Accounting and Management Review

Revista de Contabilidade e Gestão

ISSN 2795-4412

No. 27, 2023
Published by OCC
DOI https://doi.org/10.55486/amrrgg.v27i1

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Accounting and Management Review
Revista de Contabilidade e Gestão
No. 27, 2023
pp. 5-7
Published by OCC
DOI https://doi.org/10.55486/amrrgg.v27i1.0

ISSN 2795-4412

www.accountingmanagementreview.occ.pt

EDITORIAL

After almost two decades of existence of the Accounting and Management Review (AMR) - Revista de Contabilidade e Gestão, dedicated entirely to the publication of research articles, this volume introduces a new organizing logic for its content. This change in its editorial line is part of AMR's concern to reach a larger and more diverse number of readers, helping to bridge the recognised gap between academia and practice. Therefore, in addition to the usual peer-reviewed articles, the content of the journal is now wider with the inclusion of supplementary publications of interest for practitioners and academics. The new content envisaged for AMR, encompasses articles written by eminent scholars from national or foreign universities on topics of highly recognised relevance and importance; technical reviews by specialists; book reviews of works of importance and potential impact in the field of accounting and/or management; extended doctoral abstracts by Ph.D. students; and calls for papers for national and international conferences, and special issues of academic journals.

Volume 27 embraces the new format, beginning with the article by Professor Trevor Hopper from the Universities of Sussex, Essex and Victoria, Wellington. In his article entitled “What is accounting? What should it be? What should we profess and teach?”, Professor Hopper opposes to allegations that accounting scholars pay scarce attention to the needs and problems of practice, arguing the converse, i.e. that there has been little interest for accounting research by accounting educators and instructors within universities and professional courses. According to him, the neglect of theoretical, philosophical, and moral foundations of accounting and of its incorporation into courses threatens opportunities for advancing accounting practice, therefore causing intellectual and practice stagnation, and doubts on claims that accounting profession bases on scientific knowledge and on a rigours ethical code.

The volume continues with the presentation of four peer-reviewed articles. The first article is entitled “Action at a distance: Accounting and the Company of Grão Pará and Maranhão” and it is authored by Ofélia Pinto who bases on an extensive archival analysis to develop the research. In the paper, the role of accounting in managing an 18th century multinational Portuguese company, whose activities were located in three distinct geographical locations (Lisbon, Western coast of Africa and Pará and Maranhão in Brazil) is explored, drawing to this end on the concept of ‘action at a distance’. The study discusses the use of accounting to manage the company’s resources from a distance, claiming how a system of remuneration and incentives was put in place to align the company’s overseas administrations with its targets.

The next peer-reviewed article (title: "Relationship of the rating of the companies with the forecast error of market analysts"), is authored by Rafael Gatsios, Gabriella Ribeiro, Fabiano Lima and Vinicius Magnani, and adopts a different perspective, exploring the area of capital market, and the topic of analysts' forecasts. The researchers seek to assess the existence of a relationship between the rating and the earnings forecast error of market analysts using as methodology panel data analysis. Drawing on a sample of 44 companies selected from the Thomson Reuters® platform (I/B/E/S database), the study shows that companies with better credit rating risk have lower error in their earnings forecasts.

In article three, entitled "Cash conversion cycle across industries: Airlines versus fast-moving consumer goods industry", Bárbara Costa and Leonor Ferreira look at days inventory outstanding, days sales outstanding and days payables outstanding to assess whether cash conversion cycle differs between airlines and fast-moving consumer goods industry. Based on data retrieved from Bloomberg and supplemented from the analysis of annual reports of 23 fast-moving consumer goods companies and 20 major airlines companies operating worldwide, the authors perform univariate and bivariate (correlation) analysis. Findings evidence that not only days inventory outstanding, days sales outstanding and days payable outstanding directly affect the cash conversion cycle, as well as other factors, namely the inventory costing system, the bargaining power with suppliers and customer credit policies.

José Ribeiro, Francisco Ribeiro and Fernando Ribeiro are the authors of the fourth peer-reviewed article (title: "The impacts of IFRS 16 on airlines"). Highlighting the scope of IFRS 16, which aims at the standardization of a single accounting model for all leases in order to increase the transparency and quality of information provided to company's stakeholders, the authors base on a sample of 12 airlines from several countries in Europe and South America to analyze the impact on companies' assets, liabilities, EBITDA, leasing policies, autonomy and solvency ratios following the adoption of IFRS 16.

The technical review reported in volume 27 is written by Salvador Marin, President of EFAA for SMEs and member of the Sustainability Reporting Board of EFRAG, and by Carlos Menezes, a board member of EFAA for SMEs. The authors discuss the role of SMPs (accountants) in face of the requirements posed by the new Corporate Sustainability Reporting Directive 2022/2464/EU (CSRD), and the first set of European Sustainability Reporting Standards (ESRS – EU). A summary of the main challenges as well as, opportunities and responsibilities for accountants (SMPs) associated with the new sustainability regulatory environment is provided, with the authors arguing that accountants should be prepared to advise companies,

institutions and other entities on how to adopt sustainable management practices and improve sustainability performance.

In the following section of the volume, a review of the book "European Public Sector Accounting" (2nd edition), edited by Peter Lorson, Susana Jorge and Ellen Haustein (2023) is offered by Patrícia Gomes, who claims that the book serves different purposes and audiences: teaching at the undergraduate and graduate levels; research on the public sector; and refection about the EPSAS project by policy-makers.

The extended doctoral abstract by Adriana Silva (title of her doctoral thesis: "The enforcement of accounting standards and the quality of financial information") is presented next. In the doctoral abstract, Adriana describes the four research papers that are part of her thesis, the methodologies and theoretical perspectives that she adopted to investigate the enforcement of accounting standards in Portugal, and its impact on the quality of financial information.

The volume ends with the presentation of calls for two conferences (the IV International Congress of Public Sector Accounting, 14-15 March, 2024 and the International Congress of Accounting History - The Cultural and Social Dimensions of Accounting: An Historical Perspective, 10-11 October, 2024) as well as, a call for the special issue on "The Cultural and Social Dimensions of Accounting: An Historical Perspective".

Wish the reader of the Accounting and Management Review a pleasant reading of volume 27 and that its content provides him/her a valuable perspective on some of the current debates on accounting research and practice.

Maria João Major
Editor-in-Chief of the Accounting and Management Review

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Accounting and Management Review
Revista de Contabilidade e Gestão
No. 27, 2023
pp. 9-31
Published by OCC
DOI https://doi.org/10.55486/amrrgg.v27i1.1

ISSN 2795-4412

www.accountingmanagementreview.occ.pt

HIGHLIGHTED PAPER

What is accounting? What should it be? What should we profess and teach?

Trevor Hopper[a]

ABSTRACT

Differences between accounting researchers and many accounting practitioners and professional institutions on what constitutes the domain of accounting has grown considerably over the past fifty years. In contrast to the frequent allegations that accounting researchers pay insufficient attention to the needs and problems of practice, this paper argues the converse, namely that accounting education and training within universities and professional courses neglect accounting research. This has consequences for the legitimacy of accounting as a profession, inhibits developing skills sought by prospective employers, and can blind practice to the emergence of important new issues.

Recently, there have been calls from academics to redefine accounting. In addition to including technical practices, they seek greater emphasis on ethics, morality, theory, sustainability, and accountability. This broader, interdisciplinary approach focuses on public rather than private interests; seeks broader, often non-financial reporting on sustainability goals; serving a wider range of stakeholders; and devising new processes of accountability, especially to empower civil society groups. Illustrations of these themes are explored in the paper. It concludes by offering ways to reform accounting courses. Ideally academic and professional leaders could devise, on an equal footing, courses leading to qualification as a professional accounting that better serve the needs of employers and utilise scientific academic research. Failing this universities could offer two accounting degrees, one emphasising technical material and exemptions from professional examinations, and another more oriented to contemporary accounting research and develops skills sought by employers relating to communication, continuous learning, critical analysis, and multi-functional teamwork.

Keywords: Accounting; Ethics; Morality; Education; Sustainability; Accountability.

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1. Introduction

Within academia there has been a growing movement to redefine what accounting is, what it should be, and what should be taught, as reflected in previous articles in this journal, especially McPhail (2022), Parker and Troshani (2022), and Sangster (2022). Together they reflect upon tensions and divisions within universities researching and teaching accounting on their relationship to accounting professional institutions, especially regarding course content. In contrast to commentaries alleging how academia neglects the needs of practice, this article argues that many accounting professions' continuing neglect of accounting research and failure to incorporate it into courses, especially but not only for entry into the accounting profession, threatens the accounting profession credentials. Its techniques should be based on scientific knowledge and a failure to engage with contemporary research may stymy opportunities for advancing accounting practice.

Much of the accounting profession differs from many other professions, especially law and medicine, as it primarily serves the interests of private and corporate clients rather than other stakeholders, such as employees, and society generally. This furthers tensions between the profession and academia, which is more oriented to serving the public interest, and furthering and diffusing knowledge, rather than owning it privately for commercial gain. Moreover, unlike other major professions' knowledge, much accounting taught and practised lacks a sound and generally accepted theoretical basis. Yet academic accounting research in the past fifty years has made major strides in this respect, albeit without achieving any consensus upon ascertaining a single dominant theoretical approach.

2. What is accounting?

Clear, accepted, and precise definitions of accounting are essential for defining its ends, scope, and purpose (Carnegie et al., 2021); and thence what is taught by professional institutions and university accounting departments and what falls within the domain of accounting practice. However, the definition of accounting has become controversial. Carnegie et al. (2021) complain that current definitions, despite variations, need updating because they overly emphasise technical matters. Hence their alternative definition portrays accounting as ‘a technical, social and moral practice concerned with the sustainable utilisation of resources and proper accountability to stakeholders to enable the flourishing of organisations, people and nature.’ (Carnegie et al., 2021, p. 69). If accounting is so viewed then they claim its knowledge base must incorporate contemporary accounting scholarship, especially inter and multi-disciplinary work. They argue that these changes would help challenge the stigma of accounting being boring, accounting work being

tedious and involving daunting hours; and would help attract and train future leaders wishing to change the world for the better. Others have argued for a similar exercise for research and courses in university departments (Hopper, 2013, 2019). Alongside this are longstanding findings that much accounting education, whether in university courses or for professional qualification, fails to develop skills that prospective employers desire. Few potential employers would disagree that technical knowledge should be imparted, but they also value highly social skills such as communication and teamwork, and the capacity for critical analyses, problem-solving, continual learning, and working in multi-functional groups. However, developing these skills are often neglected in training oriented to the technical (American Accounting Association, 1986).

In summary, there are divisions between academic researchers and professional associations over what accounting is, for accounting researchers have extended its remit beyond the normal domains of accounting tasks, issues, and systems; and what accounting should be, especially whether it should primarily serve private or public interests, and primarily concentrate on financial reporting or also provide non-financial information on sustainability goals. The answers to these questions have profound implications for what professional associations and university accounting departments profess and teach.

3. The accounting profession and the neglect of research

Accounting researchers are frequently criticised for having little impact on accounting practice or accounting education, As Lee (1989, p. 238) commented, 'accounting research activities do not appear to have had a major part to play in shaping the content of professional education programmes or the conduct of accounting practice, despite continuous concern that the opposite is the case. A considerable proportion of research appears to exist in increasing isolation from education and practice.' He reproduces the common presumption that research should serve practice, often to solve short-term pressing problems. This assertion needs challenging.

Until the late 1960s accounting research was primarily normative – it sought to improve practise and was relatively theory free. Ball and Brown's (1968) seminal paper fostered a major switch, especially amongst North American accounting academics, from normative to descriptive, economistic research. Market-based research employing mathematical and statistical methods, theoretically based primarily on neo-classical economics, and primarily focussed on financial reporting, grew considerably, e.g., investigating the impact of financial reporting content upon firms' stock prices. This major change in academic focus, especially in the USA, grew further with the rise of positive theory research initially popularised by

Watts and Zimmerman (1978), which extended to management accounting. This too adopts an economic approach, namely agency theory, to studying accounting, depicting relations as essentially contractual and presuming that managers act in their self-interest. Together this research seeks to explain and predict which firms will or will not use a particular accounting method and its effects, but it does not prescribe which should be use or what may be in the public interest. Not all the economic, empirical, and highly quantitative accounting research since the late 1960s has explicitly adopted positive theory, but it normally claims it is scientific, objective, descriptive, value free, and pursues data-driven statistical methods. The focus has lain on corporations, capital markets, governance, and controls. This market-based research has made significant contributions, e.g., identifying the stock price effects of changes in financial reporting, and factors influencing management compensation contracts, and capital structure of firms. It has been influential, e.g., upon the policies of international accounting standard setters and financial regulators, and since the 1970s it has dominated the contents of the earliest and prestigious accounting research journals from the USA, especially the *Journal of Accounting Research* and *the Accounting Review*.

Other academics, especially from Europe and Australasia, have been criticised this trend, and the subsequent exclusion of alternative theories (particularly within the social sciences), important topics (e.g., history, behavioural issues), and other research methods (especially qualitative ones) by these journals. They take issue with their claim that the quantitative, economics-based research is value-free, objective, and neutral, pointing out how it is impossible to avoid value judgments when choosing research topics and designing and executing research studies. Moreover, the claim that it only explains and *predicts* what people might do ignores what they *should* do, i.e., it fails to consider what may be in the public interest. For example, concentrating on capital market effects of accounting disclosures, and assuming managers and owners invariably pursue their (often conflicting) self-interests to maximize their wealth, neglects their possible adverse effects, and fails to recognise how accounting is an instrument of power and control that helps create, shape, and legitimise understandings of the world that favour corporations and privileged sections of society. For example, value-added financial reporting which makes employees' contribution more transparent, was abandoned in jurisdictions such as Italy, due partly to the strictures of standard setting bodies pursuing market-based accounting policies.

Critics of the status quo, of which the author is one, advocate for accounting that serves a wider range of stakeholders and issues cognate not just to corporations and capital markets, but also civil society, and non-private institutions, such as government and non-governmental organisations (NGOs). Extending the scope of issues investigated has flourished, especially accounting to improve accountability

and to foster sustainability. In the 1980s important research journals specialising in, or willing to include research on such topics, e.g., *Accounting, Organisation and Society*, the *Accounting, Auditing and Accountability Journal*, and *Critical Perspectives on Accounting*, and associated academic networks have emerged, especially from Europe and Australasia. More new journals of a similar ilk, too many to list, sympathetic to alternative avenues of research have followed. Much of this research falls within the umbrella term of 'interdisciplinary accounting research'. Now some of these newer journals have high impact and citation scores internationally.

The growth of interdisciplinary accounting research has had a major impact upon what topics some academic accounting researchers are investigating; the research methods adopted; the countries, regions, and type of organisations investigated; the stakeholders being served; and the theoretical approaches adopted, The topics pursued are too numerous to fully enumerate but they include behavioural and organisation theory approaches to management accounting; investigating corruption; developing human rights, employee, and decent work accounting; the measurement and conception of risk; the role of accounting in aiding development in poor countries; how civil society actors can create counter accounts to challenge government and corporate reports, e.g., when 'greenwashing' occurs; and whether new public sector management principles incorporating private sector practices, e.g., outsourcing, and output-based accounting performance measures, within some government sectors, e.g., health and education, has proven effective. Inter alia, it has revealed how accounting changes can have unanticipated and sometimes undesirable consequences, often ignored in conventional, traditional accounting courses. They may not always bolster efficiency and rationality as purported in textbooks. Instead, they may be used for external legitimation, post-decision rationalisation, criminalising political opponents, and to aid creative problem-solving.

Today interdisciplinary accounting research has expanded the domain of what accounting is and should be beyond the traditional domain widely taught and practised. Consequently, what many academics regard as accounting and what it should be, can differ substantially from that of practitioners. The interdisciplinary accounting research community argue that acting morally, ethically, and in the public interest, should be central to accounting, whether in academia or the profession, and both should pursue a broader societal mission. However, incorporation of this work in professional and many university degrees has often been minimal, partly because narrowly trained academics and professional accountants lack exposure to this work, or have dismissed it as irrelevant, impractical, or financially unproductive. Sometimes this is justified, but there are many instances where accounting research has identified and extensively

researched new topics that subsequently became pressing for practice. For example, social and environmental accounting research that emerged in the 1970s, was then considered as marginal and even eccentric in mainstream circles.

Now the profession is beginning to incorporate it into its domain. If new avenues of inquiry and practice created by interdisciplinary accounting research is not incorporated into accounting education and training, then further developments in practice may be stymied.

Unfortunately, the gap between conceptions of accounting knowledge held by accounting professions, practitioners and some accounting teachers, and accounting researchers, especially those within the interdisciplinary movement, is frequently large and may possibly be growing. This is worrisome for accounting being deemed a profession rests upon its practices lying on a complex and scientifically determined body of knowledge. If the practices enacted and taught neglect research employing rigorous research methods, then they may lack theoretical and empirical validation. Theories are vital to understand what accounting methods may be effective or not, and why. For example, research on divisionalisation and transfer pricing based on operational, economic, and behavioural theories clearly indicate how, why, and under which circumstances, which accounting treatments will be effective or not. If accounting knowledge has no theoretical base this does not mean it lacks value but rather, as Gambling (1977) observed, relegates its techniques as having properties akin with witchcraft – spells, lotions and accounting prescriptions that may work despite not knowing why. This is troublesome for a profession claiming unique expertise and exclusive rights to perform some tasks. Its reputation rest on beliefs that its practices derive from a sound knowledge base, but this is not invariably so. For example, there is a long history of management accounting innovations, such as activity-based costing and balanced scorecards, being quickly adopted within accounting syllabuses and prescribed for businesses by accounting firms before they have been rigorously tested. This would be unacceptable in professions such as medicine with respect to new drugs or treatments.

If accounting education and training fails to incorporate contemporary research, then this can produce intellectual and practice stagnation. There is often a long-time lag between pathbreaking and ‘blue skies’ research being incorporated, if at all, in technically and practice-oriented accounting education. However, if students are not exposed to such research and are just taught technical material, then developing the critical analysis, problem-solving, and continuous learning skills valued by potential employers will be inhibited, and may render practitioners unable to access, appreciate, evaluate, or apply new developments.

4. What should we profess and teach?

4.1 Technical practices

The revised definition of accounting by Carnegie et al. (2021) recognises that technical practices are a part of accounting knowledge. Probably few involved in accounting education would deny that teaching these are essential. Rather the argument of reformers is that they overly dominate courses, are unnecessarily detailed, and are too numerous. Instead, they argue that the important aim is to understand basic systems and concepts. A fuller understanding of these can be gained experientially and from rigorous academic reflection during coursework on practical issues encountered in the workplace. Too often accounting syllabuses adopt a 'tick box' approach of trying to cover multiple rules, regulations, and systems, some of which may be unlikely to be encountered in practice, may change, or be similar. Moreover, given the rise of enterprise reporting systems and computerised accounting packages, the accounting methods used may be predetermined and difficult to change. The dangers of overly stressing technical matters are that knowledge gained may be superficial, transitory, and push out other important topics. Given the sheer volume and the constant expansion of new systems, rules, regulations and issues, the most important pedagogical aim is to impart a basic understanding of the concepts and theories underpinning these and imparting continuous learning skills.

4.2 Accounting as a social and moral practice

An area where this is relevant, not least to developing critical thinking and creativity, is accounting as a social and moral practice. Interdisciplinary research has illustrated how accounting can be an instrument of power and control. It is neither neutral nor objective as often portrayed but helps create, shape the world, and legitimise practices (Hopper et al., 2015), e.g., what is reported on and how – why is say financial data and profit prioritised over say value added per employee?

The inability to be totally neutral and objective is not attributable to malicious intentions by accountants or others (though it can be) but because philosophically and psychologically this is impossible though we can strive to be more so. We make choices on what systems we profess and exercise, to whom we serve, to what ends; and we are prone to selective perceptions and seeking cognitive balance. Hence, we tend to exclude and ignore views contrary to our own. An important aim of higher education is offsetting this by exposing students to and making them more receptive to competing viewpoints regarding the role and nature of accounting, some of which may run contrary to their own beliefs.

According to Tsahuridu and Carnegie (2018: 1), 'Accounting is seriously misrepresented … if … seen only as technical practice. Accounting is a practice that

underlies and enables organizational action and much of human activity. In this way, accounting is fundamentally a social practice, which guides and influences the behaviour of people in organizations and society, thereby impacting our lives, as well as organizational and social functioning and development. When we understand the full dimensions of accounting, we also get to appreciate how morality is at its core.'

Most accounting associations recognise this and have adopted or adapted codes of ethics recommended by international federations to govern members' behaviour. For example, the International Association of Accountant's (AIA) code of ethics states each AIA member should follow five principles:

- Integrity - You must be straightforward and honest in all professional and business relationships.

- Objectivity - You must not compromise professional or business judgment because of bias, conflict of interest or the undue influence of others.

- Professional competence and due care - You must maintain professional knowledge and skill (in practice, legislation and techniques) to ensure that a client or employer receives competent professional service.

- Confidentiality - You must not disclose confidential professional or business information or use it to your personal advantage, unless you have explicit permission to disclose it, or a legal or professional right or duty to disclose it.

- Professional behaviour - You must comply with relevant laws and regulations, and avoid any action that may bring disrepute to the profession.

The document claims, 'The AIA's robust membership requirements and disciplinary framework adds additional reassurance and protection to the businesses that rely on accountancy services. All accounting professionals must act in the public interest using their professional judgement and skills to build trust in the profession. It is for these reasons that AIA members are expected to engage with and apply the fundamental ethical principles to ensure:

- The client's needs are met.
- The public interest is not compromised.
- Risk is properly managed.
- All parties are treated fairly.

The above is admirable and reasonable but limited. It fails to satisfy those wanting accounting to serve more stakeholders and institutions (see Taylor & Williams, 2021). The only clients mentioned are businesses and there is little on the pursuit of the public interest other than not acting disreputably and abiding within laws and regulations.

In my experience the accounting curricula of professional associations and some universities increasingly cover ethics, albeit somewhat cursorily, by informing students of professional codes of ethics or, more extensively, requiring students to analyse case studies containing ethical issues. This is welcome but whether it significantly changes potential behaviour in the workplace is debatable. A more comprehensive approach that permeates the entire curricula is likely to be more effective. However, to bolster this the curricula needs courses informed by philosophical, ethical, sociological, and other social science material. Following academic accounting research over the past fifty years there is now an abundance of work relevant to such a course.

Unlike the legal profession and law schools, accounting has failed to create a branch of knowledge equivalent to jurisprudence - the philosophy and theory of law. This primarily covers what the law is and what it should be. It includes questions of how people and social relations are understood in legal terms; the values exercised in law; its systems, institutions, and principles; how legal knowledge is derived - whether implicitly or explicitly from theory and science; and its application within the legal system and societies. Its roots go back two thousand years across different jurisdictions worldwide. Many of its schools, as in most social sciences, are diverse and sometimes conflicting. Academic research in accounting, albeit much more recent, has schools of thought resembling those in jurisprudence, e.g., it too has positivist, critical and interpretive schools, to name a few. This is not just an academic pursuit. The philosophical approach adopted by professional decision-makers has practical consequences. For example, the rift between theories of living constitutionalism and originalism within USA courts, including the Supreme Court, is not merely an esoteric debate among judges but affects controversial judicial decisions such as abortion laws. Accounting regulation is similarly affected, though accounting training plays little heed to this. For example, the International Accounting Standards Board’s (IASB, 2018) updated conceptual framework seeks to provide a theoretical basis for formulating accounting standards, but this has attracted criticism from academics. For example, Zhang and Andrew (2022), arguing from a critical perspective, claim it aligns ‘the purpose of financial reporting with the demands of finance dominated capitalism (p. 3) and they dispute ‘whether [its] financial market-oriented notions of the public interest will ever be capable of addressing the grand challenges facing contemporary society, such as wealth inequality and the climate crisis’ (p. 4).

It is not the purpose of this article to adjudicate who is right in such disputes but rather to reinforce how morality is at accounting's core, and acting ethically and serving the public interest is central to a profession. Moreover, accounting is inevitably a social practice as it entails making choices that have socio-economic repercussions for different constituencies. For example, some critics, e. g. Sikka et al. (1989), have argued that often accounting concentrates on satisfying decision makers' (financial) information interests without morally evaluating their social consequences, e.g., the effect of tax avoidance schemes that heighten inequality in societies, and their effects upon employees and communities. The failure of accounting courses to rigorously examine the theoretical, philosophical, and moral foundations of practice, despite the now large body of relevant work by academics, is concerning and renders the claims of accounting to be a profession based on scientific knowledge and a rigorous ethical code questionable. Also, it stymies students developing critical skills of analysis and formulating new conceptions and techniques of accounting.

4.3 Addressing sustainability

In 2015, the United Nations General Assembly adopted seventeen Sustainable Development Goals (SDGs) to succeed the Millennium Development Goals, most for achievement by 2030, though some have no end date. They seek *within 15 years a world free of poverty and hunger, and safe* from the worst effects of climate change. The SDGs cover: no poverty; zero hunger; good health and well-being; quality education; gender equality; clean water and sanitation; affordable clean energy; decent work and economic growth; promoting industry, innovation and infrastructure; reducing inequality; sustainable cities and communities; responsible consumption and production; action on climate change; protecting life below water and on land; peace and strong institutions; and partnerships to achieve the goals.

Standard setters, the accounting profession, and its firms have begun to include sustainability reporting within its remit. This is welcome for accountants' expertise is potentially relevant to auditing corporate social reports; measuring and reporting on sustainability targets, especially by corporations; ensuring their reporting is accurate, uniform, and transparent; thoroughly incorporates environmental risks; and providing cost analyses of environmental decisions. Accounting's auditing expertise can expose 'greenwashing.' Ethically, practitioners should be exposing, not facilitating this. However, determining and monitoring targets is difficult due to their scale, complexity, lack of data, aggregation and disaggregation issues, and different methods across jurisdictions. Hence making comparisons is difficult. Given the scope, scale and complexity of SDGs, devising and monitoring targets requires skills from many disciplines. Accountants cannot do this alone but must work effectively in multi-disciplinary teams. Here, the

ability to undertake continual learning is an imperative, for key reporting targets and the theories underlying sustainability reporting is a dynamic, rapidly changing field. Fortunately, within accounting academia, there is now a substantive body of relevant academic research for practitioners to draw upon (e.g., see Adams, 2022b).

However, the determination of standards rests upon the theory and moral stance of the preparers. These can differ substantially between practitioners and academics and within academia. Standards are being formulated by different sources. The IASB has made it clear that material climate change risks must be incorporated in International Financial Reporting Standards governing financial reporting. Its International Sustainability Accounting Standards Board has developed globally applicable, industry specific sustainability standards, though their adoption by companies is currently not mandatory. The objective is to provide a global baseline of sustainability disclosures that enable companies to provide comprehensive sustainability information to global capital markets and meet the information needs of investors. Thus, the remit is to inform capital markets and investors of financial risks emanating from climate change factors, which can substantially affect valuations of companies.

Many academics have heavily criticised this business centric approach (Gray, 2010). Most concur 'that much of the realist and procedural baggage associated with conventional accounting is no longer apposite when seeking to account for sustainability' Gray (2006, p. 47). It has been alleged that the Board ignored academic research and academic submissions during the consultation stage (Adams & Mueller, 2022). Carol Adams, a leading researcher in the field has even accused the Board of being the enemy of sustainability (Adams, 2022a). Contributors to her book reviewing academic research on sustainability reporting advance avenues on how this can change. Basing standards and systems on sound theory and evidence-based research figure strongly. Unfortunately, efforts by accounting professions and accounting standard setters to develop a conceptual framework to underpin their recommendations have been woeful. They can be contradictory, philosophically naïve, and pay little or no attention to non-capital market oriented academic work on this area. The critiques of Hines (1988, 1991) remain apt. One cannot avoid making social and moral choices when establishing standards. The lack of professional courses of the ilk of jurisprudence, as mentioned previously, compounds problems in this area.

