

Measuring the Board's Members Effect on Banks' Performance: An Application to Portugal

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Abstract - This paper provides a model for analyzing the relationship between boards' members characteristics and companies performances. In this paper, Portuguese Banks were studied. An index was used to measure the educational qualifications of Banks boards' members in order to quantify their impact on banks' performance. Results show that there is a significant influence of education index over banks ROAE but not over banks ROAA.

Keywords - Board's characteristics; bank performance; corporate governance; boards of directors; educational background; Portuguese banks.

1. Introduction

Some years after the subprime crisis, major financial institutions verified that the theme of corporate governance remains vital in what concerns to maintain the stability of the financial system. To show the relevance of this subject, and working as an example, De Larosière (2009) considered that problems in corporate governance mechanisms were one of the causes of the financial crisis. Moreover, BCBS (2015) considers that effective corporate governance is fundamental to the correct running of the banking sector. In OECD (2015) is shown that good corporate governance is a mean to generate market confidence and business integrity.

As referred by Levine (2004) there are two characteristics of banks that make them special in practical terms: the fact that banks have a greater level of opacity when compared to other industries and the fact that there is also a greater level of government regulation in the banking system. According to Flannery (1998) banks are not equal to other types of firms because of risks involved in the banking system in its activity, very particularly the "systemic risk".

However, there are few studies that include financial firms in their samples. But the importance of studying the corporate governance on banks is even higher than it was in the past. As said by Isaksson & Kirkpatrick (2009) the financial crisis can be in part associated to failures that occurred in the corporate governance arrangements. Adams & Mehran (2012) argued that many governance reforms do not take into consideration the particularities of the banking sector, so that can be a huge problem. Becht, Bolton, & Röell (2011) emphasized that bank governance is different and that would require the introduction of other governance aspects different from those that are used in traditional governance for non-financial firms. Dermine (2011) said that the debate on bank governance should consider not just the boards but at the same time the governance of banking supervision should be considered as well. Mehran, Morrison, & Shapiro (2011) considered that one big difference between the governance of banks and the nonfinancial firms is that the first have many more stakeholders. Berger, Imbierowicz & Rauch (2014) by their turn concluded that in order to evaluate the bank stability, it was of major importance to analyze banks' corporate governance, particularly the ownership structure. Erkens, Hung & Matos (2012) argued that corporate governance had a significant impact on firms performance throughout the crisis, regardless to firms' risk-taking and financing policies. Fernandes & Fich (2013) indicated that corporate governance is an essential part in the management of risk at financial institutions. Ladipo & Nestor (2009) considered that the low proportion of non-executive directors with "financial industry expertise" played a significant role in the genesis of the 2007 crisis. Mülbert (2009) argued that poor corporate governance of banks was

an important cause of the recent financial crisis. Nestor (2010) concluded that very few jurisdictions had devised extensive bank-specific governance requirements.

However, Beltratti & Stulz (2012) do not found arguments supporting the thesis that banks' governance played an important role in the crisis. As well, Gupta, Krishnamurti & Tourani-Rad (2013) concluded that corporate governance failure is not associated with the dramatic decline in stock prices that markets suffered worldwide.

Since the subprime crisis that started in 2007 in USA, the Portuguese bank system has suffered many different kind of problems. Several situations were very serious as it is the case of BPN (2008), BPP (2009) and BES (2014), which went to the bankruptcy. In some cases, reasons behind these bankruptcies derived from the manipulation of internal accounting statements. However, the problem may be larger than that. It could also be a problem related to qualifications of boards' members.

A question may be posed: Why did not the board of directors do anything timely?

In general terms, good governance practices increase firms' value. Of course, bad governance practices may have high opportunity costs what shows the need to identify problems timely.

This study intends to analyze situations in Portuguese Banks related to qualifications of their Boards' members.

