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Determinants of accounting information quality in large publicly-held companies listed on BM&FBOVESPA

Abstract

Objective: To identify the factors that influence the accounting information quality of the largest companies listed on BM&Bovespa.

Method: Research developed in a sample of 100 publicly-held companies. The information quality was analyzed by means of an index developed by Fathi (2013), consisting of 78 items that address compulsory and voluntary information. The determinants observed were corporate governance, audit company, existence of audit committee, stockholder concentration, institutional investors and internationalization of the company.

Results: The results revealed a medium disclosure index equivalent to 78%. Most companies were listed at differentiated governance levels; were audited by the big four and had an Audit Committee. The mean percentage of stockholder concentration was 41.37%; in 44% of the companies, the stockholders included institutional investors; and only 19% had their stocks traded on the American stock market. As regards the determinants, being audited by the big four; having an Audit Committee; including institutional investors among the stockholders and being traded on the American stock market reflect in higher quality of information disclosure.

Contributions: The findings add evidence to the existing literature and are relevant to the different accounting information users, such as analysts and investors.

Key words: Determinants; Accounting information quality; Large publicly-held companies listed on BM&FBovespa.

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1. Introduction

Disclosure is an inalienable commitment of accounting to users who, in turn, need financial and economic information, as well as information about the operations, resources and obligations of an entity (Iudícibus, 2010). Therefore, by presenting high-quality information, accounting will provide a useful basis for the decision-making of diverse users.

Usefulness is a fundamental factor and is related to the influence in economic decision making involving the entity, the monitoring of the equity evolution and the possibility of making inferences about the future (Bao & Lewellyn, 2017; Xue & Hong, 2016). Quality is associated with the level of transparency in accounting disclosures because, when accounting reports are manipulated or when there is an excessive number of non-recurring items, the quality of the information for the users becomes low (Paulo & Martins, 2007).

The high quality of accounting information plays a key role in reducing information asymmetry between key stakeholders (creditors) and agents (managers) (Kim, Miller, Wan & Wang, 2016; Luthan, Satria & Ilmainir, 2016). It also reduces the asymmetry of information between managers and external suppliers of capital and improves investment efficiency (Biddle & Hilary, 2006). The quality of accounting information is difficult to observe and to measure though (Isidro & Raonic, 2012). Moreover, there is no predominant and generally accepted agreement or approach to measure it (Yoon, 2007).

Nevertheless, the quality of accounting information can be evaluated based on attributes such as persistence, conservatism, accounting earnings management, quality of accruals measurement, transparency, disclosure level, relation of accounting figures with stock price performance or the market value reported by the companies (Dechow, Ge & Schrand, 2010).

It should be noted that the quality of accounting information can be influenced by normative factors and by certain business characteristics, such as concentration of ownership, financial leverage, presence in foreign listings and economic performance, besides market forces (Gaio, 2010; Isidro & Raonic, 2012; Fathi, 2013). The existence of a series of social, economic, political and behavioral factors also exerts influences that contribute to the fact that the different economic agents do not possess the same information, qualitative and/or quantitatively. These factors, such as the system of governance, auditing, accounting regulation and system of standards, enforcement, taxation, legal relations of contracts, resource suppliers, among others, directly affect the quality of accounting information present in the statements companies publish (Paulo, Cavalcante & Melo, 2012; Fathi, 2013; Miko & Kamardin, 2015).

In this context, the study intends to answer the following research question: **Which factors influence the quality of the accounting information of the largest companies listed on BM & FBOVESPA**? Thus, the objective of the study is to identify the factors that influence the quality of the accounting information of the largest companies listed on BM & Bovespa.

In Brazil, where the interest in research on this subject continues to grow, the investigation of the factors determining the quality of accounting information still constitutes a relevant research gap, given the divergent results in previous studies. Therefore, due to the importance to the managers, shareholders and other stakeholders of the publicly-held companies, this research is justified, also because it seeks to identify the determinant variables that may exert greater influence on the quality of the accounting information.

2. Theoretical Framework

In this part, the theoretical framework is presented, which served to support the hypotheses and the development of the empirical study.

2.1 Accounting information quality

Accounting figures among the main sources used as a means for decision making, analysis and control. Therefore, it is imperative that accounting information is of a quality to be useful to the various users, since bad accounting information leads to higher agency costs, asymmetry of information and provides inadequate protection to stockholders (Dyck & Zingales, 2004).

