

## Determining Factors of the Quality of the Financial Reporting of the Banking Companies Listed in Brazil Bolsa Balcão – B3\*

Determinantes de la calidad de la información financiera de las empresas bancarias listadas en Brasil Bolsa Balcão – B3

Determinantes da Qualidade das Informações Financeiras das Empresas Bancárias Listadas na Bolsa Balcão do Brasil - B3

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### Abstract:

This study aimed to analyze the determinants of the quality of financial information about banks listed on B3. We measured the quality of financial information through a set of 12 indicators built in the study of Gabriel and Silveira (2011). Subsequently, we used an econometric panel data model for a sample of 20 banks between 2014 and 2017. The results show that the banks audited by the big four have an audit committee, a lower indebtedness and a lower ROE, reflecting better quality of financial information. These findings contribute to Brazilian inspection and regulatory bodies by pointing the practices that may improve the financial information banks disclose to their investors. It also includes Brazilian banks in the empirical studies on the quality of financial information.

**JEL code:** G13

**Keywords:** banks, corporate governance, financial reporting, quality of finance information.

### Resumen:

Este estudio tuvo como objetivo analizar los determinantes de la calidad de la información contable de los bancos listados en B3. Medimos la calidad de la información contable a través de un conjunto de 12 indicadores construidos en el estudio de Gabriel y Silveira (2011). Posteriormente, utilizamos un modelo econométrico de datos de panel para una muestra de 20 bancos entre 2014 y 2017. Los resultados muestran que los bancos auditados por los cuatro grandes tienen un comité de auditoría, un menor endeudamiento y un ROE más bajo, lo que refleja una mejor calidad de la información financiera. Estos hallazgos contribuyen a los órganos de inspección y regulación brasileños sobre las prácticas que pueden calificar informe financiero divulgado por los bancos a sus inversores. También incluye a los bancos brasileños en los estudios empíricos sobre la calidad de la información financiera.

**Palabras clave:** bancos, información financiera, calidad de la información financiera, gobierno corporativo.

## Resumo:

Este estudo teve como objetivo analisar os determinantes da qualidade da informação financeira dos bancos listados na B3. Medimos a qualidade da informação financeira por meio de um conjunto de 12 indicadores construídos no estudo de Gabriel e Silveira (2011). Em seguida, utilizamos um modelo econométrico de dados em painel para uma amostra de 20 bancos entre 2014 e 2017. Os resultados mostram que os bancos auditados pelas Big Four possuem comitê de auditoria, menor endividamento e menor ROE, refletindo a melhor qualidade dos relatórios financeiros. Esses achados contribuem para a fiscalização e órgãos reguladores brasileiros ao apontar práticas que podem melhorar as informações financeiras que os bancos divulgam aos seus investidores. Também inclui os bancos brasileiros em estudos empíricos sobre a qualidade dos relatórios financeiros.

**Palavras-chave:** bancos, governança corporativa, relatórios financeiros, qualidade da informação financeira.

## 1. Introduction

The manipulation of financial information characterized the 2008 global financial crisis. In the case of Lehman Brothers, which went bankrupt during this crisis, such manipulation was aimed at omitting liabilities from its financial statements. In Brazil, financial frauds involving financial institutions occurred in Banco Nacional, Noroeste, and Panamericano, causing financial losses to their investors (Dantas & Medeiros, 2015; Martins & Ventura Júnior, 2020). That becomes relevant as Brazil has the five largest banks in Latin America regarding assets (Standard and Poor's, 2022).

This context refers to problems of market inefficiency, especially those associated with information asymmetry (Coase, 1937, 2013; Akerlof, 1970). These problems are established in two moments: before the asset's acquisition (adverse selection) and after (moral hazard). At first, investors may incur adverse selection as they do not have a level of information equivalent to that of asset managers. In addition, all information about the asset is not reflected in its price. Therefore, it will be up to the investor to acquire the asset and assume the risk of eventual losses (Akerlof, 1970). Secondly, when acquiring the asset, the investor will be exposed to moral hazard arising from the misalignment of interests between their expectations and the decisions made by the asset managers (Arrow, 1963).

