Board Characteristics and External Audit Quality: Complementary or Substitute Mechanisms? The Belgium Case

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Abstract: In this paper, we examine the impact of directors’ board on external audit quality over the period 2003-2007 for 96 Belgian listed companies on the Euronext Brussels Stock Exchange. We measure audit quality by using an index for that. To construct the index of audit quality IQAUD, we follow the approach of Depeors (2010). Five attributes are considered: Big4 auditor, co-auditor, Big4 auditor and co-audit, seniority of auditor and audit fees. The composition of the index IQAUD is determined by using the “step by step” method of Cronbach’s alpha coefficient (Curt et al., 1997). This procedure allows finding a subset of items that must be as reliable as possible. The results of our regression model, using panel data, confirm that external audit quality and board characteristics (independence and diligence) are complementary mechanisms. However, we can’t conclude to any significant relationship of audit quality with board dual structure and its size.

Keywords: corporate governance, directors’ board, index of external audit quality.

JEL Classification: G32, G38, M42, N24, C23, C5

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1. Introduction

The issue of external audit quality has been widely discussed both in the Anglo-Saxon and European contexts. Several studies focused on the impact of governance mechanisms represented by the board of directors (Hay et al. 2008) or the ownership structure (Gana, Lajmi, 2012), on external audit quality. The relationship between these variables is based on the agency theory (Jensen, Meckling, 1976). The use of an external audit quality is considered as a tool for reducing managerial opportunism and agency conflicts. It protects, also, shareholders’ interests by ensuring the relevance and the reliability of financial statements.

The study of the various international contexts of external audit reveals some specificities in Belgium. Indeed, while this country is presented as one where the practice of auditing is derived from an ancient tradition (Bertin, 2000), the demand for external audit services of quality has not been demonstrated by the few empirical studies that have investigated this context. Moreover, in Belgium, the concentration of auditors belonging to the international network «Big» is small compared to Anglo-Saxon countries and other countries in Europe. They have a market share of 50% in Belgium compared to over 90% in Anglo-Saxon countries.

The audit is described through two attributes: competence and independence (DeAngelo, 1981). As these two dimensions are unobservable, the majority of studies focused on audit quality by using substitutes such as the reputation of the auditor, commonly known as a big auditor (DeAngelo, 1981), audit fees (Hay et al., 2008) and seniority of the auditor (Kaplan and Williams, 2012). According to Bennecib (2002), the presence of a second audit firm (co-audit) is also likely to raise audit quality, particularly if it is a big one.

In this article, the directors’ board is chosen as the principle explanatory variable of the external audit quality. In theoretical and empirical literature, the relationship between directors’ board and audit quality is subject to a double interpretation: complementarity (positive) or substitution (negative). In Gana and Lajmi (2011), audit fees and auditor reputation were used as two distinct measures of audit quality. The results were not conclusive.

In this study, an aggregate measure of the external audit quality IQUAD is used.

The article is organized as follows. Section 2 presents the analytical framework and the research hypothesis. Section 3 describes data and the empirical methodology. The results are discussed in section 4. Section 5 concludes.

2. Theoretical Framework and hypothesis development

The effectiveness of corporate governance structures is related to the adoption of good governance practices. Those related to the board are described by the independence of the board, its size, its diligence and the separation of the roles between CEO and Chairman.

The new Code of Corporate Governance in Belgium (2009) requires at least half of the board should consist of non-executive directors and at least three of them should be independent. Carcello et al. (2002) point out independent board of directors tend to choose an external audit which offers a good quality of control because administrators seek to protect shareholders interests and their reputation, avoiding any situation affecting their legal liability. Thus, board independence and external audit are two complementary control mechanisms. This thesis is supported by Piot (2011).

We express our first hypothesis as follows: Hypothesis 1: There is a positive relationship between board of directors’ independence and external audit quality.

In addition, the Belgian Code of Corporate Governance (2009) argues that a separation of responsibilities at the head of the firm must exist between the leading of the board and the
leading of the firm’s activities. The board has the responsibility to engage external auditors when the structure of the board is dual (Ashbaugh and Warfield, 2003). When the two functions are combined and since the CEO/Chairman of the board is not effectively controlled, the duality may lead to suboptimal decisions, frauds and managerial opportunism. This will encourage to deepen external control mechanisms and so to recruit highly skilled auditors.

Our second hypothesis is formulated as follows:

Hypothesis 2: There is a positive relationship between CEO duality and external audit quality.

The number of inside and outside directors constitutes the board size.