On the other hand, high-quality accounting information will reduce capital costs (Leuz & Verrecchia, 2000), reduce information asymmetry between the company and external suppliers of capital, improve investment efficiency and capital allocation (Biddle & Hilary, 2006), in addition to increasing international capital mobility (Young & Guenther, 2003).

The disclosure of quality accounting information, as described by Rusanescu (2013), is mainly of interest to those who use accounting reports for contracting (management loan agreements or salary incentives) and economic investment decision-making purposes.

A good way to measure quality is through measures that capture attributes such as earnings management, conservatism, relevance, timeliness, persistence and opportunity (Habbash, Xiao, Salama & Dixon, 2014; Lin, Wu, Fang & Wun, 2014; Moura, Ziliotto & Mazzioni, 2016). As examples of research that have used such attributes, we can cite Kouaib and Jarboui (2014), Bao and Lewellyn (2017), García, Alejandro, Sáenz & Sánchez (2016), and Xue and Hong (2016).

According to Gabriel (2011), however, the research should not be restricted only to the analysis through these attributes. So another way to analyze the quality of information is through indexes. In the literature, indices composed only by mandatory information were elaborated; others comprising only voluntary information; and yet others composed by mandatory and voluntary information. As an example of research that used indices, we can cite Inchausti (1997), Naser and Nuseibeh (2003), Huafang and Jianguo (2007), Wang, Sewon and Claiborne (2008), Gabriel (2011), Fathi (2013) and Yurisandi and Puspitasari (2015).

2.2 Determinants of accounting information quality and research hypotheses

Several factors are pointed out in the literature as influencers of companies' accounting information quality, such as corporate governance, audit firm, audit committee, ownership concentration, institutional investors and company internationalization. Next, each one of them is described, together with the respective research hypothesis.

2.2.1 Corporate Governance

Corporate governance is seen as a set of mechanisms that can effectively contribute to attenuate managers' opportunistic behavior, reduce information asymmetry, help to protect the interests of diverse stakeholders, and also improve the quality of the information disclosed (Luthan et al. Xue & Hong, 2016). In this sense, several researchers, such as Shah, Zafar and Durrani (2009), Fathi (2013), Habbash et al. (2014) and Chen, Cheng and Wang (2015), emphasize that corporate governance is mainly focused on improving the quality of financial reporting, as well as on creating effective management monitoring mechanisms.

According to authors such as Bukhori and Raharja (2012), Dharma and Nugroho (2013) and Riwayati, Markonah and Siladjaja (2016), governance involves principles that include: 1) transparency, as companies need to disclose not only compulsory, but also important voluntary information for decision-making by stockholders, creditors and other stakeholders; 2) accountability, which is indispensable to achieve continuous performance; 3) responsibility towards society, environment, legislation and business continuity in the long term; 4) independence, in relation to shareholders and managers; and 5) equality and justice, in the sense of always considering the interests of all stakeholders.

Thus, a strengthened corporate governance system, based on a set of good practices and a well-structured board of directors, has been described as relevant to align interests and improve the quality of accounting information (Fathi, 2013; & Chrysostom, 2015). Therefore, the first research hypothesis is established:

H1: The quality of accounting information is superior in companies that have better corporate governance practices.

According to Fathi (2013), Mansor, Che-Ahmad, Ahmad-Zaluki and Osman (2013), Chi, Hung, Cheng and Lieu (2015), Shan (2015), Luthan et al. (2016) and Xue and Hong (2016), in the same line of reasoning, companies with better corporate governance practices can be expected to disclose information of higher quality.

2.2.2 Auditing

The audit, according to Huguet and Gandía (2016), as an activity, consists of the review of financial information and plays an important role in ensuring the credibility and reliability of financial information. This guarantee, according to the authors, is ensured by three subfunctions: a) information subfunction, which improves the credibility of the accounting information and helps to reduce financing costs; B) monitoring subfunction, which helps improve the quality of accounting information, reducing the opportunistic behavior of managers; and c) insurance subfunction, which ensures that users can rely on audited financial information, because of the responsibility auditors assume in case of audit failures.