Quality financial information mitigates information asymmetry problems by reducing the cost of capital and the cost of monitoring asset managers (Leuz & Verrecchia, 2000; Verdi, 2006; Daske *et al.*, 2008; Kim, Taylor & Verrecchia, 2021). However, accounting manipulations are more problematic in banks than in non-financial companies due to their high leverage and dependence on depositors and central banks for financing. Such manipulations occur, especially, in loan loss allowance accounts (Salem, Usman & Ezeani, 2021). In addition, factors such as corporate governance, auditing, regulations and enforcement can also affect the quality of companies' financial information, including banks (Moura *et al.*, 2017; Abed *et al.*, 2022).

Therefore, this study aimed to analyze the determinants of the quality of financial information of banks listed on Brazil Bolsa Balcão (B3). To that end, we began our research by measuring the quality of financial information from 20 banks listed on B3 through a set of 12 indicators from the study by Gabriel and Silveira (2011). Then, an econometric model was used to identify the factors determining financial information quality.

The results of this study indicate that a differentiated corporate governance index is not enough to improve the quality of the accounting statements by itself and, consequently, it cannot mitigate the problems of information asymmetry. This in turn means that it requires more effective monitoring through an audit carried out by the Big Four and an audit committee in the banks. In addition, it shows that the lower the indebtedness, the lower the probability of manipulations in the accounting statements of banks.

The contribution of this study is to include Brazilian banks in quality of accounting information research, given that previous studies were carried out only in non-financial companies in the Brazilian context (Moura,

Mazzioni, & Ziliotto, 2016; Nunes *et al.*, 2016; Silva, Mazzioni & Vargas, 2020). It also reveals that adopting an audit committee and the type of audit are essential factors in improving the quality of banks' financial information. This can help Brazilian supervisory and regulatory bodies, especially the Central Bank of Brazil (BACEN), to identify the practices that may improve the financial information disclosed by banks to their investors.

The study proceeds in the following structure. Section 2 presents the literature review and the construction of the hypothesis. Section 3 demonstrates the methodology used in the study and section 4 the respective results. Lastly, section 5 presents the final considerations.

## 2. Literature Review and Hypothesis Development

Adam Smith's Classical Theory did not consider the behavioral problem in organizations, dealt with in the work of Coase (1937), which maintains that the firm is configured as a set of contracts between factors of production driven by self-interest. Later, Williamson (1993) deepened the research on the behavioral problem when dealing with market failure, which comes from bounded rationality, uncertainty and opportunism, increasing transaction costs. Finally, Fama (1980) explains that "behavioral" and "managerial" theories of the company were developed, which reject the classical model of entrepreneur or manager-entrepreneur treated in the classical approach since there was a separation between ownership and control of the company, as a way of seeking efficiency in the economic organization within the perspective of the "set of contracts".

With the emergence of corporations, ownership and control assume different roles. The principal is no longer the holder of decision-making, which has become the agent's role (Berle & Means, 1988), configuring what Jensen and Meckling (1976) recognize as an agency problem. However, the agent will not always act in the principal's best interest, which makes the emergence of a conflict of interest possible. Thus, to minimize the divergences of interest, the principal may establish appropriate incentives for the agent, reflected in monitoring costs to limit the agent's opportunistic attitudes. Known as agency costs, in addition to the expenses with monitoring by the principal, there are expenses with contractual guarantees by the agent and the residual loss (Jensen & Meckling, 1976).

Monitoring costs are necessary, given that the agent has more information than the principal and other stakeholders, resulting in an asymmetry between the parties involved in this contractual relationship. Adverse selection and moral hazard correspond to two problems arising from information asymmetry. Adverse selection is an *ex-ante* problem because, at the negotiation time, the buyer does not have the same level of information as the seller. In addition, all information about the asset is not reflected in its price. Therefore, the buyer will pay an average price for the asset and bear the risk of losses. On the other hand, moral hazard is an *ex-post* problem and will come up if the agent takes advantage of the information asymmetry and acts opportunistically to obtain personal benefits at the expense of other stakeholders (Arrow, 1963; Akerlof, 1970).