In contrast to the IASB, other institutions are producing accounting sustainability standards employing another conception of what accounting is. Many pursue a multi-stakeholder approach encompassing all the SDGs. The Global Reporting Initiative (GRI), an international independent standards organisation, founded in 1997, helps businesses, governments, and other organizations to make transparent

their impact on issues such as climate change, human rights, and corruption. It soon gained support from the United Nations Environment Programme. Following growing pressure from various stakeholder groups, e. g., governments, consumers and investors, for companies to be more transparent about their environmental, economic, and social impacts, many multinational, large, and small and medium-sized enterprises, governments, NGOs, and industry groups have adopted GRI's voluntary sustainability reporting framework, and its sustainability reporting standards are those most used globally.

In January 2023, the European Union (EU) adopted the Corporate Sustainability Reporting Directive. This requires EU and non-EU companies with activities in the EU to file annual sustainability reports alongside their financial statements. The intention is to help businesses increase the transparency and accountability of their reporting, and help multiple stakeholders through analysis, benchmarking, and auditing. The standards are based on technical advice from the European Financial Reporting Advisory Group, an independent, multistakeholder advisory body. Investors, companies, auditors, civil society, trade unions, academics, and national standard-setters have been closely involved with developing standards for environmental disclosures on pollution, water and marine resources, biodiversity and ecosystems, resources and the circular economy, e.g., regarding clean water and sanitation (SDG 6), affordable and clean energy (SDG 6), sustainable cities and communities (SDG 11), responsible consumption and production (SDG 12), climate action (SDG 13), and life below water and on land (SDGs 14 and 15).

However, the SDGs go beyond environmental issues, i.e., no poverty (SDG 1), zero hunger (SDG 2), good health and well-being (SDG 3), quality education (SDG 4), gender equality (SDG 5), decent work and economic growth (SDG 8), industry, innovation and infrastructure (SDG 9), reduced inequality (SDG 10), peace and justice strong institutions (SDG 16), and partnerships to achieve the goals (SDG 17). Hence the GRI and EU reporting standards require organisations to make social disclosures covering employees, supply chain workers, affected communities, customers and end-users, and governance. The shift to broader standards brings into play accounting research on topics currently neglected in much accounting education (Hopper, 2019), e. g., the absence of gender-based budgeting in most accounting courses, and human rights accounting. Although many companies now provide employee reporting giving information on poverty reduction, wages, job creation, rights at work, social protection and social dialogue, and gender equality, progress remains disappointing, e.g., a GlobalData study (2022) based on first-quarter 2022 earnings call transcripts, found no mentions on factors relating to SDG1 (zero poverty) and SDG17 (partnerships). Also, SDG 16 on partnership has implications for accounting practice and what is taught. It entails giving civil society greater voice not only with respect corporations but also government

institutions, NGOs, and charities. However, this too is neglected in accounting courses. For example, participation in budgeting, emanating from Brazil, now widely adopted globally, rarely appears on syllabi.

The GRI and EU examples illustrate how sustainability reporting goes beyond determining the material effects of climate changes upon corporations' value. Many other approaches exist but lie beyond the scope of this article, e.g., Bebbington and Rubin (2022) explore a stewardship approach. Moreover, there are increasingly major ethical and moral questions involved, e. g., should sea floors and animals be granted a legal personality and constitute stakeholders with rights? However, what is distinctive in the GRI and EU examples is that reporting covers all the SDGs, the process of formulating standards is participatory and involves a wide range of stakeholders, financialisation does not reduce each issue to a monetary measure, academics and academic research have played a prominent role, and the public rather than private interests predominate. This stands in contrast to the IASB approach. Accounting academics and practitioners must become more knowledgeable of accounting and sustainability research, which reverts to the need for such material to be more prominent in syllabi.

4.4 Accountability

Accounting, accountability, and governance are interconnected, and must combine effectively to attain desired ends (Carnegie & Napier, 2023). Accountability, a subset of governance, should monitor and evaluate whether the organisation is serving its stakeholders' interests. In the past two decades, the accountability of private, government, and not-for-profit organisations across the globe has become a major research topic across many social science disciplines, including that of accounting. Previously, accountability within accounting was associated with financial reporting that makes corporations answerable for their actions and results, primarily to shareholders and capital markets. Accounting facilitates this by preparing accurate financial statements and checking they are correct through audits. However, as discussed, there is now growing pressure for corporate accountability to include being responsible for their impact on society and the environment, alongside revealing the material risks of ecological factors upon the value of companies – vital to investors and shareholders. Whatever the range of factors the organisation is being held accountable for, transparency is vital for evaluating performance and guarding against possible misuse of powers. It is sad that much of the accounting profession is not in the vanguard advocating for greater transparency.

Accounting researchers have increasingly pressed for a broader understanding of organisations' accountability, particular regarding sustainability, e. g., Brown et al. (2015), Busco et al. (2018). However, Dillard and Vinnari (2019) observe that

social and environmental accounting research shows that increased levels of such reporting has not increased accountability. They attribute this to current accounting systems (accounting-based accountability) limiting what is disclosed. Increased disclosures to secure greater social and environmental accountability represent merely incremental changes to traditional accounting reports designed to meet the needs of financial capital providers. For Dillard and Vinnari (2019, p. 19), 'Accounting is a system and craft for making visible the activities of an actor. Accountability implies constraining or giving up power by providing information, being transparent regarding decision-making, actions, and outcomes and being subjected to consequences of the evaluation thereof. Being held accountable implies accepting, or being coerced into, the obligation (demand) to act responsibly toward affected constituencies.' They outline how alternative accountability systems (accountability-based accounting) might better address the aims of interested constituencies beset with multiple, and often conflicting, interests operating in a pluralistic society. The critical dialogic accountability system offered, drawing on Brown (2009), recognises that accountability for some stakeholders is constrained by asymmetries of power. Dialogic accounting seeks to recognise these power differentials and the multiple and often contrary ideological orientations of stakeholders, and the need to offer effective participatory processes whereby all stakeholders are involved in exercising accountability and negotiating acceptable change. This requires making information accessible to non-experts, recognising its subjectivity, not reducing everything to a monetary form, and recognising the potential for transformation through debate and reflection (Godowski et al., 2020). The desire is to recognise that pluralistic democracy sometimes must extend beyond monologic resolutions, i.e. dictated by a single source, or (Habermassian) approaches whereby parties reach a rational consensual solution, to dialogic approaches whereby stakeholders with multiple, conflicting, irreconcilable aims can negotiate acceptable, albeit perhaps unstable and temporary, resolutions to their differences.

An example of this line of research is contained in Tanima et al. (2020, 2023). This is a longitudinal, ongoing, grounded study of empowering poor, marginalised women in Bangladesh in receipt of microfinance loans from a local reformist NGO. In addition to employing dialogic accounting and accountability approaches it draws on work within gender and development studies challenging neoliberal market-based discourses claiming that small loans enabling women to undertake entrepreneurial activities can empower them. She found that the NGO's accountability mechanisms emphasised financial targets, especially loan repayments, and frustrated the NGO's desire to grant the women opportunities to exercise meaningful accountability upwards. Careful participation with the women, initially to gain their trust and reveal the major difficulties they face, was followed by discussions of alternative models of microfinance, accountability,

and the socio-economic and political reasons causes of their problems. Later stages have fostered alliances between the women, sympathetic NGOs, dominant powerholders, and external experts and activists to advocate and mobilise for political change.

This example of dialogic accountability is not offered as a panacea or necessarily the most significant research currently on accountability, despite the author's attachment to it. Rather it is offered to illustrate how contemporary accounting research is raising significant issues on what accounting is and should be for both practice and accounting education. First, it illustrates how the boundaries of what accounting is varies considerably between that practised and taught in technical, professional oriented courses, and what many leading accounting researchers are investigating. Second, it brings into prominence how the public interest orientation of accounting researchers, in contrast to the more circumscribed private interest orientation of practitioners and many professional accounting associations and firms, leads to the pursuit of different topics. Given much accounting work is privately funded it is unlikely that practitioners would be paid for say pursuing dialogic approaches and even if they are public institutions and publicly funded, governments are unlikely to pay for work challenging its policies. Third, it raises the question of 'who does accounting?' Accounting in the academic arena may extend beyond what qualified accountants do and may view anyone as potentially an accountant, especially within processes of accountability. These issues prompt dilemmas for what is taught in courses to qualify as a professional accountant and within university accounting degrees.

5. Ways forward

This article has argued that academia and practice increasingly hold different conceptions of what the domain of accounting is and should be. Admittedly these differences exist within each sector (the entire accounting profession should not be demonised), but the divide is, allegedly, greater between academic researchers and practitioners. Practitioners and the accounting profession tend to retain a narrower conception, primarily focussed on financial reporting and auditing to serve the private interests of a few stakeholders, though some leaders within the profession 'have enthusiastically embraced the SDGs, seeing a pivotal role for accountants and accounting in supporting their realization.' (Bebbington & Unerman, 2018, p. 1). However, many accounting researchers have embraced a broader conception of accounting than their counterparts in the profession and practice. This embraces a multi-stakeholder approach; emphasises the public interest; covers, inter alia, morality and ethics, social theories, the SDGs, and new forms of accountability incorporating non-financial data and

vigorous processes of engagement. However, such research has often not been incorporated within many university accounting degrees due to professional dominance in determining syllabi, e. g., South Africa universities predominately teach to mainly technical syllabuses set by the profession and consequently little research is conducted or conveyed to students (Verhoef & Samkin, 2017). Accounting professions, standard setters, and large accounting firms are increasingly directing considerable effort and resources into accounting for sustainability. However, if courses do not incorporate broader approaches prominent in accounting research, the danger is that accounting professions, regulators and practitioners may struggle to adapt and accept multi factor, multi-stakeholder approaches. This is not trivial given that legislators appear to be increasingly adopting such approaches.

It may be inevitable and desirable for each sector to pursue different conceptions of what accounting is. Academia should challenge and extend practice, and academics hold different views on whether the gap between what is researched and taught is problematic. Tucker and Parker (2014) in a cross-national study found leading management accounting departments and their academics' opinions were starkly divided on this. However, the lack of influence of accounting research upon practice and the profession is worrisome. For example, Fraser and Sheehy (2020) studied differences in utilising research by accounting, engineering, and medical professionals in Australia. They found that regarding them 'reading academic material, the accounting rate declines dramatically to 21.3%, with engineering being 56% and medicine 91.5% [i.e.] .... nearly 80 percent of accountants rarely or never read academic material. This compares with less than 45 percent for engineers and less than 10 percent for medical practitioners. Further evidence supporting the lack of interest in academic material by accountants is ... that a majority (51.3%) never read academic material. This compares to 11.1% for engineering and 3.4% for medicine. ..... If one in two practitioners cannot understand the title of accounting research and only one in four are interested in reading ... popular research articles, then one could conclude that the connection between practice and academia is problematic at best.'

The reasons for the level of disconnect between practice and academia in accounting are contested and many. It is not the intention of this article to review these but rather to reflect on how university and professional education and courses may proceed in the future. The presumption is that there is a pressing need to change aims and content of accounting education and training to incorporate consideration of it as a social and moral practice; embracing social and environmental and public interest issues prevalent in contemporary accounting research; serving the needs of a wider range of constituents; and emphasising its role and application in pluralist democratic processes.

Ideally, qualification as a professional accountant should rest on integrated professional and university courses, as in leading professions such as law, engineering, and medicine. The content and aims of the courses require mutual respect and equal negotiation between academic leaders and experts in both the professional and university sectors; a desire to develop not only students' technical skills but also their, critical, analytical, learning, and social skills; and possibly to reflect on academic and work experiences and their inter-relationship. From casual observation, especially in Scandinavian countries, this is achievable.

However, in some jurisdictions, such as the UK, this may be impossible due to an unwillingness of the professions to incorporate broader accounting research within courses, and their desire to recruit trainees from all graduates, not merely accounting ones. This poses a quandary, especially for research led accounting departments and as argued above, the credentials and perceived legitimacy of the accounting profession. Given the undesirability of the status quo, and the apparent impossibility of achieving integrated courses, a pragmatic solution may be for university accounting departments to offer a professionally and technically oriented degree designed to meet professional accreditation and exemption requirements, alongside another that incorporates basic technical material but concentrates on the broader topics in contemporary accounting research, especially regarding ethics, morality, sustainability, and accountability. This would be an interesting innovation. Which degree would attract most students? Will the characteristics of recruits to each differ? Which degree develops (or does not) develop specific skills? Which graduates would be sought by employers most? Answers to these questions would be revealing.

Endnotes

[i] The writer's perspective on the accounting profession derives primarily from experiences when working as an academic in the UK, USA, Australia, and New Zealand, although he has researched and worked in many other countries worldwide. The issues raised here may be less prominent in other jurisdictions though nevertheless they remain worthy of consideration.

[ii] This problem extends to many accounting degrees in universities, partly because of accounting professions' stipulation of what must be taught to gain exemptions in their examinations.

[iii] If accounting research is a social science, as normally assumed, then this is unsurprising. Most social science disciplines contain a multitude, sometimes conflicting, theoretical schools. This is not invariably a disadvantage as it can broaden the range and understanding of phenomena studied. The theoretical choice can reflect the researcher's values, aims, or the nature of the problem under scrutiny. The author of this paper has had a longstanding commitment to critical and socio-political approaches and undoubtedly this influences the content and arguments made here.

[iv] Philosophically this is wrong for such research creates and reproduces a version of reality (Hopper & Powell, 1985).

[v] https://www.ifac.org/knowledge-gateway/building-trust-ethics/discussion/accounting-social-and-moral-practice. Accessed 5/9/23.

[vi] https://www.aiaworldwide.com/insights/ethics/. Accessed 4/9/2023.

[vii] Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC, and Directive 2013/34/EU, regarding corporate sustainability reporting.

[viii] See Bebbington and Unerman (2018) for a useful review.

[xix] These have value but cannot deal with situations where parties have conflicting and seemingly irreconcilable aims.

[x] University courses are often too preoccupied with grading students. In contrast professional courses tend to have a pass/fail result sometimes with medals for exceptional candidates. If universities had similar grading systems, they could more effectively develop the social, communication, and critical analytical skills desired by employers.

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Accounting and Management Review
Revista de Contabilidade e Gestão
No. 27, 2023
pp. 33-65
Published by OCC
DOI https://doi.org/10.55486/amrrgg.v27i1.2

ISSN 2795-4412

Action at a distance: Accounting and the Company of *Grão Pará* and *Maranhão*

Ofélia Pinto[a]

ABSTRACT

Based on extensive archival research, this paper analyses the role of accounting in managing an 18th century multinational Portuguese company. Using the concept of action at a distance, it is demonstrated how accounting was used to manage the Companhia Geral do Grão Pará e Maranhão, established in 1755, whose interconnected activities were conducted in three continents. Considering the constraints of the time, namely the challenge of distance and slow communication, the main picture emerging from archival sources is that this company was a vast machine fuelled by accounting information. The main findings of the paper contribute to previous literature on the constitutive role of accounting and demonstrate its multifaceted nature.

Keywords: Accounting history; Management; Action at a distance; 18th Century.

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1. Introduction

On 7 June 1755 the Company of Grão Pará and Maranhão (hereafter GPM or simply the company) was created and established in Lisbon, under the protection of the Portuguese King. Its main purpose was to help improve the underdeveloped north-eastern Brazil states of Pará and Maranhão, by supplying them with a much-needed workforce. For that, GPM was granted the royal monopoly for 20 years of operating what has become extensively known as the triangular trade. The typical voyage of the company started in Lisbon, with the departure of the company's ships loaded with products to be used to barter for slaves in the Western coast of Africa. The ships loaded with human cargo were then dispatched to Pará and Maranhão, where that cargo would be sold, and the ships reloaded with local products as diverse as cocoa, rice, spirits, raw cotton, cotton cloth, wood, coffee, skins and leather (Pinto & West, 2017a, p. 148). These were then carried to Lisbon, and the products subsequently sold in Portuguese and European markets.

The far reaching and enormous territorial dispersion of the company's activities is visible in its books. These also demonstrate the interconnectedness of the many activities undertaken in each location, far beyond the mere triangular journey. Apart from an understanding of the multidimensional character of GPM's activities, it is the company's human resources and their interaction that is of crucial importance to this study. The multifaceted nature and aims of the company's activities (for detail see Pinto, 2014; Pinto & West, 2017a, 2017b), implied that its management was conducted in Lisbon by a Board elected by its shareholders.

This paper focuses on the management of the company's resources from a distance, highlighting the main challenges and difficulties faced, that were typical of a company operating in three continents, in a complex context, and where communications were limited and slow. Given such territorial dispersion among three continents, it will be demonstrated how the Board in Lisbon used accounting to manage the company's resources and extract the maximum profit from them. By demonstrating the several uses accounting was put to, this paper emphasizes the remarkable versatility of this technology, including how it was used to manage action at a distance.

The paper is structured as follows: Section 2 is devoted to the literature review and theoretical framework underpinning the study. Section 3 presents the research methodology and methods adopted to conduct the study. The paper continues with Section 4 in which it is described the management of resources of the company, namely its overseas administrations, and the system of remuneration and incentives that was put in place to ensure a better alignment of the overseas administrations with the company's main targets. The paper ends with the discussion of the main findings and conclusions in Section 5.

2. Literature review and theoretical framework

This section includes the literature review and theoretical framework underpinning this study.

2.1 Literature review

There is now a significant repository of knowledge on the activities typically performed by monopoly trading companies in the 17th and 18th centuries. Of the many possibilities available, Carlos and Nicholas (1996) and Micklethwait and Wooldridge (2005) provide a good introduction to this relevant and wide-ranging topic. A quick search online with the keywords "chartered company" provides an extensive list of cases, created by nations as diverse as the Dutch, English, French, German, and Spanish, to name just a few. Indeed, this type of business organisation was typical of most of the empires, including Portugal. The most famous chartered company is perhaps the English East India Company founded in 1600, which was at its peak the largest corporation in the world, competing with the Dutch East India Company. Among its many famous particularities, it even had even had its own armed forces, totalling about 260,000 soldiers, twice the size of the British army (Erikson, 2016; Roos, 2020).

Carlos and Nicholas (1988, p. 398) claimed that "much has been written about late-nineteenth-century multinationals and their relationship to the transnational firms of the present, but both historians and economists have largely discounted the relevance of the earlier chartered trading companies to this discussion". More recently, however, 18th century chartered companies have been the focus of several studies, due in part to the development of accounting history studies relying on archival sources (Oliveira, 2007, 2008, 2009; Oliveira, 2013; Silva, 2016).

In Portugal, the Pombaline era (1750–1777) led the creation of several chartered companies[i], which became an instrument to implement State policies. This is in accordance with the seminal study of the Royal African Company by Davies (1957), who asserted that it "was created in order to assume responsibility for an essential link in the imperial economy" (p. 349).

GPM was one of the very first chartered companies, and its accounting system provided a model to be followed by subsequent companies, which further evidences the importance of this case study. While the accounting records of this company have attracted some previous attention from researchers, none of these prior studies have focused on the role of accounting in managing at a distance. Examples of previous studies include Carreira (1982), Dias (1971), Domingues da Silva (2008), Hawthorne (2010) and Rodrigues et al. (2009).

Other Portuguese chartered companies have been the focus of accounting history researchers, namely the Alto Douro Wines Company (hereafter CGAVD) and the Company of Pernambuco and Paraíba (hereafter (CPP). Oliveira (2007, 2008, 2009) analysed the accounting system of the CGAVD during the Pombaline period (1756–1777), while Oliveira (2013) added to this, by focusing on the uses given to the accounting system in the period 1756–1826. Carvalho (2011), in turn, analysed the accounting practices used by the CGAVD to measure the different assets and liabilities, namely Port Wine inventories, in the period 1852–1871.

Rodrigues and Sangster (2012, p. 1) analysed the public-private partnership of CPP with the purpose “to enhance understanding of how the Portuguese enlightened despotic regime developed and connected the empire through a corporatist interface with a private company”. Silva (2016), in turn, analysed the liquidation process at CPP, focusing in the period 1780–1813.

In what concerns GPM, the basic study is still the one done by Carreira (1982) which, despite using many accounting records of the company, did not focus on the accounting practices followed by the company, nor their implications. Rodrigues et al. (2009) studied the differences between the proposed and the adopted by-laws of GPM, and demonstrated that what is now recognised as “corporate governance regulations” were already a major concern of those times. Pinto (2014), in turn, investigated the accounting system of the company, with a particular focus in the slave trading activities of GPM (see also Pinto & West, 2017a, 2017b).

Carlos and Nicholas (1988, p. 398) argued “that the trading companies did meet the criteria of the modern multinationals, highlighting the growth of a managerial hierarchy necessitated by a large volume of transactions and of systems to control those managers over space and time”. This seems to be confirmed when one dives into the surviving accounting and related records of these companies, and GPM is no exception. Indeed, Herbert S. Klein in his book The Middle Passage, nominated GPM as “the only Portuguese private merchant or company whose records are sufficiently complete and reliable” to assess the profitability of the slave trade (Klein, 1978, p. 46). Previous literature has focused on the important slave trading activities of GPM (see Carreira, 1982; Pinto, 2014; Pinto & West, 2017a, 2017b); however, the main focus of this paper will be the use of accounting to manage the company from a distance.

2.2 Theoretical framework

Despite persisting controversies about accounting historiography and methodology (Walker, 2004, p. 10), “there has been growing realisation that historical accounting research must at the same time be firmly grounded in archival evidence and have a clear theoretical perspective to provide a coherent philosophical basis and a rigorous structure” (Napier, 2020, p. 39).

In the introduction to his edited book entitled Power, Action and Belief, Law (1986), following more explicitly the work of Foucault, reflected on the "way in which power is exercised via a set of strategies that have the effect of reducing discretion amongst a network of agents… [with] particular concern ... with the methods that actors may use to create passive agents at a distance" (pp. 16/17). Furthermore, as Law (1986, p. 240) stressed, the "whole effort depended, from top to bottom, on the capacity to extract compliance ... it was necessary to keep all ... [the human resources] in line and to make use of their efforts". Correspondingly, to secure the success of reporting and calculative practices, it is crucial to keep every single agent aligned and compliant, a goal that is to be achieved by a wise combination of discipline and inducements. In the case of GPM, and as will be demonstrated in Section 4, this included the company's Board in Lisbon, its overseas administrators and staff (clerks, ship captains and crew members, overseers), and just about any agent interacting with the company.

Drawing insights from the work of Foucault, Perks (1993, p. 186) asserted that "power can be most effective in its hidden form, producing effects in such a way that there is no conflict to observe". He exemplified, by stating that "accountancy… is involved in an attempt to integrate different interests that would otherwise be in conflict with each other" (Perks, 1993, p. 184). Indeed, "accountancy may be one [of] what Foucault calls a grid of technologies which use knowledge to make individuals the object of power, subjecting them to surveillance, categorization, recording, monitoring and control, sometimes on a daily basis" (Perks, 1993, p. 187).

This inexorable upsurge in accounting's presence and power has, in turn, increased the focus on its features, powers, and possibilities, and more specifically its capacity to determine and influence distant contexts. Unsurprisingly, "the role of accounting in enabling action at a distance has received considerable attention in the accounting literature since the early 1990s" (Preston, 2006, p. 559). Put simply, "action at a distance" deals with the problem of controlling actions and resources that are geographically remote. In the case of GPM, and as will be demonstrated, the dimensions of this challenge were dramatic, because those backing the company and located in Lisbon, had a key challenge in monitoring/governing/controlling the activities of the company given the distant nature of its operations.

Robson (1992) demonstrated how accounting documents have the features of mobility, stability and combinability, which, according to Latour's work, are the key elements of allowing action at a distance to occur. According to Robson (1992, p. 701), "with the problem of distance there is ... the issue of the media through which it is possible to influence contexts or situations remote from the actor". His paper suggested "that accounting provides a form of knowledge that may have a greater potential for "power" or action at a distance than many others", for "bringing together and making

the same, rendering equivalent, things that were previously different allow actors to make calculation in accordance with their desires to act upon remote contexts" (Robson, 1992, p. 701). "By creating what can be seen, so accounting conditions, as well as enables, action" (Robson, 1992, p. 702).

Drawing not only but most notably from insights by Michel Foucault and Bruno Latour, a considerable number of authors have reflected on accounting's potential to create and manage action at a distance. From a significant number of valuable contributions, the work developed by Peter Miller and Nikolas Rose stands out as much by its pioneer role, as by its usefulness and consequent explicit and implicit use in numerous and diverse studies. One important abridgment of their deductions and main inspirations was provided in Rose (1991, pp. 675/676). First, the link between government and knowledge, "made most clearly by Michel Foucault in his consideration of "governmentality"". Second, the link between government and information, such that "there can be no well-ordered political machinery or enlightened administration … without a knowledge" facilitated by different numbers which provide "the material on which administrative calculation can operate". Third, the formation of centres of calculation, "stressed in the work of Bruno Latour", which collect and accumulate information about distant locales which they seek to govern, aggregating, comparing, compiling and calculating such information in ways deemed adequate for government. Finally, and as a consequence of the preceding themes, the conclusion that "numbers do not merely inscribe a pre-existing reality. They constitute it" (Rose, 1991, p. 676).

The foundational work by Bruno Latour has set the scene for developments in the way accounting technology is regarded and understood. As Peter Miller and Nikolas Rose (among other notable contributors) have convincingly demonstrated and argued, accounting technology is a soft but powerful technology that allows government to be exercised, not only from a distance but also in silent, subtle ways. As demonstrated, accounting technology has the essential features that allow power and control to be exercised from a distance, namely mobility, stability and combinability, which, according to Latour's work, are the key elements for allowing action at a distance to occur. As Perks (1993, p. 184) suggested, "the assertion of power can be more effective in its unseen forms".

3. Research methodology and methods

This study adopts a research perspective that views the world as being socially constructed. As such, accounting is understood not merely as a technical practice, but as a social and institutional practice (Burchell et al., 1985; Funnell, 1998; Miller, 1994; Potter, 2005). As proposed by Napier (2020, p. 32), this study

falls under the classification of "'socio-historical accounting research', where the researcher is primarily concerned with how accounting impacts on specific individuals and organisations". This study adopts an interpretative paradigm/ perspective and an inductive reasoning approach, in order to understand and explain how accounting was used to manage GPM from a distance. Ontologically, it is assumed that reality is subjective and multiple and, therefore, open to interpretations. It is acknowledged that research is value-laden and biases may be present. However, it is the researcher's responsibility and concern to be aware of and, to the extent possible, minimise such biases, by permanently focusing on reflexivity and rigour and being aware of the researcher's "own role in interpreting and creating meaning from the data" collected (Parker, 2012, p. 58). As Parker (2012, p. 56) asserted, "qualitative tradition adopts a position that ultimately all research is infused with culture, values, beliefs, stories, language, perception, cognition, ideology and politics".

This is an explanatory case study, which means that the focus of the research is on the specific case of this company and that "theory is used in order to understand and explain the specifics, rather than to produce generalisations" (Scapens, 2004, p. 260). Such "explanatory case studies ... seek to provide deep and rich understandings of the social nature of accounting practices" (Scapens, 2004, p. 261).

This study uses a combination of primary and secondary sources, but is firmly based on archival research, conducted at five distinct archives, all located in Lisbon, Portugal[ii]. It adopts a broad view of what constitutes the archive for accounting history research (Carnegie & Napier, 1996, 2012), using different documents, produced by different agents, including accounting books such as journals, ledgers, financial statements and auxiliary books, but also legislation issued since the company was created, and voluminous volumes of correspondence exchanged between the company in Lisbon and its agents located in Africa and Brazil.