The quality of the audit, as Miko and Kamardin (2015) point out, is that auditors may discover irregularities in the financial statements and disclose them to stakeholders. Another important aspect, according to Kouaib and Jarboui (2014) and Huguet and Gandía (2016), is that the quality of the audit may differ depending on the auditor hired. For authors, large audit firms, such as the big four, can provide superior quality services when compared to non-big four auditors.

As noted by several authors, such as Kouaib and Jarboui (2014), Huguet and Gandía (2016) and Miko and Kamardin (2015), the big four auditors are able to provide a higher audit quality because they have better resources and technology, better trained staff for audit practice, and a large number of clients, and will therefore not mind losing customers who do not prioritize the quality of information. Thus, the second research hypothesis is established:

H2: The quality of accounting information is superior in companies audited by the big four.

Companies that are audited by the big four are expected to disclose better-quality information, according to Kouaib and Jarboui (2014), Shan (2015), Huguet and Gandía (2016) and Xue and Hong (2016).

2.2.3 Presence of an audit committee

The main function of the Audit Committee is to oversee the process of preparing financial reports in companies. It meets regularly with external auditors and internal financial managers to review the company's financial statements, auditing processes and internal accounting controls (Klein, 2002).

The audit committee, according to Miko and Kamardin (2015), monitors and certifies the quality of financial reporting. This monitoring role reflects, according to Badolato, Donelson and Ege (2014), the principles of Agency Theory and the need to monitor managers in order to reduce their capacity to expropriate stockholders.

An active Audit Committee, functioning properly and in a structured manner, according to Xie, Davidson III and Dadalt (2003), is fundamental. The authors emphasize that the committee should be composed of a large proportion of independent external auditors. They need corporate and financial backgrounds; professionals serving on the committee need experience and training to understand earnings management for example. In this sense, for Fathi (2013), the Audit Committee can be seen as an ally for control in improving the quality of accounting information among shareholders and managers, being responsible for releasing relevant and reliable information. Thus, the third research hypothesis is established:

H3: The quality of accounting information is superior in companies that have an audit committee.

In this direction, it is expected that companies that have audit committees will disclose better quality information, in line with the findings by Xie et al. (2003), Fathi (2013), Mansor et al. (2013), Badolato et al. (2014), and Luthan et al. (2016).

2.2.4 Ownership concentration

A company is described as highly concentrated when few individuals hold a significant portion of the capital. Few individuals with more involvement have more incentives to care about their interests and therefore monitor the management of business affairs. Thus, the managers of highly concentrated companies tend to be highly monitored (Usman & Yero, 2012; Bao & Lewellyn, 2017).

Large investors also have greater access to executives' actions. Thus, they can contribute to reduce managers' discretionary behavior, since large investors aim to maximize the company's profit and greater control over their assets to have their rights respected (Usman & Yero, 2012; Kouaib & Jarboui, 2014).

In this sense, Kouaib and Jarboui (2014) report that property concentrated in the hands of a major shareholder can even effectively control the preparation and presentation process of the financial statements. Thus, the concentration of capital could influence the quality of accounting information. Hence, the fourth research hypothesis is established: H4: The quality of accounting information is superior in companies that have greater ownership concentration. Therefore, it is expected that companies with a higher ownership concentration will disseminate better quality information, like in the studies by Usman and Yero (2012), Bouvatier, Lepetit and Strobel (2014), Kouaib and Jarboui (2014), Shan (2015) and Bao and Lewellyn (2017).

2.2.5 Institutional investors

Institutional investors often have large percentages of shares that provide considerable returns. This justifies actions and costs associated with the monitoring of controlling shareholders and managers. Therefore, in comparison with other investors, institutions have better resources to collect more reliable information, including expectations of results (Kouaib & Jarboui, 2014; Bao & Lewellyn, 2017).

Based on the assumptions of the Agency Theory, institutional ownership can also serve as an effective control element, that is, it can fulfill governance functions in order to monitor, discipline and influence corporate managers (Ingley & Van Der Walt, 2004). This role is even clearer, according to Kouaib and Jarboui (2014), in emerging countries, being environments marked by conflicts and information asymmetry. In these environments, according to the authors, institutional investors can be considered the most demanding agents in terms of financial information quality.

In this sense, Fathi (2013) and Kouaib and Jarboui (2014) describe that institutional shareholders are more sophisticated investors and will therefore be better able to accurately analyze the company's performance and, consequently, to detect low-quality information. This does not only provide them with greater company-specific knowledge, but also enhances this type of capacity in the controllers to monitor managers' discretionary behavior. Thus, the fifth research hypothesis is established:

H5: The quality of accounting information is superior in companies with institutional investors among their owners.