Normally, a bank system is intensely supervised by a country's national central bank. In the case of Portugal, this responsibility is taken by *Banco de Portugal*, the Portuguese Central Bank. In 2014 European Central Bank (ECB) has assumed the supervision of main Portuguese banks: CGD, BCP, BPI and Novo Banco (ex-BES).

This paper makes the attempt to deeply explore the role of the board of directors in the Portuguese banking sector. For that all types of information were collected in what concerns to ongoing Portuguese banking reforms. The level of effectiveness of the boards in the Portuguese banking sector was also researched. For that, all Portuguese banks functioning in the period of analysis 2007-2011 were analyzed. In this study, research was made considering a large number of board characteristics (size, composition, qualifications and executive compensation), impacts of board characteristics on banks performance. An

evaluation of the new evidences on the role of the board of directors in Portuguese banks was also made.

It is intended also to test if there are significant differences between state-owned banks and private banks.

This study devotes to the literature the next aspects. First, we include another study specifically applied to the banking sector. As said by Adams & Mehran (2012) the majority of studies exclude financial firms from their samples.

Second, this paper also provides a wider picture of the board structure and its role in the Portuguese banking sector. For that, we use a detailed set of board characteristics in order to analyze the impacts of different aspects of boards on banks performance.

Third, we analyze the whole Portuguese banking system, what means the entire population. As far as it is possible to know, this constitutes the first paper doing that. Our analysis do not consider only listed banks but also non-listed banks. This can be important as it gives new insights in what is related to the comparison between characteristics of large banks and smaller banks.

Fourth, it is important to analyze the Portuguese banking system once Portugal was one of the countries that more suffered with the subprime crisis started in 2007. Results of this study will have an important impact in the process of prudential supervision developed by Bank of Portugal, particularly the process of approving members of banks boards of directors. For the case of large banks the process of supervision is developed by Bank of Portugal in association with European Central Bank.

2. An Overview over Portuguese Bank Governance

The Portuguese banking system has suffered a set of changes in last decades, namely the phenomena of M&A and also the participation in a larger market - the European market. This means that there a larger number of competitors and also larger banks when compared to the dimension of the Portuguese banking system. So, a process of M&A started in the Portuguese banking sector as a way for banks to gain a bigger scale and competitive advantages. As referred by Carvalho (2010), in this process of concentration some smaller banks as much as some foreign banks gained greater importance. This situation increased the level of concentration of the

Portuguese banking sector, being now the market dominated by five institutions (CGD, New Bank - previously named BES, BPI, BCP and Santander). CGD, the bank with greater market share, is state-owned being the other four private banks. Carvalho (2010) considered that the Portuguese banking system could be considered oligopolistic because of the level of concentration in these five banks. Pereira (2011) argued that in the Portuguese credit market the sharing of information is reduced and there are difficulties in obtaining credit, mainly in the particular case of individuals.

For the case of Portugal, the company's governance is regulated by the article 278 of Commercial Societies Code which considers three types of Corporate Governance Models (Decree-law No 76-A/2006 of 29 March):

- Two One-Tier Models
 - Latin Model or Monist which considers a Board of Directors and Fiscal Council;
 - Anglo-Saxony Model which considers a Board of Directors, including an Audit Committee and a Certified Public Accountant (CPA).
- One Two-Tier Model
 - Dualist or Germanic which considers a Board of Directors, a Supervision and General Board and a Certified Public Accountant (CPA).

In the case of state-owned banks, they need to accomplish some specific rules particularly Law 71/2007 (Public Manager Regulations). For example, all board members of CGD need to have at least a graduation according to their corporate governance report.

Portuguese listed banks consider, in their corporate governance model, regulations from Portuguese Securities Market Commission - "CMVM", in particular taking into consideration the document "CMVM Recommendations on Corporate Governance".