The problems created by information asymmetry prevent the efficient allocation of resources in the capital market. To reduce the information asymmetry between managers and investors, the company must be efficient in disclosing information. Therefore, adopting corporate governance mechanisms is important since the literature suggests that such mechanisms can improve information transparency and mitigate information asymmetry problems (Healy & Palepu, 2001; Verrechia, 2001; Schiehl & Martins, 2016; Pardo López & Cortés, 2020).

A practical corporate governance framework is critical to increasing the credibility of financial reporting, as the authors found a negative relationship between audit committee effectiveness and the likelihood of fraudulent financial reporting (Razali & Arshad, 2014). Corporate governance mechanisms can help limit

and explain some of the choices related to the identification, measurement and disclosure of economic-financial events, influencing the quality of financial information produced by the firm and disclosed to investors and other stakeholders (Gabriel & Silveira, 2011). That is, the higher the level of corporate governance, the higher the quality of financial information (Almeida, Lima & Lima, 2009; Seguí-Mas, Bolla-Araya & Polo-Garrido, 2018; Romero, Ruiz & Fernandez-Feijoo, 2019).

The quality of financial information is responsible for the design of the primary business data in a transparent or even profound way, as it subsidizes managers in updating the organizational environment, providing the accuracy of actions relevant to this context, as well as its succession (Silva, Takamatsu, & Avelino, 2017). From this perspective, it is noteworthy that the quality of financial information has a direct relationship with the management, as they provide informational support to all areas of the organization, covering the stages of the management process, as pointed out by Queiroz and Almeida (2017).

Following this idea, it is possible to infer that the quality of financial information is essential for the business process, as it provides organizations with a foundation for planning, monitoring, communicating and controlling their actions through the handling and caring for financial information. All of these aspects represent the result of corporate financial and external reporting systems that measure and publicly disclose audited quantitative data relating to the financial position and performance of publicly traded companies, which may be reflected in share prices (Bushman & Smith, 2001; Farinha, Mateus, & Soares, 2018).

To assess the impact of adherence to financial information quality practices adapted to Brazilian companies, Gabriel and Silveira (2011) developed the Financial Information Quality Index (IQIC), validated internally by Cronbach's alpha and externally by eight researchers. The authors found that the shareholding concentration positively influences the IQIC and that the firm's corporate governance constitutes one of the main explanatory variables of the IQIC. Furthermore, the study shows the objective measurement of the quality of financial information and presents the result estimated by the Systemic Generalized Method of Moments (GMM). Lastly, it concludes that it is easier to overcome obstacles than to create a greater supply of resources for financing companies.

Moura, Mazzioni, & Ziliotto (2016) analyzed the determinants of the quality of financial information in publicly traded companies listed on the BMF&Bovespa, from 2008 to 2014, excluding those that carried out financial activities and did not have the information required for all the variables used. The study was descriptive and had a quantitative approach. The dependent variable was earnings management and the independent variables were the level of market competitiveness, proportions of intangible assets, ownership concentration and corporate governance. The results showed that, among the factors investigated in the period, only two confirmed the competitiveness and intangibility factors.

The study of Nunes *et al.* (2016) analyzed the quality of financial information in 9 mixed capital companies whose controller is the State and compared it to that produced by 9 private capital companies. A structured, quantitative and descriptive methodological approach is deployed, using document analysis to develop the research. The data collected were analyzed descriptively using the Mann-Whitney non-parametric statistical test. The results point to a non-significant difference in the quality of financial information between the two types of companies when examining the following factors: shareholder control; auditing; republication of accounting statements; preparation of financial information in an international standard; publication outside the legal deadline; revaluation of property, plant and equipment; disclosure of the Statement of Cash Flow; greater adoption of practices of disclosure of the Statement of Added Value than companies with private control; executive compensation and economic profit measure.

Moura *et al.* (2017) found that the fact that when a company is audited by the big four, has an audit committee, institutional investors' shareholding, and trades shares on the American stock exchange, it produces and discloses information of better quality. Martins and Ventura Júnior (2020) analyzed the influence of the corporate governance structure in mitigating the possibility of fraudulent financial reporting of Brazilian companies. They found that the corporate governance structure of the companies mitigate

earnings manipulation. It was also noticed that the governance practices related to the board of directors were more efficient against the probability of bankruptcy. In contrast, the practices related to the audit were associated with the reduction of earnings manipulation.