Of the several archives used, all located in Lisbon, the most important was the main collection comprising a total of 217 books pertaining directly to the company. This collection is located at the *National Archives of Torre do Tombo* (ANTT). To date, these archives have attracted only limited attention from researchers. Also, other collections in this archive (ANTT) provided additional and important primary sources of a background and contextual nature. *The Historical Archive of the Ministry of Public Works, Transport and Communications* (AHMOPTC) holds important legislation, letters and reports that highlight the way the company and the state interacted in the period under study. The *Overseas Historical Archive* (AHU) contains important documents consisting mainly of letters and reports exchanged between local authorities in Brazil and the Portuguese Overseas Council.

These documents proved to be particularly helpful in understanding some of the routines and procedures adopted by the company. *The National Library of Lisbon* holds an important collection from the period, including government documents as well as private manuscripts sourced from various individuals. A significant collection relates to the Marquis of Pombal, Chief Minister of the King and the main architect and implementer of the economic and political policies of the time. The holdings of the *Historical Maritime Archive* yielded information pertaining to aspects and procedures of maritime activity during the period under study.

The richness and extensiveness of the archival resources coupled with their intrinsic character – documents were often produced by different agents in different locations – permitted extensive data triangulation. This was undertaken, wherever possible, in order to strengthen the validity of the conclusions drawn. In this case, data triangulation meant using different archives and different types of documents, as well as a combination of primary and secondary sources. The data triangulation also assisted in avoiding possible biases, by highlighting different views, held by different actors. As Decker (2013, p. 163) suggested:

> this is why historians put great emphasis on source triangulation and frequently highlight the need to work with more than one archive, as this facilitates not only the 'filing of gaps', but also the identification of bias and silences in sets of records.

Additionally, basing the research on more than one archive "is a way to access duplicate records or multiple points of view" (Decker, 2013, p. 164). Indeed, history "is about the systematic use of sources in the quest for 'substantiable truth' … [and] the results of evidence gathering provides the lifeblood of historical debate" (Walker, 2004, p. 12).

As part of a broader research on GPM (Pinto, 2014), this paper is based on data collected between March 2008 and June 2014. During this period several visits were made to the five above mentioned archives located in Lisbon, each comprising several weeks. Due to the extensiveness of the data available in the main collection at *the National Archives Torre do Tombo* (TT_GPM), copies of thousands of pages of the 217 books were obtained from the archive services. These were subsequently analysed, to extract the maximum information possible to support the conclusions of the study.

The extensive data triangulation also assisted in eliminating difficulties arising from faults in the surviving records. For example, the lack of most of the books pertaining to the local administrations of Africa, *Pará* and *Maranhão*, was overcome by referring to auxiliary books produced and kept in Lisbon (such as the

books of extracts), a more in-depth and detailed analysis of entries in the central books (such as the accounts of each administration that are to be found in the Lisbon ledgers), and a thorough reading of the letters exchanged between several locations. These methods proved adequate and reliable when similar analyses and triangulations were conducted for the periods when such local books do exist.

Because the company was managed from Lisbon, its accounting records were kept there and survived to this day. Additionally, the main collection available at the archives in Torre do Tombo also includes some books pertaining to the administration of Pará, and these specimens are especially helpful to understand the sophistication of the accounting system, and the information exchanged between Lisbon and the overseas administrations (in this case, Pará). Accordingly, it is visible that the entries in the Pará administration were mirrored in the Lisbon books, thus presenting the Board with an image of the financial situation of each overseas representation. As will be demonstrated in Section 4, this image was crucial not only to have a general picture of the company, but also to allow the management of the company's activities from a distance.

4. The empirical study: Accounting and the management of the Company of Grão *Pará* e *Maranhão*

The nature of the company's activities required that its physical and human resources be disseminated across three continents. Although its basic triangular trade fundamentally depended on the fleets that connected these continents, it would be injudicious to presume that the remainder of the company's activities were trivial. Quite the contrary, much of the intricacies of GPM's undertakings, and of the underlying information/accounting system, can be observed in the activities that were developed in its several locations while ships were coming and going. This section highlights the typical organization of the company as evidenced by the archival sources.

a. The Board in Lisbon

According to its statutes (National Archives of Torre do Tombo, GPM Collection, hereafter TT_GPM), GPM was managed from Lisbon and consequently all accounting information and decisions were centralized there. The Board was the supreme governing body of GPM, responsible for its management in its several locations and from every possible angle. The Board's powers were first defined in the 1755 charter, but were then elaborated upon in the 1760 statutes. Such powers included establishing goals for GPM as a whole, and for its several overseas representations, but first and foremost adequately articulating them. Therefore, the list of powers and functions of the Board was extensive, and included hiring the staff allocated to each representation, deciding how and when to send fleets, the number and dimension

of ships, the contents of each cargo, and which operations would be undertaken by the company. In Portugal, apart from assembling and combining the information received on a regular basis from overseas, the Board had also the critical challenge of promoting its connection with the State, namely Pombal, in order to ensure GPM would always be granted the most favourable conditions, under the banner of promoting the state policies and the common good of the nation.

The Superintendent of the Board had special duties of coordination, including selecting and appointing from among the deputies those most able to manage different areas and operations of the company, and controlling their actions and performance accordingly. In particular, he was required to take special care to ensure that the accounting books were kept "updated, using double-entry bookkeeping according to the usual mercantile method and not in any other way, not only recommending it to the Deputy and Inspector but also visiting the said Bookkeeping Department, reprehending the faults of the respective officers" (Conservatória da Companhia Geral do Grão *Pará* e *Maranhão, Caixa 67, Maço 48*, 1760 Statutes, Chapter 29). Such behaviour, it was emphasized, would make it possible to easily obtain reports and a daily examination and knowledge of the situation of the company.

After the first Board mandate that lasted until 17 June 1760, Boards started being elected annually following prescriptions of the 1755 and 1760 statutes, and there were strict rules of governance to be met in order to prevent abuses (see Rodrigues et al., 2009). However, on 20 April 1776 (Historical Archive of the Ministry of Public Works, Transport and Communications, hereafter AHMOPTC, *Ministério do Reino, Livro da Companhia Geral do Grão Pará e Maranhão, fl. 420)* Article 3 of the 1755 statutes was changed to prescribe that subsequent Boards should serve for three-year terms.

Details on how the company was managed and how its operations were conducted were prescribed in the 1760 statutes. Being managed from Lisbon implied that all decisions affecting the company as a whole, or just one specific overseas administration, were taken by the Board that officiated in twice weekly sessions at its house. In these sessions, presided by the Superintendent, problems were analysed, options were considered, goals were established, and strategic and operational decisions were made. However, mere administrative issues, "proper of clerks, salesclerks and bookkeepers" should not burden the Boards' attention, time and energy in these meetings (Chapter 10 of the 1760 statutes). Letters from overseas agents were read aloud by the Secretary, so that every Board member would be informed. Decisions were taken based on a majority of votes, and ensuing replies to letters were also read aloud. Chapter 11 of the 1760 statutes defined these procedures and also established penalties for the Secretary for not acting accordingly. The need for confidentiality and discretion about the decisions taken at the Board level, under severe penalties, was highlighted in Chapter 44 of the 1760 statutes.

According to Chapter 13 of the 1760 statutes, the company was divided into four different departments, namely "Navy", "Warehouse", "Debts Collection Inspection" and "Bookkeeping Inspection". Each of these departments had different and complementary roles, defined in considerable detail in the subsequent chapters, including prescriptions on the information that would be permanently gathered and presented to the Board. These included a detailed list of the auxiliary books that each department would have, the way entries would be made, and how the Superintendent and Deputies would control staff members allocated to keep those books. Among the above-mentioned departments, the "Bookkeeping Inspection" (*Inspecção da Contadoria*, Chapter 22) was overseen by an inspector whose duties were carefully emphasized, given the importance of accounting for the good management of GPM.

The web of relations established either between the company's human resources and external agents or simply within GPM, both in Lisbon and abroad, was intense and complex. Similarly to many present day companies, the Board had to manage its human resources from a distance, a task that was made substantially harder due to the constraints of the times. As mentioned above, limitations, difficulties and slowness in communications meant that the Board had to rely to a considerable extent on the accounting system and the information it was capable of providing. As such, tensions and conflicts were present in the relationships established between the Board and the company's managers located in Africa and Brazil, and these had to be managed by the Board. Of interest to this study is the role accounting played in the identification, analysis and management of such conflicts, as well as the several different ways it was used to allow the company to achieve its objectives.

A letter of 16 June 1761 (TT_GPM, Book 97, pp. 58–68) to the *Pará* administrators, Bernardo Simões Pessoa and Marcos Gonçalves de Faria, shows how severely internal complaints were handled by the Board, and how accounting documents were used to better assert its opinion. Among other issues, the letter reported on the reckless behaviour of the administrators who had had the audacity to complain of being sent goods that had not been requested, and that they feared would never be sold. Based on "orders sent to this Board and that are in its bookkeeping department", it was demonstrated that such goods had actually been ordered in 1759, in fact in higher quantities than the ones that had been sent. Thus, "this forgetfulness on your side persuades us that, either you don't register [in the books] the orders you send us, or that you make them without the necessary circumspection".

As can be seen from this example, in which previous documents were used to substantiate the careless behaviour of Pará administrators, the Board relied on accounting information received from its overseas representations and that was transcribed into the main books in Lisbon to give a general picture of the full activities of the company. It constantly exhorted its administrators to send regular

and more detailed information, according to the rules and prescriptions it defined. Indeed, even the books used in overseas locations were formatted prior to their expedition from Lisbon, as revealed by a letter of 4 January 1777 to the bookkeeper of the Maranhão administration (TT_GPM, Book 215, p. 208), and all human resources working in any bookkeeping capacity were selected and appointed by the Board. Details in letters evidence the many uses this accounting information was put to, as will be detailed below.

b. Administrators and agents in Africa, Pará and Maranhão

To ensure the proper management of GPM's operations, administrators were appointed to the several locations where the company operated: Africa, Pará and *Maranhão*. Although these administrators were selected and appointed by the Board, the conditions under which they performed their duties presented similarities but also differences according to their location.

i. Africa

In Africa administrators were closely connected, and were supposed to work together and help each other, especially the ones located above the Equator – their proximity meant that they had to articulate their actions, and this was especially true in relation to the slave trade. Indeed, while activities in Cape Verde were fundamental to conduct the slave trade in Bissau and Cacheu, these two administrations complemented each other on all the slave trading activities (for detail, see Pinto & West, 2017a).

However closely they worked, administrations were totally independent, as frequently stressed in the letters from the Board. This implied that in each location the administrators were responsible for the resources under their jurisdiction and had to send regular information to Lisbon about them. More importantly, this meant that any transfer of resources between administrations would imply reports exchanged and accounting entries made both at the local level and in the Lisbon books. This was evident both during the monopoly but also when the company closed down its operations. In a letter of 4 December 1779 (TT_GPM, Book 96, pp. 3-7), the Cacheu administrators were instructed to transfer all items to Bissau where in the future every operation was to be concentrated, but the letter also stressed the need to make detailed lists of the items belonging to each location, "as our intention is to not mix the commerce of Cacheu with the one of Bissau, since up until today we have kept them separated" (TT_GPM, Book 96, p. 4).

The financial statements of 1759 identified administrators in Angola (Manoel da Costa Pinheiro), Cacheu (Manoel Ferreira de Oliveira) and Cape Verde (Pedro Cardozo), while an administration in Bissau was established only later[iv]. Over the years these administrators were replaced much more frequently than the managers in Brazil, where administrations tended to be much more stable. One of the reasons

explaining this higher volatility in Africa administrations concerned the natural conditions of the territory, which took their toll in human lives. Accordingly, in a letter of 8 May 1762 from Cacheu (transcribed in Carreira, 1982, p. 359), the two administrators, Lourenço José Viana and Pedro Rodrigues Sousa, reported that "the administrator Manuel Pires Querido arrived here on 14 December last year; however, he immediately wished to taste the ground's flavour, so on 8 January was buried in the main Church of this city, intestate". Additionally, what letters and other records sometimes suggest is that officiating in Africa was not as attractive as in Brazil, as the opportunities for improvement and even private benefit seemed much scanter. Clearly, there weren't many businesses that could be conducted in Africa – it consisted basically of Cape Verde fabrics, beeswax, ivory, *orchella* weed and of course slaves, the backbone of the regional trade. For this reason, administrators in Africa were usually given either a fixed salary or more commonly commissions of five to twelve percent. Local salaries were paid with these commissions, but sometimes advance money was given to staff, especially when a new administration was designated. Indeed, on 10 October 1760 (TT_GPM, Book 98, pp. 17–18) the new administrators, Jozé Ramos da Silva and Lourenço José Viana, were sent to Cacheu to replace the recently deceased administrator Manoel Ferreira de Oliveira. On this occasion the company advanced the sum of 288,000 *reis*, an amount to be deducted from future commissions. The new administrators were sworn to take "two clever clerks, whom in the said location [Cacheu] we will keep in our company and at our table, being our responsibility all related expenses, and to give to each one 200,000 reis per year as salary". The same letter revealed that the administrators were to receive a commission of five percent over any merchandise dispatched from Cacheu to Brazil or Lisbon, from which all expenses for the subsistence of the house and salaries of the clerks were to be taken. The remaining amounts were to be distributed among them, two thirds for the first administrator, Jozé Ramos da Silva, and the remaining one third to the second administrator, Lourenço José Viana. The letter also prescribed measures to be adopted in case of the demise of any of them: if the deceased was the first administrator, the second would assume his duties and the position of second administrator would be given to one of the clerks, "the more able of the two". Similarly, if the deceased was the second administrator his position was to be occupied by one of the clerks. Importantly, calculations until the date of the demise had to be made, to ensure that the heirs of the deceased would receive their rightful belongings. All transportation had to be provided by the company, either to Cacheu or when returning to Lisbon, at any time when they wished to do so; however, they were not permitted to leave their duties without previous knowledge and consent of the Board, in order to replace the vacant position.

These procedures imply that the number of staff members used by local administrators had a direct impact on the net amount of commissions they would get. It was probably

for this reason that two administrators resented and, on 8 May 1762, complained about the Board's decision to increase the number of administrators and clerks to three - a decision that reflected a desire to increase the volume of commerce in Cacheu. The two administrators claimed:

> for this increase this house does not need more than three people: first and second administrators and a clerk, not like the ones that are here, none of which are useful in any way, and especially the first clerk who is lazy [and rude] (letter transcribed in Carreira, 1982, p. 359).

As for the second clerk, and as a result of a local illness, he was mad, rude to locals, stealing whatever he could, consequently unable to remain in service and thus about to be returned to Portugal (letter transcribed in Carreira, 1982, p. 359).

Regarding accounting procedures, the instructions accepted by the two administrators on 26 September 1760 (TT_GPM, Book 98, p. 18) referred to an obligation to send a formal account of every dispatch made, in duplicate, each sent on different ships, a normal procedure considering the risk of shipwreck. A subsequent letter of 10 October 1760 (TT_GPM, Book 98, pp. 18–20) revealed that before leaving for Cacheu both administrators were instructed on important matters related to the duties they were to perform, and on the reports and accounts that should be periodically sent to Lisbon. All books, letters and documents should be permanently kept in the house of administration, not leaving it without previous express consent from the Board, on account of the importance that the archives and accounts in Cacheu had for local management. The administrators' priority, the letter stressed, was to receive every asset and account from the previous administrators, settle accounts with them, and send complete reports to Lisbon, to allow all necessary entries in the main books.

Details in the letters revealed praise for the work being undertaken, but also warnings and reprimands, and advice on how operations should be conducted and how information should be provided. The importance of acting according to the company's interest and to seek good relations and collaboration with all local authorities was constantly stressed. On 17 February 1761 (TT_GPM, Book 98, p. 33) the administrators of Cacheu were also urged to dispatch the Curveta Nossa Senhora das Necessidades to Maranhão as quickly as possible, due to the existence of local products waiting to be shipped to Lisbon, which highlights the pressure exerted on overseas administrators so as not to compromise the good performance of other locations. Similarly, administrators in Brazil were frequently informed by the Board of the serious efforts being undertaken in Africa to dispatch enough slaves through the Atlantic (TT_GPM, Book 97, p. 2) and likewise urged to avoid any delays in dispatching ships to Lisbon, to allow their ready use (TT_GPM, Book 215, p. 13).

Unacceptable behaviour by local agents could lead to their suspension or dismissal. In one such example, on 12 November 1766 (TT_GPM, Book 98, pp. 217–219) the administrators of Bissau, Bonifacio José Lamas and José da Costa, were dismissed on the following grounds:

> Being this Board fully informed of the dissension in which that administration is in regards to the people connected with the interests of this company, the disturbances with which its good economy is perturbed, and the few zeal resulting of your neglect, and predicting that of this disorder can only result dire consequences preceding irreparable losses, before increasing this damage the Board decided to suspend you from your duties, replacing you with new administrators that on this occasion are travelling to that location …

Carreira (1982, pp. 56–68) discussed the actions of local agents in Africa benefitting their personal interest, some of which were certainly known to the Board, which, to some extent, connived or at least tolerated such behaviour, provided it was not too visible and did not damage the company's interests. He even stated that such behaviour was one of the main reasons for the volatility of administrations in Africa. No matter how plausible these claims may seem, considering all the intricacies characteristic of the operations undertaken locally, the truth is that some of them cannot be proved with the archival sources available today.

ii. *Pará* and *Maranhão*

A lot of the financial success of the company depended on the know-how, skill and performance of local administrators in Pará and Maranhão, as the third leg of the triangular voyage was, beyond any doubt, the most profitable[V]. On these locations, administrations were much more stable than in Africa, and a team of administrators could be in service for considerably long periods[VI]. Correspondence evidenced that these administrators enjoyed a considerable degree of independence, which reinforced the need to select adequate administrators and to monitor them conveniently and effectively.

Despite the comparatively high salaries and extra amounts "for their outlay", other accounts suggest that administrators would use further funds of the company, although the absence of more local journals and ledgers prevents knowing the details of such transactions. For instance, the list of debtors in Pará on 15 November 1775 reveals that on this date Gonçalo Pereira Viana, the deceased administrator, personally owed a total of 4,293,329 reis (TT_GPM, Book 173, p. 10). Notwithstanding the subsequent payments made by his widow, the sum of 3,518,004 reis was still unsettled on 10 September 1780 (TT_GPM, Book 174, p. 261). Ledgers in Lisbon included specific accounts relating to these personal debts,

some of which would be created or at least increasingly enlarged once the mandate of a given administrator was finished, sometimes even correcting previous compensations.

Recommendations on information to be sent to Lisbon were also frequent, including the need to send more detailed information on the sales (TT_GPM, Book 97, p. 18), detailed annual information on existing debts (TT_GPM, Book 97, p. 6) and hoping that "the settlement of accounts with the previous administration is concluded and that you send us that very important information with the utmost brevity" (TT_GPM, Book 97, p. 18). Whenever needed, letters also referred to small mistakes found in sums that should be corrected, so that books in Lisbon and overseas would match.

Certain remarks and instructions in letters from the Board seem to indicate that the Pará administration was more efficient than the one in Maranhão. For example, on 22 April 1770 (TT_GPM, Book 215, p. 1) in a letter to the Maranhão administrators, Joaquim Barboza de Almeida and José Vieira da Silva, the Board acknowledged the receipt of accounts concerning the year 1769, in accordance with customary instructions that should continue to be followed. However,

> we cannot but feel the little effect that our strongest recommendations have produced, by which we pretend the reduction of the exorbitant amount that the inhabitants of that city are owing, for when we expected that it was smaller than the ones of preceding years, as happens in the administration of Pará, on the contrary, we see it increased, being much higher the total debts in that administration than in Pará; and none of the reasons you ponder are sufficient to content us, for growing with such strength the idleness of capital of the Company makes it impossible for us to have the means to keep its commerce running, lacking the ready satisfaction of its credit.

The letter proceeded referring to a previous letter of the said administrators of 10 September 1769:

> Here you again repeat the same frivolous fundaments with which you intend to justify the increase of the debts, by being proportional the relation between the entries of merchandise and slaves to the income of the country [State of Maranhão]; however, to this we reply that the said entries are determined by your requests and the corresponding sales should be made according to our instructions, for by selling on cash or on credit only to people of entire credit and ready satisfaction, and by no means to whom does not pay the amounts in arrears or greatly

> diminishes the longstanding debt, and again trusting them, by this means the Company can easily see its debts resolved.

The letter also added:

> We again warn of the inferiority of the cocoa that you keep sending us which is unworthy of any price, besides being more expensive that the one coming from Pará, and it is not fair that we pay more than what it's worth in *Pará*.

If these comments are insufficient to allow conclusions on the better performance of the *Pará* administrations, they at least allow some inferences as to how the Board in Lisbon used the power of comparison between administrations, through accounting information. The *Pará* administration, if not viewed as a model, was at least used as a reference, in order to achieve better performance in *Maranhão*.

This subsection analysed the relationships between the Board and the overseas administrations, highlighting tensions and conflicts that prevailed, and measures put in place to overcome any damaging consequences for the company's interests, coupled with its reputation as an arm of the State. In this endeavour, accounting was instrumental in the identification, analysis and management of such conflicts: accounting information was widely used for managing the actions of overseas agents interacting with GPM, providing the basis for comparisons, admonitions, but also incentives. As will be seen in next section, incentives were multifaceted, adapted according to the circumstances, and essentially designed to extract compliance from every agent.

c. System of remuneration and incentives

The system of remuneration and incentives that prevailed in the company was regulated primarily in the 1755 statutes. According to Article 25 the Board members did not receive a specific salary; instead, their "sole remuneration" was a six percent commission resulting from GPM's transactions at different stages: two percent over the acquisition cost of goods dispatched and expenses of the fleets set up in Lisbon, two percent over the sales made in Pará and Maranhão, and two percent over the sales in Lisbon of products imported from those states and related expenses. These commissions would be managed by the Board and primarily used for payment of expenses, the details of which become clear when analysing the accounts available in ledgers over the years.

A list of the "ordinary expenses of the Board" is available in financial statements (except for years 1775–1778). According to the description available in those reports, the salaries included all staff supporting the Board, the Judge, the

Fiscal Procurator, as well as human resources in Pará and Maranhão, namely administrators and their staff. Other expenses included, apart from mundane administrative items (ink, paper, books and candles) and masses, rents paid for warehouses and other facilities as well as several repairs done on such premises, both in Portugal and Brazil.

Apart from the purpose mentioned in Article 25—"to eliminate any suspicion of fraud"—the commissions obtained from the "mercantile circuit" of the company were viewed as a direct result of the decisions taken and implemented by the Board and to some extent a measure of their success, thus an incentive to act according to the best of its members' ability in favour of the company. For this reason, after all these expenses had been paid, the Board was free to decide what to do with the remaining amounts, which meant that any decision related to the dimension and composition of its staff in Lisbon or *Pará* and *Maranhão* would have a direct impact on the amount of commissions available for distribution among its members.

Analysis of several accounts in ledgers evidence increasing amounts of commissions, as well as the total each member received, after all salaries and other expenses had been paid. Although commissions were substantially and continually increased over the years, the Board requested on 23 August 1768 (AHMOPTC, fls. 183–184) that the two bookkeepers, the registry officer and the debt collector should instead be paid directly from funds belonging to the company, considering that their duties were performed in the common interest of the company as a whole, not just for the particular benefit of the Board. The request was also grounded on the fact that this was already an established practice in the *Company of Pernambuco and Paraiba*.

The first payment of salaries in Lisbon amounted to 946,666 *reis*, a sum taken from the commissions of 1755 and 1756, and registered on 21 December 1757 (TT_GPM, Book 23, p. 4) referring to "salaries that in these two years we paid to the bookkeeper and clerks". Further, on 20 May 1759 this same account was debited by 466,665 reis referring to the "salaries of the Maranhão administrators from 15 September until 31 December 1756". On 2 January 1761 a total of 576,076 reis was paid (TT_GPM, Book 2, p. 744) due to "salaries of the bookkeepers and clerks of the company from 1 October 1760 until 31 December 1760".

On the contrary, and as mentioned above, agents in Africa had a different scheme of payments and incentives. These were still defined by the Board but the due amounts would come directly from the company's funds. Since the books pertaining to the administrations in Africa did not survive it is not possible to view, either in the financial statements or in the several journals and ledgers kept in Lisbon, the entries and amounts for such payments. Rather, they come from correspondence exchanged with Lisbon as well as details on the cargo books. Relating specifically to the slave

trade, the acquisition cost of a cargo would normally include commissions that were payable either to the ship captains (in the case of "boat trade") or to the agents of the company in Africa (in the "fort trade"). For many of the cargos the commission is only revealed by its percentage and corresponding value, but in some cases the beneficiaries of such commissions are also stated. The first such instance appears in Cargo 19 of 22 June 1763 (TT_GPM, Book 47, p. 19) from Cacheu to *Maranhão*, which includes 1,684,080 *reis* of "Commission for the first and second administrators and the first and third salesclerks of 9%". Several similar instances appear for this and subsequent cargo books, with the percentage and the beneficiaries of the commission varying (for more detail see Pinto & West, 2017a). However, the administrators in Africa could instead receive a fixed salary; João Antonio Pereira was appointed on 10 January 1769 (TT_GPM, Book 89, p. 29) as second administrator of Bissau, with the annual salary of 1,200,000 *reis*, counted since the day of his departure from Lisbon.

On 14 July 1767 GPM issued a public announcement of its intention to hire several staff members for diverse locations (TT_GPM, Book 92, p. 1). The edicts included the annual salaries to be paid and specified that every potential candidate for the positions of bookkeeper or clerk had to be a graduate from the School of Commerce[vii]. Table 1 summarises the information included in this edict.

Table 1. Edict for Hiring Several New Employees, 14 July 1767 (in *reis*)

Position	Location	Individual Annual Fixed Salary	Variable Income
2 Clerks for the Board	Lisbon	100,000	
1 Bookkeeper	*Pará*	600,000	
1 Clerk	*Pará*	300,000	
2 Administrators	Bissau	1,200,000	
1 Second Salesclerk	Cape Verde		2% commission (potentially 800,000 *reis* per year)
1 Second Salesclerk	Cape Verde		1% commission (potentially 400,000 *reis* per year)
1 Salesclerk	Bissau	240,000	

Source: TT_GPM, Book 92, p. 1

In the case of an income of a variable nature, such as the salesclerks for Cape Verde, the company defined the commission as a percentage over local dispatches and revealed the potential annual amount that such commissions could bring for each salesclerk. This reveals, for example, that for the potential commission of 800,000 reis per year to be achieved by the first "second salesclerk" in Cape Verde, local dispatches had to reach 40,000,000 *reis*.

On 4 October 1770 another edict was published (TT_GPM, Book 92, p. 6), this time seeking one administrator for Cape Verde and two clerks for Pará. Although this

time the proposed salaries were not mentioned, the edict stressed once again that the two clerks had to be graduates from the School of Commerce and be qualified in the profession according to the recently published law of 30 August 1770[viii]. The law expressly aimed at balancing the supply and demand of these professionals, establishing salaries of 72,000 *reis* for their first year as salesclerks, and for the second and third years 96,000 *reis* and 120,000 *reis*, respectively. According to custom, they also had to be given free accommodation and food ("casa, cama e mesa"). After those three first years, these professionals were free to adjust their remuneration with the entity hiring them. It is likely that the absence of potential salaries on offer in this GPM edict of 1770 reflected the need to evaluate the profile, skills and experience of all candidates before a salary could be defined.