In this line of reasoning, it can be expected that companies that have institutional investors among their owners will disclose better quality information, according to Koh (2007), Hadani, Goranova and Khan (2011), Njah and Jarboui (2013), Lin et al. (2014) and Kim, Miller, Wan and Wang (2016).

2.2.6 Internationalization of companies

Companies from countries with fragile institutional structures have difficulty to obtain external financing, as it is generally difficult to provide sufficient guarantees to external investors that agency conflicts and information asymmetry are controlled. Hence, those investors react to this lack of protection by increasing the cost of capital (Lang, Lins & Miller, 2003; Leuz, 2006).

As such, companies have incentives to look for compliance devices that provide greater security to outside investors. In this sense, trading stocks on US stock exchanges may be one of these devices (Leuz, 2006; Chang & Sun, 2009). Authors like Leuz (2006), Hope, Kang and Kim (2013) and Parte-Esteban and García (2014) argue that listing on US stock markets makes it difficult for controllers to extract private control benefits and also for managers to expropriate investors.

The logic is that the US regulatory system grants stronger rights to foreign investors than in most other countries. In addition, such rights are more strictly enforced, either through the Securities and Exchange Commission (SEC) or private securities litigation. Thus, by negotiating shares on US stock exchanges, foreign firms are subject to these laws and their application (Leuz, 2006, Hope et al., 2013).

Leuz (2006) points out that the American stock markets also oblige foreign companies to substantially increase their disclosures, making it less expensive for the various stakeholders outside the company to monitor their investments. Finally, the author describes that listing on US stock exchanges may also increase the attention of financial analysts and the monitoring of more sophisticated participants in the US capital market, such as institutional investors. Thus, the sixth research hypothesis is established:

H6: The quality of accounting information is superior in companies traded on American stock exchanges.

Therefore, it is expected that companies traded on US stock exchanges will disclose better quality information, as pointed out by Leuz (2006), Chang and Sun (2009), Hope et al. (2013) and Parte-Esteban and García (2014).

3. Methodological procedures

To meet the proposed objective, a descriptive and quantitative research was carried out. The research population comprised publicly-held companies listed on the São Paulo Stock Exchange (BM&FBovespa). The sample was considered intentional, non-probabilistic and comprised the 100 largest companies on BM&FBovespa, using as a criterion the total assets presented in the balance sheets of December 31, 2015. The choice of the largest companies is justified by their economic representativeness.

Initially, the quality of the accounting information was analyzed through the construct developed by Fathi (2013), who developed an index to measure the level and quality of the information the companies disclosed. The index consists of items all companies are obliged to disclose, that is, it does not contain items specific to a particular branch of activity for example. The index presents 78 items, divided into seven categories: 1) General and strategic information; 2) Information on the financial statements; 3) Social and environmental data; 4) Corporate governance; 5) Financial and market information; 6) Information projections; 7) Other information.

The index includes mandatory and voluntary information and was drawn mainly from the studies of Haniffa and Cooke (2002), Collett and Hrasky (2005), Hassan, Giorgioni and Romilly (2006) and Banghoj and Plenborg (2008). In addition, Fathi (2013) pointed out that the items selected for the index include the main characteristics of the financial information disclosed, such as relevance, reliability and intelligibility for example.

Other researchers have also adopted this way of assessing accounting information quality, using similar indices, including: Inchausti (1997), Naser and Nuseibeh (2003), Huafang and Jianguo (2007), Wang et al. (2008), Gabriel (2011) and Yurisandi and Puspitasari (2015).

Next, the data were collected for the factors described in the literature as determinants of accounting information quality, as highlighted in the research construct, presented in Picture 1.