Silva, Mazzioni & Vargas (2020) aimed to identify the factors that improve the quality of financial information of public utility companies listed on B3. They found that ownership concentration, company size and level of corporate governance contribute to improving the quality of financial information. Considering the empirical literature exposed and that banks have more significant incentives for earnings management due to their high leverage (Kanagaretnam, Lim & Lobo, 2010; Mangala & Singla, 2021; Salem, Usman & Ezeani, 2021), the following was established as our study's hypothesis:

**H1:** Corporate governance mechanisms influence the quality of bank financial information.

### 3. Methodology

#### 3.1 Model and variables

Based on the established hypothesis and the literature review, the following econometric model was built:

$$IQIC_{it} = \beta_0 + \beta_1 GC_{it} + \beta_2 TIPOAUD_{it} + \beta_3 COMAUD_{it} + \beta_4 CA_{it} + \beta_5 TAM_{it} + \beta_6 END_{it} + \beta_7 ROE_{it} + \epsilon_{it} \quad (1)$$

Where:

$IQIC_{it}$  = represents the quality index of the banks' financial information.

$GC_{it}$  = dummy variable that takes the value of 1 when the bank is listed on the differentiated corporate governance stock index (IGCX) and 0 when it is not listed.

$TIPOAUD_{it}$  = dummy variable that takes the value of 1 when the bank was audited by the big four and 0 when it is not audited by the big four.

$COMAUD_{it}$  = dummy variable that takes the value of 1 when the bank has an audit committee and 0 when there is no audit committee.

$CA_{it}$  = represents the percentage of bank ownership concentration.

$TAM_{it}$  = bank size measured by the logarithm of total assets.

$END_{it}$  = overall indebtedness of each bank.

$ROE_{it}$  = return on equity.

$\epsilon_{it}$  = error term.

$\beta_0$  = intercept

$i = 1, \dots, 20$

$t = 2014, 2015, 2016$  and  $2017$

The quality of bank financial information was measured using 12 questions prepared by Gabriel and Silveira (2011), which scored between 0.0, 0.5, and/or 1.0, forming a financial information quality index (IQIC), as shown in Annex I. The Corporate Governance proxy is a dummy variable. Therefore, it received a value of "1" when the company is listed on one of the B3 Corporate Governance levels (New Market, Level I, and Level 2) and "0" when it is not listed on one of these levels. Also, we used dummy variables for the audit committee, where "1" corresponds to the bank having an audit committee and "0" otherwise. The type of audit is "1" for banks audited by one of the four largest auditing companies and "0" for those not. Regarding shareholding concentration, the total percentage of shares (common plus preferred) held by the largest shareholder was used. Table 1 summarizes the variables used in the study.

TABLE 1.  
Study Variables

Variable	Description
Quality of Financial Information	Financial Information Quality Index (IQIC)
Corporate governance	1.0 - Listed on IGCX
	0.0 – Not listed on IGCX.
Audit Type	1.0 – Audited by the big four.
	0.0 – Not audited by the big four.
Audit Committee	1.0 – Has an audit committee.
	0.0 – There is no audit committee.
Shareholding Concentration	Total percentage of shares owned by the largest shareholder.
Size	Natural logarithm of total assets.
Indebtedness	$(PC+PNC)/AT \times 100$
ROE	Return on PL(LL/PL).

Source: Adapted from Moura *et al.* (2017)

We collected all variable data on the Brazil Bolsa Balcão website (B3). The following section presents the population and sample of this study.

### 3.2 Population and sample

The study population consisted of 25 banks. From this total, we excluded the banks' INTER, BTGP BANCO, INDUSVAL, PATAGONIA, and BANSANTANDER because they did not have the necessary information for all the variables in the years studied. After this procedure, the sample consisted of 20 banks analyzed between 2014 and 2017 during the Brazilian economic and political crisis. Table 2 reveals the study sample.

TABLE 2.  
Banks surveyed.