Despite the edict published in 1767 demonstrating that GPM was perhaps ready to pay higher salaries to obtain good professionals, at least for the overseas representations, finding adequate professionals or even anyone interested in leaving for Pará or Maranhão seems to have been at times a difficult task, as revealed by the correspondence. On 6 April 1761 (TT_GPM, Book 97, p. 40) the Board informed the Pará administrators: “we are making all efforts to obtain a good bookkeeper, hoping to find a suitable one as we wish, so that with his arrival you can be more relieved”. However, on 10 June 1761 (TT_GPM, Book 97, p. 59) the Board added:

> we have been making every possible effort to send you the bookkeeper you requested, summoning candidates by public edicts; and finding not even one Portuguese bookkeeper, we are now even considering sending a foreign one; however not even this has appeared until the present moment, and for this reason we are not sending him. You must endeavour to supplement the absence that you claim to have of someone to make the entries in the books of the company and make the maps that you should present to the General [Governor] of the goods you sell and of the ones you keep in stock in the company’s warehouses, by hiring some fellow and using him as long as the bookkeeper does not arrive, who is being searched for, and if he appears he will travel on the next occasion.

Each of the two independent administrations of *Pará* and *Maranhão* had two administrators, who received a fixed salary; additionally, certain amounts for general expenses seem to have been periodically given to them and at times a special gratification rewarding special services or good performance. In the journal of *Pará* payments in cash reveal regular sums given to both administrators, usually just mentioning “for their outlay”, although on 22 June 1776 each of them received amounts to be used for tailoring services (TT_GPM, Book 173, p. 112). For the year

1776 alone, this kind of payment to these two administrators totalled 892,850 reis, whereas during the same year salaries paid to seven other staff members amounted to 994,000 *reis* (see TT_GPM, Book 173). It was expected that all these amounts would be recovered by commissions generated from dispatches from Brazil; if not, certain measures had to be adopted. Indeed, the *Maranhão* administrator José Vieira da Silva was reminded on 20 April 1770 (TT_GPM, Book 215, p. 10) of the Board's previous generosity to him:

> having gone to that administration with the annual salary of 800,000 reis, and intending the Board to increase the commissions, and seeing that these did not correspond to the said salary, decided to assimilate the loss of the reduction, and attributing you the double of the said salary in 1766 with no previous request from you, remembering then to reward your zeal.

This section has analysed the financial incentives given by GPM to its human resources, as well as other agents interacting with the company. As demonstrated, these incentives were designed to increase the alignment of these agents' actions with the interests of the company, and as such were different according to each recipient's functions, location and even personal characteristics. Although designed to extract compliance from the human resources, managing their diverse aims and possible agency issues, GPM's actions were in nature characterised by multilevel tensions and conflicts. The next subsection will elaborate further on the main internal tensions involving the company, and the way accounting was used to manage such conflicts.

d. Accounting and the management of resources from a distance

Previous subsections have analysed the company's organisation in the three continents that its actions connected. As seen, the challenge of distance coupled with communication restrictions characteristic of the time, and the typical challenges of the activities undertaken, motivated the indispensability of an information system capable of overcoming such limitations. Accounting was to be such an information system.

Accordingly, accounting records demonstrate the many purposes accounting served on the several locations where GPM operated. Details on correspondence, and especially analysis of the surviving books pertaining to the administration of Pará, confirm that at the local level accounting served essentially three different purposes, each of which was vital to the life of GPM: control of accounts with third parties, especially debtors, and generally of every asset under the jurisdiction of each administration; periodical detailed financial reporting to Lisbon, according to permanent requests of the Board; and calculations to allow monetary values to be

ascribed to the different businesses GPM conducted. Although only a very limited number of local books are included in the main archival collection available at National Archives of Torre do Tombo in Lisbon (TT_GPM), they are enlightening witnesses of the system's sophistication.

Records were also instrumental in the act of shifting administrations, a complex task implying extra hours of work to verify and settle accounts with the outgoing administrators, produce several different reports to be sent to Lisbon, so that the accounts of the ceasing administration could be closed and the accounts of the new one could be started on a fresh basis, with no errors. The qualities with which this task should be performed, as well as the subsequent behaviour of administrators, were emphasized—these included good order, and prudence. The Board in Lisbon felt that this was a good time to reassert what was expected from local administrators, and reaffirm or redefine accounting and reporting procedures. Qualities such as experience, accumulated knowledge, intelligence, zeal and loyalty previously shown in service of the company were instrumental in appointing a new administrator or promoting an already existing second administrator to first administrator. Likewise, bookkeepers and clerks were occasionally given financial incentives or even a promotion, if additional commitment was necessary and expected of them.

In Lisbon, accounting records served additional purposes: the information received from abroad was compiled, consolidated and transcribed into the main books, joining the entries on operations involving Portuguese and other European agents, allowing a full picture of the economic and financial situation of GPM. This full picture was visible in the annual financial statements, which were primarily used to allow distribution of dividends to shareholders; but they were also used to transfer administration to the subsequent Board and for reporting purposes before the State, as there was an identical book kept at the Ministry of Kingdom into which these financial statements were copied annually. This duty of report to the State shows how close at hand Pombal wished to have GPM, in order to align its actions and performance with the responsibilities it was entrusted with, in the context of the State's policies.

From the Board's perspective, the information received from abroad was also the main basis for operational and strategic decisions, to allow control and management of physical and human resources from a distance, and to generate action consistent with the company's objectives. Achieving these was dependent on the Board's skill to articulate the profit aims of a private business with the duties of an arm of the State – a true Public Private Partnership. Accounting records and underpinning documents and reports were widely used as proof on the broadest possible situations.

The archival sources uncovered in this study highlight how GPM's accounting system was created and managed to allow action at a distance. From the outset, a successful implementation of the State's policies needed a dense web of aligned agents, acting for the benefit of the metropolis, not the colonies. Thus, despite the initial plan elaborated by Mendonça Furtado, placing the initiative of the enterprise with the inhabitants of Pará and Maranhão, the final version of the statutes confirmed the company's headquarters would be in Lisbon (Rodrigues et al., 2009, p. 419). This was not an accident: it was a deliberate decision by Pombal, who needed to have the centre of decision close at hand if his policies were to be successfully implemented. Thus, from the outset Lisbon was the centre and every other location where GPM operated acted as a periphery. The usefulness of accounting information for knowledge and management was shared by GPM's Board and Pombal, who demanded GPM to provide information on its activities, to ensure their alignment with State policies[ix].

To ensure a permanent collection of useful information from the peripheries, GPM's accounting system was standardized: while books used in overseas locations were formatted prior to their expedition from Lisbon, strict rules for keeping those books in good order were permanently emphasized, and information was constantly circulating to ensure the data contained in each location's accounting records matched the information available in Lisbon. Further, agents acting in any bookkeeping capacity were not only selected and appointed by the Board, but had to be graduates from the School of Commerce. The representation of each periphery in the Lisbon books allowed its visibility and management from a distance. Further, the accumulation of this mobile and stable information, allowed its combination by the Board, facilitating performance comparisons between different locations[x]. This allowed setting standards, defining corrective measures based on objective data, and combining admonitions with inducements to increase compliance from the company's human resources.

The success of GPM's activities relied on enlisting a web of agents, placed at different levels and locations, to whom "proper training" was given. They were instructed on rules and procedures before departing to Africa or Brazil and were constantly monitored and advised on how to act, aligning GPM's interests with its duties as an arm of the State. While aligning every agent seems to have been at times a difficult task, because of their naturally contradictory aims, admonitions were constant, and financial benefits were designed to extract compliance.

In essence, action at a distance was made possible by accounting information which, far from being constrained by distance, seems to have taken advantage of it. Imposing harsh measures on peripheries, designed to empower the centre,

was made possible by a conveniently structured accounting system, and the active collaboration of a web of agents continually aligned with GPM's objectives and State policies.

5. Conclusion

This paper has focused on the accounting information and techniques used to manage the resources of the company from a distance. It has been shown that accounting was the information system designed and used to overcome difficulties resulting from the challenge of distance and slow communication. As demonstrated, GPM's Board relied to a considerable extent on accounting to manage the company's physical and human resources and extract the maximum profit from them. Further, not only was accounting the mechanism used by both GPM and the State to overcome the difficulties imposed by distance, it in fact allowed effective benefits from such a distance. As asserted by Davie (2005, p. 77), "the power of accounting resided in its ability to simultaneously serve multiple interests".

The findings of this paper reveal much about the power of accounting: only a very powerful and versatile technology could have been effectively used in so many different ways and achieving so many different purposes. The main picture emerging from archival sources is that for all purposes GPM was a vast machine fuelled by accounting information.

The main findings of this paper contribute to previous literature on the constitutive role of accounting, and demonstrate its multifaceted nature. The study also contributes to theory by exemplifying and demonstrating how accounting was effectively used to manage action at a distance. As a result, although focused on a single case study – GPM – the theoretical underpinnings of this research may be able to be applied to other settings.

The study also contributes to uncovering in detail a collection of archival sources that to date have remained relatively unexplored, and reveals how they can be used to further understanding accounting and its implications. Indeed, despite the extensive use of archival data to support the findings, the potential of these archival sources is far from exhausted with this study.

Future research could be conducted in other (previous or subsequent, national or international) chartered companies, to assess possible similarities and differences in the usage of accounting. Exploring existing accounting books and supporting documentation of this company in African and Brazilian archives and libraries may complement the conclusions drawn from this study. In particular, they may

provide new and interesting perspectives from the angle of these peripheries, in comparison to those drawn from the centre (Lisbon). Another possibility is extending this research by focusing on the period after 1778, when the monopoly rights of GPM were not renewed, and as such the company started a very long and difficult liquidation process, which would only finish in 1914. Indeed, apart from the entries and records in the accounting books in Lisbon made after 1778 (although the monopoly rights of the company ended in 1778, it continued to trade on a reduced basis at least until 1788), at ANTT there is a vast collection comprising 201 folders of loose documentation that was held and produced mostly during the liquidation period of the company, from 1778 to 1914 (CGPM_JLF).
While many historians have already shown how rich and troubled those times (1778-1914) were for Portugal, these unexplored primary sources of GPM could contribute to a better understanding of important events, and accountings' role in them. This may provide additional understandings of their determinants and of the way accounting both influences and is influenced by the contexts in which it operates.

Endnotes

[i] Other Pombaline companies included: Company for Trade with Asia (1753); Company for Whale Fishing in Brazil (1756); Company of Agriculture and Vines of Alto Douro, best known as Alto Douro Wines Company (1756); Pernambuco and Paraiba General Trading Company (1759); and Company of Tuna-Fish and Sardines in Algarve (1772).

[ii] A list of the archival sources is provided in the references.

[iii] Although these specific statutes were prepared only on 18 January 1760, coinciding with the beginning of the mandate of the second GPM Board, their introductory paragraphs evidenced that the contents corresponded to practices that had been developed and applied during the first Board mandate.

[iv]Although cargos to Bissau were mentioned already in 1757 (TT_GPM, Book 78, p. 4), until 1766 the existing merchandise in Bissau was said to be in possession of ship captains, unlike existing merchandise in other African locations. For the first time, assets of 1766 comprised a total of 73,722,838 reis of "merchandise in possession of the administrators of Bissau" including items for the construction of the fortress (TT_GPM, Book 78, p. 71). Additionally, details on slave cargos evidence that slaves were acquired directly by captains, not administrators (boat trade). Confirming this, a letter of 15 October 1765 (TT_GPM, Book 98, pp. 149–152) appointed Bonifacio José Lamas and José da Costa as administrators with the special duty of establishing for the first time the house of administration in the port of Bissau and to initiate the construction of a fortress, as determined by the King. This fortress was concluded on 10 October 1774 (TT_GPM, Book 87, p. 80).

[V] This is demonstrated by the numbers inscribed in the financial statements of GPM (TT_GPM, books 77–80), as well as many entries relating to commissions paid to the Board members (see for example TT_GPM, Book 21, pp. 80-82, 84, 87, 93, 146, 233). Details of the nature and significance of the profitable operations conducted in the third leg of the voyage can also be confirmed in a representation addressed to Queen Maria I in 1777, signed by 48 "loyal subjects", asking for the monopoly rights of GPM not to be renewed (document transcribed in Carreira, 1982, pp. 330–345). Further, in his study of the Royal African Company, Davies (1957) concludes that one of the main reasons why this English chartered company could never operate profitably was the fact that it did not have any monopoly rights on the third leg of its voyages, that is, from America to England.

[vi] For example, Joaquim Barboza de Almeida and José Vieira da Silva were appointed as administrators of *Maranhão* on 22 June 1760 (TT_GPM, Book 89, p. 16). After requesting his dismissal for health issues, Joaquim Barboza de Almeida was permitted on 20 April 1770 to finish his tenure and return to Lisbon (TT_GPM, Book 215, pp. 6, 11) for, as the Board stressed, "it is never our intention to force any person to be in service of the company". On this occasion José Vieira da Silva was promoted to first administrator, and started his tenure with Bonifacio Jozé Lamas.

[vii] The School of Commerce (Aula do Comercio) was established in Lisbon in 1759 and "it is claimed to be the world's first government-sponsored school to specialise in the teaching of commerce, including accounting" (Rodrigues et al., 2004, p. 53; see also Rodrigues et al., 2007).).

[viii] This law made it compulsory for all book-keepers, clerks and other "practitioners" to be registered with the Board of Trade, otherwise not only could they not be admitted to public service, but also the accounts they would produce would not be legally valid. The law also forbade public and private companies hiring book-keepers, clerks and "other practitioners" who were not legally registered and were not graduates from the School of Commerce.

[ix] The appreciation Pombal had for accounting, especially double-entry bookkeeping, was a known fact, stated in most of his writings. He relied on this information not only for stately issues but also in his personal dealings (Gomes, 2007, p. 111; Ratton, 1813, p. 140).

[x] While each administration had the duty of collaborating with neighbouring administrators, each location was independent and exchanges of resources between them had to be reported to Lisbon. This increased the centre's power to manage at a distance: the accumulation and juxtaposition of information on peripheries allowed comparisons because while the centre saw them all, each periphery only had information on itself.

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Accounting and Management Review
Revista de Contabilidade e Gestão

No. 27, 2023
pp. 67-86
Published by OCC
DOI https://doi.org/10.55486/amrrgg.v27i1.3

Relationship of the rating of the companies with the forecast error of market analysts

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ABSTRACT

This study sought to assess the existence of a relationship between the *rating* and the earnings forecast error of market analysts. The sample relates to 44 companies for the period from 2010 to 2018, which was selected from the data collected on the *Thomson Reuters*® platform, in the I/B/E/S database. The methodology chosen was panel data analysis. The results showed that the *rating* impacts the level of analysts' forecast error, so companies with better credit risk rating have lower error in their earnings forecasts. The study contributes to the literature on capital market, specifically that of analysts' forecasts, focusing on the *rating* variable as an important factor to be considered by market analysts and contributes to the literature on the predictive quality of accounting information.

Keywords: Rating; Forecast error; Analysts' forecast; Predictive quality of accounting information.

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1. Introduction

Analysts' forecasts are fundamental for market participants to allocate their resources at different levels of risk (Antônio et al*.,* 2017). Such forecasts may present errors that form a fundamental concept in the market analyst literature, that of precision. This term is an estimator that has an inverse relationship with the standard deviation, so the lower the standard deviation, the higher the forecast accuracy (Martinez & Dumer, 2013).

The literature shows that analysts do a good job of predicting profits but underestimate losses. This fact is linked to analysts' reluctance to report negative earnings forecasts (Martinez, 2004). In Brazil, studies presented address the analysts' forecast error with the aim of understanding what can influence it, for example the size of the brokerage firm where the analyst works, the complexity of the portfolio analysed, the analyst's professional experience (Martinez, 2007), the level of corporate governance (Dalmácio, 2009) and the implementation of the International Financial Reporting Standards (IFRS) (Gatsios, 2013). Such factors previously established in the literature show that there is a probability that the projection will diverge from the disclosed result.

From the perspective of shareholders and creditors, the granting of funds to companies is linked to an expectation of risk and return, risk being a variable that links to the probability of not obtaining the expected return on the investment made (Soares et al., 2012). A variable commonly used by the capital and credit markets is that of *rating*. This measure refers to the credit notes issued by rating agencies on the credit quality of public and private organisations. Credit *ratings* "represent a forward-looking opinion of a debtor's overall credit quality, reflecting the ability and willingness of the debtor to honour its financial commitments as they come due" (Standard & Poor's Financial Services LLC, 2019) .

In Brazil, there are several studies that address the variables that determine the *rating* classifications of companies. Among the main ones are: a study that analyses whether structural models predict *rating* changes by credit agencies (Kanandani & Minardi, 2013), which are the main accounting indicators, such as the level of indebtedness, fixed assets, profitability and liquidity, and market indicators such as the company's risk, the number of analysts who cover it and the level of specialisation of analysts (Damasceno et al., 2008; Soares, et al., 2012).

As for international research, recent articles are looking for the relationship between *rating* classifications and the effects of corporate decisions from ESG (Saadaoui, et al., 2022; Zanin, 2021). Other papers also explore the relationship between accounting indicators and *ratings and* incorporate the effects of company

risk into the models, measuring them mainly by the volatility of their earnings (Jiang, 2022; Magnani, 2017; Magnani et al., 2022).

Thus, the credit *rating* and the analysts' forecast are linked to the company's risk, given that companies with higher risk present greater volatility in their profits and can impair the analysts' predictability ((DeMarzo & Duffie, 1995; Magnani, 2017; Magnani et al., 2022). Thus, the following research question arises: What is the relationship between credit *ratings* and the error of analysts' forecasts?

In view of the established context and according to the impact that the risk of companies can cause on the *rating* disclosed by credit agencies and on the predictability of market analysts, the following research hypothesis is made:

The higher the company's *rating*, i.e. the greater the risk of lending funds to the company, the more difficult it will be for analysts to forecast its earnings.

This paper aims to analyse the relationship between the *rating* and the predictability of market analysts, specifically the errors in their forecasts. As such, the aim is to show market agents that forecasts for companies classified with higher *ratings* may have higher forecast errors. As a result, we hope this study will facilitate decision making and improve the predictive quality of information.

2. Theoretical framework

2.1. Analysts' forecasting error

Market analysts are professionals responsible for assisting companies in decision making, performing market analyses, developing growth strategies and making predictions about the future of companies.

A relevant line of research is the aptitude of market analysts, since they are the main users of financial information. Such research provides important information to investors on how far they should rely on the projections, in addition to knowing the main limitations of forecasting models (Martinez, 2007). Other studies have found that there is optimism in loss projections and a reluctance on the part of analysts to report on negative results (Martinez, 2004).

Another line of research seeks to analyse the determinants of analysts' forecast error. The first variable is the brokerage firms that the professional is linked to, i.e. analysts linked to large brokerage houses have more accurate forecasts. Another variable is the analysts' projection track record, because when analysts have performed well on past forecasts, they tend to continue developing good

projections (Martinez, 2007). A third variable is the number of analysts covering the companies, so the more analysts working on the coverage of the companies, the lower the error in projections. The fourth variable is the size of the entity, given that in large institutions there are several accounting standards and this increases the complexity for analysts to predict value indicators (Martinez & Dumer, 2013). The Fifth variable relates to the corporate governance mechanisms, which are negatively linked to the error of analysts' consensus projections as well as the error of individual analysts' projections (Dalmácio, 2009).

The adoption of standards can also influence the forecast error, Gatsios (2013) and Gatsios et al. (2018) showed interesting results on the relevant drop in the accuracy of analysts' projections after the implementation of the IFRS standard in Brazil. Also, De Marzo and Duffie (1995) and later Saito et al. (2008) specifically analysed the quality of analysts' projections, showing that the variability of profit and indebtedness have a positive relationship with the forecast error, that is, the projection error is higher when indebtedness and variability are higher.

Martinez (2004) compared the performance of company analysts in Brazil and abroad. It was evidenced that in Brazil, the longer the analyst has been in the position, there is negative interference in the error of projections, however, experience in a specific company improves the forecast performance. Meanwhile, in the United States and in European countries, experience in years of performance influences an improvement in projection performance. In addition, the complexity of the portfolio was studied, which in the Brazilian case did not influence the forecast error, while in the case of North American and European cases, the complexity of the portfolio interferes with the error.

Still on analysts' forecasts, Magnani et al. (2022) evaluated the effects of *hedging* on analysts' forecasts. The authors concluded that in emerging markets, with high volatility of macroeconomic variables and political instability, the corporate *hedging* policy, the *rating* assigned to the credit ratings of public companies and liquidity indices are key variables that influence analysts' forecasts.

2.2. Credit rating

Rating is the classification of the credit risk of a company, a security, a bank, another financial entity or even a country . Its purpose is to constitute an opinion on the possibility of non-fulfilment of financial obligations, including delays and/or actual non-payment. It presents a global language to express the level of debt risk. They are used by investors to demonstrate the likelihood of receiving the amount invested (Fitch Rating, 2019).

The *rating* has three classifications: International Rating in Local Currency, International Rating in Foreign Currency and National Rating. The first, does not

consider the risk of not being able to convert the currency, since in this case it is allowed, the remuneration in local currency at the exchange rate, at the time of delivery to the investor, the second considers the risk of not being able to convert the local currency into foreign currency, since in this case it is necessary that the remuneration is made in foreign currency, at the time of delivery to the investor. (Fitch Rating, 2019). Both consider "the risks of sovereign equities, since the measures adopted by the government of that country may jeopardise the ability to pay financial commitments." (Kanandani & Minardi, 2013).

And finally, the National Rating which is designated "to bonds of local issuers issued in the local currency of the country where the issuer is located" (Fitch Ratings, 2019), this type excludes the effects of transfer risk and sovereign risk, however it takes into account the company's financial risk, competitive position and industry risk (Soares et al., 2012).

Since comparisons between an international and a national scale are not feasible, only Foreign Currency and Local Currency *Ratings are* comparable (Fitch Rating, 2019).

"This *rating* does not apply to any specific financial obligation, nor does it consider the nature and provisions of the obligation, or its position in the event of bankruptcy or liquidation, statutory preferences, or the legality and enforceability of the obligation." Standard & Poor's Financial Services LLC. The main rating agencies are Fitch Ratings, Moody's and Standard & Poor's (S&P), known as the Big Three.

Typically, rating forms are expressed through letters ranging from 'AAA' to 'D' to express the agency's opinion of the risk level (Standard & Poor's Financial Services LLC, 2019). 'AAA' being the highest credit quality, reflecting the lowest expectation of default risk, assigned only in cases of exceptionality of payment of financial obligations. And so, reducing to 'AA' (very high credit quality), 'A' (high credit quality), 'BBB' (good credit quality), 'BB' (speculative), 'B' (highly speculative), 'CCC' (substantial credit risk), 'CC' (very high credit risk), 'C' (credit risk close to default, 'RD' (restricted default) and 'D' (default) being the last level and indicating that the "issuer has filed for judicial reorganisation, administrative intervention, liquidation or other formal closure process or has ceased its activities" (Fitch Rating, 2019). Fitch´s classification rating is only one example, given that in the case of other companies, such as S&P and Moody's, this classification may undergo some changes in the way the scale is presented, nevertheless the purpose and interpretation will follow the same pattern.

Ratings are relevant, given the difficulty for a company to be able to issue debt securities without the opinion of some rating agency on the quality of its credit.

In addition, it is also reported that, after several crises between 1994 and 2002, investors began to develop a more critical eye on rating agencies, which generated greater transparency in the criteria used for credit analyses (Damasceno et al., 2008).

Amongst the literature focusing on identifying variables capable of explaining the *rating of* companies is the work of Soares et al. (2012) who identified as main drivers, the size of the companies, the interest coverage ratio and the corporate governance mechanisms implemented by corporate management. Subsequently, Lima et al. (2016) identified market risk, calculated through the set of variables, systematic risk, general indebtedness ratio and weighted average cost of capital, operational risk, formed by return on investment and degree of operational leverage, liquidity risk, represented through the size of the company and credit risk, represented by the degree of financial leverage and ability to pay debts, as variables that drive the *rating* level of companies. These relationships were not previously identified in the study by Damasceno et al. (2008).

Brito and Assaf Neto (2008) estimated a credit risk model combining default events and accounting ratios and found evidence, for public companies on the Brazilian stock exchange over 10 years, that confirms an improvement in the quality of financial information disclosed by accounting. Subsequently, Kanandani and Minardi (2013) aimed to anticipate credit *rating* changes. Structural equation modelling was used and the sample included companies listed on the stock exchanges for Brazil, Argentina, Chile and Mexico over a 12-year period. There was no empirical evidence to support the proposed models.

Gomes Neto (2017) analysed the segregation of credit *ratings of* financial institutions in emerging and non-emerging countries. In emerging countries, the risk attributed to the country issuing the debt securities is a crucial factor in determining the risk rating of financial institutions, as well as the level of leverage. In non-emerging countries, the credit quality and size of the institutions are the crucial factors in determining the *rating*.

In an emerging discussion, , Zanin (2022) sought to estimate the effects of ESG indices on the *ratings of* companies in North America, Europe and Asia. Mixed results were found for the effects of ESG pillars on ratings, according to different sectors.

Subsequently, Saadaoui et al. (2022) examined the effects of the information content of *ratings* in emerging countries on debt market liquidity. The sample covered the period from 2009 to 2017 and the results indicated that market liquidity is positively related to better debt ratings. In the same year, Jiang (2022) examined the relationship between financial *ratios*, company risk and ratings for

Moody's, Standard & Poor's and Fitch's agencies. The author found that company risk increased in significantly over agency ratings, while financial ratios declined notably.

Finally, two tables were established to summarise the literature on analyst forecast error and the determinants of credit *ratings*.

Table 1. Distribution of studies, by authorship, year and objectives, on forecast error

Author	Objectives
Martinez (2004)	Analyse analysts' consensus and individual earnings forecasts, identify factors that may explain forecast errors, and document analysts' ability to identify overvalued or undervalued stocks.
Martinez (2007)	Measure the effect of experience on analyst forecast error, the effect of portfolio complexity on forecast error, and the effect of broker characteristics.
Saito et al. (2008)	Determine possible factors for the size of analysts' forecast error and the bias of these forecasts.
Dalmácio (2009)	Demonstrate that the adoption of different corporate governance practices is positively related to analysts' individual and consensus forecast error.
Martinez and Dumer (2013)	Determine whether the adoption of IFRS in 2013 led to material changes in the statistical properties of analysts' projections.
Gatsios (2013); Gatsios et al. (2018)	To study the relationship between the error of market analysts' estimates after the adoption of IFRS in Brazil and the relationship between the dispersion of analysts' estimates after the adoption of IFRS in Brazil.
Magnani et al. (2022)	To analyse the effects of corporate hedging, credit ratings and accounting indicators on companies' agency costs as measured by analysts' forecast errors.

Source: Prepared by the authors.

Table 2. Distribution of studies, by authorship, year and objectives, on credit ratings

Authors	Objectives
Damasceno et al. (2008)	Look for evidence that a company with the same accounting indicators over time currently receives a worse credit rating than that assigned in previous years.
Brito and Assaf Neto (2008)	To develop a credit risk rating model for large companies operating in Brazil.
Soares et al. (2012)	To analyse the effect of possible determinants of credit *rating*, which are: Indebtedness indicators, profitability indicators, coverage variables and immobilisation variables.
Kanandani and Minardi (2013)	To assess whether structural models predict in advance *rating* changes by credit agencies in Latin America. The research used companies listed on the stock exchanges of Brazil, Mexico, Chile and Argentina.
Lima et al. (2016)	They analysed possible determinants of rating classification in Brazilian non-financial publicly traded companies.
Gomes Neto 2017	Present whether there is a distinction between the determinants of credit ratings of financial institutions located in emerging and non-emerging countries.
Zanin (2022)	It sought to estimate the effects of ESG indices on the ratings of companies in North America, Europe and Asia
Saadaoui et al. (2022)	Examined the effects of the information content of emerging country ratings on debt market liquidity.
Jiang (2022)	Examined the relationship between financial ratios, company risk and ratings across Moody's, Standard & Poor's and Fitch's.