Dependent variable	Measure	Source	Background authors
Accounting information quality	Index based on 78 indicators elaborated by Fathi (2013)	BM&FBovespa, financial statements, Reference Form	Fathi (2013)
Independent variables	Measure	Source	Background authors
Corporate Governance	Categorical variable equal to "1" when the sample company was listed on IGCX and "0" if not	BM&FBovespa	Fathi (2013), Mansor *et al.* (2013), Chi *et al.* (2015), Shan (2015), Luthan *et al.* (2016) and Xue and Hong (2016)
Type of Audit Company	Categorical variable equal to "1" when the sample company was audited by the big four and "0" if not	Reference Form	Kouaib e Jarboui (2014), Shan (2015), Huguet and Gandía (2016) and Xue and Hong (2016)
Audit Committee	Categorical variable equal to "1" when the sample company had an audit committee and "0" if not	Reference Form	Fathi (2013), Mansor *et al.* (2013), Badolato *et al.* (2014) and Luthan *et al.* (2016)
Ownership Concentration	Percentage of common stock held by largest stockholder	Economática	Usman and Yero (2012), Kouaib and Jarboui (2014), Shan (2015) and Bao and Lewellyn (2017)
Presence of Institutional Investor	Categorical variable equal to "1" when the sample company included institutional investors among its stockholders and "0" if not	Reference Form	Koh (2007), Hadani *et al.* (2011), Njah and Jarboui (2013), Lin *et al.* (2014) and Kim *et al.* (2016)
Internationalization of companies	Categorical variable equal to "1" when the sample company was traded on the American stock exchange and "0" if not	BM&FBovespa	Leuz (2006), Chang e Sun (2009), Hope *et al.* (2013) and Parte-Esteban and García (2014)
Control variables	Measure	Source	Background authors
Size	Natural logarithm of total assets	Economática	Badolato *et al.* (2014), Chi *et al.* (2015) and Huguet and Gandía (2016)
Indebtedness	PC + PNC Total assets	Economática	Shan (2015), Chi *et al.* (2015), Bao and Lewellyn (2017) and Xue and Hong (2016)
Sales growth	Mean sales growth percentage in past three years	Economática	Badolato *et al.* (2014), Bouvatier *et al.* (2014), Chi *et al.* (2015) and Huguet e Gandía (2016)

Picture 1. Research variables

Source: elaborated by the authors.

Picture 1 shows that the data were collected on the BM&FBOVESPA website, in the Economática database, in the Reference Forms and refer to 2015. The control variables, that is, variables that can also influence the quality of the information, as indicated in the literature, also considered independent variables in the regression, were:

A) Size: larger companies tend to have better governance structures and internal controls. They are also subject to more rigorous analysis by investors and analysts. Thus, a positive association between accounting information quality and company size is expected, as suggested by Badolato et al. (2014), Chi et al. (2015) and Huguet and Gandía (2016), for example.

B) Indebtedness: companies with a higher level of indebtedness are more susceptible to practices that may impair the quality of information to avoid breach of financing agreement covenants, according to Shan (2015), Chi et al. (2015), Bao and Lewellyn (2017) and Xue and Hong (2016).

C) Growth: Managers of companies with high growth potential tend to be more concerned about the need to achieve result goals and, therefore, have more incentives to engage in actions that could jeopardize the quality of information. In addition, growing companies need more funding and new investors. This variable has already been used by Badolato et al. (2014), Bouvatier et al. (2014), Chi et al. (2015) and Huguet and Gandía (2016).

After the data collection, the analysis was performed. Initially, a descriptive analysis of the main variables of interest was carried out. Then, multiple linear regression analysis was performed to verify the influence of the various factors and the other control variables on the quality of the accounting information.

It is noteworthy that the normality assumptions were observed through the Kolmogorov-Smirnov test; multicollinearity by means of the variance inflation factor (VIF and Tolerance); homoscedasticity, by means of the Pesarán-Pesarán test; and absence of serial autocorrelation using the Durbin-Watson test.

4. Data Description and Analysis

This section contains the description and analysis of the data. First, the descriptive statistics of the information quality variable are presented, followed by the descriptive statistics of the quality determinants and the control variables. Finally, we present the results of the multiple linear regression, which made it possible to verify the power of the factors to predict the information quality.

Table 1 presents the descriptive statistics of the general information quality index and the seven subcategories that compose it.

Table 1
Descriptive statistics of accounting information quality

Information quality	No.	Minimum	Maximum	Mean	St. Dev.
1 – General and strategic information	100	0.85	1.00	0.94	0.05
2 – Information about the financial statements	100	0.92	1.00	0.99	0.03
3 – Social and environmental data	100	0.85	1.09	0.95	0.05
4 – Corporate governance information	100	0.06	1.00	0.94	0.10
5 – Financial and market information	100	0.17	0.78	0.70	0.06
6 – Information projection	100	0.00	1.00	0.17	0.26
7 – Other information	100	0.17	0.71	0.53	0.09
General information quality index	100	0.39	0.87	0.78	0.05

Source: research data.

