

Board Members' Financial Education and Firms' Performance: Empirical Evidence for Bucharest Stock Exchange Companies

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Abstract—After the accounting scandals and the financial crisis, regulators have stressed the need for more financial experts on boards. Several studies conducted in countries with developed capital markets report positive effects of board financial competencies. As each country offers a different context and specific institutional factors this paper addresses the subject in the context of Romania. The Romanian capital market offers an interesting research field because of the heterogeneity of listed firms. After analyzing board members education based on public information posted on listed companies websites and their annual reports we found a positive association between the proportion of board members holding a postgraduate degree in financial fields and market based performance measured by Tobin q. We found also that the proportion of Board members holding degrees in financial fields is higher in bigger firms and firms with more concentrated ownership.

Keywords—financial education, corporate governance, board

I. INTRODUCTION

DEBATES on corporate governance reform revolved around the role and composition of corporate boards ([2]). Following the financial crisis, research studies argued that the lack of financial expertise of board members played a major role in banks failures ([21]). Given the increasing importance of boards, it is important to identify the board characteristics that make one board more effective from another. Although more research studies stressed the importance of qualified members on board for delivering improved firm performance ([15]; [26]) research on the value of the board's financial education is scarce. Studies on the relationship between board's financial education and firms' performance were conducted mainly in US. Recently (following the crisis) researchers from other countries began to grant more attention to board members financial qualification. Because "different environments and backgrounds give rise to specific governance needs" ([23]) the context of each country is unique to some extent and is worthy investigating. We focus our analysis on Romania, an ex-communist country and member of the European Union (hereafter EU) since 2007. The Romanian capital market is medium size capital market if compared with the countries in the region placed between Bulgarian Stock Exchange and Budapest Stock Exchange to what concerns the capitalization of the local companies traded on the regulated market.

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Although it experienced increases of the trading value Romania still has to overcome the gap between it and other European countries concerning the stock exchange representative in economy. The Capitalization / GDP index was of 15% in 2011, compared to EU countries average of 56%, according to Eurostat data.

Romania started to adopt CG principles after 2001, but efforts are still necessary for the adoption of good corporate governance practices. First Corporate Governance Code was issued in 2001 and was replaced with a new one starting 2010. Researchers report a low level of disclosure on corporate governance matters ([24], [20]). Other studies provide empirical evidence for a higher level of mandatory disclosure compared with voluntary disclosure ([20]). Feleagă et al ([9]) collected attributes of the Board of directors: size, structure, frequency of meetings, independence, separation between the chairman and chief executive officer for first tier listed companies and compared the results with the European averages. Ienciu ([18]) found that board independence and board size are factors that explain the environmental reporting in Romanian listed companies.

Ștefănescu, Pop & Mureșan ([27]) investigated the relationship between the board of directors of banks and their business strategy and found that board of directors made exclusively of foreign members proved to be the most traditionalists. Empirical research on corporate governance is still scarce and no empirical study was conducted before on the relationship between the financial education of Board members and firms' performance. Our research was concentrated on listed companies because they have higher standards of corporate governance and disclosures.

II. LITERATURE REVIEW

Research studies conducted in the management literature addressed the influence of board members education on their behavior. According to the upper-echelon theory, organizational outcomes, strategic choices and performance are partially predicted by managerial background characteristics ([13]). Bantel and Jackson ([4]) found that more innovative banks are managed by more educated teams. Hitt and Tyler ([17]) showed that the type of education affects the firm's strategic decision models. Using a sample of 500 companies Wiersema and Bantel ([29]) advanced that top managers with higher educational level are more likely to undertake significant changes in corporate strategy. Hambrick et al. ([14]) identified a significant association between the average education level of top management team members and the firm's competitive moves. Graham and Harvey ([12]) showed that CEOs holding MBAs are more likely to employ learned techniques, such as net present value and payback criterion, in valuing projects. Agrawal and Chadha ([3]) reported evidence supporting the benefit of having outside financial directors in the board.

They found that the probability of earnings restatement is lower in firms whose boards have an independent director with a background in accounting or finance. The independence argument alone seems to have no explanatory power in their case.