Source: Prepared by the authors.

3. Methodology

3.1. Database

The work followed the methodology used by Gatsios (2013) for analysts' forecast errors and Lima et al. (2016) for *ratings*.

The data collected for the research was obtained through the Thomson Reuters® platform, in the I/B/E/S databases. Information was collected from 44 companies listed on B3 that had a credit rating from Moody's and S&P rating agencies from 2010 to 2018. Therefore, the companies' *rating* database depends on the coverage of the rating agencies, which limited the sample size. Also, it should be noted that insurance and financial companies were excluded from the sample because they have different financial indicators and business characteristics compared to other companies.

The variables total assets, debt and ROE were collected from the Economática® database.

3.2. Sample analysis l

The total sample included 44 publicly traded non-financial companies, of which at least one forecast value for EPS was reported in the years of collection and had at least one credit rating in the period analysed. It should be noted that this is due to the coverage of credit *rating* agencies. Thus, 369 observations of forecast error and 2,259 observations of *rating* classification were totalled, as shown in Tables 3 and 4 below.

Table 3. Number of observations of the forecast error variable by year

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Remarks	37	42	39	42	42	42	41	42	42	369
% of Total	10%	11,4%	10,6%	11,4%	11,4%	11,4%	11,1%	11,4%	11,4%	100%

Source: Prepared by the authors.

Table 4. Number of observations of the rating variable by agency year

Agencies	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Fitch	112	120	126	135	136	136	143	152	152	1.370
S&P	76	86	107	112	115	122	128	134	136	1.016
Moody's									31	31
Total	188	206	233	247	251	258	271	286	319	2.259
% do Total	8,3%	9,1%	10,3%	10,9%	11,1%	11,4%	12%	12,7%	14,1%	100%

Source: Prepared by the authors.

Regarding table 3, the number of observations was constant over time, which indicates low adherence to analyst coverage in relation to companies listed on B3. As for table 4, the number of companies with credit ratings increased over

time. This movement can be interpreted by the need for greater transparency of companies with information users and by the increase of companies with capital trading in the Brazilian stock market.

3.3. Model

In order to test the hypothesis proposed by the study, the model shown in equation (7) was proposed:(7)

$$ACURÁCIAj,\ t = \beta 0 + \beta 1RATINGj,t + \beta 2LNATIVOj,t + \beta 3ENDIVIDAMENTOj,\ t + \beta 4DUMMY\ SETORj,t + \beta 5ROEj,\ t + ej,t \quad (7)$$

Where, the coefficient of interest is $\beta 1$ and the expected sign is positive, as it reflects the relationship between market analysts' error and credit risk rating. In addition, in order to control for other factors that influence the forecast error and have already been analysed by other studies, we will use control variables such as: size, indebtedness, *ROE* and *dummy* variables for sectors.

The panel data methodology was used to analyse the data. According to Gujarati (2011), this method makes it possible to work with a large number of data, taking into account companies over time, and this methodology offers greater efficiency for the estimators.

3.4. Variables

3.4.1. Dependent variable

The analysts' forecast error was calculated by dividing the Absolute Forecast Error, calculated by the modulus of the difference between the entities' actual earnings per share (*actualEPS*) and the median of the analysts' estimate for the companies' earnings per share in the last month of the year (*EPSprev*), with the value of the actual result for the period (*actualEPS*), as shown in equation (5):

$$EPAj,t = \left| \frac{LPAreal - LPAprev}{LPAreal} \right| \quad (5)$$

Where:

Actual EPS = Actual/effective earnings per share for the period

EPSprev = Earnings per share forecast by analysts

In this research, to obtain the Forecast Error, the actual EPS was used as the denominator in the calculation of the APS, as well as other studies that used the same approach by Martinez (2004, 2007). The data used to compose the profit was

that of the month of December, because the forecasts made previously, up to 11 months before the disclosure, do not capture all the information available to make the forecasts. In addition, it is possible to capture forecasts from a larger number of analysts with revisions on their projections (Martinez, 2004). Finally, the use of the median as a construct statistic for analysts' forecasts aims to mitigate the effect of discrepant projections between peers (Gatsios, 2013).

3.4.2. Independent variables

The rating variable is disclosed by the rating agencies (S&P, Fitch and Moody's), through a scale represented by letters. According to previous studies by Damasceno et al. (2008), Lima et al. (2016), and Soares et al. (2012) and it is necessary to adopt a numerical scale that corresponds to the rating letters.

Credit rating scores were listed from 0 to 7, as shown in Table 1, with level 0 corresponding to the best ratings and level 7 to the worst.

If there are differences between the *rating* data collected from the three agencies, the value will be calculated using the weighted average of the three ratings obtained, rounding to the nearest whole value on the scale shown in Table 5.

Table 5. Numerical scale of S&P, Moody's and Fitch Ratings

Credit risk level adopted	S&P and Fitch	Moody's	Meaning
0 1	AAA AA+ AA AA-	Aaa Aa1 Aa2 Aa3	High credit quality and low risk.
2	A+ A A-	A1 A2 A3	
3	BBB+ BBB BBB-	Baa1 Baa2 Baa3	Average credit quality.
4	BB+ BB BB-	Ba1 Ba2 Ba3	
5	B+ B B-	B1 B2 B3	Low credit quality.
6	CCC+ CCC CCC-	Caa1 Caa2 Caa3	
7	CC C D	Ca C	High risk.

Source: Adapted from Lima et al. (2016).

In addition to what is shown in the table above, it is possible to find ratings such as 'NR' which "indicates that a rating has not been assigned or is no longer assigned" (Standard & Poor's Financial Services LLC, 2019) and 'RET', or in English 'WD', which indicate "Ratings that have been withdrawn" (Fitch Rating, 2019).

For the other variables, the study based itself on the works of Saito et al. (2008), Gatsios (2013) and Lima et al. (2016), and Saito et al. (2008). The debt variable was added to assess its relationship with the error due to the complexity it can bring to the analyst, since there is debt in foreign currency, debts with variable rates and which are often not disclosed with full disclosure. Based on the work of Saito et al. (2008), the ROE variable was changed, not using its standard deviation, but its actual value. Finally, the size variable was represented by the ln of the companies' total assets.

4. Presentation of results

4.1. Descriptive statistics

This section shows the descriptive statistics of the variables proposed and used in the model. Firstly, we chose to analyse the statistics for each year of the selected sample. It can be observed that the highest level of indebtedness of the companies was reached in 2015. In 2018, companies reached the highest average volume of total assets. The lowest level of indebtedness occurred in 2010, along with the highest average *ROE* (Return on Equity). The average *rating* was constant at 1 over the years covered by the sample.

Table 6. Descriptive statistics of variables separated by year

2010					
	Error	***Rating***	**Total Assets**	**Indebtedness**	**ROE**
Average	0.43	1	R$ 82,481,216,43	32.67%	22.82%
Median	0.18	1	R$ 12,808,909,50	34.39%	18.75%
Maximum	5.06	3	R$ 811,172,208,00	64.70%	178.22%
Minimum	0.00	0	R$ 1,328,168,00	2.62%	-1.46%

2011					
	Error	***Rating***	**Total Assets**	**Indebtedness**	**ROE**
Average	0.88	1	R$ 94,602,529,19	32.51%	16.10%
Median	0.15	1	R$ 13,750,271,50	33.90%	12.23%
Maximum	5.73	3	R$ 981,229,907,00	59.50%	138.76%
Minimum	0.00	0	R$ 2,831,721,00	2.61%	-29.27%

2012					
	Error	*Rating*	Total Assets	Indebtedness	ROE
Average	0.84	1	R$ 109,968,774,38	33.98%	11.85%
Median	0.34	0	R$ 16,008,721,50	32.41%	11.75%
Maximum	11.51	3	R$ 1,150,486,189,00	61.17%	125.08%
Minimum	0.00	0	R$ 2,738,159,00	3.58%	-102.96%

2013					
	Error	*Rating*	Total Assets	Indebtedness	ROE
Average	3.08	1	R$ 119,866,880,71	34.71%	9.97%
Median	0.22	0	R$ 17,394,765,50	33.03%	8.38%
Maximum	85.13	3	R$ 1,303,915,123,00	68.89%	95.43%
Minimum	0.00	0	R$ 3,211,167,00	3.06%	-74.27%

2014					
	Error	*Rating*	Total Assets	Indebtedness	ROE
Average	0.57	1	R$ 131,924,634,12	35.98%	9.37%
Median	0.11	0	R$ 18,698,228,00	35.07%	10.70%
Maximum	3.72	3	R$ 1,437,485,512,00	73.72%	84.35%
Minimum	0.00	0	R$ 3,209,768,00	3.64%	-90.51%

2015					
	Error	*Rating*	Total Assets	Indebtedness	ROE
Average	2.41	1	R$ 140,028,185,26	38.08%	9.51%
Median	0.21	1	R$ 20,684,045,00	37.55%	10.09%
Maximum	87.74	3	R$ 1,401,128,757,00	89.74%	80.16%
Minimum	0.00	0	R$ 3,203,997,00	3.99%	-54.14%

2016					
	Error	*Rating*	Total Assets	Indebtedness	ROE
Average	0.64	1	R$ 135,878,086,41	35.74%	6.74%
Median	0.21	1	R$ 22,419,938,50	35.72%	11.51%
Maximum	7.36	6	R$ 1,425,638,779,00	76.21%	40.69%
Minimum	0.00	0	R$ 3,005,820,00	6.42%	-65.08%

2017					
	Error	*Rating*	Total Assets	Indebtedness	ROE
Average	1.85	1	R$ 141,149,550,32	33.58%	10.65%
Median	0.15	0	R$ 26,882,950,50	34.00%	13.62%
Maximum	28.20	4	R$ 1,503,503,484,00	80.70%	111.54%
Minimum	0.00	0	R$ 3,527,332,00	2.94%	-94.64%

2018					
	Error	*Rating*	Total Assets	Indebtedness	ROE
Average	1.61	1	R$ 150,445,517,66	33.45%	14.92%
Median	0.23	0	R$ 27,719,384,50	32.25%	14.16%
Maximum	46.35	4	R$ 1,649,613,394,00	81.62%	64.82%
Minimum	0.00	0	R$ 3,549,313,00	1.97%	-46.42%

Source: Prepared by the authors.

Subsequently, the same sample was divided according to the *rating* score. The data is presented in table 6 below. The risk ratings were changed to numbers as previously set out in the methodology. It should be noted that grades 5 and 7 did not appear in the sample and grade 6 was assigned to only one company.

The lowest average forecast errors are seen when the risk ratings are 0 and 3, while the ratings with the highest forecast errors are 1 and 2. Rating 0 shows the lowest debt ratio and the highest *ROE*. The lowest *ROE* is observed in rating 2, and the lowest average in 3. The highest average volumes of total assets were found in better *ratings* such as 0 and 1, the lowest volume observed was in rating 4 and in this same credit note, the highest average *ROE is* observed.

Finally, the highest debt ratio is seen in *rating* classification 6. However, only one company presented this classification, which justifies the same value for averages, medians, maximums and minimums. In addition, there was no data on ROE in 2016 for this company on the Economática® platform.

Table 7. Descriptive statistics of variables by rating

Rating 0				
	Error	Total Assets	Indebtedness	ROE
Average	0.77	R$ 195,926,313,38	29.61%	17.45%
Median	0.11	R$ 28,656,371,00	30.92%	15.24%
Maximum	26.86	R$ 1,649,613,394,00	66.26%	178.22%
Minimum	0.00	R$ 1,328,168,00	0.00%	-47.68%

Rating 1				
	Error	Total Assets	Indebtedness	ROE
Average	1.29	R$ 59,353,399,79	33.72%	13.25%
Median	0.22	R$ 17,904,891,00	33.45%	14.20%
Maximum	87.73	R$ 1,417,143,716,00	81.62%	64.82%
Minimum	0.00	R$ 2,294,331,00	2.61%	-65.08%

***Rating* 2**

	Error	Total Assets	Indebtedness	ROE
Average	4.87	R$ 26,637,002,29	47.52%	-11.14%
Median	0.67	R$ 14,142,108,00	42.40%	-0.93%
Maximum	85.14	R$ 126,591,612,00	84.31%	62.47%
Minimum	0.00	R$ 3,212,014,00	24.68%	-102.96%

***Rating* 3**

	Error	Total Assets	Indebtedness	ROE
Average	0.77	R$ 15,797,109,67	60.00%	-19.46%
Median	0.52	R$ 10,638,448,00	58.25%	-20.10%
Maximum	4.60	R$ 44,153,623,00	89.74%	7.24%
Minimum	0.11	R$ 2,628,350,00	42.83%	-74.27%

Rating 4

	Error	Total Assets	Indebtedness	ROE
Average	7.81	R$ 32,149,314,00	52.80%	25.81%
Median	1.00	R$ 45,209,970,00	60.91%	19.19%
Maximum	22.14	R$ 47,327,524,00	65.28%	56.83%
Minimum	0.29	R$ 3,910,448,00	32.20%	1.42%

Rating 6

	Error	Total Assets	Indebtedness
Average	0.13	R$ 8,404,355,00	75.90%
Median	0.13	R$ 8,404,355,00	75.90%
Maximum	0.13	R$ 8,404,355,00	75.90%
Minimum	0.13	R$ 8,404,355,00	75.90%

Source: Prepared by the authors.

4.3. Model results

Table 8 shows the results of the estimation of the proposed model by the panel data methodology, specifically the *pols* method.

A positive and statistically significant relationship can be observed, at a level of 5%, between the *rating of* the companies and the analysts' forecast error. This relationship confirms the non-rejection of the research hypothesis proposed by the study that the higher the company's *rating* (the greater the risk in lending funds to it), the greater the difficulty of market analysts in predicting its earnings.

In relation to the other variables, a positive and statistically significant relationship was presented at 5% between company size and analysts' forecast error. This relationship corroborates the study by Martinez and Dumer (2013) that reports the increased complexity of accounting standards in larger companies, which generates an increase in the difficulty of analysts' forecasts.

The relationships of the variables *ENDIV* and *ROE* with the analysts' forecast error were statistically non-significant, so no statistical inference can be made regarding the relationships. These relationships are in line with the work of Gatsios (2013) and Martinez (2004). The R^2 of the model was 4.6%.

Table 8. Panel data results

Forecasting Error	Coefficient	Standard Deviation	P > z
Rating	**1,309012**	**0,600207**	**0,029**
ln Assets	**1,132818**	**0,568829**	**0,046**
Total Indebtedness	-3,96048	3,368014	0,24
ROE	-1,3632	2,092373	0,515
Constant	**-19,9193**	**10,64629**	**0,061**

Source: Prepared by the authors.

Analysts' forecasts have substantial value for market agents, so in addition to understanding how professionals act, it is necessary to know and understand what can influence their actions. In this sense, the results showed that the rating is significant and positively impacts the analysts' forecast error, so companies with a better rating have fewer errors in their earnings projections and companies with a worse rating show more errors in their forecasts.

In short, this ratio increases the market's range of options for carefully analysing analysts' projections, and helps market analysts themselves to better weigh their projections against the *ratings* provided by bond rating agencies.

5. Final considerations

This study aimed to analyse the relationship between analysts' forecast error and the rating provided by credit rating agencies to publicly traded non-financial companies in Brazil. To this end, data from 44 companies was collected between 2010 and 2018 in the Thomson Reuters® and Economática® platform database, and the hypothesis was tested that the higher the company›s rating, the greater the difficulty in forecasting its earnings by market analysts.

With the results obtained by the present study, the hypothesis that the forecast error of the results is positively related to the risk rating on credit quality was confirmed. As it is a primitive study, no previous work was found on the relationship between forecast error and rating, however the research advances and connects the works of Gatsios (2013), Gatsios et al. (2018), Jiang (2022), Lima et al. (2016), Magnani et al. (2022), and Saadaoui et al. (2022).

In this sense, analysts' forecasts have substantial value for market agents, so in addition to understanding how professionals act, it is necessary to know and understand what can influence their actions. In this sense, the results showed that the *rating* is significant and positively impacts the analysts' forecast error, so companies with a better *rating* have fewer errors in their earnings projections and companies with a worse *rating* show more errors in their forecasts.

In short, this ratio increases the market's range of options for carefully analysing analysts' projections, and helps market analysts themselves to better weigh their projections against the *ratings* provided by bond rating agencies.

It should be noted that we only used data from companies that presented a forecast of earnings and credit risk rating for at least one year of the period analysed. Therefore, the number of companies was limited in the period analysed. For future studies, it is suggested that the sample be expanded, to include, in particular public companies in emerging economies. In doing so, it will be possible to increase the empirical evidence of the relationship established by this study.

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Accounting and Management Review
Revista de Contabilidade e Gestão

ISSN 2795-4412

No. 27, 2023
pp. 87-117
Published by OCC
DOI https://doi.org/10.55486/amrrgg.v27i1.4

www.accountingmanagementreview.occ.pt

Cash conversion cycle across industries

Airlines *versus* fast-moving consumer goods industry

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ABSTRACT

The purpose of this research is to assess whether the Cash Conversion Cycle differs between industries, by looking at Days Inventory Outstanding, Days Sales Outstanding and Days Payables Outstanding. This research provides an overview of Cash Conversion Cycle in two different industries and discusses how each component influences Cash Conversion Cycle. It uses a sample of 172 data points (43 firms) from multinational companies operating worldwide. Based on data retrieved from Bloomberg and from the annual reports of 23 Fast-Moving Consumer Goods companies and 20 major airline companies, a univariate and bivariate (correlation) analysis was done. The analyses for both industries cover four years, from 2009 to 2012, a time span that includes a period of economic downturn. The findings suggest that Cash Conversion Cycle differs between industries. It also differs depending on the size of the company. While its components – Days Inventory Outstanding, Days Sales Outstanding and Days Payables Outstanding – directly affect Cash Conversion Cycle, there are also other factors at play, such as inventory costing system, bargaining power with suppliers and customer credit policies. The economic downturn, and particularly the specificities of each industry make this overview relevant. The research addresses managers who should take Working Capital Management decisions, which can extend or reduce Cash Conversion Cycle, as it contributes to a better understanding of how the size of a firm, its inventory system, liquidity, and payables are associated to the Cash Conversion Cycle and consequently affect companies' profitability.

Keywords: Cash conversion cycle; Days inventory outstanding; Days payable outstanding; Days sale outstanding, Working capital management; Airlines; Fast-moving consumer goods.

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1. Introduction

Working Capital Management (WCM) is a strategic priority for generating cash. It can prevent liquidity shortage through efficient inventory, receivables management and timely discharge of liabilities (Shin & Soenen, 1998). This is mainly affected by the Cash Conversion Cycle (CCC), which is a key factor for successful WCM. In the past, these two concepts have been of paramount importance due to economic and financial challenges, such as banking crises (Fukuda et al., 2007; Chen et al., 2022). Cash has been harder and harder to obtain and, as a result, companies are managing working capital to be able to extract Cash from their balance sheets instead of seeking it from external financing. By managing this capital, looking particularly at the CCC, companies are able to negotiate payment terms, trade credits and the optimal inventory they should have in order to fulfil their requirements. This obviously impacts on *liquidity* and, moreover, on *profitability*, in terms of individual ratios and general results per industry. So, how do industries differ from each other in terms of the Cash Conversion Cycle? Does CCC impact on profitability? Are some specific characteristics of a company and its particular industry in general associated to CCC?

Cash Conversion Cycle is normally defined as a metric that expresses the length of time that it takes for a company to convert resources into cash flows. The CCC may have a negative impact on a company's profitability and liquidity, as shown in many works (Christopher & Kamalavalli, 2009; Deloof, 2003; Lazaridis & Tryfonidis, 2006; Padachi, 2006; Shin & Soenen, 1998; ; Uyar, 2008 and many others). However, there is no consensus in the main results of previous literature on the subject regarding the direction and intensity of the association and even whether such a relationship exists.

Thus, the purpose of this research is to assess whether the Cash Conversion Cycle differs between industries, by looking at its components: Days Inventory Outstanding, Days Sales Outstanding and Days Payables Outstanding. This research provides an overview of CCC in two different industries, based on a sample of 172 data points (43 firms). Twenty-three companies belong to multinational Fast-Moving Consumer Goods companies and the remaining 20 companies are major airlines operating worldwide. Data was retrieved from Bloomberg and from the annual reports, and a univariate and bivariate (correlation) analysis was performed. The analyses for both industries cover four years, from 2009 to 2012, a time span that includes a period of economic downturn. The findings suggest that Cash Conversion Cycle differs between industries. These two industries are similar in that they have low levels of CCC, however such levels are the result of quite different characteristics and Working Capital Management decisions, thus each CCC component contributes in a different way for liquidity of a Fast Moving Consumer Goods (FMCG) company or an airline.

The two industries have been studied in the past, but previous literature on CCC has not yet analysed these two industries on a comparative basis. The comparison can provide evidence of concerns regarding CCC for these two types of industries, and the discussion addresses managers by bringing to their notice how Working Capital Management is sensitive to the specificities of the industry, and how liquidity and profitability can improve, given the association between CCC, and its components, to profitability, proxied by Operating Income.

The research addresses managers making Working Capital Management decisions, as they can extend or reduce Cash Conversion Cycle. This paper contributes to a better understanding of how the size of a firm, its inventory costing system, liquidity, and payables are associated to CCC and consequently affect companies' profitability.

This paper is organized as follows: Section 2 provides definitions of ratios and metrics that are key to the analysis of CCC, reviews the empirical research on the topic and highlights the relevant findings in previous papers. Section 3 introduces the research questions. Section 4 outlines how the sample was selected, and the data collected, and the methodology used to obtain the final results. Section 5 presents univariate data analysis. Section 6 presents bivariate data analysis and interprets the findings. Section 7 is the conclusion, showing the limitations of the paper, along with suggestions for future researchers.

2. Literature review

2.1. Key concepts

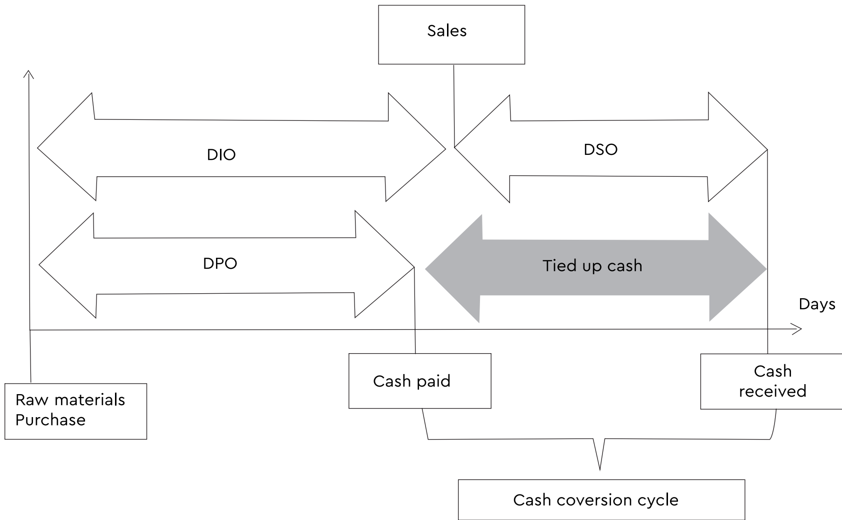
Cash Conversion Cycle (CCC) is a key concept, measuring how quickly a company can convert inventories into cash through sales. It is the sum of Days Sales Outstanding (DSO) and Days Inventory Outstanding (DIO) minus Days Payable Outstanding (DPO).

Cash Conversion Cycle can be expressed in number of days, but it is also possible to calculate it in months.

$$CCC_t = DIO_t + DSO_t - DPO_t \quad [1]$$

Figure 1 illustrates the concept of CCC.

Figure 1. Cash Conversion Cycle



Source: Rehan (2012)

DSO is the average number of days a company takes to collect cash after the sale of the merchandises, products or services provided. A low DSO means the company collects receivables in a relatively short time. DSO measures how effective the company is in obtaining cash. The DSO ratio is calculated as follows:

$$DSO_t = \frac{\textit{Average Accounts Receivables during period t}}{\textit{Sales during period t}} \; x \;\; 365 \; days \qquad [2]$$

DIO shows how long a company takes to convert its inventory into sales. Low values of DIO are the ideal for a company. Inventories must be kept at a level where sales are not lost because of stockout. DIO depends on the industry. For example, supermarkets selling fruit usually have low inventories, while companies in the automobile industry have large amounts of stock. It should be noted that DIO ratio varies with the inventory measurement system in use, either FIFO, LIFO, or the weighted average cost inventory basis.

$$DIO_t = \frac{\textit{Average Inventories during period t}}{\textit{Cost of Goods sold during period t}} \; x \;\; 365 \; days \qquad [3]$$

DPO is the average number of days a company takes to pay the supplier in cash after the acquisition of a raw material, a merchandise, or a service. A low DPO means there is a long time between the purchase and the payment, which gives the company extra liquidity. This ratio varies from industry to industry. DPO depends on the duration of the operating cycle, that is the length of time in transforming raw material into finished goods. For example, the payment for a project in the construction industry is expected to take a long time, whereas a transaction in FMCG is speedy.

$$DPO_t = \frac{\text{Average Accounts Payables during period } t}{\text{Cost of Sales during period } t} \times 365 \text{ days} \quad [4]$$

It is generally expected that CCC will differ between industries, given the divergence in its components.

DSO depends on Sales or services rendered, credit agreements and discounts. In FMCG and in the airline industry customers tend to pay at once, therefore this ratio does not vary much between either industry.

DIO depends on the size of the inventory and how it is measured. In the airline industry, inventory levels are very low. On the contrary, inventory levels represent a high percentage of the total assets of FMCG companies. As can be seen, inventory levels vary widely depending on the industry. These differences will obviously have a bearing on the CCC levels, hence the divergence in ratio values between FMCG companies and the airline industry. DIO not only varies depending on the quantity of stock, but also on the accounting choice, i.e., how inventories are measured, FIFO (First In First Out), LIFO (Last in First Out) or the weighted average cost of acquisition or production.

DPO depends on decisions on the purchase of merchandises and raw materials, and suppliers' conditions and discounts on offer. FMCG companies' have a high bargaining power with suppliers, as the former have a large part of the total billing of the latter. Furthermore, the three components of CCC are affected by the level of activity as well as business seasonality.

2.2. Empirical research

There has been some research in the field of Working Capital Management and how it influences Cash Conversion Cycle, Profitability and Liquidity. Table 1 provides a summary of the relevant research.

Table 1. Literature review of the impact of CCC on profitability

	Gross Operating Income	Return on Assets
Significant negative linear	• Deloof (2003) only a significant negative effect. • Lazaridis and Tryfonidis (2006) for firms listed on the Athens Stock Exchange. • Enqvist et al. (2014) for Finnish companies.	• García-Teruel and Martínez-Solano (2007) for Spanish SME. • Yazdanfar and Öhman (2014) for Swedish SME. • Enqvist et al. (2014) for Finish listed firms. • Chang (2018) for a global sample.
Significant positive linear	• Gill et al. (2010) for US listed manufacturing firms.	• Chang (2018) for US firms. • Lyroudi and Lazaridis (2000) for Greek major companies of food and beverege
Insignificant linear		• Chang (2018) for German firms.
Significant Non-linear	• Banos-Caballero et al. (2012) found a concave influence for Spanish SME. •Yilmaz and Acar (2019) for non-financial Omani companies.	• Yilmaz and Acar (2019) for non-financial Omani companies.