All banks in the Portuguese system need to accomplish several rules imposed by the supervisor (in this case Bank of Portugal). The reference for this

supervision is the Legal Framework of Credit institutions and Financial Companies, approved by Decree-law No 298/92 of 31 December. Moreover, there are several orientations imposed by the European Banking Authority in what concerns to the qualifications and professional experience of banks board members (EBA orientations - EBA/GL/2012/06). This more recent document results from the creation of the European Banking Authority on 1 January 2011 as part of the European System of Financial Supervision (ESFS).

Decree-law No 126/2008, 21 July introduced some criteria and procedures to evaluate the suitability of the proposed Boards' Members as well as their professional qualifications specifically evaluated in terms of academic qualifications and professional experience.

Moreover, the previous directive 2006/48/CE was modified with the incorporation of new directives from the European Parliament (directive 2013/36/UE and regulation EU No 575-2013) what has originated the Decree-law No 157/2014.

The regulation EU No 575-2013 in the article No 435 describes the necessity of credit institutions to publicize their boards' members recruitment policy and also their capacities in terms of knowledge and competencies.

Bank of Portugal, considering its instruction n° 30/2010, defines the procedures to register the board's members of banks. This includes:

- an inquiry about professional experience, academic qualifications, suitability and independence;
 - a detailed curriculum vitae;
 - a copy of the identity card;
- and for the first registration of the person it is also needed to add an
- updated criminal registration certification.

3. Literature Review and Hypotheses Development

3.1. Literature Review

The literature shows that the topic of board of directors in what concerns to banks is relatively unexplored. Booth, Cornett & Tehranian (2002) used a sample of 100 largest banks and discovered that

when insider ownership increases, the percentage of outside directors decreases. De Andres & Vallelado (2008) found that bank performance has a significantly positive relationship with board meetings using a sample of large international commercial banks. Pathan & Faff (2013) argued that both board size and independent directors influence negatively the bank performance; their sample comprises initially 300 publicly traded bank holding companies. Cornett, McNutt & Tehranian (2009) using a sample of US bank holding companies found that board independence may restrain earnings management. Erkens et al. (2012) found that firms with more independent boards achieved more equity capital during the 2007-2008 crisis (sample of 296 financial firms from 30 countries). Aebi, Sabato & Schmid (2012) argued that banks, in which the Chief Risk Officer directly reports to the board of directors - not to the CEO, showed a greater level of stock returns and ROE. Furthermore, Adams & Mehran (2012) discovered that the board size is positively associated with the performance; for their analysis they used initially a random sample of 35 publicly traded banking holding companies. Garcia-Meca, Garcia-Sánchez & Martinez-Ferrero (2015), applying a sample of 159 banks in 9 countries, found that gender diversity increases bank performance, but national diversity has the opposite effect.

The majority of the literature about corporate governance in Portugal does not consider the financial sector isolate and the only studies that refer banks they just analyze listed banks. Alves & Mendes (2004) proved that exists a relationship between the compliance of some corporate governance recommendations and computed (abnormal) returns (listed companies in "Bolsa de Valores de Lisboa e Porto – BVLP"). Rodrigues, Seabra & Mata (2008) analyzed the independence of boards' members of Portuguese listed banks and concluded that there exists the possibility that managers have a discretionary behavior. Marques (2009) found that Portuguese companies that accomplish CMVM recommendations show a greater level for firm performance (sample with the top 250 non-financial Portuguese firms). Alves (2011) defended that the main determinants of voluntary disclosure are the following variables: firm size, growth opportunities, organizational performance, board compensation and large shareholder ownership. In Business & Economics (2014) it is showed that the level of Portuguese listed companies that follow the corporate governance recommendations is high. Marques

(2013) argued that companies comprising the PSI-20 index revealed a high degree of compliance. Pereira Alves, Couto & Francisco (2014) argued that CEO characteristics, board of directors' structures, and shareholders features are associated with the CEO pay (sample of Portuguese listed companies). Banco de Portugal (2015) report suggests that there are some deficiencies in banks' boards namely:

- the board of directors does not monitor correctly the executive commission;
- the process of selection of the non executive members is not the best and finally
- the possible conflict of interests is not well preserved.

