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# Editorial

**Dear reader**,

The Journal of Accounting Education and Research (REPeC) is a scientific journal issued by the Brazilian Academy of Accountancy (ABRACICON), electronically published every three months.

As from the third issue of 2017, REPeC is publishing all articles in compliance with the updated Guidelines for Authors (version 2017). The main changes refer to the smaller number of words per article (brought down to 9,000 words) and the abstract, which has adopted the structure of the main international journals.

In this issue, we are happy to inform that REPeC has maintained its classification in level B1 of Qualis Periódicos for the period 2013-2016, as published by CAPES last month. This means that it will remain at that level until the next assessment by the area of Public and Corporate Management, Accountancy and Tourism.

Next, we briefly described the scientific articles published in this issue.

The first study, entitled "**ENADE and the Proposed Curriculum of CFC: A Study in Brazilian Accountancy Programs**", by *Vanessa Ramos Silva, Gilberto José Miranda* and *Janser Moura Pereira* assessed whether the institutions that offer Accountancy programs with curricular flows closer to the proposed curriculum of the Federal Accounting Council (CFC) score higher on the ENADE. Its main findings demonstrate that the academic curricula of public universities stand closer to the contents of the CFC proposal. The tests also evidenced that the best ENADE scores in 2012 also came from public universities.

*Eduardo Bona Safe de Matos, Lucas Vieira Lôbo de Araújo, Mariana Guerra* and *Fernando Dal-Ri Murcia* are the authors of the paper entitled "**International Studies About Fair Value (2000-2016): Themes, Methods and Suggestions for Future Research**", which aimed to analyze the publications about fair value in the main international accounting journals and classify them by research theme and design. In the results, a growing trend was identified in scientific productions on the theme, especially after 2011, particularly in the five main accounting journals. The research area was heterogeneous, with publications on different themes, mainly: (i) comparison between fair value and other assessment methods; and (ii) stock market reactions to the fair value. In addition, the predominance of quantitative and archival studies was observed.

"**Taxonomy of the Dark Triad: Revelations from the Scientific Network in the Organizational Context**" was the third study published, written by *Márcia Figueredo D'Souza* and *Daniel Nelson Jones* to characterize the scientific research on the Dark Triad in the organizational and accounting context published between 2002 and 2014. In its results, we observe that Narcissism is the most explored focus, associated with leadership and corporate decision making. Psychopathy attracts researchers' attention to the corporate leaders' aversive behavior. Machiavellianism, then, is more emphasized in research on manipulation. Specifically in the accounting area, the majority associates these traits with unethical behavior tending towards fraud in the financial reports.

The fourth studies, entitled "**The Constitution of the Scientific Field and the Low Diversity of Brazilian Accounting Research**", by *Paulo Frederico Homero Junior*, was intended to produce a plausible hypothesis to explain the lack of a consolidated line of interpretive and critical Accounting research in Brazil. In its results, the author identifies the low autonomy in the academic field when compared to the professional field, as evidenced by the origin of higher education programs in accountancy, based on efforts of professional leaderships and constant attempt of professional entities to interfere in Accounting education, as a cause of the low diversity in Brazilian accounting research.

"**Determinants of accounting information quality in large publicly-held companies listed on BM&FBOVESPA**" by *Geovanne Dias de Moura, Mayara Zanchi, Sady Mazzioni, Francisca Francivânia Rodrigues Ribeiro Macêdo* and *Silvana Dalmutt Kruger* was the fifth study published, which identified the factors that influence the accounting information quality of the largest companies listed on BM&Bovespa. Its results revealed an average disclosure index of 78%. Most companies were listed on differentiated governance levels; were audited by the big four and had an Audit Committee. The mean percentage of ownership concentration was 41.37%; in 44%, the owners included institutional investors and only 19% were traded on the American stock exchange. As regards the determining factors, it was verified that being audited by the big four; having an Audit Committee; including institutional investors among the owners and being traded on the American stock exchange leads to the disclosure of higher-quality information.

The sixth paper is a teaching case by *José Américo Pereira Antunes, Renata Sol Leite Ferreira da Costa* and *José Elias Feres de Almeida*, entitled "**Teaching Case: Liquidity or Solvency, Who is to Blame? The Economic-Financial Analysis of a Financial Institution**", which illustrated the use of liquidity and solvency concepts to support long-term strategic decision making. In its results, Bank Y presented rapid growth of its credit portfolio in recent years, based on a term extension strategy, which was not accompanied to the same extent by its equity, leading to increased leverage and compression of regulatory capital. Dissatisfied, the partners disagreed on the causes of failure; was it a liquidity problem, deriving from the extension strategy of the credit portfolio, or a solvency problem as, besides illiquid, was the portfolio also defaulting?

Finally, the entire editorial team of REPeC hopes you will enjoy your reading!

**Prof. Orleans Silva Martins, Ph.D.**
**Editor in-Chief**

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# ENADE and Proposed Curriculum of CFC: A Study in Brazilian Accountancy Programs

## Abstract

**Objective:** The objective in this study was to assess whether the institutions that offer Accountancy programs whose curricula stand closer to the proposed curriculum of the Federal Accounting Council (CFC) score higher on the ENADE exam.

**Method:** In the data collection, the websites of all Accountancy programs that participated in the ENADE in 2012 were visited. Information was located for 447 institutions, which constituted the study sample. In the data analysis, descriptive statistics and the Wilcoxon test were used.

**Results:** The main research findings demonstrate that the academic curricula of the public universities stand closer to the contents proposed by the CFC. The tests also evidenced that the best ENADE scores in 2012 also came from public universities.

**Contributions:** The research contributes by evidencing that the Brazilian Accountancy curricula substantially differ from the curriculum the CFC proposes. It also evidences that greater alignment with the proposed curriculum is associated with higher ENADE scores, which values the proposal as a parameter for new curricular revisions in Brazil.

**Key words:** Accounting Education. Federal Accounting Council. Curriculum.

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## 1. Introduction

The Higher Education Institutions (HEI) should provide the development of the skills the students require for professional activities. In order to do so, they need proper planning of the education process, which is embodied in the Political Pedagogical Project (PPP), a document elaborated to establishing a planning with the main ideas, elements, curricular and organizational structures of an undergraduate course (Veiga, 2003).

The HEIs structure their PPPs for each program, according to the norms of the respective areas. The National Curricular Guidelines (NCGs) - National Council of Education (CNE) / Board of Higher Education (CES) Resolution No. 10, issued on December 16th 2004, guide the institutions that offer Accountancy programs in the elaboration of the academic accounting curriculum, divided into three educational blocks: Basic, Professional and Theoretical-Practical. The Federal Accounting Council (CFC) also proposed a curriculum in 2009 to assist and standardize the curricula presented by HEIs.

Accounting is based on legislation that is constantly adapted and modified. At the international level, standards are created and changed frequently. Following the objective of standardizing the way of doing Accounting, teaching also needs modifications, especially in the contents covered in disciplines. Teachers and HEIs have the task of adapting their planning, methods and knowledge in order to fill in the gaps and offer accounting education with updated focuses (Fouché, 2013).

In addition to the above, the profound changes introduced by Law No. 11638 / 2007 should be reminded, when the International Financial Reporting Standards (IFRS) were adopted. According to Jackling, Howieson and Natoli (2012), the IFRS influence accounting education in the countries that have adopted them, as they are related to the organizational environment the students will integrate, and in some cases are already inserted in. According to Carvalho and Salotti (2013), Brazil is one of the few countries with full compliance with IFRS.

In view of the heterogeneity of the Brazilian HEIs' curricula, evaluation programs are necessary to guarantee the quality of the education offered. Law No. 10861/2004 established the National System for the Evaluation of Higher Education (SINAES), which established three pillars for the evaluation of HEIs: institutional evaluation; course evaluation; and student performance assessment. The tools used in the evaluation include the National Student Performance Exam (ENADE).

The quality of teaching at an institution is a result of the involvement of three components: students, faculty and HEI (Corbucci, 2007). Faculty variables may interfere with students' academic performance, whether through the academic or professional education, teaching strategy or method, work regimen, degree and professional experience. As for the HEI, the variables can be classified in infrastructure (study environment) and didactic-pedagogical organization (entrance form, PPP, class size and course shift) (Ferreira, 2015). Thus, the result of the ENADE evaluation represents the performance of the HEI based the relation among these three aspects.

Based on the results obtained by the HEIs that offer the Accountancy program on the ENADE 2012 and in view of the CFC's argument on the lack of curricular harmonization among the Brazilian institutions, the question that guides this study is: **is the greater proximity to the curriculum proposed by the Federal Council associated with higher levels of academic achievement on the ENADE?** In view of the above, the general objective of this research is to evaluate whether the HEIs whose curricula stand closer to the CFC proposal present higher scores on the ENADE of Accountancy programs.

The objective of analyzing the curricula of HEI and presenting their relationships with student performance in Brazilian undergraduate programs in Accountancy is justified by the fact that studies of this nature are still incipient in the Brazilian literature consulted. In addition, as from 2008, Brazilian Accounting began to undergo profound changes due to the adoption of international accounting standards, with the approval of Law 11388/2007. Some HEIs still maintain curricula prior to that law though. Thus, the practical contribution of this research is the possibility of assisting managers of HEIs who are in the process of adapting or creating their curricula and PPPs, also collaborating with the production of knowledge about the evaluation of higher education institutions.

## 2. Theoretical Review

### 2.1 National System for the Evaluation of Higher Education - SINAES

The purpose of the evaluation is summarized in the interest in improving knowledge (Grizendi, Silva & Ferreira, 2008). According to Álvaro Méndez (2002, p. 14), "in the educational field, evaluation should be understood as a critical learning activity, because it is assumed that evaluation is learning in the sense that, through it, we acquire knowledge".

The SINAES allows for the evaluation of undergraduate programs and undergraduate students' performance in all Brazilian HEIs, aiming at improving the quality of higher education and expanding its supply, guaranteeing the HEIs' social commitments and responsibilities (Brazil, 2004). In view of this purpose, SINAES, based on its evaluation, characterizes the profile of the institution through activities, projects, courses offered, programs and sectors. The evaluation also focuses on the conditions of the physical facilities, the qualification of the teaching staff and the pedagogical structure the students are exposed to (MEC, 2013).

In other words, the SINAES evaluates the institutional aspects, the academic performance of the students and the undergraduate course. The ENADE measures the students' income, according to Art. 5 of Law 10861/2004:

> § 1º The ENADE will verify the students' performance with regard to the program contents established in the curricular guidelines of the respective undergraduate program, their skills to adjust to the requirements deriving from the evolution of knowledge and their competences to understand themes beyond the specific context of their profession, linked to the Brazilian and global reality and to other knowledge areas.
> [...]
> § 3º The maximum periodicity to apply the ENADE to the students of each undergraduate program is three-annual.
> § 4º The application of the ENADE will be accompanied by a tool to survey the students' profile, which is relevant to understand their results.
> [...]
> § 8º The assessment of the students' performance in each program on the ENADE will be expressed through concepts, ranked on a five-level scale, based on minimal standards set by experts in the different knowledge areas (Brasil, 2004).

As outlined above, the ENADE assesses the students' performance through specific skills resulting from their training. According to Polidori, Marinho-Araújo and Barreyro (2006, p. 432), the "expectations of undergraduate training include, in addition to the content domain, the development of postures and processes that constitute the design of an expected professional profile".

The ENADE is composed of: a test consisting of questions that measure knowledge and skills; the questionnaire focused on students' impressions concerning the test; the socioeconomic questionnaire, which aims to characterize the student profile; and the questionnaire of the program coordinator (Brazil, 2004). The exam divides the contents in: General Education (25% of the grade) and Specific Education (75% of the grade).

The academic performance evaluation undertaken through the ENADE helps the institutions in the process of self-evaluation, for those who seek continuous improvement in their PPPs. According to Polidori, Marinho-Araújo and Barreyro (2006, p. 434), ENADE "aims to provide reflection within the program itself and the institution, as it constitutes a privileged moment of interaction with students, aiming at stimulating critical reflection and the evaluation of their education processes".

The test is applied at all HEIs of the Brazilian states:

> The objectives of the assessment include getting to know the strengths and problems of the institution, considering the appropriateness of its work to the new and classical social demands, identifying the degrees of involvement and the commitments of their teachers, students and servants, in view of the basic institutional priorities (INEP, 2004, p. 97).

In that sense, the ENADE is an important tool to assess the teaching and learning process in Brazil as, according to Worthen, Sander and Fitzpatrick (2004), the evaluation is a vehicle for identifying, clarifying and applying defensible criteria to determine the values, quality, utility and importance of the evaluated object. In this sense, according to Peck and Gorzalski (2009) and Preskill and Caracelli (1997), information from course evaluations can contribute to their improvement by providing managers with data that allow more in-depth knowledge about the reality of the programs and assist in their management.

In this respect, an important analysis would consider the curriculum, which is the tool the HEI use to structure the content approach and its respective schedules in student education. There are some shortcomings in this process though, which make it difficult to fulfill this role. According to Rodrigues and Peixoto, course coordinators do not see the results of assessments as relevant information for course improvements. In addition, it should be appointed that many of them claim to be ignorant of both the ENADE and student performance. At the same time, the study by Freitas, Barbosa, Galvão & Miranda (2015) indicates that the programs whose managers revealed a positive view on the quality and usefulness of the ENADE Course Report scored higher in the evaluation.

## 2.2 The curriculum of Accountancy programs

The pedagogical planning process is ongoing and seeks a balance for the sake of the development of the education system. According to Ribeiro (2010), higher education practice is continuously changing and the academic education needs cannot be predicted for a long period, which is why the planning of educational practice is constant. According to Silva (1996, p. 23):

> The curriculum is one of the privileged places where knowledge and power, representation and mastery, discourse and regulation intermingle. It is also in the curriculum that the power relations are condensed which are crucial to the formation process of social subjectivities. In short, curriculum, power and social identities are mutually involved. The curriculum embodies social relationships (Silva, 1996, p. 23).

Moreira and Silva (1997, 28) point to the curriculum as "ground for cultural production and policy, in which the existing materials function as raw material for creation and recreation and, above all, for contestation and transgression." By portraying historical, social and cultural factors, the elaboration of a curriculum is "a social process in which logical, epistemological, intellectual and social determinants coexist side by side, such as power, interests, symbolic and cultural conflicts, domination propositions driven by factors related to class, race, ethnicity and gender "(Jesus, 2008, p. 2640). In this respect, Rojas-Rojas and Giraldo-Garcés (2015) highlight the relevance of the curriculum in the transformation of the professional practices and environments Accounting is embedded in.

Sacristán (2000, p.16) presents the curriculum as a "project based on a constructed and ordered plan, relating the connection between certain principles and their accomplishment, something that will prove itself and that in this practical expression concretizes its value." The structure of the curriculum considers the skills and abilities that need to be developed in such a way that the student participates in the process of knowledge construction and that he is not seen only as an inactive subject (Vasconcelos, 2008).

The programming of an HEI should consider "the substantivity and ordering of the curriculum contents, the configuration of the most appropriate activities to achieve what is intended and the ability to carry out these plans within certain conditions of space, time, [...] and organizational structure "(Sacristán, 2000, p. 297). Curriculum planning is the starting point for constructing content in accordance with the context of teaching, thinking about how it will happen as a sequence before doing it, considering available time, methods to be employed, available resources, among others (Jackson, 1990; Taylor, 1970).

In view of the composition of aspects related to the curriculum, its objective is to transform the individual so that he can develop in the environment related to his area and be subject to certain changes in his trajectory (Doll Jr., 1997). As for the construction of the curriculum, the challenge is to provide "integrated human competence at the speed of time, also to humanize innovation processes" (Demo, 1998, p. 30).

Riccio and Sakata (2004, p.35) comment that "accounting education institutions in different countries are encouraged to adapt to the changes brought about by globalization". In the case of national and international HEIs, in view of the integration effect, they have been forced to adapt their curricula to encompass issues related to legislation, organizations and cultures (Kumar & Usunier, 2001; Kwiek, 2001; Wallace, 2003).

In discussing accounting education in the Anglo-American world, Porter and Carr (1999, p. 565) emphasize the "inability of existing programs to properly prepare students for the dynamic and complex business environment they enter after graduating". The authors criticize the fact that HEIs do not provide students with the necessary methods to act in the job market, since they often work only on concepts and do not help them to develop their skills.

The curricula of Brazilian institutions are guided by CNE Resolution No. 10/2004, which establishes the DCNs for undergraduate courses in Accountancy. With autonomy and flexibility, HEIs should consider that, the greater the supply of tools for graduates to develop their skills in the academic period, as regards the curriculum structure, the better their performance and professional success (Paola, 2009). Pires and Ott (2008, p.7) point out that:

> The determination of CNE/CES Resolution No. 10/2004 are broad and flexible, which means that it is the role of each HEI to define, for example, which subjects to teach and the number of class-hours for each content, provided that the established guidelines are complied with, that is, provided that the curriculum contents are covered (Pires; Ott, 2008, p. 7).

As mentioned in Resolution 10/2004, the undergraduate program in Accountancy is interrelated with other branches of knowledge, such as Administration, Economics, Mathematics and others. Thus, the disciplines in related and complementary areas contribute to accounting education (Lagioia, Santiago, Gomes, & Ribeiro Filho, 2007). The assessment by Capacchi, Moretto, Vancin & Padilha (2007, p.12) is that, "if one is not preparing very generalist people, who actually know a little of everything and nothing in depth regarding the professionalism that businessmen expect so much".

Regarding this freedom of the Accountancy curricula to choose their approach, in their research, Capacchi et al. (2007) analyzed the curricular structure and the educational challenges of the Accountancy programs in Rio Grande do Sul. In their findings, the authors verified that, in the courses analyzed, the curricula approach a reduced number of specific contents in accounting and concluded that, for the institutions studied, the education was generalist and not specialist, and could therefore interfere in these students' results in accounting examinations and in professional selection processes.

Galdino and Soares (2013, p.2) investigated whether "Accountancy education at public universities in the North of Brazil is predominantly generalist or specialist." Seven HEIs composed the study sample and analyses only considered the compulsory subjects in the curricula, separated by "accounting disciplines" and "non-accounting disciplines". The authors were unable to state whether the training was predominantly specialist or generalist, due to the proximity of the percentages found.

According to Soares, Borgert, Pfitscher & Will (2012), in the specialized literature, specialist or generalist curricula receive different treatments. These concepts follow different but appropriate arguments. In summary, the authors discuss that the main characteristic of the general format is that the curricula contain a diversity of contents, following the social and professional education. The specialized curriculum has the objective of penetrating and analyzing, in a deeper way, specific topics in Accounting, thus preparing a specialized professional in certain segments in the area.

The CFC pointed out that, in 2009, there were more than 1,000 curricula for the Accountancy program, making it difficult to standardize the content, program and bibliography at the national level (CFC, 2009). Therefore, it issued a National Content Proposal for the Undergraduate Course in Accountancy, covering:

> The expected professional profile for the graduate in terms of competencies and skills;
> The curricular components;
> The assessment systems of the student and course;
> The supervised curricular training; the complementary activities;
> The monograph, the scientific initiation project or activity program as an optional component of the institution; and
> The academic regimen the program is offered in (CFC, 2009, p. 19).

Corrêa, Antonovz and Espejo (2009) analyzed the students' perception about the Accountancy programs at the Federal University of Paraná. The findings showed that the contents related to Administration, Economics, Informatics and Mathematics do not contribute to these students' education, besides classifying the discipline related to Ethical contents as not important. Rodrigues and Miranda (2013) carried out another analysis of curricular contents, focusing on the content that is most present in Brazilian public exams for the position of Accountant in the years 2011 and 2012. They identified a disagreement between the curricular suggestions of Resolution No. 10/2004, the CFC and the content required in the tests analyzed.

Oliveira, Silva, Miranda & Tavares (2015, p. 1) carried out a comparative analysis of the curricula's level of compliance with the curricular proposal of the CFC at Federal Higher Education Institutions (Ifes) in Brazil. The comparison was made with the content blocks presented in the proposal with the IFES' course plans. The authors observed that 55% of the analyzed institutions comply with the content proposed by the Council. Compliance was lower for the elective subjects, whereas the contents of the theoretical-practical training block presented the highest level of compliance, despite a small difference in the average adoption among the regions. The Midwest was the region with the highest level of compliance (61%).

In another study, Silva and Miranda (2016) performed curricular analyses of the Accountancy program at 447 Brazilian HEIs. The authors diagnosed that, the more hours the institutions allocated to the basic education subjects, the lower the students' scores on the ENADE, considering that 75% of the exam addresses aspects related to vocational training content.

Despite past studies, some gaps still prevail, such as identifying whether institutions with curricula more aligned to vocational training score higher on the ENADE.

## 3. Method

The research is classified as descriptive, whose approach is characterized as quali-quantitative, due to its statistical treatment approach of the data, as well as the analysis and interpretation of the contents. According to Richardson (2011, p. 79), the two methods are related and "the qualitative aspect of an investigation may be present even in the information collected by essentially quantitative studies." Regarding the data collection procedures, documentary research was used.

The population consists of public and private HEI, who offered the Accountancy program and received an ENADE concept in 2012, listed in the Preliminary Course Concept (CPC) Worksheet for 2012, available on the Inep website (2012). In total, there were 995 HEI, but the institutions that did not present the final ENADE 2012 score were discarded. Thus, the population was reduced to 854 HEI. The academic curriculum of all HEIs was investigated on their respective websites. The website search and forwarding of requests by e-mail took place from April until July 2015. 589 curricula were collected, but 142 HEI did not disclose the hour loads per discipline; thus, the sample consisted of 447 HEIs.

Initially, the descriptive analyses of the sample were developed to characterize it. Subsequently, the contents of the curricula of the participating HEIs in the sample were classified according to Silva's proposal (2016), considering CNE / CES Resolution 10/2004, the CFC Curricular Proposal and the study by Rodrigues and Miranda (2013), as explained in the first column of Table 1.

In view of the autonomy of each HEI to construct its curricula, some disciplines found were not mentioned in the CFC Curricular Proposal or in CNE / CES Resolution No. 10/2004. Thus, two groups classified these contents: G19 (Other basic subjects), composed of disciplines such as Research Methodology, Psychology, Sociology, Portuguese Language, Communication and Foreign Language; and G20 (NC) with contents not classified in the other groups or by Resolution No. 10/2004 and the CFC Proposal, as some institutions presented disciplines related to religious subjects and sports practices.

As part of descriptive statistics, the Variation Coefficient (VC) was used. According to Martins and Theóphilo (2007), this is a dispersion measure, a result of the division of the Sample's Standard Deviation (S) by its Mean. To analyze the VC, the authors suggest: (a) VC <15%: represents low dispersion; (B) 15% <VC <30%: represents medium dispersion; and (c) VC ≥ 30%: represents high dispersion.

The Wilcoxon test was also applied to evaluate if there is a significant difference regarding the factors Brazilian Region, Administrative Category and Academic Organization in relation to the variables of the 20 content groups. It should be noted that the analyses were implemented in the freeware R (R Development Core Team, 2015).

## 4. Results

### 4.1 Descriptive analysis of the data

All 26 Brazilian states and the Federal District were part of the sample. The states with the highest number of curricula were: Rio Grande do Sul (RS) - 41; Santa Catarina (SC) - 43; Minas Gerais (MG) and Paraná (PR) - 51; and São Paulo (SP) - 66. From the Southeast, 147 curricula were analyzed and, from the South, 135. Together, they represented 63% of the total sample. In the Northeast, 80 curricula were examined; in the Central-West 50 and, in the North, 35. In this sense, the sample portrays the fact that the South and Southeast regions concentrate the largest number of institutions offering Accountancy programs in Brazil.

Inep classifies the HEIs into two Administrative Categories: Public and Private. Examining the database, we can see that the sample is divided into 80.8% of private institutions and 19.2% of public HEIs. In this aspect, the sampling also reflects the composition of the population, that is, around 80% of educational institutions in the private network.

Inep's characterization of each HEI also identifies the type of Academic Organization, divided into: Universities, University Centers, Faculties and Federal Institutes of Education, Science and Technology. In this sample, 239 institutions are colleges, 145 universities and 63 university centers.

Table 1 below presents the descriptive statistics for the hour load of the content groups surveyed.

