

In such contexts, sound governance practices

require, among other things, a clear separation of roles between board and management to avoid opportunistic behaviours as well as to ensure adequate internal supervision and accountability. Our results provide evidence that a higher board independence score may help business results' achievement.

It is also noteworthy that insurance companies show the highest level of compliance with sound governance standards in the field of board committee internal structure, that is board committee allow poor differentiation opportunities compared to competitors. This could explain why, despite the central role of the board committee in corporate governance, we found weak signals of financial benefits associated with the board committee score.

We believe empirical results may have important implications for both managers and policy makers within the insurance industry. Greater awareness of key board characteristics in the value creation process may stimulate a number of players to intensify their efforts to enhance internal governance policies and practices.

Of course, our study has its limitations. First, the research suffers a geographical bias because of a strong heterogeneity in the regional sub-sample size. That is, the findings at a regional level may be somehow affected by a non-proportional representation of insurance companies across countries in the data sample, which is a direct consequence of the stock markets' dimension across geographical areas.

A second limitation of the paper concerns the elaboration of the "ad hoc" score for each of the four governance areas identified, which inevitably required some discretionary choices, especially with reference to the interval scales used to convert governance ordinal variables into graduated scores. We cannot exclude that a different metric may lead to different conclusions.

Finally, our results could be affected by the internal heterogeneity of the sample in terms of insurance companies' size, business model and operating profile.

In order to validate and/or improve our findings, future research might operate a similar regression model on a larger international sample, by including unlisted insurance companies, so to increase the statistical significance of the results at a regional level.

Also, it might be useful to check the impact of dummy variables aiming to control for differences in companies' profile (size, business sub-sector, corporate ownership, etc.).

We believe an increased sample size and the inclusion of additional control variables could strengthen our results, as well as a wider generalization of our findings would probably require checking a regression model based on different governance metrics.

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