3.2. Hypotheses Development

The literature evidences that in the case of banks the board of directors will play a more important role when compared to other types of companies. There is an opaque nature of the banking business which implies greater difficulties in the monitoring process as well as greater obstacles in order to evaluate the performance of banks as much as boards' members.

The main objective of this paper is to evaluate if the background of the banks boards' members will affect banks' performance. For that, we used a unique database, being data hand collected from corporate governance reports and/or from annual reports. Obviously, we used all available information that we can get from many different sources.

As a result of the several changes that occurred in the legislation and recommendations in what concerns to the topic of corporate governance, we intend to test if there are any other aspects that need to be included in those reports.

According to Pereira & Filipe (2014) literature about the relationship between boards members' characteristics and the corporate financial performance has a series of articles focused on boards' members education.

Some authors tried to explain the performance of companies using the education levels of top managers as an independent variable. For example Bhagat, Bolton & Subramanian (2010) used 6 CEO education variables particularly, for instance, CEOs holding an MBA degree or a law school degree. By their turn, Gray & Nowland (2013) considered a bachelor, a master or yet another degree as one independent variable. Ahrens, Filatotchev & Thomsen (2011)

argued that future research about corporate governance should consider in a very relevant way the economic competence, what means to measure competencies of boards' members as it is the experience and the education.

For the purpose of this study, we employ 6 measures of educational backgrounds of board members, particularly

- graduation in the area of business/economics,
- MBA in the area of business/economics,
- post graduation in the area of business/economics,
- executive formation in the area of business/economics,
- master degree in the area of business/economics and
- doctorate in the area of business/economics.

The hypotheses are formulated as follows:

H1. Graduation in the area of business/economics held by board members is positively associated with the bank performance;

H2. MBA in the area of business/economics held by board members is positively associated with the bank performance;

H3. Post graduation in the area of business/economics held by board members is positively associated with the bank performance;

H4. Executive Formation in the area of business/economics held by board members is positively associated with the bank performance;

H5. Masters in the area of business/economics held by board members is positively associated with the bank performance;

H6. Doctorate in the area of business/economics held by board members is positively associated with the bank performance.

4. Data and Methodology

4.1. Data

In the analysis, all Portuguese banks are considered. However due to several limitations in

data collection, it was not possible to overcome this problem, what made necessary to exclude a part of these data.

This study's sample comprises the biggest financial institutions in Portugal in terms of their total assets. This means that it is an empirical study representing the population instead of the sample. All available information of the boards' members was obtained from BoardEx database, annual reports, interim reports and press releases. Financial data was obtained from Bankscope database and from annual reports of Banks.

Some errors in databases were found. Consequently, data were manually checked in order to prevent big differences in terms of final results. The boards members' data include 257 elements but at the end just 155 elements could be used in the research because 102 elements made available no enough information. So, it was not possible to work this information in the research considering the insufficient information made available for these members.

4.2. Empirical Methodology

We used the following main model setup:

$$\text{Bank performance} = \alpha +$$

$$\sum_j \beta_j \text{board variables}_{i,t}^j + \gamma \text{control variables}_{i,t} + \varepsilon_{i,t}$$

Where i varies from bank 1 to bank 32 and t represents values from 2007 to 2011. β coefficient measures the impact of different board characteristics on bank performance.

In this study the following variables were considered:

1. Independent variables - The main variable is board members' education. For that an index was used, aggregating different levels of education namely:
 - GradEdu, a dummy equal to 1 if the board member has a graduation in the area of business or economics; 0 otherwise.
 - MBAEdu, a dummy equal to 1 if the board member has a MBA in the area of business or economics; 0 otherwise.