Table 1
**Descriptive Statistics of Hour Load of Content Groups, 2015**

| Groups | CFC Proposal | Minimum | Maximum | Mean | Median | VC |
|---|---|---|---|---|---|---|
| G1 – Accounting Theories | 180 | 40 | 340 | 149.84 | 144 | 46.176 |
| G2 – Management Accounting | 360 | 120 | 380 | 425.98 | 420 | 110.244 |
| G3 – Notions of Financial Quantification | 120 | 0 | 440 | 59.84 | 60 | 63.275 |
| G4 – Public Finance and Accounting | 180 | 0 | 240 | 98.93 | 80 | 38.049 |
| G5 – Actuarial Auditing and Expertise | 150 | 0 | 400 | 193.68 | 180 | 55.145 |
| G6 – Advanced and International Financial Accounting | 390 | 60 | 576 | 290.75 | 288 | 87.734 |
| G7 – Tax Planning and Accounting | 60 | 0 | 360 | 112.59 | 120 | 51.325 |
| G8 – Applied Accounting | 0 | 0 | 340 | 83.02 | 72 | 73.145 |
| G9 – Social Accountability | 120 | 0 | 520 | 65.09 | 60 | 45.632 |
| G10 – Administration | 60 | 0 | 660 | 186.86 | 160 | 107.951 |
| G11 – Economics | 90 | 0 | 384 | 104.39 | 80 | 51.349 |
| G12 – Law | 270 | 50 | 630 | 209.59 | 204 | 71.301 |
| G13 – Quantitative Methods | 210 | 80 | 557 | 234.30 | 240 | 64.989 |
| G14 - Training | 180 | 0 | 744 | 198.67 | 204 | 144.975 |
| G15 – Complementary Activities | 60 | 0 | 1024 | 184.21 | 180 | 150.614 |
| G16 – Optional Subjects | 120 | 0 | 840 | 89.03 | 60 | 118.495 |
| G17 – Laboratories | 120 | 0 | 620 | 164.26 | 152 | 97.978 |
| G18 – Course Conclusion Monograph | 120 | 0 | 624 | 101.34 | 80 | 100.036 |
| G19 – Other Basic Subjects | 210 | 0 | 483 | 226.72 | 240 | 87.625 |
| G20 – Contents not in CFC Proposal | 0 | 0 | 756 | 40.28 | 0 | 82.867 |

Legend: VC: Variation Coefficient

Source: elaborated by the authors.

Note that only five groups had a minimum hour load different from zero: G1 (Accounting Theories), G2 (Management Accounting), G6 (Financial, Advanced and International Accounting), G12 (Law) and G13 (Quantitative). In addition to the three accounting-related groups (G1, G2 and G6), all HEIs in the sample considered the disciplines that deal with contents on Law and Quantitative Methods as necessary for the basic education of the accounting professional.

Table 1 shows that half of the sample institutions provide at least 420 hours in their curricula for the subjects related to Accounting, listed in group G2 (Management Accounting). Group G6 (Financial, Advanced and International Accounting) also presented a high median: at least 288 hours in the curricula of half of the HEIs surveyed. This is justifiable, since the contents classified in this group are related to the main Accounting disciplines. Thus, the recurrence of questions relevant to this approach tends to be more frequent in the assessment tests of Accountancy students' academic performance.

The median was 72 hours for the group G8 (Applied Accounting), and the subjects in this group focus on content applied to certain sectors of the economy. Group G4 (Finance and Public Accounting), also with a specific approach, in this case in the Public Sector, presented a minimum hour load of 80 at 50% of the HEIs.

In Table 1, all groups presented variation coefficients superior to 30%, that is, all are highly dispersed (Martins & Theóphilo, 2007). G4 (Finance and Public Accounting) obtained the lowest coefficient in relation to the other groups (38.049%) and almost all groups in the "Theoretical-Practical Education Block" surpassed 100% of relative dispersion: G14 (Training), G15 (Supplementary Activities), G16 (Elective) and G18 (Course Conclusion Monograph). Only G17 (Laboratory) presented a lower relative dispersion, 97.978, but not too distant from 100. In other words, there is great heterogeneity regarding the hour load destined to each group of contents among the Brazilian HEIs that offer the Accountancy program.

This result confirms the heterogeneity of curricula in the national territory advocated by the Federal Accounting Council (CFC, 2009), which, on the one hand, may be positive in favoring regional differences, but, on the other, hinders exchanges among students and may affect broad assessments such as ENADE and the Sufficiency Exam.

## 4.2 Relations among ENADE (2012), investigated curricula and proposed curriculum of the Federal Accounting Council

The hour loads present in the national content proposal for the CFC undergraduate Accountancy program in 2009 were compared to the averages of the HEIs investigated for the 20 content groups analyzed. The CFC (2009) points out that, until the year of publication of the proposal, more than 1,000 Accountancy proposals had different curricula and this "hinders not only the students in terms of transfers, but also the provision of a more harmonious teaching in terms of content, program and bibliography "(CFC, 2009, p.5).

The Wilcoxon test was used to compare the hours the HEI allocated to each of the content groups, considering administrative category, academic organization and region.

Table 2

**Wilcoxon Test: Administrative Category, Academic Organization and Region versus Curricular Proposal of Federal Accounting Council, 2015**

| Groups | All HEI | Administrative Category | | Academic Organization | | Brazilian Region | |
|---|---|---|---|---|---|---|---|
| | | Public | Private | University | Univ. Center and College | SOUTH and SE | CW, NO and NE |
| G1 | 0.0000 | 0.0008 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| G2 | 0.0000 | 0.0005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| G3 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| G4 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| G5 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| G6 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| G7 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| G8 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| G9 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| G10 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| G11 | 0.0000 | 0.0274 | 0.0004 | 0.0013 | 0.0051 | 0.0002 | 0.0444 |
| G12 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| G13 | 0.0000 | 0.0043 | 0.0000 | 0.0224 | 0.0000 | 0.0000 | 0.0005 |
| G14 | 0.0518 | 0.4130 | 0.0726 | 0.7396 | 0.0224 | 0.0285 | 0.7383 |
| G15 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| G16 | 0.0000 | 0.8977 | 0.0000 | 0.2289 | 0.0000 | 0.0000 | 0.0000 |
| G17 | 0.0000 | 0.0456 | 0.0000 | 0.0755 | 0.0000 | 0.0000 | 0.0000 |
| G18 | 0.0000 | 0.2038 | 0.0000 | 0.7645 | 0.0000 | 0.0001 | 0.0000 |
| G19 | 0.0000 | 0.4962 | 0.0000 | 0.0794 | 0.0000 | 0.0533 | 0.0000 |
| G20 | 0.0000 | 0.0007 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Legend: CW – Central West; NE – Northeast; NO – North; SE – Southeast; Univ. Center – University Center.

Source: *Freeware* R.

When comparing the medians of the research sample by content group with the hour loads in the curricular proposal of the CFC, it is observed that, in general, the hour loads of the institutions studied are statistically different from the proposal, the only exception was group G14 (Supervised training). That is, in a general analysis, this is the content group whose hour loads of Brazilian HEIs are closer to the curricular proposal of the CFC.

When the administrative category of the HEIs studied is observed, in addition to G14 (Supervised Training), G16 (Elective), G18 (Course Conclusion Monograph) and G19 (Other Basic Disciplines) groups in public institutions do not have Timetables statistically different from the curricular proposal of the CFC either. Except for G14 (Supervised Training), however, all other content groups of the private HEIs in the sample are statistically different from the CFC proposal.

A similar analysis can be developed when observing the academic organization of the investigated institutions. In this case, the groups mentioned above (G14, G16, G18 and G19), as well as G17 (Laboratory) of universities did not present significant differences when comparing the hour loads of the courses studied with the curricular proposal of the Federal Accounting Council. Therefore, university curricula are closer to the CFC proposal than university centers' and colleges' curricula.

Regarding the region where the institutions are located, G14 (Supervised Training) in the North, Northeast and Midwest, as well as G19 (Other Basic Disciplines) in the South and Southeast did not have significant differences in the hour loads of the curricular proposal of the CFC. This reflects the CFC's own statement in its proposal, which criticized the diversity of curricula between national HEIs and advocated the harmonization of curricular content.

Next, the test results of the mean hour loads are presented in Table 3.

Table 3
**Wilcoxon Test of Means per type of Administrative Category, Institution and Brazilian Region, 2015**

| | Administrative Category | | Academic Organization | | Brazilian Region | |
|---|---|---|---|---|---|---|
| | Public | Private | College | Univ. Center and College | SOUTH and SE | CW, NO and NE |
| N | 86 | 361 | 145 | 302 | 282 | 165 |
| Mean Ranks | 282.50 | 210.06 | 280.83 | 196.72 | 250.85 | 178.12 |
| Wilcoxon | 10492 | | 13655 | | 15694 | |
| p-value | < 0.000 | | < 0.000 | | < 0.000 | |

Legend: CW – Central West.
NE – Northeast.
NO – North.
SE – Southeast.
Univ. Center – University Center.

Source: *Freeware* R.

The Wilcoxon test also reveals that the academic performance measured by the ENADE score of the institutions surveyed is higher in the categories: Universities, Public and South and Southeast, that is, exactly the institutions that have curricula closer to the CFC proposal, according to the Wilcoxon test. There are 275 more private HEIs in the sample than public ones. Therefore, in most institutions, curricula are not aligned with the 2009 CFC proposal. The states in the South and Southeast, however, which concentrate 63% of the sample, tend to structure their curricula more aligned with the CFC proposal.

In the research by Silva and Miranda (2016), it was evidenced that the institutions that privilege professional contents tend to score higher on the ENADE, which would be justifiable, as 75% of the content of this examination is vocational. In this respect, it is important to point out that, in the curricular proposal of the Federal Accounting Council, vocational contents predominate.

## 5. Final Considerations

The general objective of this research was to verify if the Brazilian HEIs with academic curricula more similar to the Curricular Proposal of the CFC (2009) scored higher on the ENADE 2012.

Resolution CNE / CES No. 10/2004 came into force three years before the implementation of Law 11638 / 2007, which changed the Brazilian Accounting scenario due to the adoption of international standards, i.e. aspects related to the professional contents of accounting have undergone adaptations. Considering that this is the main evaluation aspect of ENADE, even though the curricula of the HEIs are close to the proposal of the resolution, the institutions are able to keep the contents updated due to their flexibility and autonomy to define curricula.

In this sense, in view of the curricular diversity in Brazil that was verified in this study, in 2009, the CFC issued the Curricular Proposal for Accountancy programs. The results showed low compliance with this proposal, as only some groups of contents, in some specific types of institutions, did not present hour loads statistically different from the proposal. Most of them were found at public institutions of the "university" type. The tests also revealed that these are the institutions that also have the highest ENADE grades. These results suggest that institutions that have curricula more similar to the CFC proposal tend to present higher ENADE scores.

The data also revealed that many institutions presented high loads of basic content disciplines to the detriment of professional content. One hypothesis for this would be the use of teachers in disciplines shared among courses, such as Administration and Accountancy. It should be reminded that 75% of the questions evaluated in the ENADE refer to vocational content. Thus, institutions that have curricula with a greater focus on professional content tend to present higher grades on the ENADE. Likewise, institutions that privilege professional content are also closer to the CFC Curriculum Proposal.

It is important to remember, however, that education focused exclusively on professional content can imply the training of professionals with knowledge and skills focused basically on the technical aspects of the profession, the so-called specialist training (Capacchi et al., 2007; Soares et al., 2012). Nevertheless, in the current scenario, besides the professional knowledge, the curriculum should contribute to the development of skills, such as critical thinking, group work capacity, among other fundamental characteristics in the education of the accountant to act in the globalized world. According to Rojas-Rojas and Giraldo-Garcés (2015), accounting education should bring about changes in social and human aspects in the accounting community.

When assessing academic performance based on the ENADE, it should be made clear that several other variables affect this indicator. Other attributes of teaching institutions are the characteristic of teachers, and especially of students (Miranda, Lemos, Oliveira, & Ferreira, 2015).

Among the contributions of this study, it should be noted that, regarding the content hours, the Brazilian curricula of the Accountancy programs substantially diverge from the CFC curriculum proposal. Greater alignment to this proposal tends to be associated with higher scores on the ENADE though, which values the proposal as a parameter for new curricular revisions.

For future studies, it should be investigated whether greater curricular closeness to the CFC proposal is associated with higher scores on the Accounting Sufficiency Exam. According to the result found, the approach of the examination applied by the Accounting Council can be compared with that of the test elaborated by the MEC for Accountancy students.

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# International Studies About Fair Value (2000-2016): Themes, Methods and Suggestions for Future Research

## Abstract

**Objective:** To analyze the publications about fair value in the main international accounting journals and classify them by themes and research designs.
**Method:** A descriptive literature and scoping review was undertaken, in line with Paré, Trudel, Jaana and Kitsiou (2015). The sample consisted of 111 articles published between 2000 and 2016 in the 30 most relevant journals, according to Matherly and Shortridge (2009).
**Results:** An increasing trend was identified in scientific productions on the theme, especially after 2011, particularly in the five main international accounting journals. The research area was heterogeneous, with publications on different themes, mainly: (i) comparison between fair value and other valuation methods; and (ii) stock market reactions to the fair value. In addition, the predominance of quantitative and archival studies was observed.
**Contributions:** The combination of different studies, methods and approaches to fair value condenses the main studies in the area, contributing to understand the debate and, mainly, to observe the usage phenomenon of the fair value, on which no consensus exists from the theoretical and practical viewpoint.
**Key words:** Fair Value; Literature Review; Accounting Research; IFRS 13; SFAS 157.

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## 1. Introduction

Accounting, throughout its existence, has adapted to the changes of the markets, in order to provide accurate and relevant information to its users (Iudícibus & Martins, 2007). These adaptations also include the valuation and measuring methods of assets and liabilities, expanding the discussion about these methods, however, only from the twentieth century. The debates particularly focus on the concept of value and the contradictions presented between historical cost and fair value (Martins, 2000; Iudícibus, Martins & Carvalho, 2005). For Lustosa (2016), with the evolution of markets and economic transactions, not only changes in context, but also in paradigms can be observed as, according to Barley and Haddad (2007), the pattern changed from measurement by historical cost to fair value.

This transition led the Financial Accounting Standards Board (FASB) to issue SFAS 157 - Fair Value Measurement - in 2006, which deals specifically with fair value valuation, bringing together concepts and measurement structures previously presented in several pronouncements of the Fasb. The proposal was to clarify and to make the application of the concept more consistent (Barth, 2007), being observed, from then on, an increase in the number of publications related to the theme. In accordance with international standards, the International Accounting Standards Board (IASB) issued in 2011 IFRS 13 - Fair Value Measurement, which in the Brazilian scenario corresponds to Technical Pronouncement CPC 46 - Measurement of Fair Value.

Another highlight in the fair value debate is the financial crisis that began in 2007/08, which led to discussions related to the influence of fair value accounting in the economic scenario, and to what extent the application of this concept increased the effects of the crisis (Markarian, 2014). Due to the various inquiries, the FASB also published SFAS 157-4, reaffirming SFAS 157, but introducing changes in the measurement model that would allow entities to present statements with figures close to those in the pre-crisis period (Lustosa, 2016). Other discussions on fair value refer to the question of their relevance for the onset of the crisis (Markarian, 2014) and the influence of the crisis on the use of fair value (Goh, Li, Ng & Yong, 2015).

Marra (2016) understands that the importance of discussing the concept of fair value is due to the dichotomy in the understanding of those who favor or oppose this method. There is also the debate about the use of fair value by information disseminators: whether opportunistic or really informative (Blacconiere, Frederickson, Johnson & Lewis, 2011); that is, whether information based on fair value is really relevant to users (Whittington, 2008, Valencia, Smith & Ang, 2013).

One of the main criticisms against the application of fair value stems from its subjectivity in the absence of net markets for the measuring of assets and liabilities. In these cases, mark to market is replaced by mark to model. The marking becomes even more subjective at the so-called level three, where the assumptions used in the measurement are not observable, that is, when they are defined by the company's own management. This scenario makes it possible to use fair value opportunistically, which impairs the quality of accounting information (Bryan & Lilien, 2013).

The non-compliance in the practice of fair value measurement may even highlight the need for improvements in the qualitative characteristics of the conceptual framework. There is, therefore, academic relevance in this widely debated topic, on whose conceptual definition no consensus has been reached yet (Barth, 2007). Considering that research approaches the application of the concept in a different way and can focus on different facets of fair value, and that there are no studies that exhaust the literature review of the theme, we ask: **what are the main themes, methods and characteristics of the publications on fair value in the main international accounting journals?**

The purpose of this paper is, therefore, to analyze the articles on fair value published in the main international accounting journals and classify them according to the themes and research designs. The characteristics also refer to authorship and sources of publications. It should be emphasized that this is not a bibliometric or sociometric study, or an epistemological study, but rather a descriptive literature and scoping review, in line with Paré, Trudel, Jaana and Kitsiou (2015) (cf. Section 3).

In addition to the importance for teachers, researchers and professionals, the study is justified because it contributes to the scientific literature by characterizing the research performed on fair value in the last 16 years (2000 to 2016) in the international academic world. This analysis period starts in the year the IASB was created, which defends the process of recognition and defense of fair value, passing, therefore, through periods of construction of the concept, criticism and financial crisis, to the present day. The selection of international journals, in turn, was based on Matherly and Shortridge (2009), who carry out an evaluation and ranking of the main international journals in the accounting area. The article is divided into five sections. The present introduction is followed by the literature review, which presents the main discussions about fair value in international research. Afterwards, the methodological procedures are described. In section four, the results and their analyses are presented. Finally, there are final considerations and suggestions for future research.

## 2. Literature Review

Based on the development of the double-entry method, around the 12th century, historical cost accounting gained predominance, going through adaptations and advanced until the emergence and application of the fair value (Iudícibus & Martins, 2007). Richard (2005) discusses the fair value as an innovation or even revolution in Accounting.

Although the concept and application of the fair value have been standardized, no consensus exists among researchers (Barth, 2007). It is even highlighted that the concepts the Fasb and Iasb present motivated significant discussion and rejection in the academic midst (Iudícibus, Martins & Carvalho, 2005). Nevertheless, as a measuring method of assets and liabilities, the fair value can be expressed as the result of a transaction in which none of the parties can impose its will (Niyama & Silva, 2008).

### 2.1 Main discussions on fair value

The publications have concentrated on three main themes: (i) the debate on the reliability, utility and benefits of the fair value; (ii) the differences between this and other measuring methods, in accordance with the standards published; and, (iii) the influences of the fair value in different market and Accounting areas (Barth, 2007). Specifically in this, the first is focused on, which predominates due to the publication volume. It should be highlighted that, in the following context, the publications included in the present sample were also reviewed, that is, the articles linked to the 30 most relevant international Accounting journals according to Matherly and Shortridge (2009).

#### 2.1.1 Standardization of fair value

Debates about fair value accounting have grown after the financial crisis started in 2007/08 (Lustosa, 2016), but discussion and theorizing about the subject have been going on for a long time (Richard, 2005). In recent decades, the main points of interest of research on the fair value standardization have been the pronouncements of Iasb and Fasb in general, pointing out possible effects of these standards in the accounting environment (Song, Thomas & Yi, 2010; Bolívar & Galera, 2012, Goncharov & Triest, 2014) or aspects of the standards (Elad, 2004; Jiang, Wang, & Xie, 2015). Whittington (2008), for example, criticizes the assertion that fair value standards consider perfect markets, and these are in fact slightly imperfect and therefore disregarded in the normative context.

The issuing of SFAS 157, in turn, is another research focus, such as Magnan, Menini and Parbonetti (2015) and Lustosa (2016). The academy's interest expands to other SFASs though, in surveys covering specific subjects of Accounting, such as the studies by Beatty and Weber (2006) and Jarva (2009), which analyze SFAS 142 - Goodwill and Other Intangible Assets - in a fair value approach.

Another focus has been the interaction of fair value standardization with public management. Galdini and Grossi (2014), Song, Thomas and Yi (2010) and Bolívar and Galera (2012) analyze how the fair value measurement method affects public accounting. Palea (2015) analyzes the relationship of fair value standardization with governments at the level of economic blocks, with application to the European Union.

### 2.1.2 Effects and relations internal to the entity

Research has been done on fair value in relation to themes that cover the relation of fair value with internal decisions in the entities and how the latter relate to this method. The studies range from the analysis of fair value as a valuation method of certain accounts or operations (Goncharov & Triest, 2014) to comparisons between fair value and other methods (Quagli & Avallone, 2010; Christensen & Nikolaev, 2013).

On the interaction of fair value with credit / risk analysis, Gray (2003) states that fair value accounting standards cause bad risk / interest rate measurements, and this effect is also identified in Gaynor, Mcdaniel and Yohn (2011), when they affirm that these standards are counterintuitive and can lead to errors in credit analyses by the users. In contrast, Lachmann, Stefani, and Wohrmann (2015) argue that recent changes in standards have reduced the risks of erroneous measurements and misinterpretations, even if such problems continue to exist.

As for dividends, another point of discussion, Goncharov and Triest (2011) claim that a negative relationship exists between fair value adjustments and dividend changes. In a later publication, Goncharov and Triest (2014) attest, after a case study, that changes in fair value standards affected the dividend policy, causing partial omission. Related to omissions, Bryan and Lilien (2013) demonstrate that fair value, in combination with accounting structures not included in the balance sheet, can allow for triple counting of income.

Research from the past 16 years has compared fair value to other methods. In this respect, Christensen and Nikolaev (2013), when comparing the usability of fair value and historical cost in the market, understand that the former has limited use in accounting for non-financial assets, indicating that fair value probably would not become the standard method on a voluntary basis. Linsmeier (2013) states that this is due to the relevance of fair value and historical cost in income and not to problems in the reliability of fair value. Still on the comparison of methods, Danbolt and Rees (2008) affirm that the relevance of the adoption of the fair value can vary depending on the worksheets and information available to the users.

In relation to fair value information, Khurana and Kim (2003) argue that historical cost is more informative than fair value in relation to loans and bank deposits; a relationship endorsed by Cantrell, Mclnnis and Yust (2014), stating that historical cost is more useful than the fair value to predict future bad debts, unpaid loans and bank insolvencies in the short and long terms. In contrast to these studies, Liang and Riedl (2014) argue that fair value improves the ability to predict balance sheets, despite reducing the predictability of net income.

### 2.1.3 Effects and relations external to the entities

There are also studies on the relationship between fair value and external effects on entities. Although focusing on standardization per se, Jiang, Wang and Xie (2015), for example, analyze the market's reaction to the resignation of the Fasb chairman, which could affect the fair value policy proposals, concluding that the market reacted positively, mainly the banks that would be most affected by the new fair value requirements for loans. Also on external reactions to fair value, So and Smith (2009) affirm that market prices, market value of stocks and the expected return on investment by investors are greater when the changes in relation to the use of fair value are evidenced in the accounting publications, in line with Robinson and Burton (2004), who observe a significantly positive reaction of the market to the announcements by companies about the adoption of fair value as a valuation method of evaluating the stock option grants to employees.

The recent financial crisis has motivated studies on the relation of fair value with this event. On the subject, Bowen and Khan (2014) suggest that the reason for the financial crisis to happen was not directly fair value as a valuation method, but the way investors and managers understood and adapted to changes in fair value standards. They divide the responsibility for the crisis with the banks' management policy regarding the liquidity of their assets. Markarian (2014) suggests that, although the crisis scenario has led to criticism against the use of fair value, which is blamed for the event, the comparison between fair value and historical value is already an old theme. The same author argues that recent changes in fair value regulation, made by Iasb and Fasb, have reduced the reliability of the method.

The interaction of audit firms and auditors with the fair value theme has also been the subject of research in recent years. Regarding audit fees, Goncharov, Riedl and Sellhorn (2014) state that the use of fair value generally results in lower monitoring costs, and the reductions in these fees vary according to the characteristics of the financial statements published. The results of this study contrast with Ettredge, Xu and Yi (2014), who suggest that audit efforts increase with the verification of goods measured at fair value, so that using this method provides increases in audit fees. Griffin (2014) states that auditors tolerate further distortions in published financial statements when clients provide them with additional reports, so that audits' preference of supplemental information by clients may affect the recognition of assets at fair value in the companies' financial statements. Also regarding how audits view fair value, Lilien, Sarath and Schrader (2013) suggest that fair value publications and disclosure are not being done in a sufficiently rigorous manner.

Finally, the contributions of studies that involve effects external to the entity can be viewed as contributing to the market and regulators, exposing how fair value measurement affects and improves the scientific knowledge based on the practical application of its concepts.

## 3. Methodological procedures

This is characterized as a descriptive and scoping literature review (Paré, Trudel, Jaana & Kitsiou, 2015). The scoping review seeks to demonstrate the potential and categorical aspects of the literature on some subject matter, as well as the nature of some research topic, without the need to enter specifically into the productions, being interested in a wider knowledge of the literature. Therefore, we do not attempt here to analyze the quality of the production, but rather to survey the literature through content and thematic analyses. Like the scoping review, the descriptive review does not aim to evaluate the quality of the studies either, but rather to determine the extent of the studies that could help to understand trends, propositions, theories, methods (Paré, Trudel, Jaana & Kitsiou, 2015). These reviews therefore consist of collecting research, coding and numerically analyzing the data that reflect the frequencies of the topics, authors and methods of the publications analyzed.