Lamberson (1995) analyzed how small companies respond to changes in the levels of economic activity in the period 1980-1991 and did not find noticeable changes during downturns. In contrast, Gonçalves et al. (2018), based on a sample of UK unlisted companies for the years 2006-2014, found that the conditions of economic cycle stress the positive impact of WCM efficiency on profitability, especially during economic downturns. They concluded that WCM is part of overall corporate financial strategy.

PwC's annual global working capital study highlights that "within any given region around the globe there are wide variations in working capital performance, reflecting differences in market maturity, legislation and cash focus." PricewaterhouseCoopers (PwC, 2019, p.20).

An optimal WCM influences profitability of the companies (Gill, Bigger & Mathur, 2010) through the focus on key drivers of performance, leveraging technology to achieve optimal levels as well as applying EU directives (PwC, 2012). Banos-Caballero et al. (2010) found that small and medium firms "have a target CCC length to which they attempt to converge and that they try to adjust to their target quickly." (Banos-Caballero et al., 2010 p. 511).

Shin and Soenen (1998) conclude that managers can create value to shareholders by reducing CCC to a reasonable minimum, and that it also has a negative relation with profitability of companies. The study was done on 30 firms listed in the Nairobi Stock Exchange between 1975 and 1994. Similarly, Deloof (2003) found a negative relation between CCC and profitability due to the fact that smaller and less profitable firms

take longer to pay their bills (Garcia-Solano & Martinez-Teruel, 2007) and have less cash to lend to customers and consequently lower accounts receivable which results in higher profitability (Fukuda et al.,2007). Deloof tested this using a sample of 1009 large Belgian non-financial firms for a period of five years. Likewise, Lazaridis and Tryfonidis (2006) concluded that Greek listed companies took advantage of the financial debt in order to decrease CCC and so increase their profitability. WCM and Profitability are correlated across all the industries. Fillbeck and Krueger (2005) found that WCM measures differ between industries and that they are not static over time. These authors' conclusions are based on a sample of 1,000 companies from different industries during a four-year period of analysis.

Concentrating solely on Fast Moving Consumer Goods, Bagchi and Khamrui (2012) conclude that CCC and debt used by the firm are negatively associated to a firm's profitability. They argue that in order to improve this, firms should manage their working capital in more efficient ways. Their study is based on 10 FMCG companies in India for a period of 10 years. As for Portugal, to the best of our knowledge there is only one study on FMCG industry in Portugal (PwC, 2012), which was only a part of a simultaneous analysis of Portugal and Spain. Therefore, the difference in the market size of each Iberian country, which would influence CCC in each country, was not taken into account. The PwC (2012) study concludes that the Iberian Peninsula has one of the lowest values in Days Working Capital (on average) with the retail industry having the lowest value and the pharmaceutical industry having the highest value. The Days Sales Outstanding and Days Payable Outstanding observed in the Iberia countries do not differ very much from the Italian ratios.

Days Inventory Outstanding in Portugal and Spain ranks between the Nordic countries and Germany. Even though DPO is directly related to a lower CCC a higher DSO and DIO implies a higher number of days in collecting cash. Consequently, Iberian companies tend to be less liquid and make less profit. There is little literature regarding the airline industry and WCM apart from a book about the foundations of airline finance which deals in particular with WCM in the airline industry (Vasigh et al., 2010).

This paper aims to study CCC and understand how it differs between industries. It also analyses how specific components impact the overall CCC in those industries, and how they can contribute to differences in CCC. Noting a void to be filled as to research on CCC and its relationship to various industries, this research adds to the literature a comparison between FMCG and airlines. These two industries have been chosen since a comparative CCC analysis would provide insights to managers in view of improving Working Capital Management decisions, and thus liquidity and profitability, although given their nature these industries may differ *a priori* regarding CCC components.

3. Research questions

This research provides an overview of Cash Conversion Cycle (CCC) in two different industries and discusses how each component influences CCC. The purpose of this research is to assess whether the Cash Conversion Cycle differs between industries, by looking at Days Inventory Outstanding, Days Sales Outstanding and Days Payables Outstanding. A negative relationship between Cash Conversion Cycle and profitability is expected. There is an analysis of CCC over a period of years as well as between the two industries**.** There is also a focus on the relationship between CCC and some variables such as the profitability, size, accounting inventory valuation model, payables, liquidity, and the industry. In order to obtain an insight and understand CCC. six research questions (RQ) were formulated:

RQ1*: Is CCC related to company profitability?*

A longer period of time is analysed in this research, including a diversity of related variables and a wide range of companies. In this, it differs from any other studies that may have been done about the same topic. Profitability is proxied by Operating Income since this is the only measure of profitability common to both industries.

RQ2: *Is CCC related to the size of the company?*

Do larger companies necessarily have a lower CCC? In general, size can be measured in three different ways: by the Average number of employees, by Sales or by Total assets. Total Assets are less volatile than Sales, the latter being greatly affected during 2008 and 2009 due to the economic downturn. The fleet size, each playing a different role in an airline's operational activities in order to achieve parity in comparisons, Total assets was taken as proxy for size.

RQ3: *Does the inventory costing system impact CCC?*

Accounting choice implies financial reporting differences. One area where these differences can happen is in the valuation of inventory, which is part of CCC. As stated in accounting regulation, inventories can be measured according to several valuation criteria. Three common inventory valuation criteria are the weighted average cost, Last-In-First-Out (LIFO), and First-In.First-Out (FIFO). Under the weighted average cost measurement, cost of inventory is based on the average cost of the goods available for sale during the period. Nowadays, LIFO is not generally very common in Europe as International Accounting Standard (IAS) 2 does not allow its use. During periods of inflation, LIFO results in lower profits and inventories becoming understated in terms of replacement costs related to exercise period. On the other hand, FIFO results in higher reported profits and

higher income taxes. Inventory valuation can thus be biased during inflation or deflation times. Despite, requiring inventories to be measured either at the lower cost or net realizable value, IAS 2 outlines three methods for cost calculation. These are FIFO, weighted average cost, and specific cost.

This research question is only answered for the FMCG industry because in airlines the inventory is not relevant due to the nature of the business[4]. Another assumption is that DIO is measured through Sales since there is a 93% correlation in FMCG and 80% in airlines between DIO measured through Sales and DIO measured through COGS. This avoids a biased result, mainly in the airline industry where it is very hard to estimate COGS, yet a non-important item in the industry.

RQ4: *Do payment terms to suppliers affect CCC?*

During economic recessions, payment terms tend to be extended due to lack of liquidity and profitability of entities. In airlines, fuel is the main raw material bought from suppliers and its price fluctuations may vary greatly from the norm. This can and has been avoided through fuel hedging contracts, fixing the prices of fuel via swaps or options reducing the exposure to volatility of fuel prices. There is a negative relationship between days of accounts payable and profitability (Deloof, 2003), but does this impact the length of CCC?

RQ5: *Does more liquidity mean more profitability for companies (via a low CCC)?*

Liquidity and profitability are related through CCC, i.e. liquidity is impacted by Cash Conversion Cycle, as the faster a company takes to collect cash from customers and inventories on sales and pay its suppliers, the more liquidity it has. At the same time, as the amounts of available cash increase, so does profitability since the company has more resources available to invest in itself.

RQ6: *Does CCC length differ between industries?*

Specific characteristics of each industry can affect CCC components such as DIO due to the huge differences in inventory that represents a big slice of retailers' assets. DIO, however, has little or no relevance in an airline's balance sheet.

To answer this research question, compels a comparison between both industries, FMCG and airlines, and therefore observe how they differ from each other and why.

4. Methodology

4.1. Sampling

The research is based on a sample of multinational companies from FMCG and the airline industry, for the period of 2009-2012. The criteria for selecting companies to the sample were size, proxied by total assets in the last year of the period of analysis, as well as being listed, since they require more strict presentation and disclosure of financial information and audits, and so information is more reliable.

Convenience sampling is "perhaps the best way of getting some basic information quickly and efficiently" (Sekaran, 2004. p. 277).

In the initial sample, companies of the FMCG and airline industry were selected from Blomberg, thus companies which were not included in the Blomberg database were out of the sampling process. This means that the findings from the study of the sample cannot be confidently generalized to the population (Sekaran, 2004, p. 276).

The analyses for both industries cover four years, from 2009 to 2012. This time span includes a period of economic downturn, and this will allow understanding of whether there are any effects of the economic recession on the CCC length.

Regarding FMCG, it is a very competitive industry. More and more, companies feel the need to improve and innovate within this industry: multi-channel distribution, online customer engagement and advertising activity are key factors to retain and attract new customers. The whole industry is customer focused and therefore it is an extremely high-value industry specially in the U.S. The global FMCG market size was valued at $11,490.9 billion in 2021 and is projected to reach $18,939.4 billion by 2031, registering a CAGR of 5.1% from 2022 to 2031 (Seehttps://www.alliedmarketresearch.com/fmcg-market).Even though growth has slowed, it still benefits from gross margins and strong balance sheets.

In FMCG the final sample is 23 companies. The initial sample consisted of 40 listed companies (see Appendix 1 and Appendix 3). However, 17 companies were excluded from the sample, 12 due to lack of information and 5 because they had been acquired by a group. The final sample in the FMCG industry includes 23 companies with 92 data points (which cover four years).

Not only is FMCG analysed, but also the airline industry. The airline industry nowadays is highly competitive, being characterized by low profit margins and a heavy cost-structure in terms of fixed costs. The expenses of an aircraft flight do not vary significantly with the number of passengers and a simple variation in pricing or in the number of passengers can have a disproportionate effect on

an airlines financial result. In addition, this industry is very tough in terms of competition, while it is very susceptible to discount prices because without these, this will result in losses due to unsold seats.

The airline industry is almost unique since it is very conservative regarding the data availability and its classification on General Ledger (G/L) accounts which differs from what is standardized, such as in COGS which is very hard to define in this industry's case. It is important to note that in the airline industry there are three main alliances to which airline companies belong with the aim of cooperating to reduce costs, share flights, improve services, and provide a higher range of flights to its customers: they are Star Alliance, Skyteam and Oneworld.

It is also worth noting that airlines have a contractual instrument to mitigate their exposure to fuel price volatility. It consists of establishing fixed prices, so even when the fuel price decreases, the company must pay the fixed price regardless of the market price. This procedure can even be a source of revenue rather than a cost, i.e. if an airline buys a fuel call option and the fuel price increases, the company will get a return on the option that offsets their actual cost of fuel. On the other hand, if the price of fuel decreases, the company will not receive the return on the option.

The initial sample of companies in the airline industry comprised 44 companies (see Appendix 2 and Appendix 4). Seven companies are now part of a group while another 16 airline companies were excluded due to lack of information. In the case of Japan Airlines, the company underwent restructuring during the period of analysis, as a consequence of the economic downturn. Therefore, the final sample for this industry has 20 companies with 80 data points.
The final sample is compounded of 172 data points (43 firms) from multinational companies operating worldwide.

4.2. Variables

Based on data retrieved from Bloomberg for 23 Fast-Moving Consumer Goods companies and 20 airline major companies.

The variables in the database are numerical and categorical. The former includes CCC, and its components, DIO, DSO and DPO, and Operating profit, taken as the proxy for profitability, as well as Total Assets, Annual Sales, Cost of Goods Sold, Receivables, Payables, and Inventories. Categorical variables are Inventory costing system, year of analysis, Industry, this later a dichotomic variable. All these variables, CCC and its components, DIO, DSO and DPO, are calculated for each company in the sample. This paper considers the exchange rates observed on December, 31st of each year. Size is proxied by Total Assets. For both industries,

descriptive statistics such as minimum, maximum, mean and standard deviation help to get a first insight of the data. Furthermore, correlation coefficient is calculated, and tested for a 5% level of significancy, both for the whole sample and for all the companies in both the industries analysed.

To better understand whether inventory valuation is associated to CCC through Inventories and DIO (RQ 3), the inventory valuation criteria for each company was retrieved from the annual reports in FMCG for the year 2012.

Along with data retrieved from Bloomberg, data was also obtained from annual reports of the majority of the companies. This was particularly so in variables for which Bloomberg did not have available data, such as Cost of Goods Sold (COGS). Data collected from databases was matched with the financial reports available in the websites for companies' validity purposes. The resultant database thus created could well be a contribution for future research to be used with the whole data on the two industries 3,258 data points.

5. Data analysis

5.1. Size

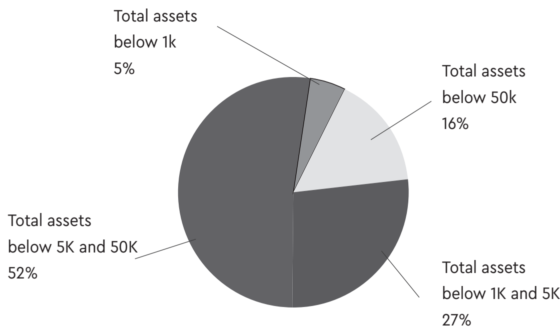
Figure 2 shows the distribution of the sample by size group and Table 2 presents the sample breakdown by industry and company size. In the database, code zero is assigned to FMCG industry while 1 stands for the airline industry.

Table 2. Sample breakdown by industry and companies' size

Category Code	Total Assets	FMCG	Airlines	#
1	Above 50K USB	7	0	7
2	Between 5K-50K USD	11	12	23
3	Between 1K-5K USD	3	9	12
4	Below 1K USD	2	0	2
# Companies		23	21	44

Company size, proxied by Total Assets, was codified using a scale ranging from 1 to 4, where 1 stands for the largest ones and 4 for micro companies (a company is classified as: large when its Total Assets are above 50K USD, medium size between 5K and 50K, small size between 1K and 5K, and micro size below 1K). It was originally expressed in the local currency; it was converted from local currency to Euros to better conclude about the size and put all data in the same currency.

Figure 2. Companies' size



Asset Turnover shows how the Sales amount generated for every euro's worth of assets varies. In both industries the Asset Turnover (Sales / Total assets) is high. In FCMG, 48% of companies are considered medium against 30% of big companies. In part, this is due to different average size of companies in both industries. Regarding airlines, 60% of companies are medium while 40% are small.

5.2. CCC and CCC components

Preliminary results show CCC decreased for both industries during the economic recession. From 2010 to 2011, CCC decreased by 27%, on average in FMCG, and was five days shorter throughout the next year. In contrast, in airline industry CCC decreased from minus seven days to minus 11days from 2009 to 2010, an average decrease of 58%. In 2012, CCC decreased even further, by 19%. Regarding each CCC component *per se* and how it influences CCC, it is important to note that the components differ a lot from one industry to another.

Descriptive statistics were calculated for average, median, minimum, maximum and standard deviation (See Table 3). This type of analysis is done for each industry individually.

Table 3. Descriptive statistics of CCC and CCC components

(in days)	FMCG				Airlines			
	DSO	**DPO**	**DIO**	**CCC**	**DSO**	**DPO**	**DIO**	**CCC**
Average	45	106	36	-24	26	74	10	-38
Median	41	90	32	-12	26	26	9	-9
Minimum	20	35	19	-257	4	2	0	-311
Maximum	84	317	135	96	66	396	38	41
SD	14	58	22	65	13	96	8	86

Cash Conversion Cycle in the FMCG industry is negative. On average CCC is minus 24 days, meaning that companies in this industry collect from customers before paying to suppliers, but after converting inventories into units sold. Therefore, it can be inferred that, on the whole, companies in the FMCG industry are using their working capital in an efficient manner. One reason that may explain this result could be only big companies with high bargaining power among their suppliers being in the sample, and so credit to them is extended. The nature of the industry would *per se* explain this, as normally FMCG customers pay immediately, and therefore Receivables are set at an average of 10% Total Sales.

During the crisis period of 2009-2010, companies took 24 days to collect money. The CCC stood at negative values (in days) since, as stated before, companies collected from customers in a shorter time when compared to the deadlines given to pay suppliers and to convert inventory into sales. This was even better than in the post crisis period because FMCG industry unlocked liquidity by reducing receivables and inventories (due to a decrease in Sales) and extending payables. In FMCG, all CCC components decreased in 2009-2010, as shown in Table 4. Between 7% and 10% for the DSO and other components respectively, and a 16% decrease in CCC overall, that is, a CCC two days shorter. In the subsequent periods all variables increased.

Table 4. Annual changes in CCC and CCC components in FMCG

Year	CCC	DPO	DSO	DIO
2009	-	-	-	-
2010	0.16	0,1	0.07	0,1
2011	-0,27	-0.08	-0.02	-0.01
2012	0.01	-0.02	-0.01	-0.03

Descriptive statistics, such as minimum, maximum, and standard deviation have been calculated, the minimum CCC in FMCG being minus 257 days and the maximum 96 days, as shown in Table 3, above.

This could be explained by the bargaining power huge companies have in relation to smaller ones. Standard deviation is also a measure that should be taken into account, as an indicator of variability within industry CCC. In FMCG this is on average 65 days.

Regarding the airline industry, CCC for each of the four years of the period analysed, is on average negative, with the maximum 41 days, and a standard deviation of 86 days.

In 2009-2010, the airline industry despite the variation in DPO being so large (21%) and DSO and DIO decreasing, the overall CCC decreased. Table 5 shows the

changes in CCC and CCC components in airlines. The largest variation was in CCC from 2011-2012, decreasing by 19%.

Table 5. Changes in CCC and CCC components in airlines

Year	CCC	DPO	DSO	DIO
2009	-	-	-	-
2010	58%	21%	-7%	-5%
2011	-3%	-4%	-4%	-5%
2012	-19%	13%	-6%	-4%

Regarding the sample, higher values of payables and receivables are expected during the first two years of analysis. The opposite is expected for Sales and Cash during the same period. The CCC should behave as the highest variation of each of its components.

6. Bivariate analysis

Bivariate analysis stands for the analysis of two variables in order to obtain empirical evidence of whether a relationship exists between variables and then determining the magnitude and direction of the relationship between them. For each specific research question a correlation analysis was done.

The correlation coefficient tells you how much one variable changes when the other one does. It provides a linear relationship between two variables, which can be positive or negative. Appendix 5 presents the correlation coefficients for the FMCG and Appendix 6 shows the correlation coefficients for the airlines.

6.1. Is CCC related to company profitability (RQ1)?

CCC and profitability are negatively correlated in both FMCG and airlines, showing a significant impact on profitability. In the case of FMCG, CCC correlates to profitability at a value of minus 14% (*p*-value = 0.000261; confidence level=95%), That is, the longer it takes companies to collect cash from its operations, the less profitable they are. Within FMCG, this could be explained mainly through payables, since DPO is the variable that most influences CCC in this industry. Likewise, in airlines CCC correlates negatively with profitability, at minus 31% (*p*-value=0.0013; confidence level=95%). Just like in FMCG, this would be explained through DPO, the component with highest influence (in number of days) on CCC as a whole. Payables are very important in this analysis since there is a negative relation between them and profitability because less profitable firms wait longer to pay suppliers' bills and inventory remains much more time within the warehouse due to the low level of sales.

Several authors, such as Deloof (2003) and Rehn (2012) and Shin and Soenen

(1998), studied the question of how WCM affects profitability. More specifically, Rehn (2012) researched on how CCC affects Finnish and Swedish companies' profitability.

It was found that WCM and profitability are correlated, and managers can create value for shareholders by reducing CCC to a reasonable minimum.

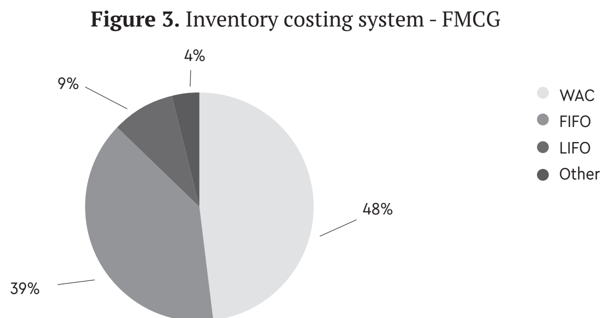
6.2. Is CCC related to the size of the company (RQ2)?

There is a negative correlation between the length of CCC and company size in both FMCG and airline industries. The larger the company, the less time it takes to collect cash from its operations. This is due to the bargaining power big companies have with suppliers and their high level of sales during the period analysed. In FMCG, on average, a 7% decrease in CCC length corresponds to an increase in company size, proxied by Total Assets, while in airlines, the former will diminish by 40%. In FMCG the two variables are negatively correlated by 27% (*p*-value = 0.01, with confidence level set at a 95%), while in airline industry this stands by 63.2% (*p*-value = 0.04; confidence level = 95%). These results are in line with Uyar (2008) who concludes that there is a negative relationship between the length of CCC and firm size. These results are due to the fact that total assets represent a huge part of the airline's balance sheet, as opposed to the impact of a high level of inventory in FMCG. The former fact is because airplanes carry such a weight within tangible fixed assets in airlines, and thus total assets.

6.3. What is the impact of the inventory costing system on CCC (RQ3)?

Companies may choose which inventory costing system to use. Regarding measurement, this will make a difference in their financial reporting. This analysis is only relevant for FMCG, given that the airlines inventory is almost zero. Figure 3 shows the inventory costing system used by FMCG companies in the sample.

Figure 3. Inventory costing system - FMCG



With LIFO, the inventory values are higher, with an average of 190 days. On the other hand, FIFO companies show the best CCC score with -71 days. This happens because LIFO overstates the value of inventory in terms of replacement costs

during recession periods (2009-2012), influencing DIO and therefore, increasing CCC levels. Therefore, income will be higher in contrast to FIFO, where there is a lower profit and lower income taxes. Thus, the choice of inventory costing systems impacts CCC regardless of whether there is a boom or a recession.

6.4. Does payment terms to suppliers affect CCC (RQ4)?

The amount of time taken to pay suppliers increased during the period of economic downturn. Big companies have a great bargaining power with suppliers, especially when it comes to multinationals companies, and within FMCG industry. Likewise, companies with lower profitability show larger payment periods particularly during downturns. This was the conclusion reached in the research done by Bernardo (2013) and Ganso (2013).

Payables are highly correlated to CCC in both industries, showing a negative correlation coefficient of -54% in the FMCG and -92% in the airline industry (with extremely low *p*-values for a 95% confidence level). The longer a company takes to pay suppliers, the less time it takes to collect cash from its operations (self-financing). Payables influence CCC via Days Payable Outstanding, which on average account for 79% and 96% of CCC in FMCG and the airline industry respectively. In the airlines payables account for 83% of CCC, while in FMCG they only account for 28%.

6.5. Are companies with higher liquidity more profitable (via a low CCC) (RQ5)?

There is, effectively, a positive correlation between liquidity, proxied by cash, and profitability, measured by operating income. In FMCG this correlation is around 72% while in airlines it is 21%. This can be explained by airlines having, on average, less liquidity, due to its major assets being fixed tangible. *P*-values and ANOVA tables have been calculated for the two industries. In FMCG, 51% of profits are in cash in hand (r square values) (*p*-value = 0.000454). In airlines, only 4% of profitability is down to cash, with the remainder coming from fixed assets turnover, the main driver of airlines profitability.

Due to its reliance on aircrafts, the airline industry shows high fixed assets on the balance sheet and thus heavy fixed costs. Moreover, the enormous capital intensity of the airlines demands external financing, thus resulting in high debt ratios and increased financial risk (Vasigh et al., 2010).

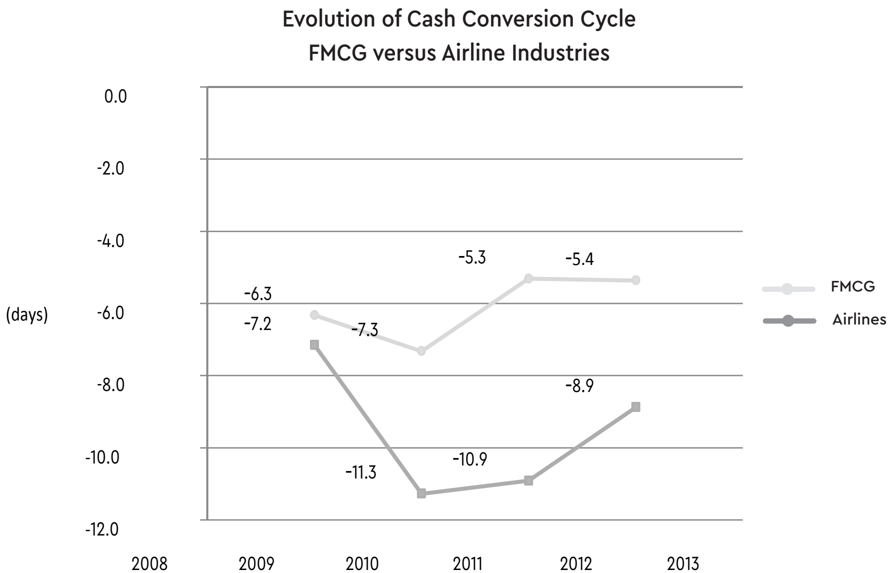
These results are not in line with the conclusions of Bhunia, Bagchi and Khamrui (2012), who researched 50 small medium Indian private companies from the steel industry. They concluded there is a relationship between WCM and profitability and that liquidity and solvency are important regarding the financial position of the company, although liquidity does not seem to have an impact on profitability.

6.6. Does CCC length differ between industries (RQ6)?

Once CCC is constituted by DPO, DIO and DSO, and since the weight of each component varies depending on the industry, CCC will also vary from industry to industry. Airlines typically rely heavily on fixed tangible assets, while FMCG are more inventory-oriented. In the latter industry, liquidity measures such as Cash are abundant while in the former it represents no more than 10% of Total Assets.

CCC differs not only across industries but also with time. As shown in Figure 4, 2010 was the best year for both industries when the CCC length was lowest. It is worth noting that having an extremely low CCC does not necessarily mean an optimal performance for a company. As Rehn (2012) concludes, working capital cannot be reduced to a minimum without the company being compromised. There is a permanent need for optimization, as suppliers could be lost because of over-long payment extensions. Furthermore, reducing too much credit to customers can make these latter to move to the company's competitors. Fillbeck and Krueger (2005) also agree that significant differences develop between industries over time. They found that food stores and food services have the lowest DSO and a quick inventory turnover while having a high bargaining power with suppliers.

Figure 4. CCC per industry along time (2009-2012)



Summing up, CCC differs between industries not only due to their nature but also depending on the way each company manages each variable that constitutes CCC: payment to suppliers, inventories, receivables, and sales, as can be seen in Figure 5 and Figure 6. In addition, these factors also vary, not just with the nature and the management of each specific industry, but also depend on the state of the economy.