As described in the methodological procedures, the index was elaborated by Fathi (2013) and contains seven subcategories that in combination generate the general information quality index. According to Table 1, the second subcategory, related to "Information on Financial Statements", stood out with the highest average, equivalent to 99% of the information disclosed. Among the 12 items analyzed, the minimum information disclosed in this subcategory was 92% and the maximum was equal to 100%.

The "General Information and Strategies", "Social and Environmental Data" and "Corporate Governance Information" subcategories were also highlighted positively, which evidenced on average 94%, 95% and 94%, respectively, of the verified items. Among these, it was noticed that there was a company that showed only 6% of the governance information.

Negatively, the subcategory "Information Projections" was highlighted, with an average of only 17% of the items investigated. Among the four items analyzed, the minimum information disclosed in this subcategory was equal to 0% and the maximum was equal to 100%. In addition, this subcategory revealed the highest standard deviation (0.26), evidencing greater inequalities in the disclosure percentages. It should be noted that subcategories 5 and 7 also presented average percentages distant from 100% and deserve attention.

Overall, the average compliance rate is 78%, i.e. distant from 100%. The company with the lowest index reached only 39% of a total of 78 analyzed items, while the maximum was 87%. It should be noted that no company reached 100% of information disclosed. Therefore, there is a clear need to enhance the information quality. The average percentage is equivalent to that found by Fathi (2013), who investigated a sample of French companies and found an average percentage of 79%.

Table 2 shows the descriptive statistics of the determinants and control variables in the research.

Table 2
Descriptive statistics of determinants and control variables

Information quality	N	Minimum	Maximum	Mean	St. Dev.
Corporate governance	100	0.00	1.00	0.74	0.44
Audit by big four	100	0.00	1.00	0.89	0.10
Audit committee	100	0.00	1.00	0.85	0.36
Ownership concentration	100	5.39	99.67	41.37	22.43
Ownership by institutional investor	100	0.00	1.00	0.44	0.50
Listed on American stock exchange	100	0.00	1.00	0.19	0.39
Size	100	2.69	8.95	7.13	0.63
Indebtedness	100	0.14	1.35	0.66	0.18
Sales growth	100	-23.26	1590.03	40.22	187.78

Source: research data.

As observed in Table 2, 74% of the sample companies were listed on differentiated corporate governance levels, 89% of which were audited by one of the 4 large audit companies, namely Deloitte Touche Tohmatsu, PricewaterhouseCoopers (PwC), Ernst & Young (E & Y) or Klynveld Peat Marwick Goerdeler (KPMG) and 85% of the companies had an audit committee.

Table 2 reveals that the average percentage of common stock held by the largest shareholder was 41.37%, the minimum percentage being only 5.39% and the maximum bordering on 100%, corresponding to 99.67%. In addition, 44% of the companies had institutional investors and only 19% of them were traded on American stock exchanges.

Finally, in relation to size, indebtedness and sales growth, Table 2 shows that the average total assets Logarithm is 7.13 (in thousands of *reais* corresponding to approximately 33,659,076.10), current liabilities plus noncurrent liabilities are equivalent to 66% of total assets on average and the average sales growth of the last three years was 40.22%.

Table 3 shows the multiple linear regression coefficients, which permit analyzing the predictive power of the information quality determinants, as well as the control variables, on the quality of the information (dependent variable).

Table 3

Coefficients of equation showing influence of information quality determinants

Variables	Coefficients		(t-statistics)
(Constant)	0.36*		(8.68)
Governance	0.00		(0.18)
Big four	0.37*		(13.12)
Audit_Com	0.03*		(3.17)
Own_Conc	0.00		(-0.08)
Instit_Inv	0.01***		(1.72)
International	0.02**		(2.10)
Size	0.00		(1.01)
Indebtedness	0.00		(0.15)
Growth	-0.00*		(-2.89)
Adjusted R^2 F-ANOVA	0.71 27.95*	Durbin Watson Pesarán-Pesarán VIF/Tolerance	2.15 0.58 <10

* significant at 0.01; ** significant at 0.05; *** significant at 0.10.

Source: research data.