In this sense, the articles on the theme of fair value published in the most relevant international accounting journals in English have been focused on here. To define these journals and, consequently, those analyzed in the research, the work was based on the quality estimation model by Matherly and Shortridge (2009). Among the journals selected, the exclusions are highlighted: (i) Journal of Accounting Literature (2000 to 2012), for not making articles published before 2013 digitally available; and (ii) Journal of Taxation, for not being available for consultation in electronic media.

For the selection of the sample, articles published during 16 years were consulted and catalogued. Data collection occurred at two moments. The publications from 2000 to 2014 were collected in July and August 2015. In January 2017, data were collected for 2015 and 2016. Thus, the sample covered the full years 2000 to 2016, with the due exceptions already mentioned. In addition, all articles in the journals selected were tabulated using the journal's own websites as sources and, subsequently, selected those that contained, in their titles, the terms "fair value" or "fair-value". This procedure was preferable to database searching since not all journals of interest are indexed in the databases available for consultation. At the end of these procedures, the sample was composed of 111 scientific articles, which were classified in Macro and Microcategories (Figure 1), based on Barth (2007).

| Macro-groups | Micro-groups |
|---|---|
| Standardization of Fair Value | Standards on Fair Value |
| | Applications of Fair Value-related Accounting Standards |
| Effects and Relations Internal to the Entities | Effects of Application of Fair Value in Specific Accounts/Operations |
| | Effects related to Management Choices |
| | Comparison between Fair Value and other Valuation Methods |
| | Fair Value Option |
| Effects and Relations External to the Entities | Risk Analysis and Fair Value |
| | Stock Market Reactions to Fair Value |
| | Relations between Auditors and Audits and Fair Value |
| | Fair Value and the Financial Crisis |

**Figure 1.** Macro and micro thematic classification groups

Source: elaborated by the authors.

Barth (2007) suggests examples from the general area of fair value research, drawing on recent academic discussions. These examples motivated the creation of three [thematic] Macro-groups to classify the articles analyzed in the present study. For the sake of further detail, these were subdivided into ten Micro-groups (see Figure 1), considering for their definition general approaches and objectives of each publication.

Thus, the first Macro-Group covers **Fair Value Standardization** and includes the articles whose main purpose was to study the standardization process of the theme, which includes both the issuing and publication of the standards and their subsequent application. The articles classified in the Micro-Group - **Standards on Fair Value** - deal with the standards published by Fasb and Iasb, revising concepts, characteristics and history, like in Barlev and Haddad (2007), which analyze the relationship between international accounting harmonization and fair value accounting.

In the Micro-Group of **Fair Value Accounting Applications**, articles that analyze fair value accounting standards have been allocated in order to direct their use to different accounting environments, as can be observed in Bolívar and Galera (2012), which analyze the capacity of the fair value to improve public accounting, through accounting transparency.

The second Macro-Group **Effects and Relations Internal to Entities** groups the studies that analyzed aspects of the fair value that affect entities internally, such as their management and accounting policy. In this context, the Micro-Group **Effects of the Application of Fair Value in Specific Accounts / Operations** is based on the relationship between fair value and its use in certain groups of asset and income accounts, like in Israeli (2015), which analyzes the financial effects of fair value application to investment properties.

In the Micro-Group **Effects Related to Management Choice**, articles that study the effect of fair value on decisions made by directors and managers were allocated, such as in Chen, Tan and Wang (2013), who conducted experiments with accountants in order to examine how fair value accounting affects the economic decisions of managers.

**Comparison of Fair Value with Other Valuation Methods** encompasses the studies that related the characteristics of fair value with those of other valuation methods, either presenting similarities or differences or analyzing the advantages or disadvantages of these methods in different situations. The study by Khurana and Kim (2003) is an example of this classification, when comparing the capacity of the valuation methods fair value and historical cost in explaining equity values.

The Micro-Group **Fair Value Option** was separated from the group of specific accounts / operations because it deals with the effects and analyses of the impact of the fair value on entities' liabilities, called liabilities fair value option. An example is the study by Wu, Thibodeau and Couch (2016), who verify the effects of fair value accounting for liabilities on informational asymmetry (adverse selection).

Finally, the third Macro-Group **Effects and Relations External to Entities** groups the studies that approach themes related to phenomena external to the entities themselves, that is, the environment that encompasses them. In the Micro-Group **Risk Analysis and Fair Value**, the focus was on the relation between fair value and risk analysis and instruments, such as Hirst, Hopkins and Wahlen (2004), which analyze how accounting for income by the fair value method affects the analysis of commercial banks' equity risks.

**Reactions of the Stock Market to Fair Value** is the Micro-Group in which the studies on the behavior of the stock market and its changes with the use and adoption of fair value were classified, as can be observed in the research by Koonce, Nelson and Shakespeare (2011), which elaborate experiments to analyze investors' view on the fair value.

The articles classified as **Relation between Auditors and Audit and Fair Value** relate the theme "fair value" with the audit area. In this Micro-Group, there are articles that analyze how fair value accounting makes audit work difficult and how it affects fees, and also how audits treat fair value accounting. An example is the work of Brink, Tang and Yang (2016), who carry out experiments to verify factors that influence the judgments of the auditors regarding the estimates based on fair value.

Finally, in the Micro-Group **Fair Value and Financial Crisis**, articles dealing with the relationship between fair value and the financial crisis established in recent years were classified, such as the work by Goh et al. (2015), which analyze the disclosure of financial assets accounted for at fair value during the financial crisis.

In addition to the thematic analysis, the main aspect used for categorization in this study were methodological analyses adapted from the theoretical framework of Smith (2003), in order to allow for greater descriptive detail. Thus, the articles were characterized by research methods and also as qualitative and quantitative. At that moment, the concern of the authors was related to the classification based on the method and the approaches used to answer the main objective of the research, without considering the classification based on the description and presentation of the results. The author's origin and the general authorship characteristics were also identified. The methods of methodological categorization were: (1) Archival (encompasses studies of a quantitative nature, such as time-series and cross-sectional analyses, and other studies, such as content and discourse analyses); (2) Teaching case; (3) Case study; (4) Experiment; (5) Framework (propositions of theoretical frameworks); (6) Normative (critical studies on standards); and (7) Literature review.

## 4. Results, Analyses and Discussions

The results are divided between the presentation of the articles in terms of the themes discussed and in terms of the research design used. Also, the authors and their institutional origins are characteristics, as well as the journals and their representativeness.

### 4.1 Article themes and growth over time

Figure 2 demonstrates the productivity of articles by Macro-Groups over time. Table 1, further ahead, presents the variation in the production in further detail, including the quantities and Micro-Groups. The analyses include numerical and percentage results (not included in the table for operational reasons).

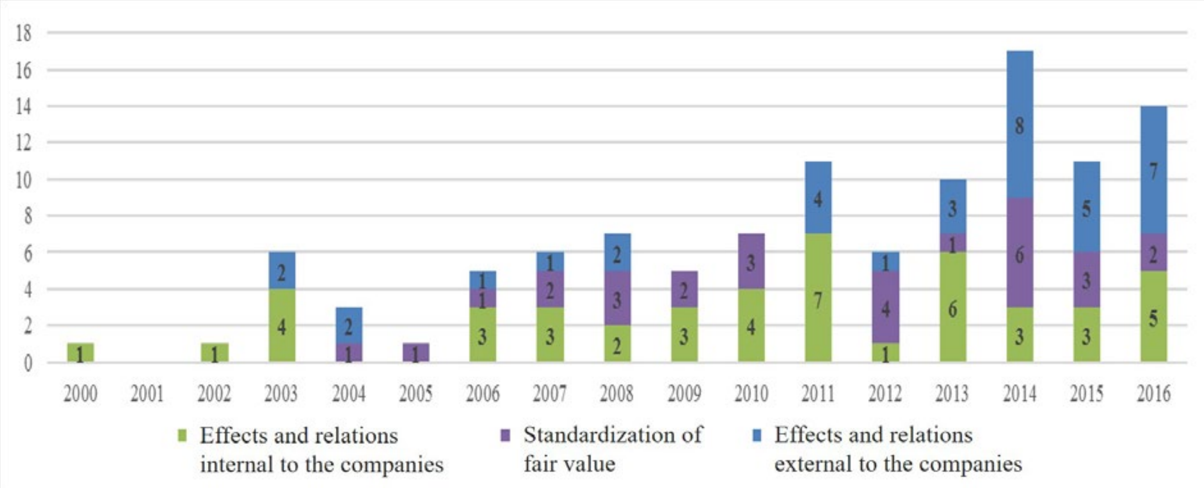


**Figure 2.** Annual production per Macro-group

**Source:** elaborated by the authors.

In a joint analysis of Figure 2 and Table 1, the average growth in the number of publications over the years is observed, especially since 2006, the year when (i) SFAS 157 (Fasb's standard on fair value measurements) was launched and (ii) Iasb issued the discussion paper, initiating the normative process that culminated in IFRS 13 (fair value measurement) in 2011. Another highlight is 2011, when the growth of publications is also higher than the average of previous years.

Other facts that can be observed are related to variations in each of the Macro-Groups. When analyzing the **Standardization of Fair Value**, it is observed that the first production studied occurred in 2004. The relation with the North American standardization can be observed here, marked in June / 2003 by the beginning of the achievement process of SFAS 157. After this, the publications on this theme were constant, with larger number in 2012 and 2014, when American and international standards had already been published.

In the first years of the sample, publications on **Effects and Relationships Internal to the Entities** are observed. Since regulators were already discussing fair value, being present in different standards issued, in these studies, attempts were already made to verify if this measuring method would have internal effects in the organizations, being the publications on this subject representative in most of the sample years.

Finally, the articles on **Effects and Relationships External to Entities** are more concentrated and present in the final years of the sample. This view demonstrates that the study of market and crisis effects was more present as of 2012, when the standards were already published, and especially after 2013, when IFRS 13 became mandatory and the resulting effects could be estimated more reliably. There are no publications classified in this Macro-Group in the years 2009 and 2010, a fact that can be explained by the uncertainties of the market due to the financial crisis, so that previously produced articles could be refuted by economic events and new articles could not capture the effects of the changes, thus creating a gap in this group of publications.

Table 1
**Classification of articles by Macro and Micro-groups per year (2000 till 2016)**

| Groups (macro and micro) / year | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Standardization of Fair Value | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 3 | 2 | 3 | 0 | 4 | 1 | 6 | 3 | 2 | 29 |
| Standards on Fair Value | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 3 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 1 | 15 |
| Applications of Fair Value-Related Accounting Standards | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 1 | 5 | 1 | 1 | 14 |
| Effects and Relations Internal to the Entities | 1 | 0 | 1 | 4 | 0 | 0 | 3 | 3 | 2 | 3 | 4 | 7 | 1 | 6 | 3 | 3 | 5 | 46 |
| Effects of Application of Fair Value to Specific Accounts/Operations | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 2 | 2 | 11 |
| Effects Related to Management Choices | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 3 | 0 | 2 | 0 | 0 | 2 | 13 |
| Comparison between Fair Value and other Valuation Methods | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 3 | 0 | 0 | 17 |
| Fair Value Option | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 5 |
| Effects and Relations External to the Entities | 0 | 0 | 0 | 2 | 2 | 0 | 1 | 1 | 2 | 0 | 0 | 4 | 1 | 3 | 8 | 5 | 7 | 36 |
| Risk Analysis and Fair Value | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 1 | 8 |
| Stock Market Reactions to Fair Value | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 3 | 4 | 17 |
| Relation between Auditors and Audits and Fair Value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 1 | 6 |
| Fair Value and the Financial Crisis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 5 |
| General Total | 1 | 0 | 1 | 6 | 3 | 1 | 5 | 6 | 7 | 5 | 7 | 11 | 6 | 10 | 17 | 11 | 14 | 111 |

Source: elaborated by the authors.

In general, Table 1 shows that, during the 16 years analyzed, the Macro-theme with the highest productivity in the period was focused on the **effects and relations of the fair value internal to the entity**, representing 46 (41%) publications, followed by **Effects and Relations External to Entities**, representing 36 (32%) studies and **Fair Value Standardization**, representing 29 (26%). The distribution of the articles in the classification indicates greater concern about the interaction of fair value accounting with the environment internal to the entity - this Macro-theme presents more publications at the beginning of the sample, while the others are more present in the final periods. The heterogeneous distribution of the articles among the Macro-Groups suggests that, although there are areas of greater interest, the different research themes are relevant, which indicates the breadth of studies on fair value and its applications. Another explanation can be observed by the very timing of publications. Some groups tend to show greater concentration after some specific event, such as the financial crisis or the enactment of the standard, so that data may be available at the time, or the interest in these surveys increases due to events.

It should be noted that, although **Fair Value Standardization** was the Macro-Group with the smallest number of articles classified, **Fair Value Standards** and **Applications of Fair Value Standards** were the third and fourth most analyzed Micro-Groups, representing 14% and 13% of the articles classified, respectively, which highlights the relevance of studies in the area.

In relation to the Micro-Groups in the Macro-Group **Effects and Relationships Internal to Entities, Comparison of Fair Value with other Valuation Methods** joined the largest number of articles classified (15%), which suggests that the efficiency, reliability and relevance of fair value in relation to the other valuation methods are reasons of interest in the scientific community. Of the 17 papers classified in this Microtheme, 12 work based on comparisons between fair value and historical cost, which specifically denotes the relevance of both assessment methods in the accounting environment, which for decades have been the subject of discussions and debates (Lustosa, 2016).

Within the Macro-theme **Effects and Relationships External to Entities**, the Micro-Group that groups more articles is **Stock Market Reactions to Fair Value**, with 17 (15%) publications, demonstrating that fair value is a reason for attention, not only for entities' accounting, but also for the various stakeholders, as changes in the valuation of entities' equity may directly affect their market value, as well as the financial return on investments, besides other aspects, such as the change in the distribution policy of dividends.

As a result of the results observed, Table 2 presents the distribution of the publications, in order to facilitate easier visualization for comparison, segregating in two analysis periods: 2000 to 2010, and 2011 to 2016. The separation of these periods is aimed at differentiating pre- and post-financial crisis studies since, as argued, it is closely related with fair value surveys. In this sense, despite the fact that the peak of the crisis was in 2007-08, it was decided to separate the time groups according to Table 2, in order to absorb the evaluation time of the international publications.

Table 2
**Classification of articles per Macro and Micro-groups per period. * V.A.: Vertical analysis**

| Groups (macro and micro) / year | 2000-2010 | V.A.% | 2011-2016 | V.A.% | Growth |
|---|---|---|---|---|---|
| Calculation | a | | b | | c = (b - a) / a |
| Standardization of Fair Value | 13 | 31% | 16 | 23% | 23% |
| Standards on Fair Value | 10 | 24% | 5 | 7% | -50% |
| Applications of Fair Value-Related Accounting Standards | 3 | 7% | 11 | 16% | 267% |
| Effects and Relations Internal to the Entities | 21 | 50% | 25 | 36% | 19% |
| Effects of Application of Fair Value to Specific Accounts/ Operations | 4 | 10% | 7 | 10% | 75% |
| Effects Related to Management Choices | 6 | 14% | 7 | 10% | 17% |
| Comparison between Fair Value and other Valuation Methods | 9 | 21% | 8 | 12% | -11% |
| Fair Value Option | 2 | 5% | 3 | 4% | 50% |
| Effects and Relations External to the Entities | 8 | 19% | 28 | 41% | 250% |
| Risk Analysis and Fair Value | 2 | 5% | 6 | 9% | 200% |
| Stock Market Reactions to Fair Value | 5 | 12% | 12 | 17% | 140% |
| Relation between Auditors and Audits and Fair Value | 1 | 2% | 5 | 7% | 400% |
| Fair Value and the Financial Crisis | 0 | 0% | 5 | 7% | n/a |
| Total | 42 | 100% | 69 | 100% | 64% |

Source: elaborated by the authors.

As observed, the Macro-Groups experienced average increases in the productivity of articles in the post-crisis period for the years between 2011 and 2016 when compared to the period 2000-2010. The Macro-Group that presented the highest increase in publications per year was **Effects and Relations External to Entities**, with 250% growth between the two periods, followed by **Fair Value Standardization**, representing 23% growth and, finally, **Effects and Relations Internal to Entities**, with 19% growth.

The largest increase in the percentage of publications per year in the Macro-Group **Effects and Relations External to Entities** during the post-crisis period is mainly due to the micro-theme **Relations between Auditors and Audit and Fair Value** (400%) and **Risk Analysis and Fair Value** (200%). Concerning this first Micro-Group, its growth may be due to the greater exposure of fair value after the crisis, generating the respondents' interest in its relation with specific sectors of Accounting. In addition, the explanation may be due to the mandatory application of fair value after the enactment of the specific rules on the subject (SFAS 157 and IFRS 13), at which time the audit was explicitly faced with the mandatory fair value valuation by the entities. The other growths in this Macro-Group can also be explained as a result of greater concern with fair value and its different effects, such as the risks of entities and the reaction of market participants to these risks.

Also in the Macro-Group **Effects and Relationships External to Entities**, another observation is the growth of the Micro-theme **Fair Value and the Financial Crisis**, for which no publications were observed in the first period analyzed, but five articles were found in 2011-2016. Following the logic of the division of the years in the table, as the crisis began in 2007/2008, it is understood that this temporal difference between the beginning of the crisis and the publications can be explained by the time, both for data collection and preparation of studies, and for publication in these journals, which can take up to four years in some cases.

In relation to the Macro-theme **Effects and Relationships Internal to Entities**, the Micro-Group with the highest relative growth in the annual scientific production was **Effects of the Application of Fair Value in Specific Accounts/Operations**, with a 75% increase in articles between the two periods. Such increase may be related to the fact that these studies have their relevance increased after the enactment of accounting standards. We also observe a percentage reduction in the studies on Comparison of fair value with other valuation methods". This is due to the fact that the debate on the efficiency and relevance of fair value as a valuation method has extended for some decades, as well as the comparison of fair value with other methods, mainly with historical cost.

Finally, with respect to the Macro-Group **Fair Value Standardization**, the Micro-Group **Applications of Fair Value Accounting Standards** increased by 267%, while **Fair Value Standards** decreased by 50%. One possible explanation for these variations derives from the timing between the enactment and the apex of the discussion on fair value standards, either by their applicability or by comparing related standards.

## 4.2 Research designs and methods of the articles

Concerning the research designs used in the articles in the sample, they were classified in qualitative and quantitative by Macro and Micro-Group, as shown in Table 3.

Table 3

**Typological classification of articles per Macro and Micro-groups. *H.A.: Horizontal analysis**

| Groups (macro and micro) / quali x quant | Quali | H.A. | Quan | H.A. | Total | H.A. |
|---|---|---|---|---|---|---|
| Standardization of Fair Value | 20 | 69% | 9 | 31% | 29 | 100% |
| Standards on Fair Value | 14 | 93% | 1 | 7% | 15 | 100% |
| Applications of Fair Value-Related Accounting Standards | 6 | 43% | 8 | 57% | 14 | 100% |
| Effects and Relations Internal to the Entities | 16 | 35% | 30 | 65% | 46 | 100% |
| Effects of Application of Fair Value to Specific Accounts/ Operations | 1 | 9% | 10 | 91% | 11 | 100% |
| Effects Related to Management Choices | 5 | 38% | 8 | 62% | 13 | 100% |
| Comparison between Fair Value and other Valuation Methods | 6 | 35% | 11 | 65% | 17 | 100% |
| Fair Value Option | 4 | 80% | 1 | 20% | 5 | 100% |
| Effects and Relations External to the Entities | 9 | 25% | 27 | 75% | 36 | 100% |
| Risk Analysis and Fair Value | 2 | 25% | 6 | 75% | 8 | 100% |
| Stock Market Reactions to Fair Value | 4 | 24% | 13 | 76% | 17 | 100% |
| Relation between Auditors and Audits and Fair Value | 3 | 50% | 3 | 50% | 6 | 100% |
| Fair Value and the Financial Crisis | 0 | 0% | 5 | 100% | 5 | 100% |
| Total | 45 | 41% | 66 | 59% | 111 | 100% |

Source: elaborated by the authors.

There is room for qualitative and quantitative research in all Macro-Groups. It was observed, however, that the number of articles that used the quantitative approach (59%) was superior to that of the articles that used the qualitative approach (41%), a trend observed in several areas of Accounting, which have rested on positivist studies with quantitative hypothesis tests.

Regarding the Macro-themes, **Effects and Relations External to Entities** presented a larger number of quantitative studies (75%). The other groups stood out by the opposing standards. **Effects and Relations Internal to Entities** also presented a larger number of quantitative studies (65%) while, in **Fair Value Standardization**, the qualitative studies (69%) were the majority. This difference is due to the fact that the studies ranked under standardization of fair value rest on a more regulatory paradigm, while the other groups rest on a positivist paradigm.

Also in Table 3, there is a certain balance between production and research approaches, with some Micro-Groups showing significant differences. **Standards on Fair Value** presents predominance of qualitative studies, which can be explained by the greater occurrence of studies with regulatory discussions, demonstrating, for example, pros and cons of standardization. In **Fair Value Option**, there is a certain balancing.

As a counterpoint, the Micro-Groups **Effects of the Application of Fair Value on Specific Accounts / Operations, Stock Market Reactions to Fair Value** and **Risk Analysis and Fair Value** presented a majority of quantitative studies. In these groups, the justification can be found mainly in the words that define them: effects and reactions. Even if there is a possibility of qualitative studies, as observed, these words are more widely measured in scientific research through statistical tests, directing the research to a quantitative bias. Finally, in the group **Fair Value and the Financial Crisis**, quantitative studies represent 100%. This can also be explained by the measurement of the effects of the crisis through proxies and quantitative constructs, in order to measure such effects at fair value or vice versa.

At this point, different research opportunities are observed, such as studies on themes and approaches that are most needed, for example, qualitative discussions about the relationship between fair value and financial crisis. In order to support the understanding of the method used, Table 4 presents the studies separated by methods and related to the research approach (qualitative and quantitative), based on the theoretical framework, adapted from Smith (2003).

Table 4
**Typological classification of articles per method**

| Method | Qualitative | V.A. % | Quantitative | V.A.% | Total | V.A. % |
|---|---|---|---|---|---|---|
| Archival | 7 | 16% | 62 | 94% | 69 | 62% |
| Regulatory | 15 | 33% | 0 | 0% | 15 | 14% |
| Experiment | 9 | 20% | 4 | 6% | 13 | 12% |
| Case study | 6 | 13% | 0 | 0% | 6 | 5% |
| Teaching case | 3 | 7% | 0 | 0% | 3 | 3% |
| Framework | 3 | 7% | 0 | 0% | 3 | 3% |
| Literature review | 2 | 4% | 0 | 0% | 2 | 2% |
| Total | 45 | 100% | 66 | 100% | 111 | 100% |

*V.A.: Vertical analysis

Source: elaborated by the authors.

Studies based on the archival method prevailed. The use of large databases in quantitative research contributes to this factor, as well as the greater adherence of these bases to the performance of robust statistical tests. It is observed, however, that there are studies using this method classified as qualitative, such as content analysis and discourse, which by their nature are qualitative - but, according to Smith (2003), they are classified as archival because they use collected data, or not, for the analyses.

Surprisingly, the third most representative method is the experiment, being surpassed by the normative studies. All normative studies were classified as qualitative, showing that there is room for quantitative and normative studies. At first glance, such a union may seem incongruous, but quantitative studies regarding discussions of normative applications or even of empirical suggestions for normative changes are observed. The experiments also contribute to science, since they help to simulate scenarios and research that might not be feasible in the economy on a routine basis.

The other methods are less representative in the sample, thus presenting fertile ground to apply these methods to the area of fair value studies. The present study, for example, according to Smith (2003), would be classified as literature review, being the least representative group in the sample. This method can contribute to the development of research that support, in addition to other researchers, the market and regulators, who can make use of the analyses about the research done and its contributions.

Finally, it is observed that the quantitative studies are restricted to two research methods: archival and experiments. In this sense, research can observe this gap regarding the application of the methods and the possibility to extend the quantitative studies based on the use of other methods.

## 4.3 Authorships and institutional origins

Table 5 presents the number of articles per number of authors, that is, the number of collaborators per publication, as well as the total number of authors at each level of collaboration. As can be observed, articles with three (33%), two (32%) and one authorship (28%) predominate, with a small representativeness of more than three authors per article. The total number of authors is 244, the average number of authors per article being 2.2. This average is similar to that of other studies that apply author analysis techniques, such as Matos, Niyama, Araújo and Marques (2012), suggesting that, in this respect, the study of fair value follows the standards of other themes.