The relationship between education and performance was addressed empirically initially in US studies and lately in studies conducted in other countries. Hambrick et al. ([14]) showed that the growth in market share and growth in profits is positively associated with the average education level of top management team members. In the context of China, Cheng et al. ([6]) showed that university degrees held by the board chairman are positively associated with seven measures of performance (earnings per share, ROA, cumulative returns, cumulative abnormal returns, change in EPS, change in ROA, and market-to-book ratio).

Golec ([10]) showed that better-performing funds have managers holding MBAs. Chevalier and Ellison ([7]) revealed that funds whose managers attended higher-SAT undergraduate institutions are more performing. Gottesman and Morey ([11]) identified a positive association between quality of MBA programs attended by the managers and fund performance. Employing a sample consisting of *Forbes* 800 firms Jalbert et al. ([20]) found that the prestige of a CEO's graduate school is positively related to ROA. Haniffa and Cooke ([15]) identified a positive relationship between general business and accounting education of board directors and disclosure of information. Yermack's study ([30]) illustrated that share price reactions are sensitive, among others, to director's professional qualifications, particularly in the area of accounting and finance. Darmadi ([8]) showed that the educational qualifications of board members and CEO matter, to a particular extent, for either return on assets (accounting-based performance) or Tobin's Q (market-based performance).

III. RESEARCH METHODOLOGY

Because it is difficult to measure board members financial expertise, we used observable indicators such as the educational qualification which was often viewed in literature as a good proxy for human capital, knowledge base, or intellectual competence ([13]; [29]).

In order to measure the qualification of board members we conducted content analysis of their CVs posted on companies' websites or included in their annual report. The sample included non financial companies listed at Bucharest Stock Exchange for which public information regarding board members education was available. Financial institutions and investment companies (9 companies) were excluded from the sample because they develop specific activities requiring different abilities from board members.

The content analysis that we carried revealed a higher percentage of financial literate members for financial institutions and investment companies. Three entities were eliminated because they had negative values for owners' equity. The small size of the sample (40 companies from 70 non financial listed companies) is due to the absence of detailed information on the educational backgrounds of board members.

Only 37,5 % of the companies from the sample have an audit committee justifying their choice by the fact that they do not have independent members in the Board or that they considered that the Board can fulfill itself the tasks of the Audit Committee. This determined our concentration on the board members.

For the purpose of this study, we employed three measures of the educational backgrounds of board members, namely postgraduate diplomas, degrees obtained from economic universities (license degrees), degrees obtained from foreign universities in developed countries (license degrees and postgraduate degrees). Academic degrees awarded by either domestic or foreign institutions in the areas of accounting, finance, management, and business administration were considered financial degrees.

Financial degrees could provide board members with financial skills that would help them accomplish their jobs, and thereby firm performance could be enhanced. For this reason we propose testing in the case of Romanian companies the following hypothesis:

H1: The proportion of Board members holding degrees in financial fields is positively associated with firm performance.

The proportion of board members holding degrees in financial fields was determined by dividing the number of Board members holding such degrees to the total number of board members. Because other studies ([19]; [5]) advance the idea that the education level is a good proxy for competence ([12]) we would expect higher educational level to lead to better performance. Consequently, the second hypothesis that we test is:

H2: The proportion of Board members holding postgraduate degrees in financial fields is positively associated with firm performance.

We considered as postgraduate degrees Master degrees, Doctor of Philosophy degrees (PhDs) and their equivalents which were obtained from either domestic or overseas institutions.

In Romania, as in other developing countries ([8]), foreign education, especially in universities from developed countries, is considered superior. Consequently, better financial performance can be expected from firms whose board members are educated in universities from foreign developed countries. Therefore, the third hypothesis tested is:

H3: The proportion of Board members holding degrees from universities in developed countries in financial fields is positively associated with firm performance.

Following other studies ([16] and [1]) performance was measured by ROA and Tobin's Q. ROA is a proxy for profitability or accounting-based performance, whereas Tobin's Q is a measure of firm value or market-based performance. Return on assets (ROA) which is defined as the ratio of net profit over total assets has been widely used in prior corporate governance research ([22]; [28]). Tobin's Q was operationalized as the market value divided by the book value of total assets. Data collected refer to the end of 2011.