1	ALPHA HOLDING	11	MERC INVEST
2	BANESTES	12	MERC BRAZIL
3	ABC BRAZIL	13	NORD BRAZIL
4	ALFA INVEST	14	PAN BANK
5	AMAZONIA	15	PINE
6	BRADESCO	16	SANTANDER BR
7	BRAZIL	17	BRB BANCO
8	BANESE	18	ITAUUNIBANCO
9	BANPARA	19	ITAUSA
10	BANRISUL	20	PARANA BCO SA

Source: elaborated by the authors.

Therefore, the financial information quality index was applied to 20 banks, totaling 960 observations obtained in the four years analyzed. The variables were analyzed from regression with panel data, processed in the statistical software STATA®.

## 4. Analysis of Results

Table 3 presents the descriptive statistics of the analysis, whose sample of selected variables is composed of 20 banks listed on B3 for four years, obtaining 80 observations in total. The dependent variable (IQIC) has a mean of 7.22 with a standard deviation of 0.86. This result confirms the similarity between the analyzed companies. The independent variable of shareholding concentration (CA) presented an average percentage of shares held by the largest shareholder corresponding to 53.51%. In its analysis, there was a standard deviation of 26.84%, the minimum rate of shares that the largest shareholder held is 7.07%, and the largest was very close to 100% with 99.98%.

The company size, operated as a proxy for the natural logarithm of the company's total assets, presented a maximum of 12.18 and a minimum of 7.88, with an average of 10.35 (corresponds to approximately USD 55,5 billion). The companies analyzed have an average of 74.45% of their total assets committed to short and long-term debt obligations, with a minimum of 0.71 and a maximum of 95.3. The return on equity (ROE) presented a minimum of -28.93, a maximum of 29.50, and an average of 10.53 with a standard deviation of 10.10.

TABLE 3.  
Descriptive statistics of the variables used in the study (2014 to 2017)

Variable	Note	Average	Standard deviation	min	Max
<b>IQIC</b>	80	7.22	0.86	5	9.5
<b>GC</b>	80	0.40	0.49	0	1
<b>TIPOAUD</b>	80	0.95	0.22	0	1
<b>COMAUD</b>	80	0.54	0.50	0	1
<b>CA</b>	80	53.51	26.84	7.07	99.98
<b>SIZE</b>	80	10.35	0.97	7.88	12.18
<b>END</b>	80	74.45	30.86	0.71	95.30
<b>ROE</b>	80	10.53	10.10	-28.93	29.50

Note: IQIC - Financial Information Quality Index; GC - Corporate Governance; TIPOAUD - Type of Audit; COMAUD - Audit Committee; CA - Shareholding Concentration; SIZE - Size; END - Indebtedness; ROE - Return on equity.

Source: elaborated by the authors.

It was identified that only 2 banks weren't audited by one of Brazil's four largest auditing companies between 2014 and 2017. One of them was ITAUSA (2015 to 2017) and another was ALFA HOLDING (2014). More than half of the companies, precisely 43, have an audit committee. Audit (COMAUD) with an average of 0.54 of the banking companies presenting 0.50 of their standard deviation and the 80 observations, only 32 companies were traded on the New Market and listed in levels 1 and 2 of corporate governance (GC). This corresponds to an average of 0.40 of banking companies with a standard deviation of 0.49. Regarding corporate governance, the result of this variable is justified by the fact that the analyzed companies present accounting statements different from the other publicly traded companies listed in B3, bearing in mind that these are financial companies.

Table 4 identifies the frequency for better analysis of the variables measured by the dummy variable.

TABLE 4.  
Frequency of variables analyzed by the dummy variable (2014 to 2017)

GC	Frequency	Percentage	Cum.
0	48	60.00	60.00
1	32	40.00	100.00
Total	80	100.00	
TIPOAUD	Frequency	percentage	Cum.
0	4	5.00	5.00
1	76	95.00	100.00
Total	80	100.00	
COMAUD	Frequency	percentage	Cum.
0	37	46.25	46.25
1	43	53.75	100.00
Total	80	100.00	

Note: GC - Corporate Governance; TIPOAUD- Type of Audit; COMAUD - Audit Committee  
Source: elaborated by the authors.