Table 5
**Number of authors per article**

| Number of Authors per Article | Number of Articles | % | Number of Authors | % |
|---|---|---|---|---|
| 1 author | 31 | 28% | 31 | 13% |
| 2 authors | 36 | 32% | 72 | 30% |
| 3 authors | 37 | 33% | 111 | 45% |
| 4 authors | 5 | 5% | 20 | 8% |
| 5 authors | 2 | 2% | 10 | 4% |
| Total | 111 | 100% | 244 | 100% |

Obs.: The column "Total number of authors" considered the occurrence of authorship in each publication, so that the same author, with more than one publication, was considered repeatedly per occurrence, and therefore added more than once to the total.

Source: elaborated by the authors.

Concerning the authors' affiliation, the institutions the researchers were affiliated with and what countries they were located in were observed, with a view to characterizing the participation of research institutions and countries in fair value studies. Table 6 presents the countries with the largest number of authorships in the articles, not based on where the authors were born, but on the origin of the institutions they were affiliated with.

Table 6
**Number of authors per country the institutions are affiliated with**

| Country | Number | % | Country | Number | % |
|---|---|---|---|---|---|
| United States | 164 | 67% | Singapore | 5 | 2% |
| Germany | 12 | 5% | The Netherlands | 4 | 2% |
| United Kingdom | 9 | 4% | South Korea | 3 | 1% |
| Spain | 7 | 3% | Egypt | 2 | 1% |
| Italy | 7 | 3% | France | 2 | 1% |
| Australia | 6 | 2% | Switzerland | 2 | 1% |
| China | 6 | 2% | Others | 5 | 2% |
| Canada | 5 | 2% | Total | 244 | 100% |
| Israel | 5 | 2% | | | |

Source: elaborated by the authors.

It is observed that the United States is the country that most contains authorships in fair value research, representing, alone, 67% of the total, indicating its great academic influence in the subject. The fact that only five countries concentrate 82% of the publications, being the US or European countries, demonstrates the possible hegemony of research in the area, with a small insertion of authors affiliated with institutions beyond the US-Europe axis. If we add the countries of Europe and the US, the representativeness of the axis reaches 86%. The non-representativeness of Latin American countries in the sample is also observed.

## 4.4 Articles per journal

Finally, Table 7 displays the number of articles published per journal.

Table 7
**Number of articles per journal**

| Journal | Quant | Journal | Quant |
|---|---|---|---|
| Review of Accounting Studies | 11 | Critical Perspectives on Accounting | 5 |
| The Accounting Review | 10 | European Accounting Review | 4 |
| Journal of Accounting and Economics | 9 | Journal of Business Finance & Accounting | 4 |
| Journal of Accounting Research | 8 | Behavioral Research in Accounting | 3 |
| Journal of Accounting, Auditing & Finance | 8 | Issues in Accounting Education | 3 |
| ABACUS - A journal of accounting, finance and business studies | 7 | Auditing: A Journal of Practice & Theory | 2 |
| Accounting and Business Research | 7 | Accounting Historians Journal | 1 |
| Accounting, Organizations and Society | 7 | Journal of International Accounting Research | 1 |
| Contemporary Accounting Research | 7 | Journal of International Accounting, Auditing and Taxation | 1 |
| Journal of Accounting and Public Policy | 7 | Journal Of Public Budgeting, Accounting and Financial Management | 1 |
| Accounting Horizons | 5 | Total | 111 |

Source: elaborated by the authors.

Of the 30 papers selected based on the work of Matherly and Shortridge (2009), 29 were analyzed in this study (see Section 3). Twenty-one presented fair value publications between 2000 and 2016, indicating that interest in fair value research is widespread in the academic community. According to Matherly and Shortridge (2009), of the five journals with more publications on fair value, four are at the top of the list of the most relevant journals, accounting for 34% of the articles published: Review of Accounting Studies, The Accounting Review, Journal of Accounting and Economics and Journal of Accounting Research. This fact confirms the importance of fair value studies in the academic-accounting environment, demonstrating that research on the subject is relevant in the journals considered to publish top-quality scientific production.

## 5. Final Considerations

The role of this study was to map recent research on fair value to further understand the theme. Based on the results, the area was broad, with several issues being addressed and with publications throughout the period analyzed (2000-2016), but still with limitations in the use of methods and themes. The main research foci were (i) the comparison of fair value with other valuation methods, demonstrating that fair value is not a consensus in the academy, and (ii) stock market reactions to fair value, denoting researchers' concern with its practical use and how the market interacts with the method. Despite this, few of these studies propose changes, mostly describing the effects of the changes already made.

The study of fair value standardization represents almost a quarter of all the publications analyzed, demonstrating the great impact of the recent Iasb and Fasb treatments on the subject in the scientific community. Another major focus of study was the relationship between fair value and the stock market, considering that both are affected in both directions - the discussion about the relationship between fair value and the financial crisis has obviously grown in the post-crisis period, in view of the exposure that this approach has gained since then.

Regarding the methods, most of the publications were classified as using the archival method, being mostly quantitative. This result denotes the need to broaden the application of different methods and approaches in order to foster different outcomes and views on fair value. Furthermore, in an analysis of authorship and institutions of the publications, one can again observe certain patterns already present in accounting research. The supremacy of authorship linked to US institutions is present in the sample, a fact that can be justified by the mother tongue, academic strength of the area and other aspects. In the current form, studies applied in the US market tend to bias even the accounting standardization in favor of this market, so that the others can present diverse and not comparable effects.

As a summary of the results, the fair value surveys have presented a growth process in the last 16 years, mainly as from 2006 - which may be related to the fact that this was the year of publication of SFAS 157, which deals specifically with the topic and encompasses concepts and rules that were spread across various standards until then. Another highlight in the publications on the subject is after the financial crisis of 2007/08, with attention focused on fair value because of its possible relationship with the crisis.

Despite the points cited and the perception of increased studies, the results demonstrate possibilities for future research. Because fair value is often related to financial crises, studies of a more purposeful and less diagnostic nature can be conducted on the subject, including studies of a critical nature. In addition, there is an ample relationship between fair value and financial institutions, but few studies in the banking area were identified in the sample, which is an area that contributes to accounting and to the market.

There is also a lack of studies that relate fair value to management control systems, whether in the entities' internal or external scope, such as, for example, possible influences of these systems on perceived risks in the business. There is also the lack of modeling studies, cultural relations and proposition of valuation methods based on fair value. All these proposals can be carried out by quantitative or qualitative approaches, as well as by different research methods, beyond the archival mainstream that has been carried out.

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# Taxonomy of the Scientific Network of the Dark Triad: Revelations in the Business and Accounting Context

## Abstract

**Objective:** Characterize the scientific research of the Dark Triad, elucidating the direction of this theme, in the context business and accounting, in the period from 2012 to 2014.
**Method:** For this research, a socio-bibliometric survey was used as the research strategy, based on the observation of contents in two sources: the Portal Periódicos Capes and the Web Science Knowledge. The study sample included 90 articles, illustrated by scientific networks. At the end, the taxonomy was elaborated for the 12 studies that discussed the Dark Triad construct.
**Results:** Concerning the focus of the articles, Narcissism is the most explored trait and is associated with leadership and corporate decision making. Psychopathy attracts the researchers' attention to the leader's aversive behavior in the corporate midst. Machiavellianism receives greater emphasis in research on manipulation. Specifically in the accounting area, the majority associates the traits with unethical behavior, tending towards fraud in the financial reports.
**Contributions:** The results appointed opportunities for research using the traits of the Dark Triad, particularly in view of the interdisciplinary nature and scientific relevance of this theme, which accounting researchers have hardly explored. In addition, they are noteworthy for leaders to reflect on their own and their employees' attitudes in the corporate sphere.
**Key words:** Dark Triad, Narcissism, Machiavellianism, Psychopathy, Business Context, Accounting.

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## 1. Introduction

In the business environment, the behavior of executives inspires research in the various areas of knowledge and raises attention to accounting research. Accounting is an important tool for benchmarking performance and is used as the basis for the calculation of bonuses and rewards, and therefore, the target of manipulations that reflect the results of those who aim for personal and business success.

Executives hold insider information about the company's economic and financial position and are aware of weaknesses in the corporate governance structure and internal controls, giving it a position of power and influence to maneuver controls and engage in manipulation and/or accounting fraud. The motivation for dysfunctional behavior comes from the perspective of financial compensation (Troy, Smith, & Domino, 2011).

Psychological personality influences the leader's behavior and may explain cases of financial fraud in the business environment that have shocked the corporate world (Nair & Kamalanabhan, 2010), but may also evidence strategic dynamism and business performance (Chatterjee & Hambrick, 2007).In this sense, business and accounting studies have related personality to individual behavior in the business environment, aiming to measure the reflexes in the financial reports (Johnson, Kuhn Jr, Apostolou, & Hassell, 2013; Olsen, Young, & Dworkis, 2013; Murphy, 2012), to detect aversive attitudes of leaders (Boddy, 2006) and the relationship with business performance (Babiak, Neumann & Hare, 2010).

Non-pathological personality traits of Narcissism, Psychopathy and Machiavellianism, the so-called Dark Triad, in accordance with Paulhus and Williams (2002), have aroused the scientific community's interest in detecting the behavior of individuals with "[...] a socially malevolent character with tendencies towards self-promotion, emotional coldness, duplicity, and aggressiveness" (Paulhus & Williams, 2002: 557).

The Dark Triad is a constellation of three personality traits, with subclinical features that, although conceptually distinct, possess empirically overlapping features. They are considered attributes normally distributed to the population in general and based on social psychology literature. The findings of the study do not suggest a clinical diagnosis of personality disorders, as it is done in the psychiatric literature, that is, they do not cover tests or results with individuals suffering from clinical mental disorders or who have committed criminal acts.

Specifically in the corporate environment, the Dark Triad has been studied in research to disclose leaders' strategies and emotional vulnerability (Black, 2013), impulsiveness tending towards risky decision making (Crysel, Crosier, & Webster, 2013), selfish financial attitudes with money from third parties for personal gain (Jones, 2013), the ability to cheat (Giammarco, Atkinson, Baughman, Veselka, & Vernon, 2013), manipulation tactics at work (Jonason, Slomski, & Partyka, 2012); uncertainty in the disclosure of financial estimate intervals (Majors, 2014), clinical and unethical attitudes (Nair & Kamalanabhan, 2010) and counterproductive behavior at work (O'Boyle, Forsyth, Banks, & McDaniel, 2012; Spain, Harms & Lebreton, 2014).

In this context, the present research intends, Characterize the scientific research of the Dark Triad, elucidating the direction of this theme, in the context business and accounting, in the period from 2012 to 2014, with the following guiding question: What is the direction of scientific production on the Dark Triad in the business and accounting context in the past twelve years?

The answer to the research problem will bring to the national debate an original and relevant theme that will particularly contribute to the innovation of scientific research in accounting. In addition, it will signal the importance of studying these traits in the s environment as a way to detect and mitigate unethical behavior in the workplace. Therefore, the present study presents a literature review, based on a survey made from the observation of contents necessary for the characterization and taxonomy, illustrated by a scientific network.

Subsequent sections are structured as follows: theoretical framework based on scientific work, presentation of methodology, analysis of results and conclusions with suggestion for future research.

# 2. Theoretical Framework

## 2.1 Dark Triad: Conceptual Aspects of Personality Traits

Hall, Lindzey, & Campbell (2000, p. 32) have two meanings for the term personality, although a range of designations exist in the context of personality psychology: the first meaning refers to skill or social expertise, considering that "an individual's pis assessed by the effectiveness with which he or she is able to elicit positive reactions from a variety of persons under different circumstances"; the second meaning considers personality as the most prominent or salient impression the individual creates in other people. In this approach, the personality is classified as good or bad. "The observer selects a highly typical attribute or quality of the subject, which presumably is an important part of the overall impression created by others, and identifies his personality by that term."

Personality traits are used to describe people and to evaluate individuals based on systematic, reliable, and effective scientific methods, using statistics to simplify and objectify the personality structure (Friedman & Schustack, 2004, p.267). They can generate socially desirable or undesirable implications on business leaders; both socially desirable and undesirable traits can entail positive and negative implications for leaders and stakeholders.

Paulhus and Williams (2002) investigated the non-pathological personality traits of Psychopathy, Narcissism and Machiavellianism called the Dark Triad in order to verify the correlation between the three traits. These scientists departed from individual studies and developed a tool for measuring psychological aspects to assess cognitive similarities and differences among these three personality traits.

It is important to emphasize that these personality traits are characterized as non-pathological, since the intention of the research is to detect non-clinical traits, based on social psychology literature, without any claim on diagnosing the individuals clinically. The clinical level is a serious problem and requires professional help, while the subclinical is light and allows individuals to live normally in social settings (Jones & Paulhus, 2011). Gudmundsson and Southey (2012) point out that subclinical personality traits represent a "middle ground" between a pathological personality disorder described in the psychology manual and the normal personality traits.

In this conception, Paulhus and Williams (2002) tested socially aversive personalities in 245 graduate students in psychology, in order to examine whether the three traits were equivalent, totally overlapping constructs and to evidence similarities and differences. The researchers mapped the three measures, relating them to the personality factors of the 'big five' - extroversion, affability, consciousness, neuroticism and openness - as well as the classification of self-assessments of intelligence, talents, and skills. These researchers have shown that the measures are moderately interrelated, in a range of 0.25-0.50, but are not equivalent. Low affability proved to be the only feature common to all three traits. The traits of psychopathy differed because they assumed low neuroticism; machiavellians and psychopaths exhibited low scores in relation to the consciousness factor; Narcissism pointed to small positive associations with cognitive ability. Narcissism and psychopathy were also associated with extraversion and openness. In the meantime, the researchers concluded that the Dark Triad personalities are overlapping but have different constructs.

Although with some distinct characteristics, they share cognitive traits and can be characterized as anything that implies a "socially evil character with behavioral tendencies toward self-promotion, emotional coldness, duplicity and aggressiveness" (Paulhus & Williams 2002, p.557).

### 2.1.1 Narcissism

According to the American Psychiatric Association (2000), Narcissism is defined as an "... invasive pattern of grandiosity (in fantasy or behavior), need for admiration, and lack of empathy present from childhood." Narcissism is therefore a personality mark detected in arrogant individuals, who have an abnormally high level of self-esteem, believing that they are special, with the right to praise and admiration, perceive others as inferior, often acting insensibly and hostile. These behavioral traits often translate into conflicting interpersonal interactions hampered by lack of empathy.

The concept of Narcissism proposed by Ellis (1898) has its origin in Greek mythology, when Narcissus fell in love with his own reflection in a lake. The scientist Freud analyzed several manifestations of Narcissism, identifying the characteristics of self-love, self-admiration, and self-aggrandizement. This personality trait was studied, whose results confirmed the association with self-esteem (Morf & Rhodewalt, 1993) and self-exaltation (John & Robins, 1994).

Social psychology studies without clinical intent by Paulhus and Williams (2002) and Chatterjee and Hambrick (2007) revealed that narcissistic individuals exhibit behavioral traits of grandiosity, need for dominance, and a sense of superiority. Chatterjee and Hambrick (2007, p.6-9) empirically studied the behavior of 111 CEOs and found Narcissism as a personality trait positively associated with strategic dynamism and business performance.

Narcissists are extremely confident in their own abilities to perform tasks, to the point of being overconfident (Campbell, Goodie & Foster, 2004). When it comes to the motivational aspect, individuals with narcissistic personality traits reinforce self-image, self-exhibition or the diminution of the image of others (Bogart, Benotsch, & Pavlovic, 2004), as well as the exaltation of others in the form of applause and adulation (Wallace & Baumeister, 2002).

Studies point out that traces of narcissism can also be beneficial to the organization though. These individuals are innovative and lead the business to gain power and glory. They are therefore experts in their actions, present critical postures in the face of the facts, surround themselves with all the information inherent to the company and the ramifications of these for their career, seek the public admiration and do not lose sight of the attainment of their purposes (Maccoby, 2004, p.3-7). There is a consensus that moderate narcissism is essential for the human being (Chatterjee & Hambrick, 2007, p.6-9).

### 2.1.2 Psychopathy

Although the term psychopathy is related to criminals, clinically called psychopaths, studies reveal that the general population has non-pathological, subclinical traits of psychopathy (Jones & Paulhus, 2011). Babiak and Hare (2006, p. 187) observed that such people "can be surprisingly successful in dealing with others [...] ... they are experts in analyzing people and then modifying their approach in order to influence those around them".

There is vast literature on criminal psychopathy in the judicial system, but little is known about psychopathy in the corporate environment and its implications (Babiak et al., 2010, p.174). This difficulty arises from the lack of active cooperation of business organizations. In an attempt to clarify the questions raised by the debate on this theme, the researchers set out to develop a study to examine psychopathy and its correlation in a sample of 203 professionals who work in the management area. Correlations included demographic and status variables, as well as 3,608 classifications of key variables of internal performance assessments. The results indicated that psychopathy was positively associated with charisma, but negatively associated with performance. They also demonstrated that a high level of psychopathic traits does not necessarily impede the progress and advancement of business organizations as Babiak and Hare stated in 2006. Most participants with high psychopathy scores are held in high-level executive positions and skillfully manage to hide performances and behaviors that are detrimental to the organization (Babiak et al., 2010, p.176).

### 2.1.3 Machiavellianism

Machiavellianism was defined as a personality trait in the studies by Christie and Geis (1970, p. 1) in individuals who manipulate others according to their point of view and to achieve their own interests. In these studies, scales were developed, based on Machiavelli's writings, composed of three factors: tactics, human views and morality (Christie & Geis, 1970, p.17). These factors are related to the characteristics of manipulative and strategic people, with a pragmatic ethical sense and a propensity to use tactics to reach their goals, to achieve personal gains (Jones & Paulhus, 2009). Individuals with marked machiavellian traits are strategists, tacticians, and develop a style of rational decision-making, considering all the costs and benefits to solve problem (Jones & Paulhus, 2011).

The first writings on the concept of Machiavellianism were elaborated by the philosopher Sun Tzu (500 BC), attributing to him the characteristic that "... a wise leader in his decisions always considers the gain and loss relation" (Jones & Paulhus, 2011, p.254).

According to Judge, Piccolo and Kosalka (2009, pp. 886-867) the term Machiavellism derives from Niccolo Machiavelli, a 16th century author who wrote The Prince, a treatise on the accumulation and leverage of political power. Although almost 500 years have passed since the publication of the book, the messages contained in The Prince are as relevant today as they were at the time of its release. The work brings at its core the incentive to lie, perceive, manipulate and convince voters, with the aim of providing the leader with political and social power. The term Machiavellianism is used to define a personality trait characterized by dexterity, manipulation, as well as the use of any means necessary to achieve a political goal. Individuals who imprint this personality brand are generally quite strategic and calculating in their thoughts, being able to navigate the complex business dynamics in non-governmental organizations.

The presented constructs were investigated individually and their characterization is based on different psychological measurement scales. The Dark Triad, as a cluster of three traits, presents 27 assertions that capture information about non-pathological characteristics of Narcissism, Machiavellianism and Psychopathy. As the objective of this article is to demonstrate the direction of the work on the Dark Triad in the business and accounting context, it is considered important to perform the analysis and taxonomy of scientific productions.

## 3. Analysis of Scientific Productions

### 3.1 Method

In order to respond to the research problem, this research adopted the empirical-analytical approach, which permitted the observation of the contents that deal with the main and underlying themes, in order to reveal the characteristics of the study. Therefore, a bibliographical survey was used as a technique for collecting information which, according to Martins and Théophilo (2009, p.54), "seeks to get to know, analyze and explain contributions on a certain subject, theme or problem".

In addition, qualitative evaluation was adopted to describe and rank the articles that deal with Dark Triad; and quantitative evaluation to show the frequencies of the articles, themes, countries and journals that were part of the study sample.

### 3.1.1 Sample composition and selection criteria

The data were collected through a bibliographical survey in the main scientific research sites: *Portal Periódicos Capes* and Google Scholar. This procedure is similar to O'Boyle et al. (2012) who sought, in six scientific bases, articles that deal with the relationship between the Dark Triad and counterproductive behavior in the work environment.

To select the articles for this study, the combination of the words *Dark Triad, Narcissism, Machiavellianism, Psychopathy*, with *Accounting, Accounting, Leader, Leadership, CEO* and *Decision Making* was used to highlight the focus of the work related to the Dark Triad and the underlying themes that make up the scientific production in the business and accounting context. It should be noted that the articles were collected by combining two words, always contemplating a trait and one of the underlying themes. The search with these keywords also evidenced the characterization of the theme "work behavior", as discussed in this study, acknowledging the importance of this subject in the business environment.

In order to validate the findings for the accounting area, in addition, a search was developed in the main international journals, adopting the same criterion as reported above: The Accounting Review; Accounting, Organizations and Society; Contemporary Accounting Research; Journal of Accounting and Economics; Journal of Accounting Research and Review of Accounting Studies.

Intentionally, to survey the articles, a temporal cut was established from 2002 to January 2014, with the purpose of evidencing and evaluating the evolution of articles that deal with personality traits individually and / or cite the seminal work by Paulhus and Williams, whose article was published in 2002. The collection carried out between December 2013 and January 2014 totaled 90 articles that fully met the established criteria. From the selected articles, information was collected about the author, title, year of publication, journals, country, number of citations, objective, method and main results.

At the end, the taxonomy of the 12 works that discussed the Dark Triad with the underlying subjects was elaborated, initially illustrated by a scientific network, chosen to highlight the characteristics the selected articles held in common.

### 3.1.2 Analysis of Results

According to Table 1, of the 90 articles selected, 19% discuss the Dark Triad - including the three articles considered as the basis of the study -, 34% Narcissism, 26% Machiavellianism and 19% Psychopathy. Related to these traits, 63% of the studies focused on leadership, 18% accounting, 9% work behavior, 7% decision making and 3% baseline articles on research about the Dark Triad.

It is noteworthy that 75% of the works in accounting were associated with the machiavellian trait; 40% of the work on leadership was related to the narcissistic trait; the articles on decision making were evenly distributed among the three traits and studies on professional behavior had a higher concentration in Narcissism (38%) and in the Dark Triad cluster (38%).

The countries with the highest concentration of publications are the USA with 46% of the works, with emphasis on Narcissism (44%); followed by Australia 13%, focusing on Psychopathy (83%); and Canada (12%), which hosts the University of British Columbia, a campus that fosters Dark triad research, overseen by the authors of the construct. The baseline articles for this study are the investigations of Paulhus and Williams (2002), Williams (2002) and Jones and Paulhus (2013), which discuss the procedures, elaboration and validation of the personality measurement instrument (D3 - Short).

Table 1
**Distribution of traits/themes/years of publication**

| | | | Themes | | | | | | | | | | Countries with highest incidence of articles | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Traits | Number of articles | (%) | A | (%) | L | (%) | DM | (%) | WB | (%) | B | (%) | USA | (%) | Australia | (%) | Canada | (%) |
| *Dark Triad/Dark Side* | 17 | 19 | 1 | 6 | 10 | 18 | 0 | 0 | 3 | 37 | 3 | 100 | 10 | 24 | 0 | 0 | 3 | 27 |
| Narcissism | 31 | 34 | 3 | 19 | 23 | 40 | 2 | 33 | 3 | 37 | 0 | 0 | 18 | 44 | 1 | 9 | 3 | 27 |
| Machiavellianism | 23 | 26 | 12 | 75 | 8 | 14 | 2 | 33 | 1 | 13 | 0 | 0 | 9 | 22 | 1 | 9 | 1 | 9 |
| Psychopathy | 17 | 19 | 0 | 0 | 14 | 25 | 2 | 33 | 1 | 13 | 0 | 0 | 3 | 8 | 10 | 82 | 3 | 27 |
| Psychopathy/ Machiavellianism | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 |
| Narcissism/ Psychopathy | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 |
| Total | 90 | 100 | 16 | 100 | 57 | 100 | 6 | 100 | 8 | 100 | 3 | 100 | 41 | 100 | 12 | 100 | 11 | 100 |
| % | 100 | | 18 | | 63 | | 7 | | 9 | | 3 | | 46 | | 13 | | 12 | |

Legend: A – Accounting; L – Leadership/Leader/CEO; DM – Decision Making; WB – Work Behavior;
B – Baseline article
The proportion of the countries with the highest incidence of articles is based on the total number of 90 articles.

Source: Research data.

As the themes are related to personality psychology, the main publication medium is the *Journal of Personality and Individual Differences,* corresponding to 10% of the publications. The *Journal of Business Ethics* also stands out with 7% of the publications, especially due to the business area's concern with the managers and employees' ethical behavior in the work environment.