- Postgraduated, a dummy equal to 1 if the board member has a post-graduation in the area of business or economics; 0 otherwise.
- ExecutiveEdu, a dummy equal to 1 if the board member has executive formation in the area of business or economics; 0 otherwise.
- MasterEdu, a dummy equal to one if the board member has a master in the area of business or economics; 0 otherwise.
- PhDEdu, a dummy equal to one if the board member has a PhD in the area of business or economics; 0 otherwise.

The “total executive compensation in 2011” was also used. This variable was named “*excomp11*” and was considered as one independent variable.

In terms of the most used performance measures by previous studies, four indicators were found:

- ROA,
- ROE,
- Tobin’s Q and
- cumulative abnormal returns

For details, see, for instance, Jalbert, Rao & Jalbert (2002); DeFond, Hann & Hu (2005); Gottesman & Morey (2006); Kroll, Walters & Wright (2008); Papakonstantinou (2008); Bhagat et al. (2010); Cheng, Chan & Leung (2010); Darmadi (2013); Gray & Nowland (2013).

However, there are some other authors who have introduced some different performance measures. It is the case of Hau & Thum (2009) who applied for example, the log to losses.

In our case we used has dependent variables:

- Performance 1 (*ROAA - return on average assets*);
- Performance 2 (*ROAE - return on average equity*).

Finally, there are also control variables adopted in various articles. A deep observation shows that there is a significant preponderance on the following ones: natural log of total assets, leverage, board size, industry and proportion of outside directors.

In this paper we used as control variables:

- Ownership, a dummy equal to 1 if the bank is state-owned; 0 otherwise.
- Assets 07-11, log of average total assets (07-11).
- Tier 07-11, average tier capital (07-11).

5. Empirical Results

Portuguese bank system is composed approximately by 30 banks, having one state-owned bank (CGD) which has a relevant market share, as stated previously. During the period 2007-2011, CGD was the bank that in average had a higher level of total assets.

In terms of ROAA (*performance 1*) the average of private banks (0.51%) is higher than the average of state-owned banks (-0.92%). However, in terms of ROAE (*performance 2*) the average of state-owned banks (16.01%) is higher than the average of private banks (5.34%).

Table 1 also shows that the variable “*excomp11(value)*” has a big difference when we compare for example bigger private banks particularly those that are listed (BPI, BCP, BES and BANIF (IPO only in 2012)) with CGD (the biggest state-owned bank). For example, BPI presents an executive compensation of 5.3 million euro in 2011, while CGD only has an executive compensation of 0.7 million euro. This is a major difference that can reduce highly the attractiveness of talented managers for state-owned banks.

Furthermore, *eduindex* of state-owned banks show a superior value of 1.67 that compares with only 1.11 of the private banking sector.