As observed in Table 3, the adjusted R^2 was 71%. This adjusted R^2 is similar to that recorded in other studies, such as Siregar and Utama (2008), who presented regression with adjusted R^2 of 68%, also similar to Chi et al. (2015), which were based on regression with 65% R^2 and Huang and Xue (2016), with an R^2 regression equivalent to 66%.

The F-ANOVA test was significant (0.01), that is, the set of independent variables exerted influence on the dependent variable. The results of the Durbin-Watson statistic (2.15) show that there are no autocorrelation problems of the residuals, since the coefficient was close to two. The analysis of the Pesarán-Pesarán test shows that the assumption of homoscedasticity has not been violated. Finally, it is also verified that the variance inflation factor (VIF and Tolerance) presented low coefficients. Therefore, in this case, there is no multicollinearity problem between the independent variables of the model. According to Hair, Black, Babin, Anderson and Tatham (2009), a VIF is considered high when superior to ten.

Table 3 shows that the "big four" variable, which captures whether the companies are audited by Deloitte, PwC, E & Y or KPMG, presented a positive and statistically significant (0.01) coefficient of 0.37. Therefore, it was not possible to reject the H2 hypothesis, because the result shows that companies audited by the big four publish better quality information, in line with Kouaib and Jarboui (2014), Shan (2015), Huguet and Gandía (2016) and Xue and Hong (2016).

The variable "Audit_Com", which verifies if the companies have an Audit Committee, also presented a positive (0.03) and statistically significant (0.01) coefficient. Therefore, it was not possible to reject the H3 hypothesis, as the result indicates that the companies that have such a committee show better information. This result is in line with Xie et al. (2003), Fathi (2013), Mansor et al. (2013), Badolato et al. (2014) and Luthan et al. (2016).

It is also noticed that the variable "Instit_Inv" was another variable that presented a positive (0.01) and statistically significant (0.10) coefficient. Thus, the hypothesis H5 is not rejected, as the result shows that, in the sample companies, there is an association between stockholder participation of institutional investors and accounting information quality, like in the studies of Koh (2007), Hadani et al. (2011), Njah and Jarboui (2013), Lin et al. (2014) and Kim et al. (2016).

Among the determining factors, the final variable that presented statistical significance, at a level of 0.05, was the "International" variable, which identifies whether the companies traded shares on American stock exchanges. Therefore, hypothesis H6 cannot be rejected either, indicating, like in the studies of Leuz (2006), Chang and Sun (2009), Hope et al. (2013) and Parte-Esteban and García (2014), that the internationalization, or trading of shares on the American stock exchange, influences the rise of information quality.

Table 3 shows that the variables "Governance" and "Own_Conc" did not present statistical significance, so the hypotheses H1 and H4 were rejected. That is, for the research sample, the results of Fathi (2013), Mansor et al. (2013), Chi et al. (2015), Shan (2015), Luthan et al. (2016) and Xue and Hong (2016), that companies with better corporate governance practices are more likely to disclose superior information, were not confirmed. The findings of Usman and Yero (2012), Bouvatier et al. (2014), Kouaib and Jarboui (2014), Shan (2015), and Bao and Lewellyn (2017), that companies with higher ownership concentration disclose information of better quality were not confirmed either.

In relation to corporate governance, however, the results are in line with the Brazilian studies by Erfurth and Bezerra (2013), Mazzioni, Prigol, Moura and Klann (2016) and Moura et al. (2016), who investigated the influence of governance on earnings management (proxy for information quality) and also found that there was no relation. As regards the ownership concentration, the results are in line with the Brazilian study by Gonzaga and Costa (2009), who verified the influence of the concentration on earnings management and, again, similar to Moura et al. (2016), who did not find influence of ownership concentration either.

Regarding the control variables, it can be seen in Table 3 that only the variable "Growth" was statistically significant. This result confirms the reports of Badolato et al. (2014), Bouvatier et al. (2014), Chi et al. (2015) and Huguet and Gandía (2016) about a trend for managers with high growth potential to be more concerned about the need to achieve result goals and therefore have more incentives to engage in actions that could jeopardize the quality of information.

With regard to size, it was not confirmed that larger companies, because they generally have better governance structures and internal controls and because they are subject to more rigorous analysis by investors and analysts, would disclose better quality information, according to Rajpal (2012), Lee (2013) and Habbash et al. (2014), for example.