Between January 2002 and January 2014, the years with the largest number of publications were 2010 (12%), 2011(10%), 2012(12%) and 2013(31%), in accordance with Table 2. This fact can be related to the maturation period of the financial scandals the corporate world has witnessed, like the Madoff case in 2008. The researchers are concerned with analyzing the association of these frauds with leaders possessing aversive personality traits.

Table 2
**Dissemination media/Years of publication**

| | Main dissemination media | | | | Years with greatest concentration of publications | | | |
|---|---|---|---|---|---|---|---|---|
| | Journal of Business Ethics | Personality and Individual Differences | Working papers | Theses | 2010 | 2011 | 2012 | 2013 |
| *Dark Triad/Dark side* | 0 | 3 | 1 | 2 | 1 | 4 | 2 | 8 |
| Narcissism | 2 | 1 | 2 | 1 | 4 | 2 | 4 | 12 |
| Machiavellianism | 1 | 1 | 4 | 1 | 2 | 2 | 4 | 3 |
| Psychopathy | 3 | 4 | 0 | 1 | 4 | 1 | 1 | 5 |
| Total | 6 | 9 | 7 | 5 | 11 | 9 | 11 | 28 |
| Number of journals investigated | 7 | 10 | 8 | 6 | 12 | 10 | 12 | 31 |

Source: research data

In order to show the focus of the studies, we selected publications with more than 50 citations, not as a quality criterion, but as a filter for the 90 articles in this study, in order to evaluate the impact factor, the interest of the scientific community and the resonance of the themes under study. Furthermore, we presented the authors, years, themes and subjects, as shown in table 3. It is observed that the most cited article is Paulhus and Williams (2002), the baseline theme that aroused the interest in the present research.

The theme Narcissism is the most explored and associated with leadership, exhibitionism, grandeur and business decision making. The theme Psychopathy raises the researchers' interest in investigating the relationship of this antisocial trait with the corporate environment, especially after the findings by Babiak, Newmann, & Hare (2010), in which most corporate managers, occupying senior executive positions, present non-pathological psychopathy traits. Researchers on Machiavellianism, on the other hand, focus on the capacity for manipulation, planning, cynicism and the reputation of individuals.

Most of the findings were evidenced by the application of research to undergraduate or graduate students, in exchange for course credits. This is common practice in international publications, due to the achievement of consistent results when compared to research applied to professionals.

Table 3
**Focus of Articles/Authors/Traits/Citations/Subjects**

| Authors | Personality traits | Citations | Focus of the studies | Subjects |
|---|---|---|---|---|
| Austin, Farrelly, Black, & Moore (2007) | Machiavellianism | 120 | Associations among machiavellianism, emotional intelligence performance and emotional manipulation capacity. | College students |
| Babiak, Neumann, & Hare (2010) | Psychopathy | 83 | The relation between corporate psychopathy and management performance. | Managers |
| Boddy (2006) | Psychopathy | 51 | Implications of organizational psychopaths for organizations and corporations. | Does not apply* |
| Campbell, Goodie, & Foster (2004) | Narcissism | 187 | Relations among narcissism, excess confidence, willingness to take risks and performance. | College students |
| Chatterjee & Hambrick (2007) | Narcissism | 344 | Influence of narcissism in CEOs on company strategy and performance. | CEOs |
| Judge, Piccolo, & Kosalka (2009) | *Dark side Narcissism* | 135 | Relation between dark traits of leaders and self-confidence, awareness and dominance in the organizational midst. | Does not apply* |
| Lakey, Rose, Campbell, & Goodie (2008) | Narcissism | 66 | The association of narcissism with games in general, mediated by judgment and decision taking (risk and excess confidence). | College students |
| Maccoby (2004) | Narcissism | 299 | The narcissistic personality in leaders as something productive but at the same time dangerous. | Does not apply* |
| Paulhus & Williams (2002) | Dark Triad | 536** | TheDark Triad of personality: correlation and overlapping of the triad. | College students |
| Wallace & Baumeister (2002) | Narcissism | 211 | The effects of narcissism on activity performance. | College students |

Notes: *Literature review. ** Currently the seminal study records 1592 citations, which demonstrates the potential of the investigation in this time space.

Source: research data.

The analysis of the accounting studies' focus revealed six studies published in international accounting journals, four of which discussed Machiavellianism and two Narcissism, as shown in Table 4:

Table 4
**Focus of accounting studies**

| International accounting journal | Personality Traits | | Authors | Focus | Research strategy |
|---|---|---|---|---|---|
| | Narcissism | Machiavellianism | | | |
| *Auditing: a Journal of Theory & Practice* | 1 | – | Johnson, Kuhn, Jr., Apostolou, & Hassell (2013) | Perceived traits of narcissism in managers as an indicator of fraud risk | Experiment |
| *Journal of Management Accounting Research* | 1 | – | Olsen, Young, & Dworkis (2013) | Narcissistic personality traits in CEOs related to accounting measures, such as earnings per share | Survey |
| *Behavioral Research in Accounting* | – | 2 | Wakefield (2008) | Relations between traits of Machiavellianism and demographic characteristics of accountants, career choice, satisfaction at work, professional satisfaction and ideological ethics | Survey |
| | | | Hartmann & Maas (2010) | Machiavellianism as a trend for controllers to take the decision to create a budgetary slack | Experiment |
| *Managerial Auditing Journal* | – | 1 | Shafer & Wang (2011) | Machiavellian attitudes related to earnings management in China | Survey |
| *Accounting, Organizations and Society* | – | 1 | Murphy (2012) | The relation between Machiavellianism and fraud detection and rationalization of false reports | Experiment |

Source: research data.

The theme narcissism was investigated by Johnson et al. (2013), due to the realization that narcissistic characteristics in client-managers motivate fraudulent attitudes in financial reporting. In this same perspective, Olsen et al. (2013) evidenced the traces of narcissism in CEOs with unethical behavior of manipulating earnings per share.

The machiavellian theme was related to the ability to deceive and defraud financial reports (Murphy, 2012), earnings management (Shafer & Wang, 2011), creation of budgetary slack in decisions under pressure (Hartmann & Maas, 2010) and accountants' satisfaction and success in the work environment (Wakefield, 2008).

Notably, researchers in the accounting area associate the personality traits of the Dark Triad with financial fraud, with studies published since 2008 as a consequence of the various accounting and financial scandals, such as the Enron and Madoff cases mentioned earlier. In addition, a balance is observed in the adoption of Survey and Experiment research strategies. Behavioral Research in Accounting also stands out as the journal that concentrates more articles, although the quantity is not very expressive.

In this context, the present study will present a ranking of the 12 papers that dealt with the Dark Triad theme, with related themes, in order to highlight opportunities for future research on the topic in the business area. This method is similar to Spain, Harms, and Lebreton (2014) who, after carrying out a literature review, elaborated a taxonomy relating the Dark Triad to the work context.

### 3.1.3 Taxonomy of the scientific articles on the Dark Triad cluster

Initially, the taxonomy was illustrated by a scientific network, whose 'knots' represent the characteristics the studies hold in common concerning the relation among the authors, the themes, the research strategies and the subjects, in accordance with figures 1, 2 and 3:

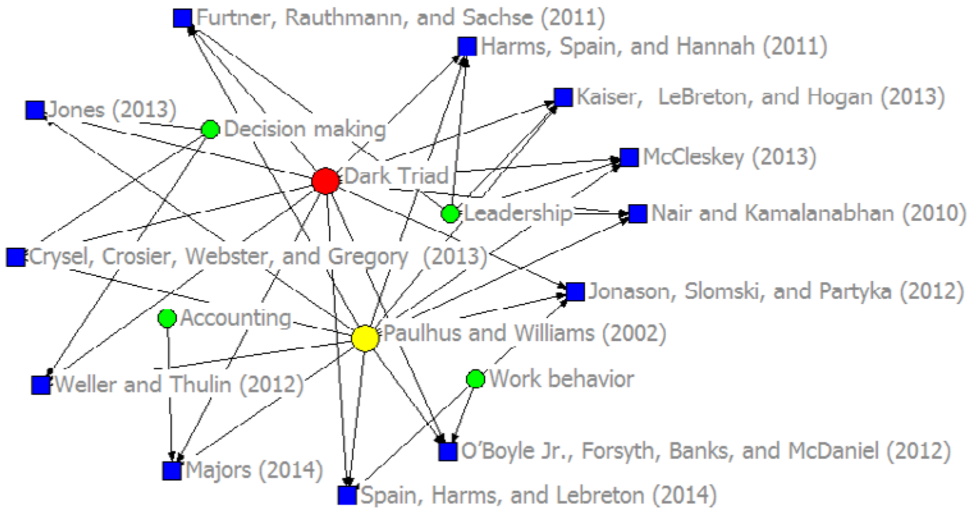


**Figure 1.** Scientific Network Illustration - Authors and Themes

Source: elaborated by the authors

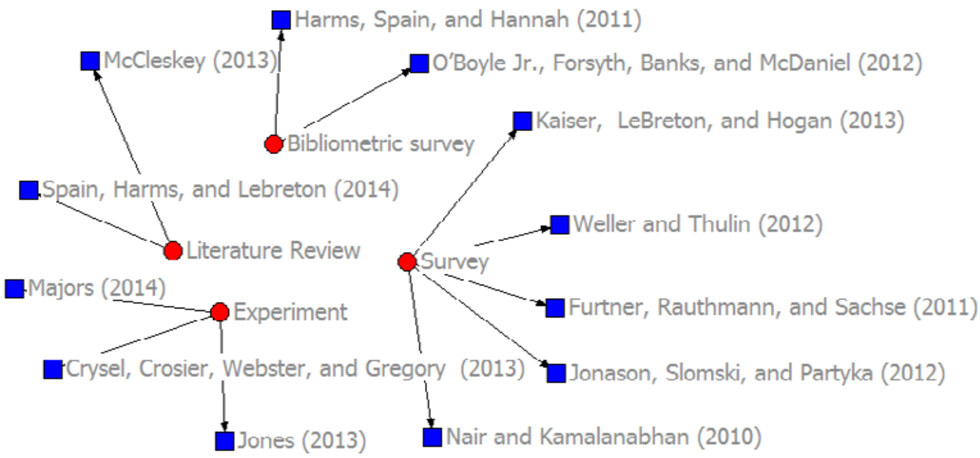


**Figure 2.** Scientific Network Illustration - Research Strategies

Source: elaborated by the authors.

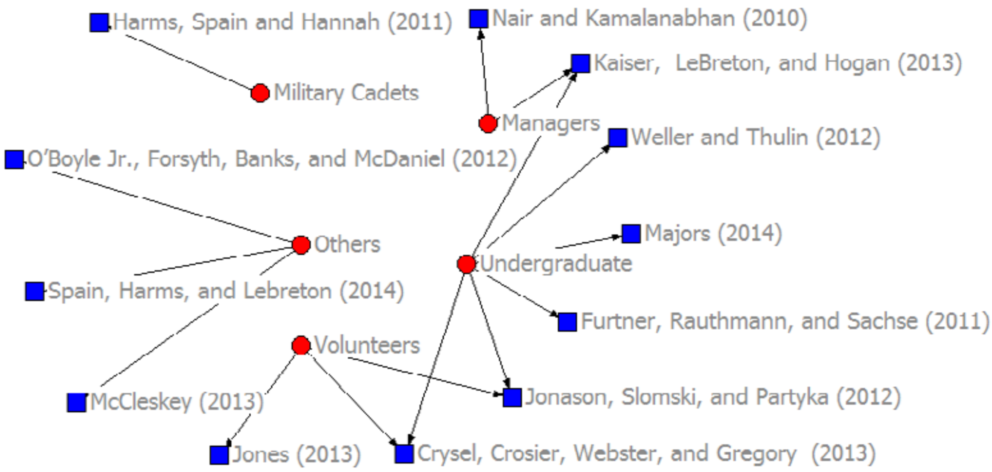


**Figure 3.** Scientific Network Illustration – Research Subjects

Source: elaborated by the authors.

In the elaboration of the ranking, articles on the same conceptual cluster and correlated areas were grouped. Thus, the literature review structure in this study was based on concepts, which were compiled in a conceptual matrix after having read the articles, in accordance with recommendations by Webster and Watson (2002).

The shared concepts were related to the traits of the Dark Triad and adjacent themes, which permitted characterizing the studies in the following themes: Leadership, Accounting, Decision Making, and Work Behavior.

## Leadership

In order to investigate the importance and complex role of the negative side of subclinical personality traits and the individuals' responsiveness to a leader development program, Harms, Spain, and Hannah (2011) developed a study of 919 academy cadets of the US military police. The authors selected this sample intentionally because they believed that, during the two or four years of training, the cadets developed a spirit of leadership committed to the values of duty and honor to the country, in order to develop a career of professional excellence. They found that not only were subclinical personality traits important for the development of leaders, but they could also act as strong inhibitors and / or demonstrate positive or integrated effects with performance.

When analyzing the leadership, through an empirical study of 119 Indian managers, Nair and Kamalanabhan (2010) proved that the position occupied (junior, middle or high) influences the level of general and organizational cynicism. Individuals working in middle and higher-level management positions have higher levels of organizational cynicism and are less unethical than managers in junior positions.

Still in this context, Furtner, Rauthmann, and Sachse (2011) achieving the business goal / goal is an important factor for leaders with Dark triad traits and this achievement is probably due to different underlying motives. Self-leaders distribute and focus their cognitive and behavioral resources on a specific goal, primarily on an intrinsic value of the goal or process of attaining it. Narcissistic leaders and self-leaders are similar in the definition of self-targets, driven by a need for accomplishment, self-observation, focusing on the self and on the use of self-regulation strategies, to reach and fulfill goals, being one or the other.

The authors concluded that narcissists focus on the results of meta-accomplishment, rather than focusing on the process of achieving it, for reasons of attention, admiration and appreciation of others, so that their inflated self-image can be maintained or reinforced. Thus, intrinsic motivation would be different between narcissists and self-leaders, although both are rich in meta-accomplishment and use similar phenotypic strategies in pursuit of goals, such as autofocus, self-configuration in goal-setting, and self-rewards. No associations were found between self-leadership, Machiavellianism and psychopathy.

McCleskey (2013) theoretically discusses seminal work that addresses the downside of leadership by pointing to the relationship with subclinical narcissism, Machiavellianism, and psychopathy. Findings suggest that dark leadership is related to negative operational outcomes and, in some situations and in a contradictory way, a positive side of these personality traits emerges that mingles with the negative side and reflects in the organizational environment.

There is a relationship between the dark side of personality and the leader's extreme behavior, tempered by emotional stability. This evidence was detected in a study of 320 managers and executives, both American and European, who were evaluated by 4,906 employees, permitting a better understanding of the role of the dark side in leadership, especially regarding the reflexes of excessive behavior, the attenuating effect of emotional stability and negative effects, such as inefficiency, revealed in leaders with low levels of dark traits (Kaiser, Lebreton, & Hogan, 2013).

### Accounting

Majors (2014) developed a study on the relationship between the personality traits of the Dark Triad and the reporting of uncertainties in accounting estimates, based on FASB (2011) discussions, IFRS (2011), IAASB (2013), PCAOB (2013) and SEC (2011). The experimental strategy allowed the author to simulate with college students, who received significant monetary incentives to interact in roles analogous to managers and investors, a practical scenario in which a reasonable range of estimates was provided for the value of an asset.

The findings revealed that, when the ranges of estimates are not disclosed, these managers report relatively aggressive estimates for investors. Managers showing low association with dark triad personalities, then, report more accurate estimates. The disciplinary effect of the range of disclosures is concentrated in managers exhibiting association with one or more of the Dark Triad personalities, as these managers report particularly aggressively without interim disclosure, while their non-Dark Triad counterparts report less aggressively.

### Decision Making

An investigation into a group of 1,097 undergraduate psychology students demonstrated that the characteristics of Dark Triad were positively related to impulsiveness and the search for sensations. In a second study, with 307 volunteers from the Mechanical Turk community on the Amazon website, it was confirmed that Dark Triad features are positively associated with increased black jack gambling and cash rebates (Crysel et al., 2013).

The two studies made it possible to conclude that there is a relationship between the dark personality traits and risk behaviors in impulsive decision making. Of the three traits, Narcissism was the most consistent with behavioral risk tasks, and may be considered the guiding thread of the observed relationships. The manipulation of the wounded ego, through the experimental strategy with the volunteers, facilitated evidence of the positive relationship between threatened narcissists with negative feedback and temporal discount.

Each set of personality traits component of Dark Triad can predict different but important outcomes of gambling with real consequences. The relationship between the selfish financial behavior of risking others' money for personal gain and the Dark Triad was the subject of two experimental studies by Jones (2013).

Taking into account reckless psychopathic behavior, narcissistic overconfidence, and Machiavellian strategy, the author conducted the Study 1, with 119 adults, and the Study 2, with 135, randomly, assigned adults so that each could play with Your own bonus or with the bonus of the next entrant.

The findings of Study 1 made it possible to show a correlation of Psychopathy with gambling with someone else's money and not with their own money in a game with chances of loss. Narcissism has been correlated with the loss of more money from another person. The results of Study 2 have suggested different financial consequences among the dark traits, given that given the opportunity to make risky investments without cost, they do so because they are aware that someone will bear this cost. In general, Psychopathy predicted to play with another person's bonuses, and Narcissism predicted greater losses.

Stiller regarding decision making, Weller and Thulin (2012) investigated the association between the risky decision in a group of 231 university students, with choices that involve potential gains and/or losses, and the dimensions of honesty and humility of the HEXACO model of structure Of personality. Individuals who report greater honesty and humility are more likely to help and less willing to explore others. They are less likely to cheat or steal and less interested in luxury status items. However, this dimension is related to Dark Triad.

### Work Behavior

O'Boyle et al. (2012) developed a meta-analysis on the relationship between the Dark Triad and performance and counterproductive behavior in the workplace. Therefore, the authors extracted data from six scientific research databases, in addition to other sources, from 1951 to 2011. They found that, in terms of the reduction in the quality of work performance, the machiavellian and psychopathic traits were consistently associated. Counterproductive behavior, then, was associated to the three constructs, although moderated by the factors authority and culture.

The causes and consequences of the dark personality traits and the implications in the business context, especially with regard to selection and training, drew the attention of Spain et al. (2014). Self-reported style evaluations intrigue the authors as to the honesty of respondents' responses at the time of selections for recruitment purposes. On the other hand, the results can signal to managers points to be addressed through the implementation of development plans, in order to minimize the individual's weaknesses and mitigate the problems caused by the triad.

Officials or "toxic" leaders with rigid or light manipulation tactics in the work environment were identified from the constellation of Dark Triad traits. Evidence that men, more than women, adopt an aggressive or strong style of interpersonal influence was found based on an empirical study with 419 participants (30% male, 65% female), aged between 18-61 years. Individuals with high Dark Triad personality traits have a range of tactics to influence others in the workplace. Especially men at the highest level can disproportionately use rigid tactics (Jonason, Slomski & Partyka, 2012).

In view of the taxonomy presented, a greater concentration of Dark Triad studies is observed associated with the category Leadership, as well as a higher incidence of studies using the survey method, applied to college students.

## 4. Conclusion

The Dark Triad's personality traits are intriguing psychological aspects that permeate individuals' behavior and explain negative and positive attitudes of leaders and employees in the business environment. The externalization of these traits sometimes causes harm, but may also show benefits, especially when at moderate levels. Spain et al. (2014) call the attention of the researchers to the understanding of these characteristics in moderate intensity, since it is a possible differential in the construction of more effective theories about the externalized behavior by individuals.

In order to respond to the research problem of the present study, about the focus of the scientific production on the Dark Triad in the business and accounting context, in the last twelve years, the survey based on the observation of contents allowed to select and characterize 90 articles based In the main and underlying themes, as to the author, year of publication, country, number of citations and the direction of works.

Regarding the focus of the articles, the Narcissism trait is the most explored, associated with leadership and business decision making, especially by analyzing the impact and consequences of the impulsivity, exhibitionism, need for admiration, and the self-promotion of CEOs. The Psychopathic trait has greater prominence in the aversive behavior of the leader in the corporate environment, since many findings indicate that most successful managers seek excitement in the activities and exteriorize emotional coldness in decision making. Researchers on Machiavellianism, on the other hand, focus on the manipulation, planning, cynicism and reputation of individuals. Of the papers that deal with accounting, 75% are associated with Machiavellianism, due to the concern with the manipulation of accounting results.

When analyzing the focus of the studies in the accounting area, six papers could be identified that were published in international accounting journals, highlighting Behavioral Research in Accounting, with a higher concentration of published articles, despite the still not very significant amount. Of the articles, four discuss Machiavellianism and two narcissism. Most of them associate the themes with unethical behavior, with a tendency to fraud in the work environment, mainly after the financial scandals that involved frauds in the registry of accounting transactions, which disappoint those involved in business and society.

Finally, the illustration of the scientific network demonstrated the taxonomy of the 12 works that discuss the Dark Triad. This points out the convergences and highlights the focus and greater incidence of studies in the category "Leadership". Additionally, we observed a higher incidence of the survey as a research strategy applied to college students.

In view of the above, this study reached the desired goal and signals the Dark Triad as a promising research theme, especially due to the interdisciplinarity and scientific relevance, still little explored by accounting researchers in the national and international scope. The results of the presented studies also deserve managers' attention, in the sense of reflecting on their and their employees' attitudes in the business environment. It is also worth mentioning the importance of focusing research on the observation of the positive and moderate side of these traits, as possible assumptions of progress in the corporate context.

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# The Constitution of the Scientific Field and the Low Diversity of Brazilian Accounting Research


## Abstract

**Objective:** The objective in this study was to produce a plausible hypothesis to explain the lack of a consolidated line of interpretive and critical Accounting research in Brazil.
**Method:** In this study, I present an analysis of the constitution of the scientific field in Brazilian accounting, constructed based on evidence obtained through a literature review about Accounting history in Brazil, supported by documentary sources and reflections deriving from my recent trajectory in this field, theoretically based on the concepts of field, capital, habitus and scientific field, originating in the work of the sociologist Pierre Bourdieu.
**Results:** I identify the low autonomy of the academic field in relation to the professional field, evidenced by the origin of higher education courses in accountancy, based on efforts by leaderships in the profession and by ongoing attempts of professional entities to interfere in Accounting education, as a cause of the low diversity in Brazilian accounting research.
**Contributions:** In view of constant appeals for further approximation between the academy and accounting practice, these study results serve as an alert to the possible harmful effect if this approximation takes place under the current conditions of subordination of the scientific field to interests of the professional field.

**Key words:** Scientific Field; Brazilian Accounting Research; Sociology of Science.

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## 1. Introduction

Studies on Brazilian scientific production in Accounting have identified a low thematic, methodological and epistemological diversity, with the prevalence of a positivist approach as from the start of the 21st century (Cardoso, Mendonça Neto, Riccio, & Sakata, 2003; Cardoso, Oyadomari & Mendonça Neto, 2007; Leite Filho, 2008; Mendonça Neto, Riccio & Sakata, 2009; Nascimento, Junqueira & Martins, 2010; Theóphilo & Iudícibus, 2005).

The absence of a consolidated line of interpretive and critical research in Accounting in Brazil contrasts with the scenarios of related disciplines: in Economics, such are the divergences between the orthodox and heterodox currents that it is almost possible to conceive them as distinct disciplines; the area of the Administration, in which perhaps there is not such a deep split between the different segments, is marked by intense epistemological debates (see Alcadipani, 2005, Barbosa, Santos, Matos & Almeida, 2013; Misoczky & Amantino-de-Andrade, 2005a, 2005b; Misoczky, 2006; Rosa & Alcadipani, 2013) and includes a community of critical researchers whose origins can be traced back to at least the 1970s, based on authors like Guerreiro Ramos, Maurício Tragtenberg and Fernando Prestes Motta (Misoczky & Amantino-de-Andrade, 2005b).

To understand its monoparadigmatic nature, I investigate in this article how the constitution of the scientific field in Brazilian Accounting took place, from its origin until the present day. In line with analyses in the international literature, which seek to advance the understanding of the social conditions that led to the lack of diversity in mainstream accounting research (Baker & Bettner, 1997; Gendron & Bédard, 2001; Hopwood, 2007; Humphrey & Gendron, 2015; Jeanjean& Ramirez, 2009; Merchant, 2010; Sikka, Willmott & Puxty, 1995), I adopt the sociological framework of Pierre Bourdieu to interpret evidence obtained from the literature on the history of Accounting in Brazil and, in addition, documentary sources and reflections arising from my recent trajectory in this field.