5.1. Descriptive statistics

Table 1. Values for main variables

Bank	Ownership	public traded	performance1	performance2	Assets 07-11	Tier711	execomp11(value)	eduindex
Banco BPI SA (BPI SGPS prior to 01/2003)	1	1	0.58	11.48	44767.075	8.33	5.3	1.208333
Banco Comercial Português SA	1	1	0.50	8.37	94,034	8	3.8	1.142857
Banco Espírito Santo SA	1	1	0.65	8.82	77820.8446	8.12	7.2	1.047619
Banco Internacional do Funchal SA	1	1	0.24	5.24	14,259.02	8.59	3	1.333333
Caixa Geral de Depósitos SA	0	0	0.43	8.27	102,004	8	0.7	1.5
Crédito Agrícola Financial Group	1	0	0.68	8.87	12,943	9	n.a.	0.5
Banco Popular Portugal	1	0	0.54	8.54	9,149	9	0.8	0.75
Banco Bilbao Vizcaya Argentaria (Portugal) SA	1	0	0.04	1.38	7,001	7	n.a.	1
Banco Itau BBA International	1	0	1.09	15.73	3,767	13	0.3	1.8
Banco Finantia	1	0	1.21	7.60	2,937	10	n.a.	1.333333
Caixa - Banco de Investimento SA	0	0	-2.27	23.76	1,973	9	0.1	1.857143
Banco BAI Europa	1	0	0.17	5.22	1,108	11	0.368	1
Banco Credibom	1	0	0.71	8.96	1,243	13	0.507	1
Banco BNP Paribas	1	0	1.67	13.00	987	10	1.05	1.666667
Banif - Banco de Investimento	1	0	-0.47	1.23	1,004	8	1.49	1.6
Banco BIC	1	0	-0.03	-0.71	675	13	0.7	0.75
Banco BIG	1	0	1.37	10.95	704	33	2.265	1.333333
Banco Primus	1	0	0.58	8.40	422	14	0.309	1
Banco Privado Atlântico Europa	1	0	0.10	5.11	134	n.a.	0.679	1.428571
Finibanco - Holding, SGPS S.A.	1	0	1.66	8.55	3,402	n.a.	0.04	0.5
Banco Carregosa	1	0	2.07	10.73	85	n.a.	0.383	0
Credito Agricola, SGPS, SA	1	0	-2.47	-32.58	108	n.a.	n.a.	1
Banco Português de Gestão	1	0	-0.17	-2.74	104	n.a.	0.768	2
Total Average			0.39	6.27	16,549.25	11.14	1.57	1.16
Average Private Banks			0.51	5.34	13,174.04	11.49	1.70	1.11
Average State-Owned Banks			-0.921785714	16.0145	51988.9486	8.325333	0.4	1.678571

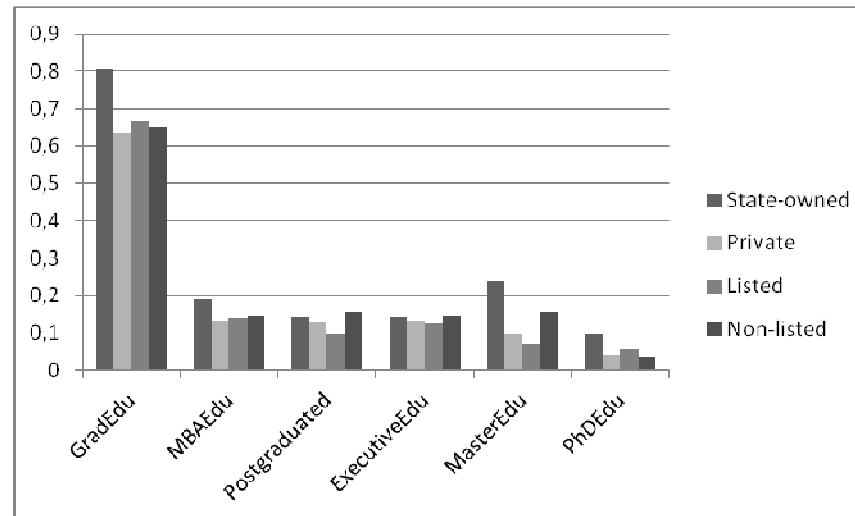
In table 2, relevant differences can be seen between the minimum value of *performance2* (ROAE) and its maximum, -32.58% and 23.76% respectively. For the variable *performance1* (ROAA) differences are very slight, a minimum of -2.47% compared to a maximum of 2.07%.

Table 2. Descriptive statistics for the main variables

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>performance1</i>	23	.386087	1.072824	-2.47	2.07
<i>performance2</i>	23	6.268695	10.10678	-32.58	23.76
<i>tier711</i>	18	11.13722	5.969564	6.78	33.44
<i>execomp11</i>	19	.2815789	.2464473	.01	.8
<i>eduindex</i>	23	1.163043	.478154	0	2