Shleifer and Vishny ([25]) advanced the idea that the existence of a significant shareholder contributes to monitoring of management. Firms with dominant shareholders are thus likely to appoint Board members with higher financial expertise. The forth hypothesis tested is:

H4: The proportion of Board members holding degrees in financial fields is positively associated with ownership concentration.

Ownership concentration was measured by the share of capital held by the main shareholder.

IV. RESULTS

Table I reports descriptive statistics of the research variables. ROA of the sample firms has a mean value of 0.013 percent. Listed companies were severely affected by the economic crisis (20 % from the companies included in the sample incurred losses for 2011). The market values of the firms generally were lower than their book values of assets, which can be seen from the mean value of Tobin's *Q* (0.327).

TABLE I
DESCRIPTIVE STATISTICS

	Mean	Standard deviation	Minimum	Maximum
Proportion of Board members holding postgraduate degrees in financial fields	0.157	0.219	0	0.8
Proportion of Board members holding degrees from universities in developed countries in financial fields	0.075	0.208	0	1
Proportion of Board members holding degrees in financial fields	0.412	0.291	0	1
ROA	0.013	0.078	-0.267	0.157
Tobin Q	0.327	0.236	0.028	1.018

In terms of the educational backgrounds of board members, it is found that 15,7 percent of Board members, on average, have postgraduate degrees in financial fields and 7,5% have degrees from universities in developed countries in financial fields.

The number of board members holding a postgraduate degree ranges from 0 to 4 and the number of members educated in foreign universities ranges from 0 to 6.

TABLE II
FINANCIAL DEGREES HELD BY BOARD MEMBERS

Statistic	Proportion of Board members holding postgraduate degrees in financial fields	Proportion of Board members holding degrees from universities in developed countries in financial field	Proportion of Board members holding degrees in financial fields	Number board members
No. of observations	40	40	40	40
Minimum	0	0	0	3
Maximum	4	6	5	9
Median	0	0	2	5
Mean	0.825	0.436	1.95	4.8
Standard deviation	1.217	1.294	1.501	1.418

The number of board members ranges from 3 (the legal minimum) and 9 with an average of 4.8. The average number of Board members is lower than the European average, which was explained by Feleagă et al ([9]) by the small size of Romanian listed companies.

As it can be seen there is a high variation in the size of listed entities (from entities with total assets of 3,2 million euro to entities with total assets of 8 billion euro for a currency rate of 1 euro=4,5 lei). Ownership is generally concentrated as the average share held by the first shareholder is 53,8%. Owners' equity range also from around 38.000 euro to 419 million euro.

TABLE III
SIZE OF ENTITIES AND OWNERSHIP CONCENTRATION

Statistic	Percent of first owner	book value of assets (lei-national currency)
No. of observations	40	40
Minimum	0.128	14.777.197
Maximum	0.976	33.832.779.965
Median	0.538	174.151.425
Mean	0.535	1.332.242.580
Standard deviation	0.228	5.389.754.760

TABEL IV
OWERS EQUITY AND MARKET VALUE

Statistic	Market value (lei-national currency)	OE (lei)
No. of observations	40	40
Minimum	1.822.189	174.91
Maximum	21.354.828.842	18.890.892.162

Median	38.126.947	95.506.285	financial fields				
Mean	699.408.655	753.984.990					
Standard deviation	3.378.466.280	3.013.043.590					
			Concentrated ownership firms	Less concentrated ownership firms	t stat	p-value (one-tailed)	

Table V presents Pearson correlation coefficients between research variables. As expected, the size of the firm (book value of assets or market value) is directly correlated with Board size. The proportion of Board members holding degrees in financial fields is positively correlated with the capital share held by the first shareholders which confirms the forth hypothesis. The proportion of Board members holding postgraduate degrees in financial fields is positively correlated with the market based performance measured by Tobin Q (hypothesis 2).

Proportion of Board members holding degrees in financial fields

0.529 0.294 2.747 0.005

A firm was considered as having a concentrated ownership if the share held by the first owner is grater than the median value (53,8%).

It results that bigger firms hire more board members holding degrees in financial fields. The result could be explained by the fact that they have more complex business and they need more financial expertise. Also firms with more concentrated ownership hire more board members holding degrees in financial fields.