The investigation follows an abductive logic, composed of three interconnected moments: the problematization of empirical phenomena, the retroductive explanation of these phenomena and the persuasion of the audiences the work targets (Glynos & Howarth, 2007). Thus, starting from the problem of low paradigmatic diversity in Brazilian accounting research, I try to produce a plausible hypothesis to explain it. It is not, however, like in the inductive logic, a search for generalizations inferred based on empirical regularities, but rather an attempt to generate reasonable explanations for the problem investigated.

Following the article, I present the concepts of field, capital and habitus in Section 2, as defined by Bourdieu, as well as the author's considerations on the specificities of the scientific field. In Section 3, I analyze, within this framework, the constitution and development of the academic and scientific fields of Brazilian Accounting. I also propose comparisons with the area of administration that, due to the thematic affinity and common origin with Accounting in commercial schools, permits reinforcing the arguments presented. At the end of the article, in Section 4, I summarize the analyses made throughout the text and indicate topics that can be deepened in future research.

## 2. Field, Capital and Habitus

Throughout his work, the French sociologist Pierre Bourdieu extensively uses the concept of **field**. According to him:

> In analytic terms, a field can be described as a network, or a configuration of objective relations among positions. These positions are objectively defined in their existence and in the determinations they impose on their occupants, agents or institutions, based on their current and potential situation (*situs*) in the distribution structure of power (or capital) species whose ownership commands access to the specific gains being disputed in the field, and in their objective relationship with other positions (domination, subordination, homology, etc.) (Bourdieu & Wacquant, 1992, p. 97, our translation).

In each field, there is a constant dispute among different agents and institutions, which follows the regularities and rules that constitute this game space, granting the field with historicity characteristics. Depending on the conjuncture, the rules themselves can be a source of dispute; hence, the limits of a field are dynamic and each of them constitutes a potentially open space of dispute.

The access to the field is guaranteed to individuals with a specific configuration of proprieties, which Bourdieu (2002) defines as **capital**. He sustains that:

> Depending on the field it functions in and the costs associated with the more or less costly transformations that are a precondition for its efficacy in the field in question, the capital can take three fundamental forms: *economic capital*, which is immediate and directly convertible into money and can be institutionalized in the form of property rights; *cultural capital,* which is convertible, under certain conditions, into economic capital and can be institutionalized in the form of educational credentials; and *social capital*, constructed through social obligations ("connections"), which is convertible under certain conditions into economic capital and can be institutionalized in the form of nobility titles. (Bourdieu, 2002, p. 282, our translation).

Bourdieu (1989) also defines the **symbolic capital**, "generally called prestige, reputation, fame, etc., which is the perceived and legitimized form of the different kinds of capital" (pp. 134–135, our translation), and alleges that the specific effects of the different forms of capital depend on the field structure, that is, the unequal distribution of capital, making the concepts of capital and field inseparable as, "to construct the field, the specific forms of capital that operate in it need to be identified and, to construct the specific forms of capital, one needs to know the specific logic of the field" (Bourdieu & Wacquant, 1992, p. 108, our translation).

The study of a field comprises three interlinked moments: an analysis of the position of the field in relation to the power field (Bourdieu's reconceptualization of the notion of dominant class (Wacquant, 2013)); a mapping of the structure of relationships among the positions the agents or institutions occupy that compete over the legitimate form of specific authority in the field (Bourdieu & Wacquant, 1992); and an analysis of the agents' habitus, that is, "the different systems of arrangements they acquired, internalizing a certain type of economic and social condition, and which finds a more or less favorable opportunity to recycle in a trajectory defined within the field under consideration" (Bourdieu & Wacquant, 1992, p. 105, our translation).

By explaining how the rules of the field are appropriated by agents possessing different capital skills, the habitus provides for a theoretical bridge between the concepts of field and capital. Being a product of history:

> It guarantees the active presence of the past experiences that, deposited in each organism under the form of schemes of perception, thought and action, tend to guarantee the compliance of the practices and their constancy over time, more safely than all formal rules and explicit norms. (Bourdieu, 1980, p. 91, our translation).

Therefore, the habitus is one way of theorizing the social actions as products of a practical sense that is socially constituted, as opposed to notions of rational agency, providing an explanation of how the structure, which the habitus is the product of, governs the practices, not through mechanistic determinism, but through the imposition of limits and constraints on the behaviors that are considered convenient. Hence, in the analyses presented next in the text, when individuals' practices are identified with the positions they occupy in the field and the interests they represent, one is not casting doubt on their authenticity, as if these practices only derived from an instrumental reason, subject to convenient changes. This is only intended to reassert the theoretical proposition about the social constitution of the habitus, and that not only the social practices reflect the individuals' positions, but also that the individuals end up occupying these positions because they adapt to the practices they impose.

## 2.1 Scientific field

Bourdieu (1976) postulates that the scientific truth results from particular social production conditions, that is, from the structure and functioning of the scientific field. According to him:

> The "pure" universe of the "purest" science is a social field like any another, with its power relations and monopolies, struggles and strategies, its interests and gains, but where all of these characteristics take specific forms (p. 89, our translation).

The dispute in the scientific field is the monopoly of scientific authority, a particular kind of social capital understood as the ability to speak and act legitimately in matters of science. And the main characteristic of this field is the fact that producers tend, the greater the autonomy of the field, to have other possible clients than their own competitors. Thus, in a highly autonomous scientific field, an individual can only obtain recognition of the value of his products in the form of reputation, prestige, authority, etc., based on the judgment of his peers who, precisely because they are his competitors, will be likely to grant such benefits, but after accurate discussions and examinations.

In the struggle for scientific legitimacy, individuals in a dominant position in the field tend to adopt conservation strategies in order to perpetuate the established scientific order. Such strategies include not only the preservation of the institutions responsible for the production and circulation of scientific ideas, but also the control over those that reproduce the current scientific habitus, especially to educational institutions.

The postulants to positions of mastery, then, can adopt strategies of succession or subversion. Succession strategies aim to assure the individual, at the end of a predictable career, the gains promised to those who follow the established ideal of scientific excellence, limiting themselves to innovations circumscribed to the limits of the field and taking part in the exchange cycle of recognition by which the scientific authority is transmitted from generation to generation.

Subversion strategies, in turn, seek to redefine the rules of legitimation of domination, so that its adopters can start to accumulate capital without granting a counterpart to the dominant ones, denying them recognition. Such strategies present a greater risk of failure and require greater investment in scientific preparation, besides depriving those who adopt them of access to the available gains in the field, at least in the short term, because they will have the whole logic of the system against them.

Thus, Bourdieu (1976) suggests that there is a connection between the dispositions regarding the scientific order and the social order, and there is a greater propensity to adopt strategies of subversion by individuals coming from subaltern social groups. Moreover, the author also asserts that epistemological conflicts are always, inseparably, political conflicts, by means of which the occupants of a certain position seek to justify and discredit the opposing positions.

But the distinction between conservation and subversion strategies tends to diminish as the autonomy of the scientific field grows, as the acquisition of the scientific preparation necessary to promote ruptures depends on an engagement with the field itself. In this way, those who are more prepared among the postulants, instead of those who possess less scientific capital, become the most apt to question the foundations of the established order, and the scientific field turns into the stage of permanent revolutions. The capacity for rupture itself becomes a source of prestige and, thus, the search for truth prevails over the affirmation of the truth of each individual's interests.

Bourdieu (1976) further argues that the social sciences face greater obstacles to their autonomization than the natural sciences. While the natural sciences offer the possibility of economic use of technological advances, and the interest of the ruling classes is the product of this autonomy, the social sciences aim at the legitimate representation of the social world, which is also the object of dispute in the political arena of the class struggle.

Thus, Bourdieu (1976) understands that scientific disputes in the social sciences always have political implications, since any changes in the understanding of the social world will also be of interest in political struggles, making the idea of a neutral science a fiction. Because of these political implications, the dominant classes seek in the social sciences a reinforcement of the symbolic arsenal that legitimizes the established order, seeking to subordinate them to a relationship of dependence, but of apparent independence in relation to external demands. Thus, instead of scientific fields, the social sciences become fields producing scholarly discourses, characterized by a strategy of false rupture that uses scholarly jargon to reaffirm common sense.

## 3. Constitution of the Scientific Field in Brazilian Accounting

The arrival of the Portuguese court in Brazil in 1808 began a series of transformations in local society, culminating in the Proclamation of Independence in 1822. The first major movements of the accounting profession in Brazil, such as the publication of the first works on Accounting, the adoption of the double-entry system in public bookkeeping and the creation of the first trade classes (Peleias & Bacci, 2004). Throughout the 19th century, however, commercial education achieved little expansion. According to Peleias, Silva, Segreti and Chiorotto (2007), Commerce classes attracted few students, while other courses such as Law, Engineering and Medicine had a greater appeal among the socially most favored classes of the time.

Although the Court's Bookkeeper Association was officially recognized as early as 1870, it was during the Old Republic that efforts were made to recognize and regulate the profession. Led by personalities such as Carlos de Carvalho, Francisco D'Áuria, Frederico Hermann Junior, João Lyra Tavares, among others, in 1911, the Brazilian Journal of Accounting is created; in 1916, the Brazilian Institute of Tax Accountants and the Association of Accountants in São Paulo and the Brazilian Institute of Accountancy in Rio de Janeiro were created; and in 1924, the First Brazilian Accounting Congress took place (Peleias & Bacci, 2004).

Mendonça Neto, Cardoso and Oyadomari (2012) affirm that, "in this era [early 20th century], the elite of the occupational group already occupied a prominent position in the Brazilian society" (p. 399), joining members with positions in the State Treasury of São Paulo, in the National Treasury and in the Senate of the Republic, to which João Lyra Tavares was elected in 1914. The authors analyze the professionalization of Accounting in Brazil, using the Professional Project concept from the sociology of professions, which identifies the following steps in this project:

- A global goal established by the occupational group, which translates into the pursuit of a market **monopoly** of services based on their expertise and **status** in the social hierarchy;
- Secondary objectives include:
    - The establishment of a **jurisdiction**, i.e. the right of an occupational group to control the services it provides;
    - Control over the **qualification** process of the aspirants to the profession, which submits them to an appropriate selection and training system, being related to the monopolization of knowledge; and,
    - Construction of the social **respectability** of the profession (Mendonça Neto et al., 2012).

In pursuit of this professionalization project, the teaching of Accounting played a prominent role. According to Agrizzi and Sian (2015), the limited possibilities of commercial education and training were reasons for dissatisfaction among members of the first professional associations, and one of the objectives of the I Brazilian Accounting Congress was to persuade the authorities to require a higher level of Accounting practitioners. In the authors' view:

> This was at the top of the agenda because the recording of accounting information, as well as the preparation of accounting reports, were still viewed as work to be performed by less qualified individuals. Increasing standards of education and, therefore, competence was key to advancing the social status and remuneration of providers of bookkeeping and accounting services (Agrizzi & Sian, 2015, p. 64, our translation).

As from the Revolution of 1930, with the advent of the Vargas Era, a period has begun that can be described as state corporatism, characterized by a system of representation of organized interests in differentiated, singular, noncompetitive and functionally ordered categories, in that the State offers recognition and representational freedom to the categories, in exchange for the tutelage over the processes of selection of leaderships and articulation of demands (Rodrigues, Schmidt, Santos, & Fonseca, 2011). Thus, as of 1930, there was a proliferation of professional accounting associations by several Brazilian states, such as Pernambuco, Mato Grosso, Minas Gerais and Rio Grande do Sul (Peleias & Bacci, 2004).

Agrizzi and Sian (2015) consider that the relationship between state and unions at that time was highly asymmetrical: the government threatened to dissolve and impose fines on unions that did not comply with the standards it issued, making them appendices of the state and of public policy enforcement. Nevertheless, for occupational groups with low social status, such as accounting, the authors consider that the rewards offered, such as the institutionalized channels for access to decision centers, were advantageous. This arrangement of accommodation and mutual convenience, in which the state sponsored corporate associations in exchange for political support for the maintenance of the status quo, permitted the leaderships of categories with low social prestige to ascend to top positions in public management, and that, starting from these positions, they advocated in favor of the interests of their categories.

The submission of trade schools from 1931 to a national curricular standard and authorization and supervision by the Ministry of Education and Health dates back to the same period (Agrizzi & Sian, 2015). The same legal diploma, responsible for this reformulation of commercial education, according to Decree-Law No. 20.158, also regulated the profession of Accountant, granting its prerogatives to holders of diplomas awarded by officially recognized commercial education institutes, but allowing professionals with only practical experience to undergo qualification exams (Mendonça Neto et al., 2012).

Finally, in 1946, the Federal Accounting Council (CFC) and the Regional Accounting Councils were created by Decree-Law 9.295, consolidating the professional design of the category by guaranteeing its unity, recognition of its jurisdiction, of the need to obtain registration in the category to practice the profession, and expanding its monopoly (Mendonça Neto et al., 2012). The profession was divided into two distinct qualifications: Accountant, for those holding a university degree; and Bookkeeper, renamed in 1958 as Accounting Technician, aimed at holders of diplomas in secondary-level courses (Rodrigues, Schmidt & Santos, 2012).

In the same year of 1946, several Brazilian universities created Accounting courses (Rodrigues et al., 2011). The first was the course in Accounting and Actuarial Science (FCEA) established by the University of São Paulo Faculty of Economics and Administration (FCEA), later called Faculty of Economics, Administration and Accounting (FEA) (Peleias et al. 2007). The creation of this course was carried out under the influence of the São Paulo Accountants' Union and Professors Frederico Hermann Junior, Milton Improta, Atilio Amatuzi and Dirceu Rodrigues, members of the elite of the occupational group at the time (Mendonça Neto et al., 2012).

Thus, the entrance of Accounting into the Brazilian academic environment was due to the efforts made by professors who were also responsible for implementing such courses in universities. Hence, accounting courses were subordinated to the interests of the professional field, not only as part of the strategy of differentiation and conquest of status towards society as a whole, but also to the accumulation of cultural capital to be mobilized in conflicts within the profession, as:

> In this group, an elite that received formal education and occupied a privileged position in the social hierarchy coexisted with a large number of practitioners without formal education but with sufficient skills to perform simple bookkeeping services that were demanded at the end of the century and in the first decades of the 20th century. The existence, at the time, of associations exclusively destined to graduates in Schools of Commerce is a strong indicator of this divergence (Mendonça Neto et al., 2012, p. 403).

Even today, initiatives aiming to guide the teaching of Accounting occupy a large space in the agenda of the representative entities of the profession. The CFC in particular has made a number of efforts in this sense over the years:

- In 2000, the Board established the Examination of Sufficiency, with the proposal to "**evaluate the knowledge acquired by students** in the area of Accounting [our marks], so that, in case of approval, they receive professional registration" (Passos, 2004, p. 15), taking on a responsibility that, as a rule, is the responsibility of Higher Education Institutions (HEIs);
- Following the extinction of the Examination in 2004, as a result of legal disputes, the Council mobilized to request that it be legally established, which came to happen through Law 12249/2010 - according to the President of the CFC at the time, Mr. Juarez Domingues Carneiro:
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> The Exam **will demand from the Higher Education Institutions (HEIs)** [our marks], in general, a better qualification of its faculty, besides awakening in the future professionals the necessity and the responsibility to seek **deeper knowledge than what is offered nowadays in many Accountancy courses** [our italics] (Girotto, 2010);

- In May and June 2008, the CFC promoted courses in International Accounting for teachers of Accountancy courses from all Brazilian states. The deputy president of Professional Development of the CFC at that time, Mr. José Martonio Alves Coelho stated, at the opening of the two classes of the course that:

> Everyone knows that there is an established deadline for harmonizing accounting standards with the international standard. We did a survey and verified that few HEIs in Brazil do not even have International Accounting on their program. Concerned about this, President Maria Clara decided that **the CFC should act to disseminate knowledge on the new accounting practices** [our marks] (Santos, 2008b, p. 4);

- In 2008, the CFC elaborated a National Content Proposal for Undergraduate Programs in Accounting Sciences, with:

The purpose of being a contribution of the System - which joins the CFC and the 27 Regional Councils of Accounting - to Brazilian society, **proposing disciplines and contents** that reflect the current dispositions and that can satisfy the needs of the accounting professional in the knowledge age [our marks] (Santos, 2008a);

- From 2006 to 2015, the Board organized ten editions of the National Meeting of Coordinators and Teachers of the Accounting Sciences Course. At the opening ceremony of the tenth edition of the Meeting, the former Vice President of Professional and Institutional Development of the CFC, Mr. Zulmir Ivânio Breda, stated that:

> There is a rapid increase in the number of new courses in Accountancy in Brazil. On the one hand it is good, since they are more professionals in the market, but, on the other hand, we are worried because **we have to guarantee the quality of these courses. We would like to participate in the process of authorizing the new courses** [emphasis added], so that we can guarantee good professionals in the market (Arduini, Oliveira, & Rodrigues, 2015, p.17);

In general, CFC interference in accounting education has been well received by the national academic community, and even promoted by participants in prominent positions in this community, especially those linked to public HEIs, which are probably not aware of these initiatives as a threat to their autonomy, but as an opportunity to reinforce the symbolic capital those institutions enjoy.

On the other hand, the undergraduate courses in Administration have a markedly different origin than Accountancy programs. Nicolini (2003) points out the origins of the teaching of Administration in Brazil, also in the Schools of Commerce, in 1902, and emphasizes the creation of the higher education course of Administration and Finances, in 1931, but that granted its graduates the degree in Economic Sciences. Specific qualifications in Administration came only with the creation of the Brazilian School of Public Administration (Ebap) and the School of Business Administration of São Paulo (EAESP), in 1952 and 1954, respectively, both linked to Fundação Getúlio Vargas (FGV). These were preceded by visits of representatives of the institution to several public management courses at North American universities.

Based on the agreement signed in 1959 between the Brazilian and US governments, involving Ebap, EAESP, the Department of Public Sector Administration (DASP), the Federal University of Bahia (UFBA) and the Federal University of Rio Grande do Sul (UFRGS), scholarship holders from these institutions were sent to US universities, and a mission of US professors specialized in Public Management and business was received in Brazil, in charge of the implementation of teaching programs in Administration in Brazil, characterizing the development of these courses as a transfer of technology developed in the United States (Nicolini, 2003).

But it was only in 1965, after Law 4769 / 1965, that the profession of Administrator was regulated: 13 years, therefore, after the creation of the first higher level course in the area, and 19 years after the regulation of the profession of Accountant. Thus, while Accounting came "from the outside to the inside" of the universities, Administration went the opposite way, with the academic segmentation of the discipline preceding the differentiation of the occupational category and its establishment as a profession.

This difference of origin indicates that the relationship between the academic field and the professional field also differs between the two areas. Given the academic origin of the professional project of the administrators, it can be supposed that the quest for social status and for the construction of respectability of the profession essentially occurred through the academy. Thus, the discipline needed to gain prestige in the academic scope and, therefore, a sufficiently autonomous scientific field had to be established, favoring the characteristic axiological and epistemological diversity.

The expansion of the *stricto sensu* post-graduation in Management corroborates this line of reasoning. For the first time, Brazil organized this postgraduate modality in the early 1970s, and the Administration area followed its expansion from the beginning: in the late 1960s and early 1970s, programs emerged in Rio de Janeiro, São Paulo, Minas Gerais, Rio Grande do Sul and Paraíba (Bertero, Caldas & Wood Jr., 1999). In 1978, there were already 14 Master's and 4 doctoral courses in the area (Castro, 1981).

Accounting, then, followed a different route: in the same year of 1978, the first doctoral course was inaugurated at FEA / USP, which remained the only course of that level in the country until 2006, when there were only 15 master's degree courses in operation, 12 of which had been established since 1998 (Peleias et al., 2007). Unlike Administration, in Accounting, the profession had already legally guaranteed its monopoly when it entered the academic midst. Thus, the main function associated with the academy was apparently to control the qualification for access to the profession, and the accumulation of cultural capital by the academic midst was not an intensely pursued strategy.

Before entering the academic midst, Accounting was already the scene of conflicts of interest between professionals with formal qualifications in trade schools and those with only practical experience (Mendonça Neto et al., 2012). After the regulation of the profession in 1946, this conflict remained, now opposing the interests of professionals with training in higher education and technical training. Thus, the slow advance of post-graduation in accounting in the country may also have been influenced by symbolic disputes within the profession, characterized by the valuation of practical experience over academic qualifications, as illustrated by the following statement by the CFC president in 2003, Mr. Alcedino Gomes Barbosa:

> Teaching without experiencing the practice is equivalent to learning to swim by correspondence (the current distance learning). Learning the technique may be easy, but swimming without sinking is another matter.... Teachers are multipliers of knowledge and should therefore be experienced in what they are teaching. The alliance between theory and practice is, in a way, inseparable. The theoretical teaching dissociated from practice or vice versa will lead to the multiplication of "ignorance of something", the result of which can be catastrophic (A. G. Barbosa, 2003).

Another historical dispute in the field of Brazilian Accounting happened between the followers of the Italian school, which for more than 30 years had dominated professional training and influenced the pertinent legislation, and those of the American school, adopted and disseminated by FEA / USP since the late 1950s, a period of strong economic growth driven by the commercial partnership with the United States and the arrival of the automobile industry in the country (Rodrigues et al., 2012). From this conflict, it should not be forgotten that leadership positions in the Brazilian accounting academy have always been occupied by individuals of high prestige also in the professional environment: what was presented as a dispute of a theoretical nature can be interpreted as an expression of the different interests of different segments in the professional field, some identified with the market of local small and medium enterprises, others with public companies and the multinationals that arrived in the country at the time, bringing with them the great international audit firms.

In this dispute, the emphasis on post-graduation as a form of cultural capital accumulation was one of the strategies adopted by the segment under US influence, led by FEA / USP. But this segment also had close links with the professional field, with leadership positions in regulatory bodies such as the Central Bank of Brazil (BCB) and the Brazilian Securities and Exchange Commission (CVM), actively participating in the preparation of accounting standards, consulting and serving on the boards of private companies (Ribeiro, 2009). And what is expected of a regulator, a standardizer, a consultant and a counselor is to present solutions, unlike the scientific habitus, whose distinguishing feature is the ability to appoint problems.

Theóphilo and Iudícibus (2005), in an analysis of the Brazilian scientific production in Accounting, from 1994 to 1998 and from 1999 to 2003, argue that "in the first phase, theoretical works are predominant, adopting a normative posture and carrying out in-depth investigations, focused on proposing new ideas and views"(p.170). These characteristics are consistent with the argument that the lack of autonomy in relation to professional practices has made the Brazilian accounting academy not a scientific field, but rather a field that produces scholarly discourses, which has always sought to reaffirm such practices rather than question them. Even in the disputes between the different schools, Accounting itself was never criticized; if the practices adopted in the country were questioned, or those suggested by a competing school, this only happened to suggest different practices, but always articulated in favor of professional interests.

For the period 1999-2003, Theóphilo and Iudícibus (2005) affirm that "the most frequent kind of work ... is theoretical-empirical, presents a positive theoretical posture and conducts surface investigations, based on existing theories accepted by the scientific community"(p.170). This period coincides with the beginning of an accelerated expansion of stricto sensu postgraduate programs in Accounting in Brazil, which nowadays practically equates to Administration in proportional terms, as indicated by the data in Table 1, as well as a paradigm change in accounting research, with a decline in normative approaches and a predominance of positive approaches, also identified by Cardoso et al. (2007) and Borges, Rodrigues, Silva and Santana (2011), among others.

Table 1
**Indicators of the Administration and Accounting Areas**

| Indicator | Administration | Accounting | Administration/Accounting |
|---|---|---|---|
| Enrollments in undergraduate education[a] | 921,395 | 257,516 | 3.58 |
| Undergraduate programs[a] | 4,111 | 1,168 | 3.52 |
| Master's programs | 72 | 22 | 3.27 |
| Doctoral programs | 46 | 12 | 3.83 |

**Obs.** Sources: Coordination for the Improvement of Higher Education Personnel. (n.d.). *Plataforma Sucupira*. Retrieved on January 10th 2016, from https://sucupira.capes.gov.br/sucupira/ & Brazilian Institute for Educational Studies and Research Anísio Teixeira. (2015). *Sinopses Estatísticas da Educação Superior*: Graduação. Retrieved on January 10th 2016, from http://portal.inep.gov.br/superior-censosuperior-sinopse

[a] Data for 2013.