As shown in Table 4, the independent variables CG, TIPOAUD, and COMAUD were measured by the dummy variable, where one corresponds to a positive response and 0 to a negative one.

The variable that stood out the most was TIPOAUD, with 76 positive responses, characterizing that 95% of audits were performed by the big four firms. According to the dummy variable, the second variable that scored the most positively was COMAUD, totaling that a little more than half of the companies have an audit committee with 43 positive responses. Then the GC variable was the least scored, showing that of the 80 observations, only 32 scored positively.

TABLE 5.  
Matrix of correlations of the research variables

	IQIC	GC	TIPOAUD	COMAUD	CA	SIZE	END	ROE
IQIC	10000							
GC	0.149	10000						
TIPOAUD	0.059	-0.164	10000					
COMAUD	0.061	-0.010	0.247	10000				
CA	0.027	-0.365	0.291	-0.089	10000			
SIZE	-0.001	0.517	0.021	0.441	-0.404	10000		
END	-0.136	-0.081	0.521	0.474	0.231	0.364	10000	
ROE	-0.179	0.038	-0.085	0.128	0.110	0.312	0.015	10000

Note: IQIC - Financial Information Quality Index; GC - Corporate Governance; TIPOAUD - Type of Audit; COMAUD - Audit Committee; CA - Shareholding Concentration; SIZE - Size; END - Indebtedness; ROE - Return on equity.  
Source: elaborated by the authors

Table 5 analyzes the correlation matrix to show if there are problems with autocorrelation between the variables. This result allows us to conclude that the financial information quality index (IQIC) showed a more substantial degree of correlation with the variables of corporate governance (GC) at 14.90%, indebtedness (END) at 13.60%, and return on equity (ROE) with 17.90%. As for the independent variables TIPOAUD and COMAUD, there was a low correlation of 5.90% and 6.10%. It is also possible to observe that the size variable (TAM), despite having almost no correlation with IQIC, presents a strong correlation with CG, COMAUD, CA, and ROE with 51.70%, 44.41%, 40.40%, 31,20 %, respectively. However, for this analysis, no problems with autocorrelation were identified.

After these descriptive analyses, regressions were applied with the Chow (F), Breusch-Pagan, and Hausman LM tests. Finally, to determine which model best fits this research, POLS, Fixed Effects, or Random effects.

TABLE 6.  
Result of Indicated Panel Data Specification Models (2014-2017)

Test		Significance	Hypotheses	Nominated Model
<i>Chow (F)</i>	F=1.02	0.3918	do not reject $H_0$	POLS
<i>Breusch-Pagan LM</i>	X= 61.09	0.0000	reject $H_0$	Random Effect
<i>Hausman</i>	X= 1.51	0.9818	do not reject $H_0$	Random Effect
<b>Nominated Model</b>				<b>Random Effect</b>

Source: elaborated by the authors.

Analyzing Table 6 shows that the Chow test (F) resulted in an acceptance of the POLS model. Furthermore, the test of *Breusch-Pagan LM* evaluated the adequacy of the random model to the POLS model, rejecting the  $H_0$ . Lastly, the Hausman test does not reject  $H_0$ , which allows us to infer that the most appropriate model for this test is the random effect model.

Table 7 below shows the model used to verify the relationship between the determinants of the quality of financial information and the quality index of financial information – IQIC. The relationship between the variables was performed using panel data regression, using the Random Effects model with robust standard errors. This panel data model was chosen due to the Wald test, which indicated the presence of heteroscedasticity in the model used in this research. Weighted models were estimated and observed according to their variances to correct this problem.

TABLE 7.  
Result of estimating the determinants of the quality of financial information through panel data for Random Effects (2014-2017)

IQIC	Coef.	Standard deviation	T	P> t	Confidence Interval	
GC	3598686	4007713	0.90	0.369	-4256287	1,145,366
TIPOAUD	9626875	417798	23.04	<b>0.000*</b>	8808006	1,044,574
COMAUD	4126771	1575589	2.62	<b>0.009*</b>	1038674	7214869
CA	81633	67072	1.22	0.224	-49825	213091
SIZE	929785	1620163	0.57	0.566	-2245676	4105247
END	-112289	41622	-2.70	<b>0.007*</b>	-193866	-30711
ROE	-172578	65738	-2.63	<b>0.009*</b>	-301421	-43734
cons	5,557,371	1,608,357	3.46	<b>0.001*</b>	240,505	8,709,692
<b>R<sup>2</sup></b>		0.1862				
<b>Adjusted R<sup>2</sup></b>		0.1323				
<b>Modified Wald Test</b>		x <sup>2</sup> = 2046.10 Sig= 0.0000				