V.CONCLUSION

Studies focusing on the relationship between the educational backgrounds of board members and financial performance are scarce in the literature. Studies conducted before concentrated in countries with more developed capital markets. As each country represents a unique environment and specific governance needs we analyze the association between listed firms performance and board members educational backgrounds in the case of Romania. We found that the proportion of Board members holding degrees in financial fields is higher in bigger firms and firms with more concentrated ownership. This could be explained by the complexity of bigger firms businesses and their attention to attract financial literate members in the Board. It results also that firms with a more important main investor appoint Board members with higher financial education in order to monitor the management. Also the proportion of Board members holding postgraduate degrees in financial fields is associated with market based performance as measured by Tobin Q. This could involve that the market appreciate that firms that have board members with superior education in financial fields as better performers than those with less educated ones. It could mean also that more educated board members undertook strategies to attract good investors. The limits of the research are related to the size of the sample and short time frame used. Future studies on the benefits of board financial competencies and the differences in the strategies used by companies with more educated boards could provide a more complete view on the implications of board members education on firms' governance.

ACKNOWLEDGMENT

This work was supported by CNCSIS – UEFISCSU, project number PN II-RU TE_337/2010, Title "A model of the

TABLE V
EXTRACT FROM CORRELATION MATRIX (PEARSON)

Variables	Proportion of Board members holding postgraduate degrees in financial fields	Proportion of Board members holding degrees from universities in developed countries in financial field	Proportion of Board members holding degrees in financial fields
Industry	0.054	0.12	0.309
ROE	0.238	0.097	0.212
Ownership concentration	0.119	0.257	0.399
book value of assets	0.154	0.114	0.151
Number board members	0.234	-0.122	0.221
Market value	0.176	0.117	0.112
Tobin Q	0.416	0.035	0.075

Values in bold are different from 0 with a significance level alpha=0.05

We examined also the differences in the educational backgrounds of board members between larger and smaller firms, as well as between firms with concentrated ownership and firms with less concentrated ownership. The results of *t*-statistics of differences in mean values are shown in Table 6. A firm was considered larger if its book value of total assets is larger than the median value (174.151.425 lei).

TABLE VI
T TEST FOR DIFFERENCES IN THE EDUCATIONAL BACKGROUNDS

	Big firms	Small firms	t stat	p-value (one-tailed)
Proportion of Board members holding degrees in	0.510	0.313	2.235	0.016

factors influencing the professional profile of the Romanian accountants in business. A study on the profession's adaptation to the current business environment and a forecast".