Together, the postgraduate expansion and the "positivist turn" in Brazilian accounting research suggest a process of greater autonomization of the scientific field in relation to professional practice. As for the expansion of post-graduation, however, one hypothesis to be considered is that it also reflects changes in the professional field. In addition to conflicts of interest between professionals with higher education and those with a technical level, which culminated in the extinction of the accounting technicians' registry as of 1/6/2015, as determined by Law 12.249 / 2010, it can be conjectured that the intensification of the conflict with other professions has led to a greater search to accumulate cultural and symbolic capital in the academic world as a strategy to maintain or expand the monopoly the category enjoyed. This understanding is supported by the role played by the CFC, which in 1994 established the Accounting Excellence Program, aiming to intensify the implementation of stricto sensu postgraduate courses in Accounting through agreements signed with HEIs recommended by the Coordination for the Improvement of Higher Education Personnel (Capes), offering financial support to the affiliated projects:

> At the origin of the Excellence in Accounting program, there is the realization that postgraduate education in Brazil was experiencing exceptional growth, which represents an auspicious gain in professional and academic quality but, **in the accounting area, this phenomenon was not occurring to the same extent** [our marks]. In addition, it was verified that the undergraduate course in Accountancy maintained a good demand of students and an expressive number of places in colleges all over Brazil, which did not occur with the *stricto sensu* postgraduate courses in the area (Santos & Girotto, 2006, p.18).

The positivist turn, which at first sight may indicate a rupture with the previous tradition in the field, seems to have elapsed not from subversion strategies by postulants to access, but rather from conservation strategies carried out by agents in dominant positions. Changes implemented by Capes in the Brazilian postgraduate evaluation system implied the de-accreditation of two graduate programs in accounting in 2004 (Peleias et al., 2007). In this scenario of external pressure, the rise of positivism played the role of "scientifying" the discourses of the field, allowing the access of their products to channels of disclosure already established in other disciplines and the emulation of these channels in the accounting journals, helping to preserve it.

The reading of Dias Filho and Machado (2004) and its list of references, however, witnesses that, at the time of that turn, contact with texts from the different branches that find space in the international accounting literature was already available. If such a turn represented, in fact, a process of autonomy gaining of the scientific field, it would be expected that the national literature would also be marked by the diversity of approaches from then on. What was seen, however, was an almost absolute predominance of positivism, which, with its reification of the status quo, under allegations of objectivity, allowed the Brazilian accounting academy to continue, now in the form of coefficients and levels of significance, to reaffirm interests of the professional field: endless studies of value relevance in order to "prove" the importance of accounting information; research problems that only take "the investor" and "the manager", or at most "the creditor", as parameters of interests; and insistence on issues related to the capital market, which the academic segment has always maintained close ties with, despite its lack of relevance as a source of financing and as an investment alternative in the Brazilian economy.

In my experience, in recent years, as a student of a postgraduate program in Accounting, I have noticed the emergence of a group of postulants that seems to adopt strategies of rupture in search of greater prestige in the academic field. Such a group is composed mostly of individuals whose careers are built essentially through the academic field itself, through the occupation of posts in the university bureaucracy, as opposed to those with greater experience in the professional field. There seems to exist a tacit agreement among the fractions in dispute though, whereby heretics are limited to related themes, such as history, education or gender and race relations, seeking to mobilize in the area a cultural capital accumulated from other disciplines, while the Orthodox hold tight control over issues that are dearer to the profession, such as regulation and accounting practices, so that Accounting itself is not the subject of questioning.

In view of this scenario, the prospects that such movements contribute to a greater autonomy of the scientific field in relation to the professional field do not seem promising to me. The orthodox segment is more able to co-opt the student clientele, as it controls a greater supply of external gains to the scientific field, and even rehearses a return to normativism. Such clientele is also divided into some segments: experienced professionals who seek cultural capital to return to the job market in a better position; teachers linked to public universities who aim for career progression; and recent undergraduates who still seek to enter the job market, but not necessarily in the academic world. In common, almost all share the view of research as a means to achieve other purposes, implying in the lack of intellectual ambition that motivates the investments in scientific preparation necessary to promote substantial changes in the field.

## 4. Final Considerations

To better understand the absence of a consolidated line of interpretive and critical research in Accounting in Brazil, I analyzed throughout this article the constitution of the scientific field in the area, using the academic literature, documentary sources and my own trajectory in this field as sources of evidence and using a sociological framework to interpret the low diversity of the scientific production in the area, pointed out by studies that are limited to bibliometric indicators or to epistemological aspects.

By adopting an abductive logic, I hypothesized that the low diversity observed in Brazilian accounting research is a consequence of the low autonomy of the scientific field in relation to the professional field: the organization of the profession preceded the establishment of the higher courses in Accounting, whose origins go back to efforts carried out by leaders of the professional field; ghe positions of prominence in the academic environment, over the years, were occupied by individuals with outstanding work also in the professional field; and representative entities of the profession, notably the CFC, are still conducting several initiatives aimed at guiding the teaching of Accounting, finding broad support in the academic environment itself. The prevalence of the positivist approach, in turn, can also be interpreted in the light of this lack of autonomy, since the reification of the status quo that is characteristic allows the reproduction, under an aura of scientificity, of the discourse coming from the professional field.

In the international literature, besides the influences of the accounting profession (Gendron & Bédard, 2001; Sikka et al., 1995), the power exerted by the editorial bodies of the journals has been pointed out as reasons for the lack of diversity in mainstream Accounting research (Baker & Bettner, 1997), as well as the linkage of academic career progression to publications in those journals (Hopwood, 2007, Humphrey & Gendron, 2015, Merchant, 2010), increased autonomy and, consequently, isolation from the field (Hopwood, 2007; Jeanjean & Ramirez, 2009), the reduction of research funding, the introduction of resource allocation criteria through academic performance indicators based on journal rankings, and a search for "internationalization" leading to the emulation of modes of thinking and conducting typically Anglo-Saxon research (Humphrey & Gendron, 2015).

But in the Brazilian context, although these other factors may help to understand how the prevalent paradigm is reproduced, I understand that they are not exclusive to the accounting area, also affecting related disciplines in which there is a greater diversity. Thus, the interpretation that the low diversity of Brazilian accounting research stems from a low autonomy in relation to the professional field is reinforced by comparisons to the Administration area, in which a community of critical researchers has established since the 1970s: the thematic affinity with Accounting, the origin of the academic field preceded the organization of the profession of Administrator, granting it a greater autonomy that is also reflected in greater paradigmatic diversity.

As in any analysis that covers such a long historical period in such a short narrative, I could not account for the whole diversity that characterized the constitution of the scientific field in Brazilian Accounting, needing to resort to generalizations that possibly do not do justice to all the actors involved in this process. The development of specific areas of the discipline, such as Management Accounting, and the influence of international academic scenarios, for example, are aspects that can be better explored in future research. The identification of the lack of autonomy in relation to the interests of the profession as the greatest impediment to expand the thematic, methodological and epistemological variety of the accounting research done in Brazil, in turn, contributes as an alert to the harmful effects that may arise from the constants calls for closer approximation between the academy and the accounting practice, if such approximation takes place under the current conditions of subordination of the scientific field to interests of the professional field.

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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<br>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 $R^2$<br>F-ANOVA | 0.71<br>27.95* | Durbin Watson<br>Pesarán-Pesarán<br>VIF/Tolerance | 2.15<br>0.58<br><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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# Teaching Case: Liquidity or Solvency, Who is to Blame? The Economic-Financial Analysis of a Financial Institution

## Abstract

**Objective:** The objective of this teaching case is to illustrate the use of liquidity and solvency concepts to support long-term strategic decision making.
**Method:** Through a teaching case, general and specific questions are analyzed for discussion in undergraduate and lato sensu graduate programs in Accountancy, Business Administration and Economics.
**Results:** Bank Y experienced the fast growth of its credit portfolio in recent years, based on a term extension strategy that was not accompanied to the same extent by its equity, leading to increased leverage and the compression of regulatory capital. Dissatisfied, the partners disagreed on the causes of the failure: a liquidity problem due to the credit portfolio extension strategy or a solvency problem as, besides non-liquid, was the portfolio also defaulting?
**Contributions:** The development of this analysis through a case study offers an additional perspective to understand the concepts involved, especially the liquidity and solvency of financial institutions, beyond the traditional problem-solving analysis.
**Key words:** Liquidity. Solvency. Risk. Decision making.

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## 1. Introduction

Bank Y is a medium-sized financial institution (FI), specialized in granting loans to companies in the middle market segment and in structured operations backed by bank credit bills (BCBs). BCBs can be held in a portfolio or assigned to investors and investment funds in which Bank Y holds part of the quotas. Its main sources of funding are time deposits and credit assignments to investment funds and pension funds.

Bank Y presented a rapid growth in the loan portfolio in recent years, supported by a term extension strategy. This growth was not accompanied to the same extent by its net equity, leading to an increase of its leverage and the compression of its regulatory capital. In view of the dilemma, represented by the capacity to originate credit in a volume that exceeds the regulatory limit to keep it in the portfolio, Bank Y has adopted the distribution of credit surplus to the regulatory limit to qualified investors, especially pension funds (directly or through investment funds), as a complementary business model. The disposal of such credit of course implied a substantial transfer of risks and benefits in order to eliminate the impact on the regulatory capital.

The strategy adopted by Bank Y, together with its business model, proved to be unsatisfactory though. The loan portfolio showed to be excessively long and possibly defaulted. The resulting potential losses could jeopardize the Bank's regulatory capital, which would send signals of difficulty to the market. Consequently, the risk of a "run" to deposits was one of the possible scenarios and, depending on the intensity of these redemptions, there would be no liquidity available to meet their obligations. In this case, intervention by the regulator would no longer be a risk but a certainty.

Aware of the condition of Bank Y, its partners disagreed as to its causes: would it be a liquidity problem as a consequence of the strategy of extending the credit operations, which allowed the bank to rapidly expand the portfolio; or would it also be a solvency problem as, besides being illiquid, the portfolio would also be in default, jeopardizing the foundations of the entity? It was essential to determine the answer, since the solution to be adopted would be different depending on this diagnosis.

Thus, the partners needed to decide what course to take. To assist in decision making, they hired an independent company to perform a due diligence process (investigation and audit). The work involved, in addition to an analysis of the figures in general, a specific analysis of the credit portfolio, which is the main business of the entity. As a result of this investigation, an opinion would be prepared on the situation of Bank Y, presenting proposals to solve the problems detected.

The justification for the present study is based on the fact that companies' liquidity and solvency are extremely relevant when it comes to decision-making in the analysis of entities' going concern, especially financial institutions. In this particular case, financial crisis events are capable of impacting the lives of millions of people. The subprime crisis in 2008, motivated by the granting of high-risk mortgage loans, culminated in the bankruptcy of the traditional Lehman Brothers investment bank and high state intervention in the US financial system. In this sense, the analysis of the solvency and liquidity indicators is fundamental in anticipating bankruptcy events that may unfold into systemic crises, largely affecting the financial system.

## 2. *Due Diligence* – General View of Bank Y

The due diligence procedure started with a baseline analysis of the bank's figures. Table 1 displays the evolution of Bank Y's main accounting balances.

Table 1
**Main accounting items between Dec/2013 and Dec/2016 (in million *Reais*)**

| Cosif | Accounting Item | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| 1.0.0.00.00-7 | ASSETS | 851 | 2,893 | 4,346 | 6,452 |
| 1.1.0.00.00-6 | Available cash | 6 | 16 | 76 | 54 |
| 1.2.0.00.00-5 | Liquid Financial Applications | 46 | 125 | 117 | 40 |
| 1.3.0.00.00-4 | Marketable Securities (MS) | 220 | 1,058 | 1,337 | 1,876 |
| 1.3.100.00-7 | MS - Free | 126 | 504 | 596 | 941 |
| 1.3.1.15.00-9 | MS – Investment Fund Quotas | 33 | 95 | 270 | 602 |
| 1.3.2.00.00-0 | MS - Others | 61 | 459 | 471 | 333 |
| 1.6.0.00.00-1 | Credit Operations | 462 | 1,592 | 2,729 | 4,410 |
| 1.8.0.00.00-9 | Other credits | 117 | 102 | 87 | 72 |
| 4.0.0.00.00-8 | LIABILITIES | 789 | 2,740 | 4,029 | 6,012 |
| 4.1.0.00.00-7 | Deposits | 509 | 1,996 | 3,002 | 4,479 |
| 4.9.0.00.00-9 | Other liabilities | 280 | 624 | 674 | 736 |
| 4.3.0.00.00-5 | Agricultural Credit Bills, Real Estate Credit Bills, Debentures | - | 120 | 353 | 797 |
| 6.0.0.00.00-2 | NET EQUITY | 62 | 153 | 317 | 440 |

Source: elaborated by the authors.

The data analysis reveals that Bank Y maintains high exposure to credit risk in its balance sheet, either directly through credit operations or indirectly, through quotas of funds backed by credit operations. Combined, the two instruments expanded their exposure to credit risk by approximately ten times in four years. On the other hand, the Net Equity (NE), as the basis of the regulatory capital, increased by only seven times, revealing an increase by 42% in the leverage of the credit portfolio in relation to the NE.

From the liquidity point of view, the information available in Table 2 is contradictory. While indices based on net assets (such as the ratio of net assets to NE and the ratio of net assets to liabilities) were relatively stable, when comparing the year 2013 with the year 2016, the free cash indices declined significantly. This drop is justified by the more rigorous criterion used in the calculation of the latter indices, which does not include investment fund quotas, which are considered in the indices based on net assets.

Table 2
**Liquidity indicators between Dec/2013 and Dec/2016**

| Accounting items | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Net Assets$^{\Psi}$ / NE | 438.7% | 783.6% | 482.6% | 447.7% |
| Free Cash$^{\omega}$ / NE | 287.1% | 421.5% | 248.9% | 235.2% |
| Liquidity Index(1): Liquid Assets/Liabilities | 34.4% | 43.7% | 37.9% | 32.7% |
| Liquidity Index 2): Free Cash/Liabilities | 22.6% | 23.5% | 19.6% | 17.2% |

$^{\Psi}$ Liquid assets are the sum of available resources, interfinancial liquid applications and marketable securities (MS).
$^{\omega}$ Free cash is the sum of available resources, interfinancial liquid applications and free marketable securities. Therefore, it excludes the fund quotas, which are not liquid assets.

Source: elaborated by the authors.

The liquidity ratio calculated based on the net assets dropped from 34.4% to 32.7%. As the share of investment funds in total Securities (MSs) increased from 15.0% in 2013 to 32.1% in 2016, the liquidity ratio (2) calculated based on the free cash excludes the fund quotas) dropped from 22.6% to 17.2%, representing a severe reduction in the liquidity of Bank Y. Thus, the risk of Bank Y not satisfying the possible redemption of its funding left it at imminent risk of a liquidity crisis.

Table 3 below shows the performance of Bank Y's Basel Capital Index (IB) and Reference Equity (RE), as well as its main components. The observed values in relation to these indicators are much less worrisome than the liquidity observed in Table 2. The reduction of the IB from 17.6% in 2013 to 14.5% in 2016 is understandable and reveals a concern with the profitability of the capital, and does not indicate a solvency problem, since the value of IB for 2016 (14.5%) was well above the regulatory floor of 11%.

Table 3
**Behavior of regulatory capital and solvency indices between Dec/2013 and Dec/2016 (in million *Reais*)**

| Accounting items | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Reference Equity (RE)$^{\Psi}$ | 124 | 289 | 587 | 869 |
| RE Level I$^{\Omega}$ | 83 | 227 | 499 | 747 |
| RE Level II$^{\omega}$ | 41 | 62 | 88 | 122 |
| Basel Index | 17.6% | 11.7% | 13.8% | 14.5% |

$^{\Psi}$ the reference equity is the sum of RE Level I and RE Level II.
$^{\Omega}$ RE Level I comprises the sum of the Core Capital and the Complementary Capital, and corresponds to the less volatile part of the NE, such as the social capital and the profit reserves.
$^{\omega}$ RE Level II comprises the FI's Subordinated Debt, and corresponds to the more volatile part of the NE, such as the capital reserves and the equity valuation adjustments.

Source: elaborated by the authors.

The composition of the accounting profit in the last four years reflects the transformation the equity structure of Bank Y underwent in the same period. The accelerated growth in the Bank's activities, especially the credit portfolio, increased the net income from R$ 8.6 million in 2013 to R$ 89.4 million in 2015. As a reflection of the revenues from the credit portfolio, the investment in securities and the provision of structuring services for credit operations (sale of credit operations to investment funds), profitability reached 19.7% of the NE in 2015.

In 2016, despite a significant increase in its financial intermediation revenues, Bank Y recorded a net profit 29% lower than in the previous year, due to the increase in estimated losses with uncertain settlement credits, funding expenses and administrative expenses. In fact, administrative expenses corresponded to more than twice the result of the Bank's financial intermediation. In addition, pre-income tax profits were 85% lower than in the previous year, as shown in Table 4.

Table 4
**Income statement between Dec/2013 and Dec/2016 (in thousands *Reais*)**

| | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| Income from Credit Operations | 207,446 | 161,354 | 466,906 | 722,036 |
| Earnings from Expenses and Reversals of Provisions for Bad Credits | (12,043) | (75,381) | (92,867) | (172,633) |
| Earnings from Marketable Securities | 42,609 | 66,976 | 121,715 | 191,178 |
| Earnings from Currency Exchange and Investments in Foreign Currencies | 39,629 | 24,043 | 30,831 | 36,388 |
| Revenues from Financial Intermediation | 277,641 | 176,992 | 526,585 | 776,969 |
| Funding Expenses | (124,366) | (136,977) | (342,917) | (556,865) |
| Exchange Expenses | (3,075) | (16,083) | (15,502) | (25,334) |
| Expenses from Financial Intermediation | (127,441) | (153,060) | (358,419) | (582,199) |
| INCOME FROM FINANCIAL INTERMEDIATION | 150,200 | 23,932 | 168,166 | 194,770 |
| Revenues from Services | 66,164 | 142,605 | 141,872 | 195,046 |
| Income from Equity Holdings | (72) | 51,688 | 135,366 | 145,985 |
| Other Operational Revenues | 591 | 1,075 | 2,651 | 8,429 |
| Administrative Expenses | (189,820) | (135,262) | (320,838) | (470,473) |
| Other Operational Expenses | (17,535) | (23,774) | (46,830) | (60,494) |
| Other Operational Income / Expenses | (140,672) | 36,332 | (87,779) | (181,507) |
| OPERATIONAL INCOME | 9,528 | 60,264 | 80,387 | 13,263 |
| Non-Operational Revenues | 1,476 | 531 | 3,920 | 10,164 |
| Non-Operational Expenses | (38) | (340) | (821) | (11,303) |
| Non-Operational Income | 1,438 | 191 | 3,099 | (1,139) |
| INCOME BEFORE INCOME TAXES | 10,966 | 60,455 | 83,486 | 12,124 |
| Income Tax and Social Contribution | (2,381) | (12,028) | 5,962 | 51,105 |
| NET PROFIT | 8,585 | 48,427 | 89,448 | 63,229 |

Source: elaborated by the authors.

After the closing of the year ended December 31, 2016, the shareholders convened an Extraordinary General Meeting (EGM) to discuss the situation of Bank Y. They realized that they needed to review their strategy and, consequently, their business model. For this purpose, the EGM decided to hire a company specialized in financial analysis and auditing. This company should issue an exempt opinion, especially on its credit portfolio, since there was no consensus among the members about the reasons that led Bank Y to the current situation.

## 3. *Due Diligence* – Specific View of Bank Y: the Credit Portfolio

The significant increase in Bank Y's credit portfolio occurred as a consequence of the concession of excessively long operations and with financial flows displaced to the end of the contracts. Such a portfolio configuration imposed on the entity a condition of low cash generation in credit assets, requiring successive rolling of liabilities until maturity. From the regulatory point of view, the Bank's strategy was profitable, as long and illiquid operations are well remunerated and the reflection on results and regulatory capital was positive. From the liquidity point of view, however, it represented high exposure to a potential crisis of confidence that would drain deposits, in addition to the risk of default.

In view of the above, the case of Bank Y is emblematic. The expressive growth of its credit portfolio focused on long operations, mainly associated with the development of real estate projects. These operations are characterized by the shift of the receipt flows to the end of the contracts, on average of three to five years, when the projects reach maturity, as well as by the low participation of other banks in the financing of the operation. The combination of these characteristics created two problems for Bank Y: (i) the maturity mismatch between assets and liabilities, which imposes successive rollovers of liabilities until the maturity of the assets, which is considered critical for banks that do not have an agency network and therefore do not have easy access to stable liabilities; and (ii) the low visibility of the client's credit risk, as the low frequency and the low representativeness of the payment flows prevent close monitoring and delay actions aimed at risk mitigation and / or credit recovery.

Table 5 presents the evolution of the share of exclusive clients (debtors of Bank Y only), concentrated (more than 90% of exposure in the national financial system of these clients is due to Bank Y) and common (exposure is shared with other FIs) . The share of common customers in Bank Y's portfolio dropped from 70.4% in Dec/2013 to 45.5% in Dec/2016, which was absorbed by exclusive and concentrated customers, which increased from 29.2% to 54.4% in the same period.

Table 5
**Distribution of the credit portfolio (AC) by client situation between Dec/2013 and Dec/2016 (in thousands *Reais*)**

| | Dec/2013 | | Dec/2014 | | Dec/2015 | | Dec/2016 | |
|---|---|---|---|---|---|---|---|---|
| Clients' Situation | AC | % | AC | % | AC | % | AC | % |
| Exclusive Clients | 54,072 | 11.7 | 210,183 | 13.2 | 439,421 | 16.1 | 1,076,071 | 24.4 |
| Concentrated Clients | 80,877 | 17.5 | 374,190 | 23.5 | 679,602 | 24.9 | 1,323,038 | 30.0 |
| Common Clients | 325,358 | 70.4 | 1,004,739 | 63.1 | 1,607,572 | 58.9 | 2,006,608 | 45.5 |
| Other | 1,849 | 0.4 | 3,184 | 0.2 | 2,729 | 0.1 | 4,411 | 0.1 |
| Total | 462,156 | | 1,592,296 | | 2,729,324 | | 4,410,128 | |

Source: elaborated by the authors.

The Central Bank of Brazil requires FIs to rank their credits in nine levels, in descending order of risk, including credits that are not overdue (AA and A), delays of up to 60 days (B and C), delays between 61 and 120 days (D and E) and delays above 121 days (E and onwards). Table 6 presents the behavior of the distribution of Bank Y's credit portfolio by risk levels between December 2013 and December 2016. An increase in the portfolio portion classified at the worst risk levels (D onwards) is observed, which rose from 3.9% to 59.7% of the total in the period. In addition to long maturities and all the resulting liquidity consequences, the bank's portfolio also presented problems of default, which made it doubly problematic.

Table 6

**Distribution of the active portfolio by risk levels between Dec/2013 and Dec/2016 (in thousands *Reais*)**

| Risk level | Dec/13 | | Dec/14 | | Dec/15 | | Dec/16 | |
|---|---|---|---|---|---|---|---|---|
| | CA | % | CA | % | CA | % | CA | % |
| AA | 81.339 | 17,6 | 584.373 | 36,7 | 1.154.504 | 42,3 | 136.714 | 3,1 |
| A | 176.544 | 38,2 | 487.243 | 30,6 | 892.489 | 32,7 | 687.979 | 15,6 |
| B | 160.830 | 34,8 | 328.013 | 20,6 | 251.098 | 9,2 | 471.884 | 10,7 |
| C | 25.419 | 5,5 | 108.276 | 6,8 | 207.429 | 7,6 | 480.704 | 10,9 |
| D | 5.546 | 1,2 | 30.254 | 1,9 | 51.857 | 1,9 | 851.155 | 19,3 |
| E | 1.849 | 0,4 | 41.400 | 2,6 | 40.940 | 1,5 | 723.261 | 16,4 |
| F | 462 | 0,1 | 1.592 | 0,1 | 68.233 | 2,5 | 335.170 | 7,6 |
| G | 4.159 | 0,9 | 158 | 0,0 | 27.293 | 1,0 | 401.322 | 9,1 |
| H | 6.008 | 1,3 | 10.987 | 0,7 | 35.481 | 1,3 | 321.939 | 7,3 |
| **Total** | **462.156** | | **1.592.296** | | **2.729.324** | | **4.410.128** | |

Obs.: i) AC, active credit portfolio; ii) the risk levels AA, A, B, C, D E, F, G and H require minimal provisions on the debt balance of the operations, corresponding to 0%, 0.5%, 1%, 3%, 10%, 30%, 50%, 70% and 100%, respectively.

Source: elaborated by the authors.

Table 7 presents the Credit Realization Index (CRI) of seven FIs during the second half of 2016. The CRI is the ratio between the flow received in the credit portfolio, i.e. the total repayments and the expected flow. Therefore, it represents the percentage of financial realization associated with the loan portfolio in the month. Bank Y has a significantly lower IRC than the other banks, all of them operating in the same market segment. This indicator is of very immediate interpretation and denotes a frustration in Bank Y's expected receivables, which are well below its main competitors. In the second half of 2016, the indicator did not exceed 60% in any month, while its worst competitor in this area, Bank 5, had no CRI lower than 70%.