The agency theory advocates that a large board size has difficulties to function effectively, as a big number of administrators create agency conflicts and make more difficult to reach a consensus (Nekhili and Cherif, 2009). Beasley (1996) finds that the size of the board significantly affects the risk of fraud in financial statements. As a consequence, a high quality of audit is required. Our third hypothesis is:

Hypothesis 3: There is a positive relationship between the board of directors’ size and external audit quality.

Finally, board’s diligence is approximated by the frequency of meetings. Board meetings give an idea about the time directors spend monitoring managerial performance (Adams, 2003). When boards hold frequent meetings, they spend more time monitoring top management and remain informed about the firm’s situation and its sector’s perspectives, which ultimately make them more reactive in the decision process (Abbott et al., 2003). It would then be expected that board meetings frequency is a substitute mechanism for external audit quality.

Our fourth hypothesis is as follows:

Hypothesis 4: There is a negative relationship between board of directors’ diligence and external audit quality.

3. Data and empirical method

The sample used in this study includes ninety-six (96) Belgian companies listed on the Euronext Brussels Stock Exchange over the period 2003-2007. These are companies for which it was easy to access to information. Data were collected manually from annual reports available on the companies’ website. Contrary to other studies, we do not exclude any sector.

To construct the index of audit quality IQAUD, we follow the approach of Depeors (2010). Five attributes are considered: Big4 auditor, co-auditor, Big4 auditor and co-audit, seniority of auditor and audit fees.

IQAUD is calculated by a simple summation of scores obtained for each company. The final composition of the index is determined by using the “step by step” method of Cronbach’s alpha coefficient (Curt et al., 1997). This procedure allows finding a subset of items that must be as reliable as possible. The highest value of this coefficient is 0.6 when the index is composed of all of the 5 items. This value is between the limit range of the validity of the index indicated by Cronbach (1951).

The independent variables describing the board of directors are measured as follows:

- Independence of the board of directors (INDE): similar to Carcello et al. (2002) and Sun et al. (2012), the proportion of non-executive members on the board to capture the independence of the board is used.
- Duality of the board (DUAL): it corresponds to the accumulation of the functions of CEO and Chairman of the board. The duality of the board is a dummy variable that takes the value of 1 if the same person holds both positions, and 0, otherwise (Baliga, et al., 1996).
- Size of the board of directors (SIZE): following Yermack (1996), this variable is measured by the total number of directors on the board.
- Diligence of the board (DILI): it is measured by the number of meetings conducted annually by the directors of the board (Carcello et al., 2002).
- The variable (SEN) describes the financial director in terms of his seniority in the firm. This variable is supposed to represent the possible entrenchment of the chief financial officer (Pigé, 1998).

To enhance the explanatory power of our empirical model, the following control variables are considered:

- Leverage of audited company (LTDTA): it is the debt ratio measured by the long term debt to total assets ratio. Debt can be considered as a solution to the conflicts between managers and shareholders (Jensen and Meckling, 1976) thanks to its contractual obligations. The external auditor comes precisely to assert respect with the terms of the contract.

- Size of audited firm (SFIRM): this variable is measured by the total of accounting assets of the company. According to DeFond (1992), the larger is the company, the greater is the need for a better audit quality.

- Profitability of audited company (PROF): it measures the ability of the firm to generate returns from its assets and is defined by the profit before tax and interest on total assets. According to Skinner and Srinivasan (2010), there is a significant and positive relationship between profitability and audit fees.

The regression model used can formally be expressed as follows:

\[
\text{IQAUD}_{it} = \gamma_0 + \gamma_1 \text{INDE}_{it} + \gamma_2 \text{DUAL}_{it} + \gamma_3 \text{SIZE}_{it} + \gamma_4 \text{DIL}_{it} + \gamma_5 \text{SEN}_{it} + \gamma_6 \text{LTDTA}_{it} + \gamma_7 \text{SFIRM}_{it} + \gamma_8 \text{PROF}_{it} + \nu_{it}
\]

According to the result of Hausman test, this panel data model is estimated using fixed effects estimators.

### 4. Empirical results

A frequency analysis (Table 1), made according to the evolution of the index, shows that about 14% of the observations show a poor quality of the index (IQAUD=0), about 31% have an index of 2, 20% an index of 3 and 3% have the maximum index of audit quality.