Finally, in relation to indebtedness, it could not be confirmed either that companies with a higher level of indebtedness disclose lower quality information to avoid the violation of financing contract covenants, as authors such as Rajpal (2012), Lee (2013), Alves (2014) and Habbash et al. (2014) highlighted.

5. Final Considerations

The objective of the study was to identify the factors that influence the quality of the accounting information disclosed by the largest companies listed on BM&FBOVESPA. To meet the proposed objective, a descriptive and quantitative approach was carried out in a sample of 100 publicly-held companies listed on BM&FBOVESPA.

The results revealed that the "Financial Statements Information" subcategory stood out with the highest average. Conversely, the subcategory of "Information Projections" was highlighted with the lowest average. In general, there was a mean index of evidence equivalent to 78%, that is, distant from 100%. This average percentage was equivalent to that found by Fathi (2013) in a sample of French companies.

It was found that 74% of the sample companies were listed on differentiated corporate governance levels; 89% of them were audited by one of the four large audit firms; and 85% had an Audit Committee. Also, the average percentage of common shares held by the largest shareholder was 41.37%; in 44% of the companies, institutional investors figured among the owners; and only 19% had their shares traded on American stock exchanges.

Finally, in relation to the determinants, the results showed that the fact that the company is audited by one of the big four is reflected in better information disclosure quality, as Kouaib and Jarboui (2014), Shan (2015), Huguet and Gandía (2016) and Xue and Hong (2016) highlighted. The same was true for the Audit Committee, since the coefficient was positive and significant, indicating that the companies that had such a committee evidenced better quality information, in line with the results of Xie et al. (2003), Fathi (2013), Mansor et al. (2013), Badolato et al. (2014) and Luthan et al. (2016).

As noted by Kouaib and Jarboui (2014) and Huguet and Gandía (2016), large audit firms can provide superior audit quality when compared to non-big four auditors. This is because, according to them, the big four have more resources, technology and better trained personnel for auditing. They also will not mind losing customers who do not prioritize the quality of information. With respect to the committee, one of the main functions is to oversee the financial reporting process in companies. According to Klein (2002), the committee meets regularly with external auditors, internal financial managers and constantly reviews auditing processes and internal accounting controls to improve the quality of information.

It was also verified that, in the sample companies, there is an association between stockholder participation of institutional investors and quality of accounting information, as evidenced in the findings by Koh (2007), Hadani et al. (2011), Njah and Jarboui (2013), Lin et al. (2014) and Kim et al. (2016).

Institutional investors often hold large percentages of shares and, therefore, have more incentives to monitor corporate actions, according to Bao and Lewellyn (2017). According to Ingley and Van Der Walt (2004), institutional ownership can serve as an effective control element, that is, it can fulfill governance functions in order to monitor, discipline and influence corporate managers.

The internationalization of companies, like in the studies by Leuz (2006), Chang and Sun (2009), Hope et al. (2013) and Parte-Esteban and García (2014) also proved to be determinants of the accounting information quality. The logic, according to authors like Leuz (2006) and Hope et al. (2013), is that the US regulatory system gives stronger rights to foreign investors than in most other countries. There are stricter requirements for enforcing such rights, whether through the SEC or private securities litigation. Therefore, by trading shares on US stock exchanges, foreign companies are subject to these laws and their enforcement and tend to disclose better information.

The results showed that the variables "Governance" and "Ownership Concentration" were not statistically significant. Regarding governance, this result is in line with the Brazilian studies by Erfurth and Bezerra (2013), Mazzioni et al. (2016) and Moura et al. (2016), who investigated the influence of governance on earnings management (proxy for information quality) and also found that there was no relation. One justification for this lack of relationship is that levels of governance do not interfere in the quality of information. As regards the Stockholders' Meeting, the results are in line with the Brazilian study by Gonzaga and Costa (2009), who verified the influence of the concentration on accounting conservatism and, again, similar to Moura et al. (2016), who did not verify the influence of ownership concentration either. One justification for this result lies in the fact that, in Brazil, concentrated ownership is the predominant structure in most companies and, consequently, does not influence the quality of accounting information. It should be emphasized that the results raise the interest in further research. Therefore, the expansion of the research universe and period is recommended. Another recommendation concerns the use of companies from the financial sector. It would also be interesting to carry out the study segregating the sectors to analyze the information quality per sector.

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