Note: IQIC - Financial Information Quality Index; GC - Corporate Governance; TIPOAUD - Type of Audit; COMAUD - Audit Committee; CA - Shareholding Concentration; SIZE - Size; END - Indebtedness; ROE - Return on equity. \* Significant normal level 0.05 or 5%

Source: elaborated by the authors.

It is possible to observe in Table 7 that the  $R^2$  is 18.62% and the Adjusted  $R^2$  of 13.23%, which can be considered satisfactory. That is, the model has an explanatory capacity of 13.23% on the dependent variable as recorded in other previous studies, such as that of Lopes *et al.* (2017), which presents regression with  $R^2$  and Adjusted  $R^2$  of 16.70% and 12.90% and Moura *et al.*, (2016) with Adjusted  $R^2$  of 17 %.

Considering the results shown in Table 7, it was found that the coefficients of the independent variables, type of audit (TIPOAUD) and audit committee (COMITAUD) are significant for the IQIC, indicating

that when the company is audited by the big four, it has a higher quality index of financial information, as in the research Moura *et al.* (2017). The same happened with the audit committee. The survey results show that companies with excellent audit committee performance have a higher quality index of financial information. This result confirms the result of the study by Moura, Ziliotto & Mazzioni (2016), which indicates the influence of the audit committee on the quality of financial information.

The coefficients were significant but negative for the variables of indebtedness (END) and return on equity (ROE), meaning that the less indebted the bank is, the less likely it is to carry out financial manipulation in its financial reports, corroborating the findings on various works on the subject (Watts & Zimmerman, 1986; Gabriel, 2011; Martins & Ventura Júnior, 2020). As for the ROE result, it indicates that high performance is related to excellent earnings management.

Regarding shareholding concentration (CA), the result is like that of Moura, Ziliotto & Mazzioni (2016), who did not indicate the influence of shareholding concentration on the quality of financial information. It is also like that of Moura *et al.* (2017), stating that the company with shareholding concentration does not have the best quality of financial information. Lastly, the size variable (TAM) result was like that of Lopes *et al.* (2017), which shows that size is unrelated to the quality of financial information.

As for corporate governance (GC), the result differs from those found in Gabriel (2011), who found that governance could be seen as a dimension of composition and management, meaning that some recommended GC practices positively impact the quality of financial information. However, the results are in line with other studies (Moura, Ziliotto & Mazzioni, 2016; Moura *et al.*, 2017) which show that the presence of corporate governance does not influence the quality of financial information, as well as other studies (Boycko, Shleifer, & Vishny, 1996; Core, Holthausen, & Larcker, 1999) which point out that weak corporate governance does not help to mitigate the problem of information asymmetry caused by the manipulation of financial reports.

## 5. Final Considerations

The study aimed to analyze the factors determining the financial information quality in banks listed on B3. For this, the quality of financial information was analyzed through the financial information quality index (IQIC). The determining factors observed were corporate governance (GC), audit committee (COMAUD), type of audit (TIPOAUD), shareholding concentration (CA), size (TAM), indebtedness (END), and return on PL (ROE). To achieve the proposed objective, the quality of financial information of 20 banks listed on B3 was measured through a set of twelve indicators from the study by Gabriel and Silveira (2011). Then, an econometric model was used to identify the factors determining financial information quality. As for the quality of financial information, the results were like those of Nunes *et al.* (2016) and Gabriel (2011), who investigated, through a questionnaire, the quality of financial information in publicly traded companies listed in B3.