#### Table 1: Descriptive analysis of audit quality index modalities

<table>
<thead>
<tr>
<th>IQAUD</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fréquence</td>
<td>s</td>
<td>59</td>
<td>111</td>
<td>130</td>
<td>90</td>
<td>21</td>
</tr>
<tr>
<td>Pourcentages</td>
<td>14.0</td>
<td>26.4</td>
<td>30.9</td>
<td>21.4</td>
<td>5.0</td>
<td>2.1</td>
</tr>
</tbody>
</table>

This table shows a frequency analysis performed according to the evolution of the variable IQAUD. IQAUD represents the index of audit quality that takes the values 0, 1, 2, 3, 4 or 5.

In addition, according to the Table 3, we note that the average level of external audit quality index is 1.833 and is significantly different from zero (at a 1% level) with a minimum of 0 and a maximum of 5. This average is closer to the minimum value of the quality index, which leads us to say that the Belgian listed companies are not particularly motivated to choose the best audit quality provider.

#### Table 2: Descriptive statistics of the evolution of IQAUD over the years

<table>
<thead>
<tr>
<th>Year</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>75</td>
<td>1.467</td>
<td>1</td>
<td>1.031</td>
<td>0.667</td>
<td>3.122</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>2004</td>
<td>80</td>
<td>1.675</td>
<td>2</td>
<td>1.144</td>
<td>0.550</td>
<td>3.512</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>2005</td>
<td>83</td>
<td>1.795</td>
<td>2</td>
<td>1.134</td>
<td>0.048</td>
<td>2.560</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>2006</td>
<td>87</td>
<td>2.069</td>
<td>2</td>
<td>1.237</td>
<td>0.093</td>
<td>2.704</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

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This table presents descriptive statistics in terms of mean, median, standard deviation, skewness, kurtosis, minimum and maximum and their time evolution of the variable audit quality. N represents the number of observations. *** Significant at 1%.

When the distribution of the dependant variables across time is examined, the results reflect the specificities of the Belgian context within which the request for audit quality is not particularly well developed in comparison to American or English contexts (Secru et al., 2002). Finally, we note that audit quality increases over the time but remains very limited.

The results presented in table 3 below show that the coefficient related to independence is significant at 1% level. Therefore, the thesis of complementarity between independence of the board and external audit quality is supported. Thus, independent directors demand audit services of quality to better protect their reputation and shareholders’ interests. This confirms H1.

Table 3: Impact of the board on external audit quality index

| Variables | Coefficients | Z     | P>|z| |
|-----------|--------------|-------|------|
| INDE      | 1.125        | 4.06*** | 0.000 |
| DUAL      | 0.221        | 1.34   | 0.180 |
| SIZE      | -0.002       | -0.18  | 0.858 |
| DILI      | 0.026        | 2.03** | 0.042 |
| SEN       | 0.212        | 4.59*** | 0.000 |
| LTDTA     | 0.245        | 0.68   | 0.498 |
| SFIRM     | 0.188        | 5.40*** | 0.000 |
| PROF      | 0.803        | 2.93*** | 0.003 |
| $\gamma_0$ | -3.235     | -5.57*** | 0.000 |


*** Significant at 1%, ** Significant at 5%, * Significant at 10%.

Board diligence is also significantly associated with higher audit quality at 5% level. The more diligent is the board of directors, the more he asks for a high quality of external audit. Thereby, in accordance with Krishnan and Visvanathan (2009), diligence and audit quality are complementary mechanisms.

The hypothesis H4 is then rejected.

The variable SEN describing the time spent by the CFO in the firm has a positive and significant impact (at 1% level) on the index of external audit quality. CFO seniority can promote its positive entrenchment and external audit is used by the firm as a mechanism to limit its managerial opportunism.

Positive and significant relations between size of the firm, profitability and external audit quality are highlighted. This indicates that a high need for an audit quality can better manage the complexity of large companies. Besides, consistent with the signaling theory, most profitable firms require an audit of quality to report their performance.

5. Conclusion

In this study, the relationship between the characteristics of the board of directors...
(independence, duality, size and diligence) and external audit quality in Belgium was examined.
Using a global index of external audit quality, we found that a higher proportion of independent directors on boards is associated with a higher audit quality in Belgian companies. The results suggested also a positive relationship between board diligence and audit quality. This is in favor of a complementarity effect. Similar results are provided by previous studies employing data from Anglo-Saxon context. However, we can’t conclude to any significant relationship between external audit quality and the dual structure of the board and its size.
Finally, our results add to the growing body of literature analyzing a relationship between corporate governance mechanisms and audit quality. They also offer a better understanding of the determinants of external audit quality in the Belgium context.

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