Figure 5. CCC and CCC components in FMCG industry

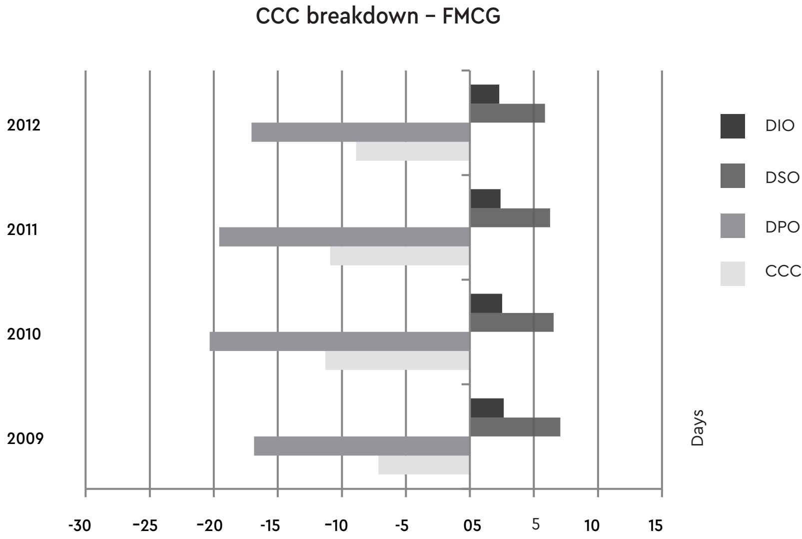
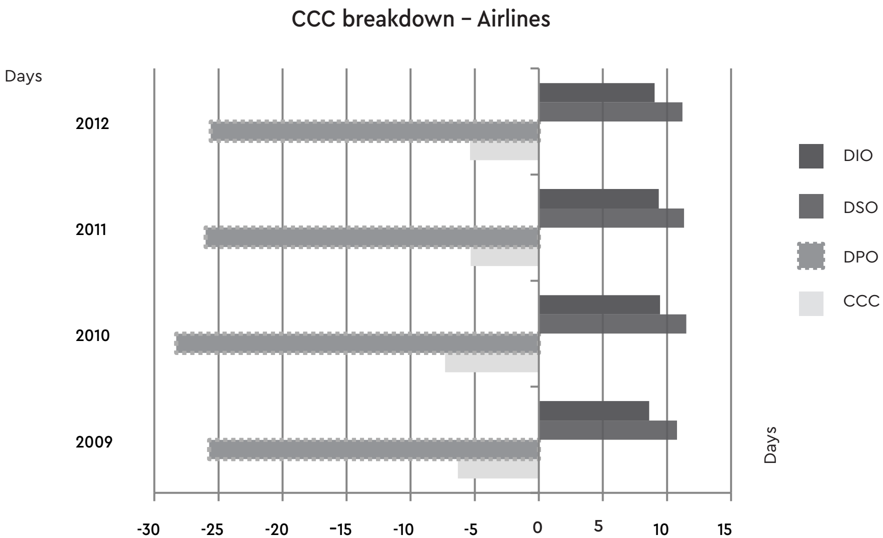


Figure 6. CCC and CCC components in airlines



7. Conclusion

This research provides an overview of Cash Conversion Cycle in two industries, Fast Food Consumer Goods and airlines, and discusses how each component influences CCC. While these components – DPO, DSO and DIO – directly affect CCC, there are also other factors at play, such as inventory costing system, bargaining power with suppliers and customer credit policies. The recent economic downturn, and particularly the specificities of each industry make this overview relevant.

The main findings are that CCC varies between industries, with this research contributing to a better understanding of how variables such as size, inventory costing system, liquidity and payables are related to CCC and CCC components, and on companies' profitability.

Although all the topics mentioned above have been carefully looked at, some details have been excluded from this analysis. Details such as value added tax (VAT) and income taxes were omitted, as were discount policies and seasonality of sales. While seasonality of sales was not included, some care was taken to avoid, for example, the use of Sales to characterize the size of a company.

Another limitation of this study regards the COGS in airlines, as in general they are not calculated for any particular company since the most common measure to define the profitability per sale is the Cost per available seat mile (CASM).
Another aspect is that companies with many exports and imports to countries with different currencies may face differences in CCC due to gains or losses in exchange rates. These limitations could be of use to further research in this area, in order to understand how each variable impacts results.

The paper focused on two industries, and only analysed data from the airlines and Fast-Moving Consumer Goods industry. Given that CCC differs among industries, it could be of interest if future research extended to other industries, whose specific characteristics differ from the two analysed in this paper.

The results obtained are limited to a sample of 47 data points per year. The full sample of 172 data points is also relatively small, which may influence the results. Future research should expand the analysis to a larger sample of companies, and additional periods. It would be interesting to see, for example, how these and other industries have developed after the COVID-19 pandemic.

Regression analysis, alternative profitability proxies and diverse formulas of CCC components (e.g., VAT issue) should also be covered. It would ensure the robustness of this paper's findings for the FMCG and airline industries.

Acknowledgement

This paper is based on the work project presented by Bárbara Reis Costa, under the supervision of Leonor Fernandes Ferreira, as part of the requirements for the award of a master's degree in management from the Nova SBE – Nova School of Business and Economics in January 2014. This is a revised and updated version of it. An early version of this paper was presented and discussed at the *8th Portuguese Finance Network Conference*, in June 2014, Vilamoura.

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APPENDICES

Appendix 1. Initial and Final Sample of FMCG Industry (by alphabetical order)

#	Company	Name Reason for Exclusion	In Final Sample?
1	Anelor SA	Owned by L'Oreal Group	
2	Anheuser-Busch InBev		Yes
3	Beiersdorf		Yes
4	Body Shop International	Owned by L'Oreal Group	
5	Britvic		Yes
6	Cadbury Schweppes	Owned by Kraft Foods	
7	Carlsberg		Yes
8	Clorox		Yes
9	Coca-Cola		Yes
10	Colgate-Palmolive		Yes
11	Coty Manufacturing	Lack of Information	
12	Danone		Yes
13	Diageo		Yes
14	Domestic & Genera	Lack of Information	
15	Estee Lauder Cosmetics		Yes
16	Fujifilm Electronic Imaging	Lack of Information	Yes
17	General Mills		Yes
18	Gillette UK	Owned by P&G	
19	Heinz		Yes
20	Helena Rubinstein	Lack of Information	
21	InBev	Owned by AB InBev	
22	Kimberly-Clark		Yes
23	Kraft		Yes
24	L'Oreal		Yes
25	Lego	Lack of Information	
26	Lever Faberge	Lack of Information	
27	Grupo Mars	Lack of Information	
28	Nestlé Yes		Yes
29	Northern Foods		
30	Pepsi		
31	Procter & Gamble		Yes
32	Reckitt Benckiser		Yes
33	Red Bull	Lack of Information	
34	Revlon International Corporation		Yes
35	Roche Products UK		Yes
36	Sara Lee	Lack of Information	
37	Unilever		Yes
38	United Biscuits	Lack of Information	
39	Warburtons	Lack of Information	
40	Sumol + Compal		Yes

Appendix 2. Initial and Final Sample of the Airlines (by alphabetical order)

#	Company	Name Reason for Exclusion	In Final Sample?
1	Singapore Airlines		Yes
2	Malaysia Airlines		Yes
3	Virgin America	Lack of Information	Yes
4	Asiana Airlines		Yes
5	Qatar Airways	Lack of Information	
6	All Nipon Airways	Lack of Information	
7	Garuda Indonesia		Yes
8	Korean Air Yes		Yes
9	Air New Zealand		Yes
10	Cathay Pacific		Yes
11	South African Airways	Lack of Information	
12	Turkish Airlines	Lack of Information	
13	Finnair		Yes
14	AER Lingus	Lack of Information	
15	Air France	Owned by KLM Group	
16	Japan Airlines	Restructuring	
17	Thai Airways		Yes
18	Oman Air	Lack of Information	
19	Air Astana	Lack of Information	
20	Lufthansa		Yes
21	Etihad Airways	Lack of Information	
22	Spanair	Lack of Information	
23	Egyptair	Lack of Information	
24	Swiss Intern.Airlines	Lack of Information	
25	TAP		Yes
26	US Airways		Yes
27	Emirates	Lack of Information	
28	Ryanair		Yes
29	British Airways	Owned by IAG Group	
30	Continental Airlines		Yes
31	Iberia	Owned by IAG Group	
32	Air Berlin		Yes
33	Vuelling	Owned by IAG Group	
34	KLM		Yes
35	Delta Air Lines		Yes
36	American Airlines	Lack of Information	
37	Easyjet		Yes
38	Royal Air Marroc	Owned by IAG Group	
39	Brussels Airlines	Owned by Lufthansa Group	
40	United Airlines	Owned by Continental	
41	Vietnam Airlines	Lack of Information	
42	British Midland Airways	Lack of Information	
43	China Eastern Airlines		Yes
44	Air Canada		Yes

Appendix 3. Final Sample – Fast Moving Consumer Goods Companies by Country and Size

Company Name Country	Size	Group
Nestlé	Switzerland	1
Anheuser-Busch InBev Belgium	Brazil	1
Roche Products UK	UK	1
Procter & Gamble	USA	1
Pepsi	USA	1
Kraft	USA	1
Coca-Cola	USA	1
Carlsberg	Denmark	2
Unilever Eng	Nether	2
L'Oreal	France	2
Danone	France	2
Beiersdorf	Germany	2
Reckitt Benckiser	UK	2
Diageo	UK	2
Kimberly-Clark	USA	2
Heinz	USA	2
General Mills	USA	2
Colgate-Palmolive	USA	2
Britvic	UK	3
Estee Lauder Cosmetics	USA	3
Clorox	USA	3
Sumol + Compal	Portugal	4
Revlon International Corporation	USA	4

Notes:
1 - A company is considered large when its Total Assets are above 50K USD.
2 - A company is considered medium size when its Total Assets are between 5K and 50K USD.
3 - A company is considered small size when its Total Assets are between 5K USD and 1K USD.
4 - A company is considered micro when its Total Assets are below 1K USD.

Appendix 4. Final Sample - Airlines by Country and Size

Company Name Country	Size	Group
China Eastern Airlines	China	2
Air Canada	China	2
Lufthansa	Germany	2
Cathay Pacific	Hong Kong	2
Ryanair	Ireland	2
KLM	Netherlands	2
Singapore Airlines	Singapore	2
Korean Air	South Korea	2
Thai Airways	Thailand	2
US Airways	USA	2
Continental Airlines	USA	2
Delta Air Lines	USA	2
Finnair	Finland	3
Air Berlin	Germany	3
Garuda Indonesia	Indonesia	3
Malaysia Airlines	Malaysia	3
Air New Zealand	New Zealand	3
TAP	Portugal	3
Asiana Airlines	South Korea	3
Easyjet	UK	3

Notes:
1 - A company is considered large when its Total Assets are above 50K USD.
2 - A company is considered medium size when its Total Assets are between 5K and 50K USD.
3 - A company is considered small size when its Total Assets are between 5K USD and 1K USD.
4 - A company is considered micro when its Total Assets are below 1K USD.

Appendix 5. Correlation Matrix – Fast Moving Consumer Goods

	Total Assets	Sales	Receivables	Payabales	Inventories	Cash	COGS	DSO	DPO	DIO (Sales)	DIO (COGS)	CCC
Total Assets	100%											
Sales	89%	100%										
Receivables	82%	86%	100%									
Payables	85%	84%	69%	100%								
Inventories	81%	88%	84%	67%	100%							
Cash	74%	70%	66%	68%	59%	100%						
COGS	85%	97%	76%	83%	85%	63%	100%					
DSO	-14%	-27%	18%	-28%	-3%	-13%	-37%	100%				
DPO	25%	4%	7%	48%	-5%	26%	-2%	15%	100%			
DIO (Sales)	-3%	-9%	4%	-16%	36%	-4%	-10%	34%	-9%	100%		
DIO (COGS)	-9%	13%	-3%	-20%	27%	-2%	-22%	40%	1%	92%	100%	
CCC	**-27%**	**-13%**	**-1%**	**-54%**	**16%**	**-28%**	**-9%**	19%	**-89%**	**49%**	39%	**100%**

Appendix 6. Correlation Matrix - Airlines

	Total Assets	Sales	Receivables	Payabales	Inventories	Cash	COGS	DSO	DPO	DIO (Sales)	DIO (COGS)	CCC
Total Assets	100%											
Sales	94%	100%										
Receivables	73%	84%	100%									
Payables	77%	86%	91%	100%								
Inventories	51%	64%	90%	69%	100%							
Cash	60%	47%	33%	43%	17%	100%						
COGS	-10%	-8%	-15%	-13%	-12%	-14%	100%					
Operating Income	45%	49%	46%	40%	53%	21%	3%					
DSO	19%	28%	67%	51%	68%	-4%	-9%	100%				
DPO	60%	72%	91%	91%	79%	31%	-30%	62%	100%			
DIO (Sales)	5%	15%	52%	28%	74%	20%	--4%	78%	47%	100%		
DIO (COGS)	32%	45%	80%	55%	94%	5%	-25%	71%	77%	80%	100%	
CCC	**-63%**	**-75%**	**-87%**	**-92%**	**-71%**	**37%**	**-32%**	**-47%**	**-98%**	**-32%**	**-68%**	**100%**

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Accounting and Management Review
Revista de Contabilidade e Gestão

ISSN 2795-4412

No. 27, 2023
pp. 119-142
Published by OCC
DOI https://doi.org/10.55486/amrrgg.v27i1.5

www.accountingmanagementreview.occ.pt

The impacts of IFRS 16 on airlines

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ABSTRACT

This study addresses the effects of the adoption of IFRS 16 on the passenger air transport sector. With practical effects for financial years beginning on or after 1 January 2019, IFRS 16 established the standardisation of a single accounting model for all leases, whether operating or financial. With this new adoption, IFRS 16 aims to increase the transparency and quality of the information that is presented in the financial statements for the most diverse stakeholders.

This study aimed to assess the effects of adopting this new international standard in a specific sector and to identify whether the changes in some of the financial indicators are felt in the same way by all companies, this being the main focus of this study. Based on a sample of 12 airlines from various countries in Europe and South America, the financial indicators were interpreted by analysing the reports and accounts before and after the application of IFRS 16.

The main conclusions obtained are: i) the adoption of IFRS 16 led to an increase in assets, liabilities and EBITDA, however in different proportions for each of these items; ii) companies with negative equity and, therefore, with greater risks of bankruptcy or greater information asymmetry, tend to resort more to leasing as a way of financing their assets; iii) the financial autonomy and solvency ratios showed significant variations for companies that resort more to operating leasing.

Keywords: IFRS 16; Airline industry; Finance leases; Information asymmetry.

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1. Introduction

According to McCarthy (2001), transport is defined as "the movement of people or goods from an origin to a destination". It is possible to say from this broad definition that transport takes on a great diversity, the simple use of a bicycle is considered a form of transport, as is the complexity that exists in sending a satellite into space.

From a very early age, transport played a dynamic role in the evolution of societies, great empires once created had in transport a great ally, an example of this were the Egyptians who used the Nile for their commercial exchanges, or the Romans with their roads and bridges, some of which are still around today.
Like transport, leases also play a historical role in the evolution of societies.

According to Nascimento (2004), leases are a very common form of financing that has existed for thousands of years.
Leases can be distinguished between financial leases and operating leases and are no more than different forms of financing that the lessee uses in order to acquire an asset, or to exploit a particular asset. We can therefore consider that the main difference is summarised in the transfer or not of the advantages and risks associated with the acquisition or operation of a given asset.

Despite all its history, the study of locations is relatively recent as Spencer and Webb (2015) note, approximately 50 years.
Bragança (2018) emphasises that one of the major focuses of discussion has been the fact that there are dual accounting models that make it possible not to include certain leased assets in the balance sheet of entities. Other studies seek to analyse the factors that lead companies to use leasing as a form of financing. According to Ribeiro and Silva (2015), issues related to agency problems, bankruptcy risks or even information asymmetry are factors that influence the demand for leasing as a financing solution.

IAS 17 (leases), which has since been replaced by IFRS 16, defined an operating lease as a non-financial lease. It should be said that this open definition gave some flexibility in the treatment of operating leases by companies, thus being able to affect the different financial indicators as well as the quality of the data to be presented to the different users.

This flexibility in accounting treatment, also translated into concern, was the subject of extensive debate and, consequently, of regulatory changes and the proof of this is that the issuance of the new IFRS 16, on 13 January 2016, is the culmination of a joint process between the IASB (*International Accounting Standard Board*) and

the FASB (*Financial Accounting Standards Board*), which began even before 2009, when a first *Discussion Paper* on the subject of leases was issued.
Under IFRS 16, when applying a single right-of-use model, a lessee must recognise an asset and a liability for all leases with a term of more than 12 months; and the depreciation of the underlying asset separately from the interest (charge) arising on the liability, in the income statement. In any case, it should be noted that there are exceptions to this rule. IFRS 16 does not oblige a company to recognise assets and liabilities in situations of short-term *leases*, i.e. with a term of less than 12 months and *leases of* low-value assets, for example, personal computers.

From a practical point of view, the classification of leases now follows the rules currently provided for finance leases, as the requirement to classify leases as either finance or operating has now come to an end. Leases, whether finance or operating, are capitalised by recognising the present value of the lease payments and carrying them forward as a leased asset (right-of-use) or together with property, land and equipment. If the lease payments extend over time, a company recognises at the same time a liability representing the financial obligation to make the future lease payments.

The transport sector, and specifically the air passenger transport sector, has materially relevant figures for operating leases. Both fleets and their components, such as engines, are significant investments, leading companies to consider the use of operating leases as a form of financing. IFRS 16 has substantially changed the nature of the expenses related to those leases, in these specific cases the typical operating expense (rent) posted on a straight-line basis as provided for in IAS 17 has been replaced by a charge for the depreciation of the underlying asset (included in operating expenses) and the interest expense on the lease liability (included in financial expenses). This change aligns the treatment of lease expenses for all types of leases, standardising and making financial reporting more reliable, thus fulfilling one of the objectives behind the change in international accounting standards.

This study aims to assess the impacts of the adoption of IFRS 16 on the air passenger transport sector. For this purpose, accounting and financial data was collected for the years 2018 and 2019, contained in the reports and accounts of 12 airlines from various countries in Europe and South America, with a consolidated turnover for the fiscal year of 2019 of 103,531 million euros. Based on the interpretation of the reports and accounts aggregated by size, the aim is to assess the behaviour of various indicators, as well as their greater or lesser susceptibility to the use of this financing method.

The work is developed in five sections. Section I introduces the topic to be addressed; section II includes the literature review; section III presents the

methodology applied, section IV highlights the results obtained from the study carried out and section V is intended for conclusions.

2. Literature review

Ribeiro (2012) emphasises that the role of transport is very present in economic activity and is a key sector of any modern economy. In the European Union, it is associated with approximately 9.2 million direct jobs, which represents 4.4% of employment, and its contribution is estimated at between 8% and 10% of GDP.

Leasing plays an important role as a form of financing for enterprises. Chiumento (2007) highlighted the fact that *leasing* is advantageous in the lessee's sphere, as it allows, for example, a company to expand its productive capacity by acquiring equipment without having to make its own investment, with the possibility of settling the instalments due with the operating profit obtained in the meantime. Eisfeldt and Rampini (2009) emphasised that the attractiveness of *leasing is* that the lessor has the ability to recover the leased asset more easily than a traditional loan creditor.

The idea defended by some authors that leasing and conventional credit are substitutes finds strong empirical consistency: Erickson and Trevino (1994), Krishnan and Moyer (1994), Marston and Harris (1988), and Yan (2006) defended the idea that leasing is a natural substitute for traditional credit.

Akerlof (1970) emphasised the idea that information asymmetry exists between two parties when one party has more information than the other. A few years later, Myers (1984) and Titman and Wessels (1988) emphasised the idea that information asymmetry between borrowers and lenders leads to the emergence of imperfections in capital markets, ultimately influencing investment and financing decisions. More recently, Ribeiro and Silva (2015) highlighted the existence of information asymmetry in a leasing transaction, i.e. the inequality of information regarding the company that is known to both parties, in that case, lessor and lessee.

Imohff et al. (1991) were pioneers and made a significant contribution by developing a method for capitalising operating leases, thus enabling their presentation in the financial statements and related notes.

The adoption of IFRS 16 attempts to address the lack of information in the financial statements of lessees, since the liabilities assumed in an operating lease were not evidenced in the companies' balance sheet (Yu, 2019). Other authors, such as Quach and Tu (2020), Spanberger and Rista (2020), even refer to the problem of information asymmetry in the accounting of operating leases.

The impact of the adoption of IFRS 16 on the airline industry has aroused the interest of several authors (Alabood et al., 2019; Bragança, 2018; Chaves, 2016; Khersiat, 2020; Öztürk and Serçemeli, 2016; Verveková, 2019; Yu, 2019). Such interest is due to the fact that the airline industry, together with retail trade, is one of the most affected by the implementation of IFRS 16, according to IASB (2016), cited by Alexandru (2018). Alabood et al. (2019) even highlight several challenges that will be posed to airlines due to the changes, caused by the adoption of IFRS 16, in several financial indicators that may cause reactions in investors and, consequently, in capital markets.

Chaves (2016) analysed the effect of IFRS 16 on the financial statements of the Brazilian airlines Tam, Gol and Azul, from 2013 to 2015, concluding that the impact caused by the accounting of operating leases is directly proportional to their amount and representativeness in relation to the assets of each company.

More recently, Bragança (2018) and Öztürk and Serçemeli (2016) studied the impact of IFRS 16 adoption on firms' financial ratios. The work of Öztürk and Serçemeli (2016), which focused on the study of an airline company in Turkey, pointed to a significant increase in the debt-to-asset ratio and a significant decrease in the return on assets indicator. On the same line of thought is the work of Bragança (2018) when, making a case study of the financial statements of TAP, for the accounting periods of 2016 and 2017, he observes that the same results obtained by Öztürk and Serçemeli (2016) are to be expected, namely through the decrease in general liquidity and asset turnover.

Verveková (2019) conducted a study analysing the impact of IFRS 16 adoption on 15 European airlines. The findings confirm a strong impact from the implementation of IFRS 16, namely through the increase in assets and liabilities, and it is also highlighted that the impact was felt more widely in companies with a greater preponderance of use of operating leases.
Khersiat (2020), carried out a study on the impact of the adoption of IFRS 16 on the Jordanian airline, and concluded, contrary to the previous studies cited, that there was no impact on the main financial and accounting indicators, before and after the implementation of IFRS 16.

3. Research methodology

3.1 Objectives and research questions

The objective of this paper is to analyse the impacts of the adoption of IFRS 16 on a wide range of airlines, with the purpose of addressing a comprehensive range of realities, such as geographical location, size and financial situation.

The sample of the present work includes 12 airlines, from different countries, namely Portugal, Spain, Germany, France, Croatia, Finland, England, Greece, Hungary, Brazil and Chile.

Firstly, due to the scope of the sample, in this work we set out to divide the various airlines according to their size into small, medium and large. This division took into account the size of each airline's fleet.

Secondly, the diversity of the data analysed makes it possible to consider, at the same time, companies with different financial situations, which will make it possible to analyse the impact of the adoption of IFRS 16 on the various companies studied, namely on some balance sheet indicators and also at the level of net worth.

As research questions, we formulated the following:

Como questões de investigação, formulamos as seguintes:

> **Question 1:** What is the impact of IFRS 16 on the financial indicators of the various airlines analysed?
>
> **Question 2:** Are the impacts of adopting IFRS 16 felt in the same way by all the airlines analysed?

3.2 Data collection instrument

The data was taken from the 2018 and 2019 annual reports and accounts before and after application of IFRS 16 and made public by the companies on an annual basis. The sample is centred on 14 airlines, all of them in Europe and South America. From this group, SAS of Denmark and Avianca of Colombia have been removed. Regarding the first company, the exclusion was due to the fact that it has a different financial reporting date to the calendar year, in which the impact of the Covid-19 pandemic is already reflected in the financial indicators. The second company, Avianca *de Colombia,* presents its financial statements in accordance with Colombian regulations *(NCIF-Normas de Contabilidad Y de Información Financiera Aceptadas en Colombia)*.

For the study, some variables considered relevant for the selection of companies were selected. Two of them are the use of the same regulations among the different companies as well as the use of companies for which the fiscal years under analysis are not affected by the Covid-19 pandemic. In addition, companies from different continents were selected so that the sample was as comprehensive as possible.

Since the 2019 fiscal year was the first mandatory adoption of IFRS 16, it is possible to analyse the financial data presented for the 2018 and 2019 periods, thus allowing the impacts of the adoption of IFRS 16 to be assessed.
Consequently, the sample used for this study presents financial data from 12 airlines, covering not only a wide geographical area worldwide but also a significant diversity of financial and ownership realities.

3.3 Variables under study and research hypotheses

The adoption of IFRS 16 significantly changes the treatment of leases in companies, implying changes in their reporting and consequently in the performance of some indicators. According to Nuryani et al. (2015), companies use operating leases as a means of financing, allowing them to hide the company's real liabilities through their form of registration.

In 2016, PwC conducted a study in order to assess the impact of IFRS 16 adoption on financial statements for a sample of 3,199 IFRS listed companies. The study points out that the impact of IFRS 16 varies significantly between different sectors, as *retail, airlines,* healthcare, professional services and textiles/clothing are predicted to be the most impacted due to the significant use of operating leases. At the same time it is evident that there are significant differences between individual entities within the same sectors depending on their specific business models.

As the air transport sector is a user of operating leases, the current research problem arises in this context. We intend, therefore, with the present study to develop the analysis of the variations that occurred, resulting from the adoption of IFRS 16, in the main financial items and indicators, such as the impact on tangible fixed assets, financing obtained and also on assets and liabilities as a whole.

On the other hand, and to complement the analysis, we verified the impacts on the main ratios such as financial autonomy and solvency as well as the behaviour of the use of operating leases between the different companies.

As research hypotheses, we will test the following:

Hypothesis 1: Assets, Liabilities and EBITDA will increase in all sampled firms, regardless of their size.

Hypothesis 2: The equity / assets ratio decreases in all sampled firms, regardless of their size.

Hypothesis 3: The solvency ratio decreases in all sampled firms, regardless of their size.

3.4 Characterisation of the sample

he sample consists of 12 companies in the commercial aviation sector, with a total fleet of 2,737 aircraft, representing about 9.1% of the total fleet worldwide, according to data from IATA (*International Air Transport Association*) and a consolidated turnover for 2019 of 103,531M/€ (one hundred and three thousand, five hundred and thirty-one million euros).

Taking into account the reclassification of lease items between operating leases and finance leases upon adoption of IFRS 16 and in order to identify the impact of the adoption of the new standard on the item tangible fixed assets, we present the breakdown of the sample based on the size of the fleet, as shown in **Table 1.**

Table 1. Fleet size - Financial Leasing vs Operational Leasing

Conceito	2016	2017	2018	2019
Own fleet	1020	1357	1423	1350
Financial leasing	272	261	215	237
Operational leasing	633	948	1002	1150
Total	1925	2566	2640	2737
Leasing weight	47,0%	47,1%	46,1%	50,7%
Δ Operational leasing a/a-1	136	315	54	148
			IATA Data	30 000
			% of sample	9,1%

Source: Own elaboration

It can be seen from **Table 1** that the relative weight of operating and financial leases in the total fleet present in the study sample is significant, showing a value of 50.7% in 2019 compared to 46.1% in 2018. In previous years, this indicator shows practically constant values. This aspect allows us to identify that, for the selected sample, the use of operational leasing for the aircraft fleet has been gaining preponderance to the detriment of financial leasing, which, although insignificant, has been steadily decreasing.

The sample of this paper includes airlines from Portugal (TAP and SATA), Brazil (GOL and AZUL), Spain/England (IAG Group), Chile (LATAM), Germany (LUFTHANSA), France/Netherlands (Air France and KLM), Croatia (Croatian Airlines), Finland (Finnair Group), Greece (AEGEON) and Hungary (Wizz Air). **Figure 1 and Figure 2.**

Figure 1. Distribution of companies in South America

Source: Own elaboration

Due to the diversity of companies presented, with different sizes, it became necessary to characterise the sample according to the size of each company. In this way, in addition to being able to assess the impacts of the application of IFRS 16 in the different dimensions, it was also sought to cancel the impact that a general consolidated analysis would cause, for example, in smaller companies, since the impact of the adoption of IFRS 16 in small companies would be diluted in the consolidated indicators of the sample.