REFERENCES

- [1] R. B. Adams and D Ferreira "Women in the boardroom and their impact on governance and performance", *Journal of Financial Economics*, vol. 94, no. 2, 2009, pp. 291- 309.
- [2] R.B Adams, B.E Hermlin and M.S. Weisbach "The role of boards of directors in corporate governance: a conceptual framework and survey", *Journal of Economic Literature*, vol 48, no 1, 2010, pp 58-107.
- [3] A.Agrawal and S Chadha "Corporate governance and accounting scandals", *Journal of Law and Economics*, vol 48, 2005. pp 371-406.
- [4] K. Bantel S.Jackson "Top management and innovations in banking: Does the composition of the top team make a difference?", *Strat. Mgt. J., Summer Special Issue*, vol 10, 1989, pp 107-124.
- [5] S. Bhagat, B. Bolton and A Subramanian "CEO education, CEO turnover, and firm performance", *working paper*, 2010, available on line at http://www.rmi.gsu.edu/faculty/PAPERS_W/Subramanian/CEO_Education_and_CEO_Turnover080310.pdf
- [6] L. T. W Cheng, R. Y. K Chan and T. Y. Leung "Management demography and corporate performance: evidence from China", *International Business Review*, vol. 19, no. 3, 2010, pp. 261-275.
- [7] J. Chevalier and G. Ellison "Are some mutual fund managers better than others? Cross-sectional patterns in behavior and performance", *Journal of Finance*, vol. 54, no. 3, 1999, pp. 875-899.
- [8] S. Darmadi "Board Diversity and Firm Performance: The Indonesian Evidence", 2011. available on line at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1727195
- [9] N.Feleagă, L. Feleagă, V.D Dragomir, A.D Bigioi "Corporate Governance in emerging economies: The case of Romania", *Theoretical and Applied Economics*, Vol. 18, no. 9, 2011, pp 5-16.
- [10] J.H. Golec "The effects of mutual fund managers' characteristics on their portfolio performance, risk and fees", *Financial Services Review*, vol. 5, no. 2, 1996, pp. 133-148.
- [11] A.A.Gottesman and M.R. Morey "Does a better education make for better managers? An empirical examination of CEO educational quality and firm performance", *working paper*, 2006 available on line at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=564443
- [12] J.R. Graham, C.R.Harvey „How do CFOs make capital budgeting and capital structure decisions", *Journal of Applied Corporate Finance*, vol. 15, no. 1, 2002, pp. 8-23.
- [13] D. C. Hambrick P.A. Mason PA "Upper-echelons: the organization as a reflection of its top managers", *Academy of Management Review*, vol 9, no 2, 1984, pp. 193-206.
- [14] D.C. Hambrick, T.S. Cho, T. S and M.-J. Chen "The influence of top management team heterogeneity on firms' competitive moves", *Administrative Science Quarterly*, vol 41, no 4, 1996, pp. 659-684.
- [15] R.M. Haniffa and T.E. Cooke "Culture, Corporate Governance and Disclosure in Malaysian Corporations" *ABACUS*, vol. 38, no; 03. 2002, pp 317-341.
- [16] R. Haniffa. and M. Hudaib "Corporate governance structure and performance of Malaysian listed companies", *Journal of Business Finance and Accounting*, vol. 33, no. 7-8, 2006, pp. 1034-1062.
- [17] M.A. Hitt and B.B. Tyler "Strategic Decision Models: Integrating Different Perspectives", *Strategic Management Journal*, vol. 12, 1991, pp. 327-351.
- [18] I.A. Ienciu "The Relationship between Environmental Reporting and Corporate Governance Characteristics of Romanian Listed Entities", *Journal of Accounting and Management Information Systems*, vol. 11, issue 2, 2012 pp. 267-294 .
- [19] M. Ionașcu, L. Olimid "Corporate Governance practices and analysts forecasts accuracy evidence for Romania", *World Academy of Science, Engineering and Technology*, vol. 77, 2011, pp. 947 – 951.
- [20] T. Jalbert, R. Rao and M. Jalbert "Does school matter? An empirical analysis of CEO education, compensation, and firm performance", *International Business and Economics Research Journal*, vol. 1 vo. 1, 2002, pp. 83-98.
- [21] G. Kirkpatrick "The Corporate Governance Lessons from the Financial Crisis", *OECD Financial Market Trends*, vol.2009
- [22] A Klein " Firm performance and board committee structure", *Journal of Law and Economics* , vol 41, no 1, 1998, pp. 275-303.
- [23] S. Peters, M. Miller, S. Kusyk "How relevant is corporate governance and corporate social responsibility in emerging markets?", *Corporate Governance*, vol. 11, no. 4, 2011, pp. 429-445
- [24] A.S. Răileanu, C.L. Dobroțeanu, L. Dobroțeanu, "Probleme de actualitate cu privire la măsurarea nivelului de guvernare corporativă în România", *Audit Financiar*, no. 1, 2011, pp. 11-15.
- [25] A.Shleifer, R. Vishny "Large shareholders and corporate control", *Journal of Political Economy* vol 94, 1986, pp. 461-488.
- [26] N. Smith, V. Smith and M. Verner " Do women in top management affect firm performance? A panel study of 2500 Danish firms", *International Journal of Productivity & Performance Management*, vol 55, 2006, pp. 569-593.
- [27] C. Ștefănescu A. Pop. and M. Muresan "Corporate governance in Romanian banking system: Does board of director's characteristics influence banks' business strategy?", *International Journal of Business Research*, vol. 10, no 2, 2010, pp. 272-280
- [28] N. Vafeas and E. Theodorou "The relationship between board structure and firm performance in the UK" , *British Accounting Review*, vol 30, 1998, pp. 383-407.
- [29] M.F. Wiersema and K.A. Bantel "Top management team demography and corporate strategic Change", *Academy of Management Journal*, vol 35, 1992, pp. 91-121.
- [30] D. Yermack "Higher market valuations of companies with a small board of directors", *Journal of Financial Economics*, vol 40, 2006, pp. 185-211.