The result shows that among the factors of corporate governance, audit committee, type of audit, shareholding concentration, size, indebtedness and ROE, which were pointed out in the literature as influencing the quality of financial information, four sustained the theoretical assumption in the investigated sample. Two factors of these, COMITAUD and TIPOAUD, with positive and significant coefficients, indicate that the greater the performance of the audit committee and audited by one of the four largest auditing companies, the higher the quality of the financial information. The others are END and ROE, which showed a negative relationship with the quality of financial information, demonstrating that the lower the indebtedness and the company's performance, the higher the quality of financial information.

The contribution of this research is to show that the adoption of the audit committee and type of audit are determining factors to improve the quality of financial information of Brazilian banks. In addition, the study

shows it is possible to analyze the control variables indebtedness and performance, noting that improving the quality of financial information requires the variables of indebtedness and return on equity to be reduced.

As limitations, we highlight that other factors could be considered to explain the quality of financial information. For example, industry characteristics, since it could be a variable that captures different business contexts. Also, and no less critical, analyze other populations, as the institutional system of each country varies and can influence the quality of financial information. The sample size can also be considered an aspect that could be improved, giving greater robustness to the results. Thus, for future research, it is suggested to include other explanatory factors that have not been contrasted in here or the consulted literature of this study. Furthermore, the research should be developed with a broader sample, including developing countries with capital markets similar to the Brazilian.

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## Annexes

ANNEX 1.  
Financial Information Quality Index (IQIC)

Questions	Scoring Criteria
1 - Is the independent auditor's opinion clean?	1.0- Companies that do not present a qualified, adverse opinion, with a disclaimer of opinion or with paragraphs of emphasis.
	0.5- Companies that present an opinion with an emphasis paragraph.
	0.0- Other cases.
2 - Is the auditing firm one of the four largest?	1.0- Companies that have the opinion prepared by one of the following auditing firms: Pricewaterhouse Coopers, Deloitte Touche Tohmatsu, Ernst & Young or KPMG
	0.0- Other cases
3 - Does the company not republish its financial statements?	1.0- Companies that do not have any resubmission (by demand or spontaneous).
	0.5- Companies that have automatic resubmission.
	0.0 Other cases
4 - Does the company also disclose its statements in US GAAP or IAS/IFRS?	1.0- Companies that disclose their financial statements following US-GAAP or IAS/IFRS.
	0.0- Other cases.
5 - Does the company not reevaluate its fixed assets?	1.0- Companies that do not constitute this reserve or have fully written off their respective balance as of 2008.
	0.0- Other cases.
6 - Does the company not record pre-operating or research expenses in deferred assets?	1.0- Companies that do not record these expenses in assets or have fully written off their respective balance as of 2008.
	0.0- Other cases.
	1.0- Companies that present their annual Standardized Financial Statements (DFP) until 03/31 of the following year.

<p>7 - Does the company disclose its statements within the legal term?</p>	<p>0.0- Other cases.</p>
<p>8 - Does the company disclose the Statement of Cash Flows?</p>	<p>1.0- Companies that disclosed the Statement of Cash Flows before the enactment of Law 11,638/07.</p> <p>0.0- Other cases.</p>
<p>9 - Does the company disclose the Statement of Added Value (DVA)?</p>	<p>1.0- Companies that published the Statement of Added Value before enacting Law 11,638/07.</p> <p>0.0- Other cases.</p>
<p>10 - Does the company publish statements in constant purchasing power currency?</p>	<p>1.0- Companies that disclose, at least, the balance sheet and income statement for the year following any of the following criteria: balance sheet monetary restatement or complete monetary restatement.</p> <p>0.0- Other cases</p>
<p>11 - Does the company disclose the amount spent on fixed and variable compensation to the executive and the board of directors?</p>	<p>1.0- Companies that break down the remuneration of directors and executives, informing the fixed and variable remuneration.</p> <p>0.5- Companies that: (i) disaggregate but do not report fixed and variable remuneration, or (ii) do not inform the proportion paid in a fixed and variable form.</p> <p>0.0- Other cases</p>
<p>12 - Does the company disclose the cost of equity or any measure of economic profit?</p>	<p>1.0- Companies that present added/destroyed value based on some measure that considers the cost of equity (EVA, shareholder value, residual income, etc.).</p> <p>0.0- Other cases.</p>

Source: adapted from Gabriel and Silveira (2011).

## Notes

\* Research article.