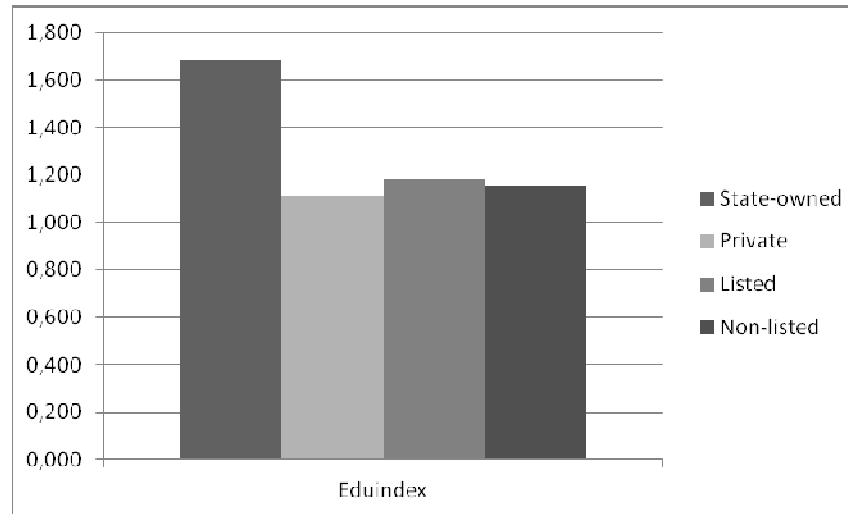
Figure 1 shows the average education level of banks' board members, contrarily to what was supposed for state-owned banks which have - in average - a higher education level when compared to private banks. Other curious aspect is associated to the fact that non-listed banks show a higher level of boards' members' education in some types when compared to listed banks; these are the cases for example of MBA, postgraduation, executive education and masters degree.

Figure 1. Average education level of bank's board members



In figure 2, *eduindex* for different groups of banks is shown. *Eduindex* aggregates different levels of education and in this case state-owned banks show a much higher value when compared with private banks. In the case of listed banks compared with non-listed banks, there is only a slight difference, so it is not possible to conclude that the fact of being listed or not can influence the level of education of banks' boards members.

Figure 2. *Eduindex* for different types of banks



5.2. Regression Analysis

In table 1 the possible impact of *Eduindex* in Banks' ROAA is analyzed. In this case it can be seen that R-squared is approximately 0,2 and that adjusted R-squared is 0,0321. This means that there is a slightly effect of the independent variables on the dependent variable.

Considering now P-value of the independent variable "*eduindex*" which is 0,48681, considerably superior to 0,05, it is not possible to reject the null hypothesis. So, the variable "*eduindex*" does not have a significant effect on the Banks' ROAA.

Table 1. Impact of Eduindex in the Bank's ROAA

<i>Regression Statistics</i>						
Multiple R		0,450459163				
R Square		0,202913458				
Adjusted R Square		0,032109198				
Standard Error		0,837764147				
Observations		18				

<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	3	2,501364316	0,833788	1,187988	0,350002935	
Residual	14	9,825882713	0,701849			
Total	17	12,32724703				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Interceptar	-0,855168502	1,550218335	-0,55164	0,58989	-4,18005614	2,469719137
Log(Assets 07-11)	0,118476446	0,127013766	0,932784	0,36674	-0,153940988	0,390893879
Tier711	0,067179675	0,038861969	1,728674	0,105847	-0,01617096	0,150530309
eduindex	-0,388546087	0,543990064	-0,71425	0,48681	-1,55528873	0,778196556

The regression that considers the effect of *Eduindex* on Banks' ROAE (table 2) shows a R-squared of 0,3184 and an adjusted R-squared of 0,1724. In this case there is an increase in the power of explanation when compared to data of table 1.

P-value of the independent variable "*eduindex*" is 0,027 (which is below 0,05). This means that this variable is significant and the null hypothesis is rejected. So, the variable "*eduindex*" influences Banks' ROAE.