Table 7

**Behavior of the CRI among Peers between July 2016 and December 2016 (in %)**

| Bank | Month 1 | Month 2 | Month 3 | Month 4 | Month 5 | Month 6 |
|---|---|---|---|---|---|---|
| Bank 1 | 92.0 | 93.5 | 86.8 | 93.5 | 93.6 | 94.9 |
| Bank 2 | 89.7 | 90.0 | 84.9 | 102.2 | 92.5 | 90.1 |
| Bank 3 | 89.4 | 93.4 | 86.2 | 93.4 | 90.0 | 87.8 |
| Bank 4 | 72.7 | 79.0 | 83.6 | 83.0 | 84.1 | 83.9 |
| Bank 5 | 71.1 | 79.6 | 71.8 | 70.5 | 79.8 | 73.8 |
| Bank 6 | 83.6 | 78.2 | 75.6 | 76.9 | 76.3 | 79.1 |
| Bank Y | 58.4 | 46.8 | 47.4 | 51.5 | 53.1 | 59.0 |

Source: elaborated by the authors.

Table 8 complements the strictly financial analysis initiated in Table 7. While the former confronts actual and expected receipts, it says nothing about the relevance of these receipts to the total portfolio. A high CRI, denoting the actual fulfillment of the expected receipts, may represent an insignificant percentage of the portfolio and, finally, may be less representative in financial terms than a smaller CRI, but substantial compared to the credit stock that originated it. Thus, for a complete financial view of the credit portfolio, It is necessary to consider the Credit Liquidity Index (CLI), which relates the received flows to the credit stock, reflecting how much of the portfolio was monetized in the month. Bank Y presents a negligible CLI compared to its competitors, without reaching a CLI of more than 1% in the last six months of 2016, while its worst performing competitor (Bank 5) did not have a CLI below 3.3%. Assuming that this is standard behavior, the effective maturity of the portfolio would be infinite, which means that its balance would grow indefinitely, as the received values do not even match the appropriate interests in the operations.

Table 8
**Behavior of the CLI among Peers between July 2016 and December 2016 (in %)**

| Bank | Month 1 | Month 2 | Month 3 | Month 4 | Month 5 | Month 6 |
|---|---|---|---|---|---|---|
| Bank 1 | 7.7 | 6. | 8.4 | 11.4 | 7.0 | 9.2 |
| Bank 2 | 6.7 | 7.2 | 4.8 | 8.8 | 8.1 | 8.7 |
| Bank 3 | 6.8 | 6.6 | 5.2 | 5.7 | 5.9 | 7.6 |
| Bank 4 | 5.6 | 5.7 | 4.6 | 6.3 | 4.2 | 8.7 |
| Bank 5 | 5.4 | 6.4 | 5.8 | 6.4 | 3.3 | 4.2 |
| Bank 6 | 7.2 | 6.0 | 5.8 | 6.1 | 5.5 | 6.2 |
| Bank Y | 0.2 | 0.2 | 0.2 | 0.3 | 0.6 | 0.9 |

Source: elaborated by the authors.

Bank Y definitely does not generate enough cash to maintain the bank's business, which needed to turn to other means to honor its needs for cash.

The due diligence had not been concluded yet when the partners, concerned with the increasing problems and the tension involving the bank's businesses, requested the material produced thus far for them to judge the bank's situation.

## 3. Questions for discussion

To develop the case, next, general and specific questions are proposed with a view to reaching the objective of the exercise.

### 3.1 General questions

1. What is the role of the solvency-based banking regulation and how does it intend to minimize the risk of bankruptcy of banks?
2. As the "raw material" of the banking industry is liquidity, how does it contribute to the economic-financial analysis of a FI?
3. After all, is Bank Y's problem related to solvency, liquidity or both?

### 3.2 Specific questions

1. The text describes the mismatch between the growth of the NE and of the operational assets (credit operations and investment fund quotas) in detail. What measures could Bank Y consider to reduce this asymmetry?
2. In view of the strategy Bank Y adopted and assuming that there are no restrictions on the action of banking regulators, what measure could the latter have imposed and what could have avoided the excessive mismatch of maturities Bank Y assumed?
3. As the low liquidity of Bank Y's credit portfolio derived not only from the operation extension strategy in search of higher returns, but also from the default, what measure could the bank have taken to acknowledge its losses without this indicating financial problems?

## 4. Teaching notes

In this topic, the characteristics and actions are presented that permeate the teaching case proposed here. Initially, the educational objectives are presented, followed by the theoretical framework, a suggestion for a teaching plan and, finally, the analysis of the general and specific questions for this case.

### 4.1 Educational objectives

This is an instrumental case, centered on the analysis of the implications of variables associated to the concepts of liquidity and solvency, involving a banking firm. The case presents the evolution of the entity's operating behavior, with emphasis on the credit portfolio. The case was conceived for discussion in undergraduate and post-graduate courses in accounting, business administration and economics.

As a requirement for the discussion of the teaching case in the classroom, it is necessary to revisit the concepts of liquidity and solvency, in addition to others specific to the banking industry. In this way, a revision should be done from a generalist perspective, along the lines of the traditional economic-financial analysis, as well as from a specific perspective, considering the particularities of the banking segment. There is also a brief discussion about the conceptual justifications for regulating a market and the instruments adopted in banking regulation. Issues such as the crises that have affected financial institutions, especially the most recent ones, can be addressed, culminating in a much greater regulation in this market, demonstrating the sensitivity of this segment.

With these elements at hand, students will be able to easily proceed in the case and, at the end of the course, will be able to understand: (i) the implications of solvency and liquidity in the financial equilibrium of an FI; (Ii) the implications of the mismatch of liquidity in an IF; (Iii) the consequences of excessive extension and low cash production of a credit portfolio for the liquidity risk of an FI; and (iv) the impossibility of solvency-based banking regulation to capture the liquidity risk incurred by an FI.

## 4.2 Theoretical framework

### 4.2.1 Causes of bankruptcy: the dilemma between solvency and liquidity

Banks are converters of maturities: converting net liabilities into illiquid assets is the reason for the existence of a bank and is also the characteristic that enables financial intermediation (Diamond & Dybvig, 1983). The role of liquidity provider assumed by the banks implies the internalization of the transformation of maturities into the figure of the liquidity mismatch though and, consequently, they become vulnerable to the runs on banks. Minsky (1986) addressed this structural mismatch in his "Financial Fragility Hypothesis," in which banks are considered intrinsically fragile, since the maturity horizon of assets is necessarily longer than that of liabilities, requiring the rolling of the latter in some cases. The greater the mismatch, the greater the financial fragility of the entity.

Financial institutions promise their current account clients instant access to their money and, at the same time, make long-term loans to companies and individuals. This incompatibility between the liquidity of the bank's liabilities (deposits) and most of its assets (loans) is only possible because the number of depositors is large enough so that the bank can be sure that all clients will not withdraw their money (Brealey, Myers & Allen, 2011).

An operating and healthy financial system is essential to economic development. Successive bank failures throughout history have motivated the constitution of safeguards that would minimize the effect of these events on the economy. The first of these countermeasures was liquidity assistance, later called the "Last Resort Loan", and the creation of central banks as the bodies responsible for coordinating such interventions. Subsequently, depositor protection, a limited liability insurance, was established to compensate depositors of insolvent banks. Finally, and more broadly, banking regulation was set up, a set of regulatory and supervisory mechanisms for the purpose of prudential action and avoiding bankruptcy. Despite this, there are several cases of FIs that, even after the most severe regulation, went bankrupt.

There is no consensus, however, about the events that trigger bank failure, and as a consequence, the regulation of this sector oscillates between different approaches of debatable practical effect: sometimes the focus is on the transformation of maturities, and regulation turns to liquidity; sometimes the focus is on the protection of the depositor and the regulation turns to solvency.

In the past, in order to minimize the liquidity mismatch between assets and liabilities, the financial system was sliced into specific market niches, which could be exploited by defined types of financial institutions. This model of "financial architecture" was adopted in a mild version in the United States (Glass-Steagal Law / 1933) and in a more severe version in Brazil, according to Law 4595/1964. In the Brazilian version, liabilities were also predefined, limiting the mismatch of liquidity by force in various market niches.

More recently, the protection of the depositor, as a strategy to minimize the risk of a looting race, came to dominate the regulatory scenario, consolidating a solvency view. The minimum risk-based capital requirement, as defined by the Basel Capital Accords, has become the central regulatory axis. The international financial crisis unleashed in 2008 and the failure of regulation to anticipate it, or even to minimize its effects, necessitated a revision of the then-current approach. Although regulation based on risk / solvency has undergone several repairs, it has not been abandoned. However, the pendulum swung back into liquidity and the outlook is for a joint solvency / liquidity approach to be implemented in the coming years.

Another important aspect in the comparison between solvency and liquidity refers to the nature of the information that composes these indicators. The Basel Index (BI), considered the solvency indicator par excellence, is economic in nature and presents a strong accounting bias. Its training dynamics privilege accounting balances and results, leaving behind the financial aspects intrinsic to banking activities. It is therefore liable to be manipulated insofar as there is broad discretion in the calculation of the accounting profit in the banking activity, or in the adjustment to the market of financial assets and liabilities (especially those of level 3 in the hierarchy of fair value, which are measured by means of internal premises and not data observable in the market, with a high degree of subjectivity), or in the constitution of provisions for estimated losses with uncertain settlement credits. And this possibility gains certainty as the BI is the internationally accepted sign of bank health. Thus, maintaining the BI at satisfactory levels, or at least above the regulatory floor, is a survival strategy adopted by FIs (Francis & Osborne, 2012). On the other hand, liquidity indices can be elaborated based on less manipulative and therefore more reliable information, especially in the banking segment, where liquidity reserves are usually made up of easily verifiable financial assets. It is therefore assumed that liquidity indices have an explanatory potential higher than BI, in case the economic and financial situation of FIs is valued. Moreover, as highlighted by Brealey et al. (2011), we should take into account when assessing the liquidity of a company that assets that are apparently liquid have a bad habit of becoming illiquid, as occurred during the subprime mortgage crisis in 2008, when some financial institutions created funds known as structured investment vehicles (SIVs), issuing short-term debt backed by residential mortgages. As mortgage default rates began to rise, the market for these debt securities was no longer attractive and investors, forced to sell their papers, found that such securities were worth less than half the face value.

### 4.2.2 Credit and its implications for solvency and liquidity

The average maturity of a credit portfolio is very illustrative of the implications of solvency and liquidity for the stability or fragility of a financial institution.

Disregarding credit risk and, by extension, the effect of estimated losses with uncertain settlement credits, the lengthening of the credit portfolio does not in any way compromise the appropriation of income. On the contrary, since the appropriation of income is competence-based and independent of the cash generation, the accounting result produced by the credit portfolio will be better the longer the average term of this portfolio, since it will be exposed to the effect of interests. The same reasoning is applicable to the reflex on the regulatory capital, whose central element is the NE, and the most relevant input is the accounting income. The extension of the credit portfolio, therefore, has positive effects on both the result and the regulatory capital, which derives from it.

The same is not true for the liquidity of this portfolio, considered here from the cash generation perspective. Minsky (1986), in his "Hypothesis of Financial Fragility", proposes the existence of three types of financing structures for active positions in the market: hedge, speculative and ponzi. These structures are characterized by different relationships between the expected cash flows arising from the company's operating activity or the financial assets it holds, and the cash flows to be disbursed to honor obligations contracted to finance them.

The hedge structure presents temporal compatibility between the cash flows of the assets and the liabilities that finance them, being insensitive to external liquidity shocks, that is, it is financially stable. The speculative structure, in turn, presents an unfavorable mismatch between the active and passive cash flows and requires that the liabilities be refinanced until the assets mature and generate enough cash to honor them. This structure is vulnerable to external liquidity shocks, since the refusal of creditors to roll their positions would lead to default of the firm. Finally, the ponzi structure is the illiquidity extreme of the spectrum, in which the assets do not generate any cash generation in the assets until they mature. In this period, the liabilities will have to be refinanced indefinitely, until enough cash is generated to honor them.

Delimiting the generalization of Minsky (1986) for the banking industry and limiting cash-generating assets to credit portfolios, we observed the coexistence of the three financing regimes with predominance of the speculative regime. In this sense, it is reasonable to assume that the composition of credit portfolios under the financing regimes is a fundamental condition to determine the degree of financial stability of the FI and the financial system as a whole. In this sense, the greater the participation of speculative and ponzi regimes in the credit portfolio of a FI, the greater its vulnerability to external shocks and the lower its financial stability.

The analysis of financial structures proposed by Minsky (1986) as credit assets would make it possible to rewrite them as follows: (i) credit operations that finance activities that generate sufficient cash to meet the contractual commitments constitute a hedge structure; (Ii) credit operations that finance activities that generate cash in the long term and require constant short or medium term refinancing correspond to the speculative structure (the feasibility of this structure depends on cash generation capable of honoring debt interests and normal market functioning, allowing the principal of the debt to be renegotiated); and (iii) credit operations that finance activities based on the value of the guarantees constituted rather than the anticipation of the expected cash flows constitute a ponzi structure. The feasibility of this financing structure, which may arise from a renegotiation of a speculative unit that has deteriorated, depends on the expected value of the asset given as collateral (Minsky, 1986).

To illustrate the argument, we simulate the behavior, from the point of view of the result and the liquidity (cash generation), of a bank whose only asset is a loan portfolio, shown in Figure 1. The credit portfolio in question obeys a ponzi financing structure, with no payments, neither interest nor principal, in the window of analysis.

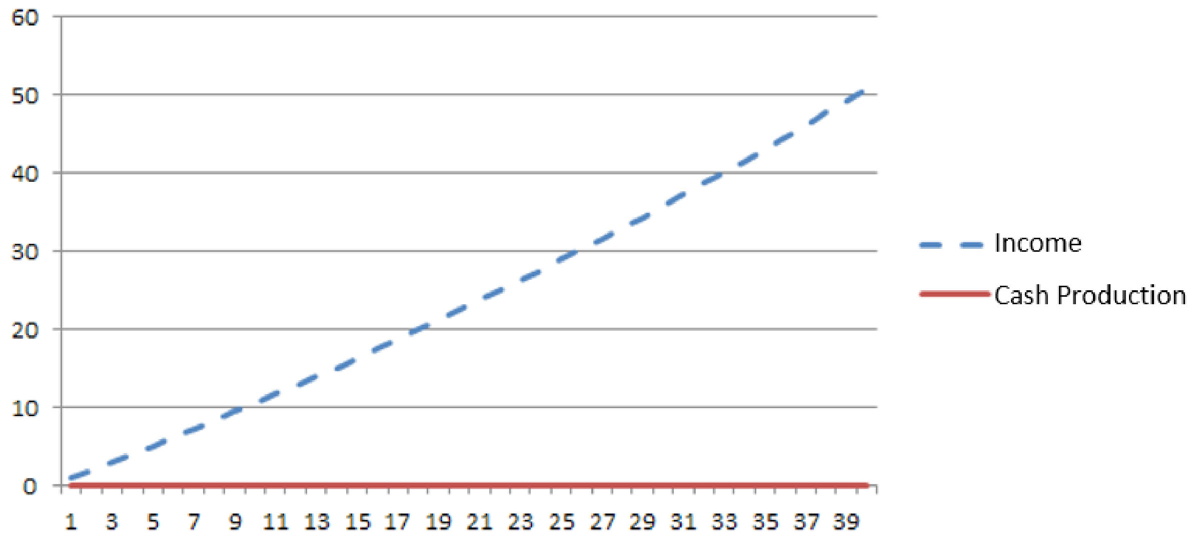


**Figure 1.** Accounting income and cash production of an asset with infinite maturity

Source: elaborated by the authors.

The behaviors of the income and cash generation are radically opposite: while the appropriate result in the credit portfolio expands significantly, cash generation is zero. As a consequence, the capital of the entity and, consequently, its solvency is inflated, whereas there is no liquidity, as the asset in question is illiquid. Thus, the maintenance of illiquid assets contributes to make the entity more solvent, although illiquid, the opposite of what should be expected for an FI. It is clear that, as the credit portfolio becomes more illiquid, the FI becomes more dependent on the willingness of its creditors to finance it. In other words, the more illiquid, the greater the FI's financial fragility to external shocks.

## 4.3 Suggested teaching plan

This case was designed for use in a 120-minute session, involving the discussion of liquidity and solvency concepts and its implication for the feasibility of a banking firm. The case study should be carried out with students familiar with concepts of economic-financial analysis, since the discussion extrapolates the general concepts of liquidity and solvency to the peculiarities of a financial institution.

The information presented in the case, especially regarding the credit portfolio, does not belong to the students' daily life. Therefore, the case must be delivered in advance to be studied and to consult the bibliography in advance. The discussion of known events of bankruptcy or "bankruptcy" of financial institutions, in addition to the serious financial crises behind them, is also interesting and will motivate students' greater involvement in the case.

The session can start by discussing the case in small groups for about 30 minutes. The objective of this initial phase is to ask the students to opine on the liquidity and solvency situation of Bank Y and the reasons that underlie this position. At the end of this phase, the teacher can ask a general question to the class, such as: "After all, is the problem of Bank Y solvency or liquidity?", presenting the reasons that support both options.

It is quite reasonable that there is a polarization between the alternatives and the role of the teacher will be to mediate this discussion by offering elements that corroborate or refute the assertions formulated. The teacher will be able to exemplify the students' arguments with known cases of bankruptcy of financial institutions, relating them with liquidity or solvency, as the case may be.

The outcome of the case should not focus on the choice of either alternative. As seen in item 4.2.1 of the theoretical framework, liquidity and solvency are related and non-antagonistic concepts. The decisive argument lies in the greater efficiency of the assessment of an entity's economic and financial situation from the standpoint of liquidity than from the standpoint of solvency, especially in the case of a financial institution, since liquidity involves fewer and less discretionary judgments, being based on elements that are, in general, more easily observable, closer to market reality. On the other hand, solvency is the consequence of judgments not necessarily observable. The result component that contributes significantly to the establishment of solvency derives from the accrual basis, which, as noted in item 4.2.2 of the theoretical framework, may lead to erroneous conclusions regarding the financial equilibrium of an entity, all the more if the subject of analysis is a financial institution.

## 4.4 Proposals for further questions

### 4.4.1 General questions

1. Solvency-based regulation is based on the premise that there would be optimal capital, which would be sufficient to support the risks incurred by a financial institution. This capital must correspond to at least 11% of the risk-weighted assets, in accordance with the Basel II Capital Accord. The application of this minimum percentage guarantees a maximum leverage of 9.09 times between risk-weighted assets and regulatory capital.
   By limiting the exposure to risk at the level of each banking firm, it is intended to minimize its risk of bankruptcy and, by extension, the risk of contagion of this bankruptcy to the other banking firms, the so-called systemic risk.

2. Liquidity provides a more accurate measurement of a bank's economic and financial situation and could act in a complementary way to solvency. Banks are financial intermediaries and, as such, theoretically dismiss the need for capital, since they only transfer liquidity between the surplus and deficit agents of the economy. When accessing assets of the company, however, they expose depositors to a risk of loss that should be minimized. Hence the various safeguards adopted, one of them being the minimum capital or regulatory capital. Solvency is a static indicator though, which does not effectively reflect the dynamics of financial intermediation. Indicators such as the cash flow generation of the credit portfolio, which is an indicator of dynamic liquidity, are more appropriate to inform about the bank's credit risk, as well as its expectation regarding the behavior of the economy as a whole. As observed in the case of Bank Y, the fact that an FI is liquid according to the index established in the Basel Accord does not necessarily imply that it has sufficient cash generation to maintain its operations.
3. The difference between liquidity and solvency is more in the temporal dimension than in the conceptual one. It is as if liquidity behaves as a short-term solvency. In addition, time is in charge of converting one into the other. According to Goodhart (2008), liquidity and solvency are twin and often indistinguishable. An illiquid bank can quickly become insolvent and an insolvent bank illiquid. What is important to point out is that the referral of the problem is different. If the diagnosis were of a liquidity problem, the bank could also extend its liabilities and limit the creation of new long credit operations. Progressively, the maturity mismatch and the resulting liquidity risk would be minimized. In the case of a solvency problem, the solution would involve more drastic measures, such as a capital contribution from the partners and the immediate recognition of losses in credit operations. These arguments will be explored in the specific questions.

### 4.4.2 Specific questions

1. The origination of Bank Y's credit, at a higher rate than the increase in its capital, was enhanced by the strategy of extending the credit portfolio. The longer a credit, the more time is required for its financial settlement. The maintenance of credit for a longer time in the balance sheet generates more credit income, but it imposes regulatory capital, since credit is a risky asset with significant weighting. Thus, one way of minimizing the mismatch between risky assets (credit) and regulatory capital would be to reduce the average maturity of the credit portfolio, offsetting Bank Y's appetite for new origins.
   Its strategy of investing in pension funds should also be criticized, since such investments are less able to offset credit risks, since their funding is long-term and there is a greater risk of default.
2. The maturity mismatch is a liquidity problem par excellence. Thus, the regulator could have imposed objective limits on the lengthening of the loan portfolio, minimizing the liquidity risk.
3. Credit portfolio default is a solvency problem. Thus, the repairing measure necessarily involves the recognition of these losses, which must be done concomitantly with a capital contribution compatible with these losses. This measure would be very interesting, since it would also address the issue of liquidity, capital contributions to financial institutions being necessarily made in cash.

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Articles containing tables or figures, they [the tables and figures] should be in a format that allows them to be edited. In case some of these Figures or Tables have been imported from other programs such as Excel, Power Point etc.., the source file must also be sent as Supplementary File.

Do not use expressions like id., ibid., op. cit., loc. cit. and the like, or reference notes and footnotes. Notes at the end of the text are acceptable, but should be avoided.

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- An **abstract** written in the language of origin of the article (Portuguese or English) with at least 150 and at most 200 words, single space between lines, in four paragraphs containing the following elements, highlighted: **Objective, Method, Results and Contributions**. At the end of the abstract should be placed **three to five** keywords;
- The article itself, written in Portuguese or English, with at least 5,000 and at most 9,000 words, including tables, figures, notes and references.
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- A4 paper (210 x 297 mm);
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- Paragraph input: 1.25;
- Margins: 3cm top, 2cm bottom, 3cm left, 2cm right;
- Tables and figures in Times New Roman, size 10;
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Tables and figures should be used in articles whenever their information make text comprehension more efficient, without repeating information already described in the text.

### 3.1 Tables

The table should usually show numeric or textual information organized in an orderly exposition of columns and rows. Any other statement should be characterized as textual figure.

The table should be displayed with its information visible and sufficient for their understanding and should be formatted as follows:

| | |
|---|---|
| Table editor | Word for Windows 97 or superior. In case authors have drawn their tables in Microsoft Excel or in a similar program, please remake the tables using the feature in Word. |
| Font | Times New Roman, size 10. |
| Line spacing | Simple. |
| Spacing before and after paragraphs | 3 pt. |
| Table colors | Use only black and white (grayscale). |
| Title | The table title must be brief, clear and explanatory. It should be placed above the table, in the top left corner, and on the next line, just below the word Table (with a capital initial), followed by the number that designates it. The tables are presented with Arabic numerals in sequence and within the text as a whole. Eg: Table 1, Table 2, Table 3, and so on. |
| Citation of tables | When citing tables in the text, type only the number referring to the table, for example Table 1, Table 2, Table 3 and so on. (the word 'Table' should be presented with the first letter capitalized). Never write 'table below', 'table above' or 'table on page XX' because the page numbers of the article may change while formatting. |
| Table notes | The font used in the notes of the table should be Times New Roman, size 10, single spaced. The notes should be described in the footnote of the table, and they serve to indicate the Source of the information of the table, and other information important to understanding the table. |

1 Most of these guidelines were adapted from the Manual for Submissions of the *Revista de Administração Contemporânea* – RAC, available at www.anpad.org.br.

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The figure should show a flow chart, a chart, a photograph, a drawing or any other illustration or textual representation.

The figure should be displayed with its information visible and adequate for its understanding, and should be formatted as follows:

| | |
|---|---|
| Font | Times New Roman, size 10. |
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| Format | Figures should be submitted in an editable format. |
| Title | It explains the figure concisely, but discursively. The title should be placed under the figure and numbered with Arabic numerals in sequence, preceded by the word Figure (with initial capital). Eg: Figure 1, Figure 2, Figure 3, etc. After the title, any other information necessary for clarification of the figure or source must be added as a note. |
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