Table 2. Impact of Eduindex in the Bank's ROAE

<i>Regression Statistics</i>						
Multiple R		0,564287082				
R Square		0,318419911				
Adjusted R Square		0,172367035				
Standard Error		5,084686356				
Observations		18				

<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	3	169,0984769	56,36615895	2,180168713	0,135862941	
Residual	14	361,9564947	25,85403534			
Total	17	531,0549716				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Interceptar	-7,61523589	9,40882234	-0,80937184	0,431842667	-27,79515273	12,56468
Log(Assets 07-11)	0,538944929	0,770891384	0,699119149	0,495929235	-1,114452645	2,192343
Tier711	0,160591847	0,235867012	0,680857597	0,507067136	-0,345292578	0,666476
eduindex	8,140199833	3,301667738	2,465481229	0,027220338	1,058826843	15,22157

In table 3 the possible influence of "Execomp11" on bank's ROAA is evaluated. In this case the R-squared of 0,3038 is compared to an adjusted R-squared 0,1646. This means that there is some considerable explanation power associated with these independent variables.

However P-value of variable "Execomp11" is superior to 0,05, meaning that this variable is not significant. So, null hypothesis is not rejected, which implies that there is no influence of "Execomp11" over the Bank's ROAA.

Table 3. Impact of Execomp11 in the Bank's ROAA

<i>Regression Statistics</i>						
Multiple R		0,551202303				
R Square		0,303823979				
Adjusted R Square		0,164588775				
Standard Error		0,864156995				
Observations		19				

<i>ANOVA</i>						
	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	3	4,888544189	1,62951473	2,182091669	0,13260275	
Residual	15	11,20150968	0,746767312			
Total	18	16,09005386				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Interceptar	-1,811854977	1,366708124	-1,325707329	0,204773083	-4,724924374	1,10121442
Execomp11	-0,622233489	1,240712195	-0,501513156	0,623290218	-3,266748921	2,022281944
ownership	1,922767653	0,826771265	2,325634351	0,034470704	0,160546425	3,684988881
Log(Assets 07-11)	0,097440972	0,133901208	0,727707942	0,477998504	-0,187962695	0,38284464

For studying the influence of "Execomp11" over Banks' ROAE, it is possible to register also some interesting power of explanation in the regression but P-value of this variable is not significant. So, the variable "Execomp11" does not explain the evolution of Banks' ROAE.

Table 4. Impact of Execomp11 in the Bank's ROAE

<i>Regression Statistics</i>						
Multiple R		0,488347508				
R Square		0,238483289				
Adjusted R Square		0,086179946				
Standard Error		5,620227458				
Observations		19				

<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	3	148,3807485	49,46024949	1,565844092	0,239052255	
Residual	15	473,8043502	31,58695668			
Total	18	622,1850987				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Interceptar	16,37774747	8,888674828	1,842540962	0,085249541	-2,56801437	35,3235093
Execomp11	4,657406621	8,069233704	0,577180782	0,572379085	-12,54175781	21,85657105
Log(Assets 07-11)	-0,07047383	0,870854776	-0,080924893	0,936571569	-1,926656837	1,785709177
ownership	-9,803382467	5,377081469	-1,823179084	0,08826626	-21,26436027	1,657595333

6. Conclusions

This study allows making an analysis that shows that there is a significant influence of “*eduindex*” over Banks’ ROAE. This represents an important outcome that shows the necessity of supervisory institutions (particularly *Banco de Portugal* (BdP) and European Central Bank (ECB)) to establish more rigorous procedures for minimum requirements to an individual to be accepted as board member of a bank.

However, the first regression which considers as dependent variable banks’ ROAA does not show similar results, meaning that “*eduindex*” is not significant in terms of the evolution of banks’ ROAA.

Moreover, contrarily to what it was expected, the variable “*excomp11*” does not show a significant influence neither over banks’ ROAA nor banks’ ROAE. In this case and in relative terms, *excomp11* of state-owned banks is lower when compared to private banks (considering their dimension) what does not seem to have a significant impact.

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