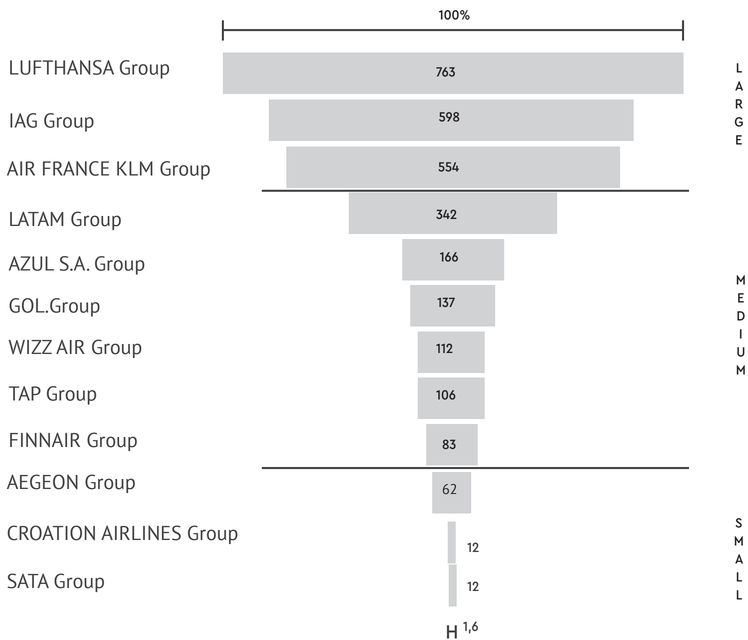
Figure 2. Distribution of enterprises in Europe

Source: Own elaboration

Considering that the sample consists of companies whose main activity is the transport of passengers by air, they were divided into large, medium and small according to the total number of aircraft operating in the first year of application of IFRS 16 **(Figure 3).**

As we can see from Figure 3, among the large airlines we have 3 groups (Lufthansa, IAG and Air France KLM), among the medium-sized airlines we have 6 groups (Latam, Azul, Gol, Wizz Air, Tap and Finnair), while among the small airlines we have 3 groups (Aegeon, Croation Airlines and Sata).

Figure 3. Division of the sample according to fleet



Source: Own elaboration

4. Analysis of results

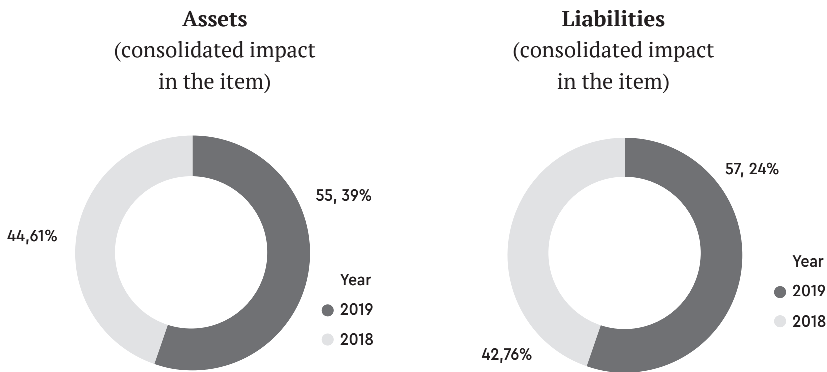
As mentioned throughout the paper, the results obtained generally corroborate the estimates made in previous studies (Bragança, 2018; Öztürk and Serçemeli, 2016; Verveková, 2019) which indicated that the adoption of IFRS 16 would cause a natural increase in assets, liabilities and EBITDA. This effect is felt more

significantly in medium-sized companies where the use of operating leases is more material in the financial statements. The fact that liabilities increase in a higher proportion than assets provides stakeholders with a better view of identifying and measuring future liabilities as well as identifying the total payments to be made in the different types of financing, whether operational or not.

4.1 General consolidated analysis

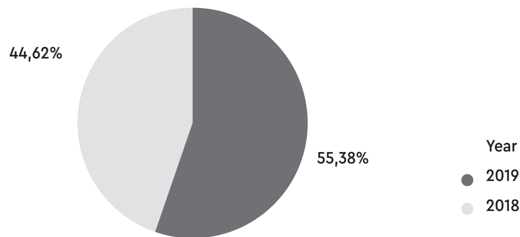
In a first analysis, and at a consolidated level, we see, on the one hand, an increase, as expected, in the weight of the asset item from 44.6% in 2018 to 55.4% in 2019, while, on the other hand, in the liability item the increase is from 42.8% to 57.2%, as shown in **Figure 4**. In fact, this increase is expected as a result of the reclassification of assets (aircraft) that were previously classified as operating leases, thus leading to an increase in tangible fixed assets and an increase in liabilities due to the recognition of future liabilities with payments to be made on financing contracts. Although these increases are to be expected, the innovative contribution of this work is to show that the increase in liabilities ends up being in a higher proportion than that verified in assets.

Figure 4. Consolidated weight of items (Total Assets and Total Liabilities)



Source: Own elaboration

Figure 5. Consolidated weight of EBITDA margin



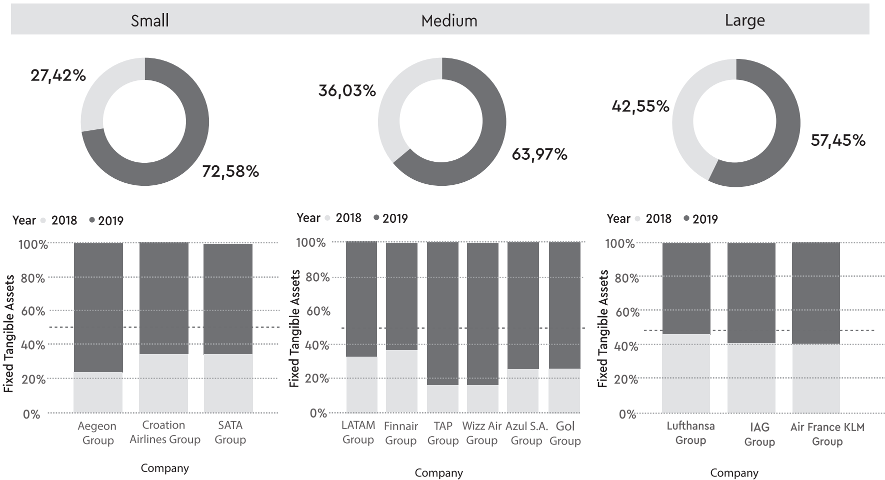
Source: Own elaboration

4.2 Consolidated analysis according to dimension

At this stage of the study we introduced the division of the sample according to the size of the airlines. In this way, we sought to analyse individually the items of assets and liabilities, such as Tangible Fixed Assets and Borrowings, items with a greater impact, due to the change and reclassification, as a result of the adoption of IFRS16.

As can be seen from **Figure 6**, in fact, regardless of their size, the weight of Tangible Fixed Assets for all airlines increases from 2018 to 2019, with the small group showing the greatest change from one year to the next, with a more marked variation in Aegeon. Basically, the total tangible fixed assets in 2019 for these companies represents 72.58% of the sum of the tangible fixed assets of the two years (2018 and 2019), this reading is transversal to all the groups studied . In the group of medium-sized companies, there were more significant increases in TAP, Wizz Air and Azul, due to the greater weight of operating leases in their fleets. In fact, according to the reports and accounts of the respective airlines, in 2019 83% of TAP´s fleet is under operating leases, while Azul has 88.6% and Wizz Air has its entire fleet, that is, 100% in operating leases, translating, in our opinion, into a clear Management option as disclosed by the company in the report and accounts. Conversely, in the group of large companies, the impact of the increase is not as pronounced as in the other groups, with Lufthansa standing out because, due to the low percentage of operating leases in its total fleet, the variation is much less significant. It should be noted that, in this group, the behaviour in the other companies analysed, IAG and Air France KLM, is very similar.

Figure 6. Consolidated and individual impact by group on property, plant and equipment item



Source: Own elaboration through MSPBI

In relation to Borrowings, and according to **Figure 7**, we also see an increase in this item for all airlines. We emphasise the increase, albeit less significant, for the companies considered large in our sample, highlighting again Lufthansa for its smaller variation. In the medium-sized companies, Wizz Air has a very significant variation in the item financing obtained, due to the reclassification that the company had to carry out, due to the adoption of IFRS16, derived from the management option of having the entire fleet under operating lease. We also note that the companies TAP and Azul, in line with the strong variations that occurred in Tangible Fixed Assets, also in the item Financing Obtained, again show a significant variation. In the group of small companies, we also highlight the behaviour of the company Aegeon with a robust variation in the weight of the financing obtained from one year to the next.

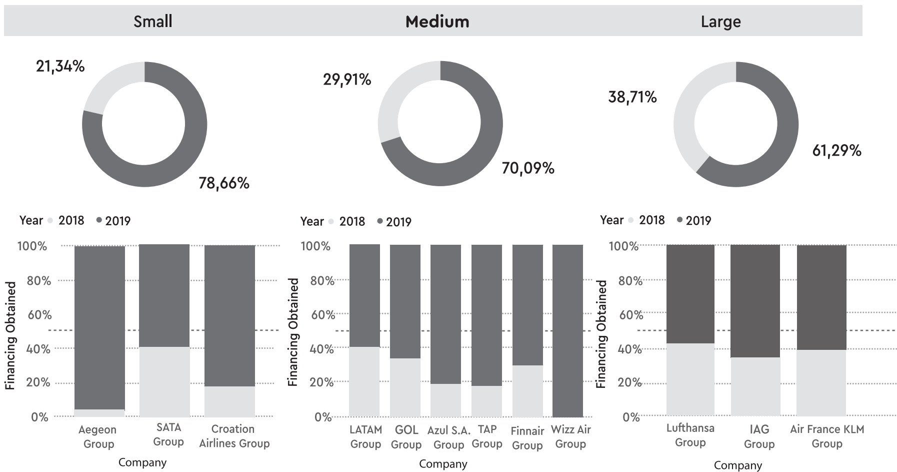
In relation to the behaviour of the two ratios, Equity and Solvency, we can see a decrease in these two capital structure indicators, as shown in Figures 8 and 9.

In fact, in the consolidated analysis of the companies studied, the equity / assets ratio decreased, as expected. In the group of large companies, we found that the fall was less significant than in the other groups, with emphasis on the sharpest fall in the medium-sized group, which recorded the greatest amplitude of fall among the three groups. This fact, which is very curious and interesting, will lead us to deepen our study in section 4.3, through a consolidated analysis according to the equity of medium-sized companies.

Figure 9 illustrates the impact on the solvency ratio from 2018 to 2019. As we can see, there has been a decrease in solvency in most of the airlines studied. In fact, we can see a behaviour very much in line with that observed in the behaviour of the

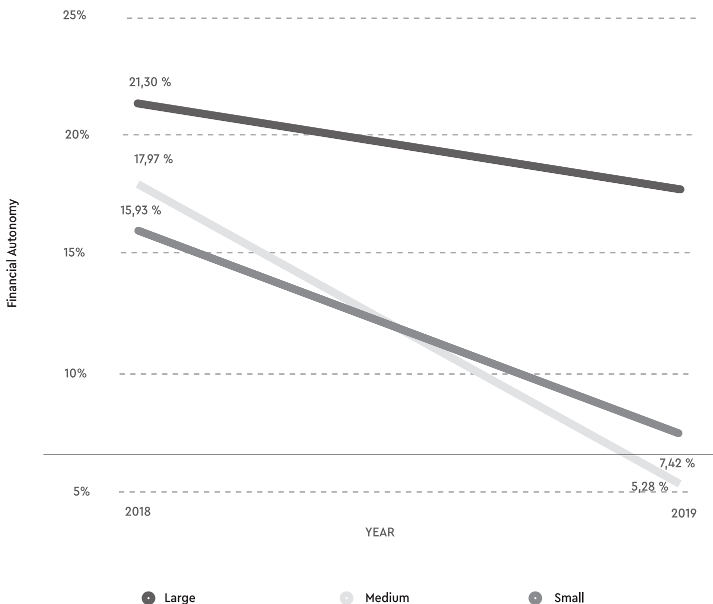
Financial Autonomy ratio, that is, also in the solvency ratio, we found that in the group of large companies, the fall is less expressive than in the other groups, with emphasis, again, on the sharpest drop in the medium-sized group, which recorded the largest amplitude of fall within the three groups.

Figure 7. Consolidated and individual impact by group on Borrowings



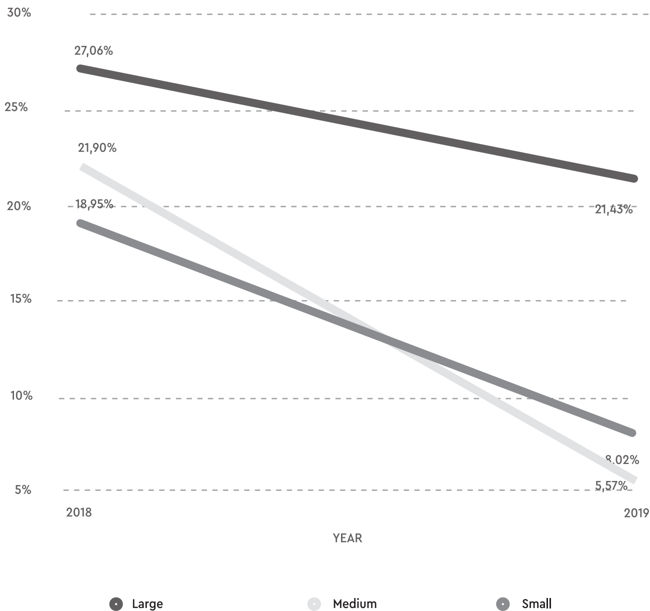
Source: Own elaboration through MSPBI

Figure 8. Impact on the equity / assets ratio



Source: Own elaboration through MSPBI

Figure 9. Impact on the solvency ratio



Source: Own elaboration through MSPBI

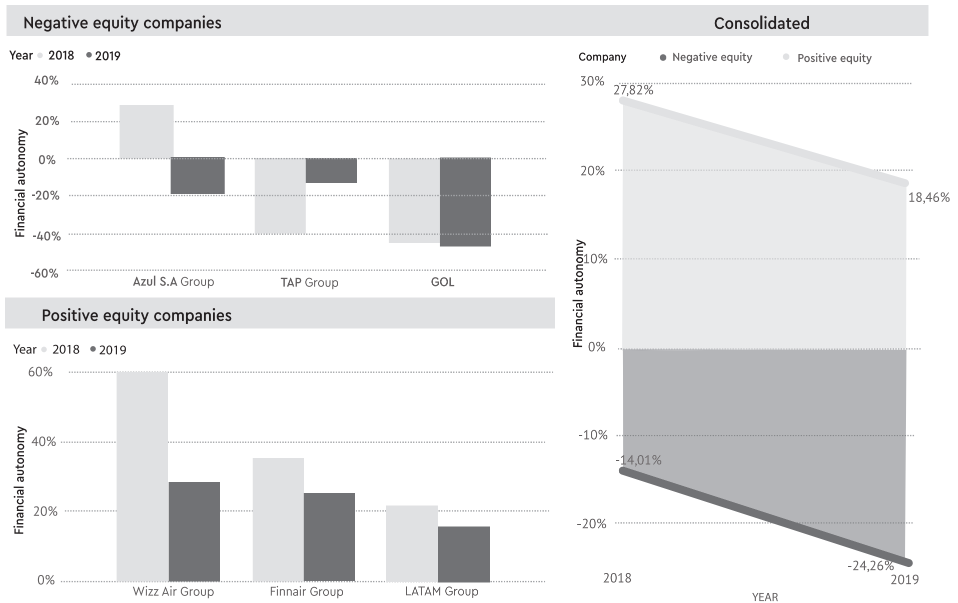
4.3 Consolidated equity analysis for medium-sized companies

In order to further analyse the sharpest reduction in the medium-sized group, as shown in Figures 8 and 9, we divided the companies in this medium-sized group into those with negative equity and those with positive equity. Although the impact presented is to be expected, the aspect that motivated our curiosity and interest was to understand why the decline was so for the medium-sized company.

In **Figure 10** we present the impact on the equity ratio within the group of medium-sized companies. From the separation made, we see an analogous fall between the two groups, however, if on the one hand in the 3 companies with positive equity the behaviour is a fall, although more expressive in the company WIZZ Air, in the group of companies with negative equity we see different behaviours within the three companies analysed. In fact, in the case of the TAP Group we saw an improvement in the equity / assets ratio. This increase, which was unexpected, is explained, as can be seen on page 19 of the report and accounts of the company TAP, due to an "*increase in equity in the amount corresponding to the effects of IFRS 16 in the treatment of aircraft maintenance expenses under lease without a purchase option*".

In this way, we can say that the fall between the two groups analysed in **Figure 10** is similar, but only because TAP's behaviour runs counter cycle to that of the other companies. If TAP were to behave similarly to its peers, the fall in the equity / assets ratio would be more pronounced in the group of companies with negative equity.

Figure 10. Impact on the equity / assets ratio (Medium-sized Companies Group)

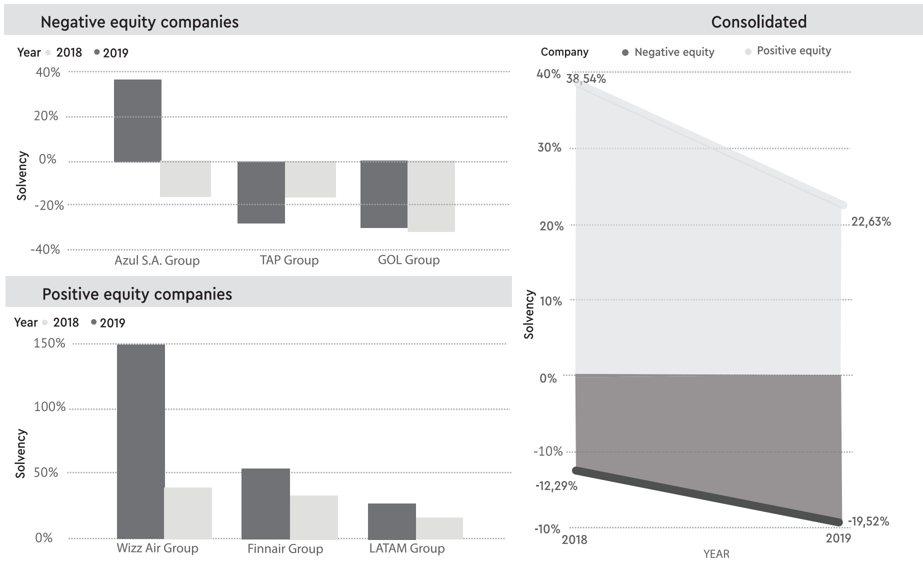


Source: Own elaboration through MSPBI

In relation to the Solvency ratio, as can be seen in **Figure 11**, we witnessed a similar general behaviour to that registered with the equity ratio, resulting in a reduction of the indicator in the two groups analysed, although the behaviour in the group of companies with positive equity is similar in the three companies studied, we again witnessed the variations noted above for equity, in the group of companies with negative equity, with three distinct realities. Once again we highlight the TAP Group, with an increase in the solvency ratio, in the opposite direction to the other companies of similar size.

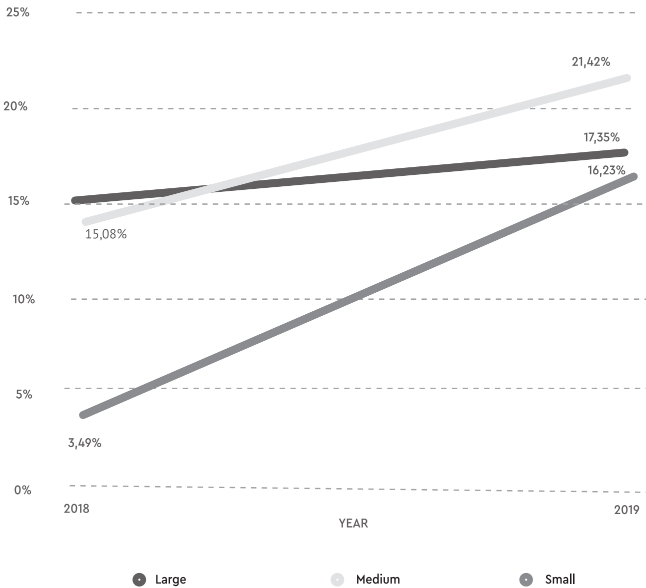
Maintaining the division regarding the size of the companies in the sample and in relation to the impact on the EBITDA margin, **Figure 12** illustrates the impact from 2018 to 2019. As we can see, also in this case, the results are in line with the literature and what was expected, that is, we saw an increase in EBITDA in most of the airlines analysed. We can see that it is in the group of large companies that the impact is less visible, while in small companies the impact is felt more.

Figure 11. Impact on the solvency ratio (Medium-sized Companies Group)



Source: Own elaboration through MSPBI

Figure 12 - Impact on EBITDA margin



Source: Own elaboration through MSPBI

4.4 General analysis of the results obtained

As can be seen from **Table 2**, and following what has already been mentioned previously, all the research hypotheses have been validated, with the exception of **Hypotheses 2 and 3** due to the behaviour of the TAP company indicators, clearly in the opposite direction to the indicators of all the other airlines analysed.

Table 2 - Summary of the validation of the research hypotheses

Hypotheses of research	Results	Confirms
Hypothesis 1	Assets, Liabilities and EBITDA increase in all sampled companies, regardless of their size.	Yes
Hypothesis 2	The equity / assets ratio decreases in all sampled companies, regardless of their size.	No
Hypothesis 3	The solvency ratio decreases in all sampled companies, regardless of their size.	No

Source: Own elaboration

In relation to Research Question 1, we note that, in general and in consolidated terms, the results obtained are in line with previous studies (Bragança, 2018; Öztürk and Serçemeli, 2016; Verveková, 2019), with regard, on the one hand, to the increase in assets, liabilities and EBTIDA and, on the other hand, to the decrease in the financial autonomy and solvency ratios.

With regard to Question 2, we confirm that the effect of the adoption of IFRS 16 is different in the various companies analysed. Indeed, the increase in assets and liabilities is more pronounced in smaller companies, where the predominance of recourse to operating leases is more pronounced.

In relation to the decrease in the equity and solvency ratios, we also see that the assisted decrease is less pronounced in large companies, as opposed to medium-sized companies, especially in companies that have operating leases as a means of exploiting a given asset.

Finally, in relation to EBITDA, it can also be seen that the increase is less marked in large companies and more relevant in small companies.
These results indicate that larger companies are more robust in absorbing the shock of adopting IFRS 16, while companies with negative equity were more impacted by the new international standard, especially in the equity and solvency ratios. It should also be noted that the most significant variations occur in medium-sized companies, where the use of operating leases is more present and in these cases the variations in the equity and solvency ratios were more significant than for the other groups.

5. Conclusion

The results obtained are in line with previous studies (Bragança, 2018; Öztürk and Serçemeli, 2016; Verveková, 2019) which indicated that the adoption of IFRS 16 would lead to an increase in the assets, liabilities and EBITDA of companies, providing better quality information for investors.

The present study, however, went a little further, because it showed that the impacts of the adoption of IFRS 16, especially on the equity and solvency ratios, were felt more strongly in companies with negative equity and, therefore, present greater risks of bankruptcy or greater information asymmetry. These types of firms tend to resort more to leasing as a means of financing their assets.

We can also emphasise that the objective of the IASB, in approving the new IFRS 16, is to promote, in the sphere of lessees, greater transparency in the accounts of companies, by introducing in their balance sheets the assets (right of use) and respective liabilities of previous operating leases. This purpose is achieved to the extent that the most notable impact, as mentioned in the previous paragraph, is seen for companies with greater information asymmetry, thus translating into the presentation of more reliable and more realistic financial statements in the identification of future financial commitments.

It should also be noted that, in the sample as a whole, TAP's financial autonomy and solvency indicators were in contrast with the other companies analysed, although this was due to an extraordinary increase in the company's equity, as mentioned in section 4.3 of the paper.

As a limitation, we can point out the difficulty in obtaining data on aircraft under operating lease and financial lease for some of the airlines, which may have somewhat conditioned greater detail and certainty in the individual analysis of changes in the items of Tangible Fixed Assets and Financing Obtained, as a result of the reclassification of items upon adoption of IFRS 16.

As future research avenues, we suggest replicating this study for another sector of activity, such as retail trade, since, according to the IASB (2016), cited by Alexandru (2018), this sector also uses leasing as a form of financing. Another suggestion would be to understand the impact on national companies that adopt NCRF 9, in the case of transposition of the international standard to the national standard. Following this suggestion, we could point out the need to replicate the international standard to the Portuguese national standard, changing NCRF 9 - leases for this purpose.

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Accounting and Management Review
Revista de Contabilidade e Gestão

ISSN 2795-4412

No. 27, 2023
pp. 143-156
Published by OCC
DOI https://doi.org/10.55486/amrrgg.v27i1.6

www.accountingmanagementreview.occ.pt

TECHNICAL REVIEW

SMPs (accountants) and their role in the face of new sustainability reports

Salvador Marin[a], Carlos Menezes[b]

ABSTRACT

In recent years, the non-financial information or sustainability reporting has experienced exponential interest and increase. Undoubtedly, the impetus that led to continued work with more intensity in this line was the so-called "Green *Deal"* that the European Commission announced in 2019. The steps to reform the directives with relations or influence on non-financial information or sustainability have meant that, in some way, the information requirements by all stakeholders in this process have increased. Therefore, the information corporations must prepare and publish is not only restricted to traditional financial information included in their financial statements but also includes non-financial or sustainability information. SMPs (accountants) can and should advise our companies, entities, and institutions where we work, we are partners, or they are our clients, on how they can adopt sustainable management practices within the so-called ESG and improve their sustainability performance. We certainly have a crucial role in supporting the quest for sustainability and a sustainable economy in the EU. This presents a double challenge, namely a significant opportunity and responsibility, for which our profession is undoubtedly prepared and will continue to grow in the coming years. In this area, two new facts were key in 2022, to be highlighted with the content of this article and that demonstrate the determined impulse of the EU in this area: on the one hand, the approval of the so called CSRD Directive and, on the other, the elaboration of the draft of the first group of European standards for corporate reporting on sustainability (ESRS). – SET 1), which has recently been adopted as a delegated act of the European Commission, and we are awaiting final publication by the European Parliament and Council for effective use from 1 January 2024.

Keywords: Sustainability; Non-financial reporting; Sustainability reporting; SMPs (accountants).

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1. Introduction

Non-financial information is that which collects corporate data referring to everything related to environmental protection, social responsibility and the treatment of workers, respect for human rights, anti-corruption and bribery, and diversity in boards of directors, as set out in Directive 2014/95 / EU, which in turn amended Directive 2013/34 / EU. Although, this informative plot of corporations (companies, entities, institutions) was initially called non-financial information to differentiate it from financial information, the name was changed while developing the new European directive on the matter. So, it has been renamed sustainability information, from the original term Sustainability *information* included in the *Corporate Sustainability Reporting Directive* (2022/2464/EU). However, all these terms continue to coexist and are often used synonymously.

Therefore, the information that corporations must prepare and publish is not only restricted to traditional financial information included in their financial statements but also includes non-financial or sustainability information, reflected in the sustainability reporting, which is included in the financial statements. However, regardless of where the two parts that make up the corporate information are included when publishing one or another information, it is a fact that they increasingly have the same relevance; they are the *"two sides of the same coin."*

In this sense, and in line with the objective of this article, we can say that the main characteristics and development of non-financial or sustainability information mean that two key aspects have to be taken into account for the purposes of our SMPs (accountants): their ***preparation (elaboration) and publication, as well as their adequate verification (assurance).***

Indeed, our profession, the accountants, must be part of the solution and the growth of the corporate information. In fact, it is already happening, because both from an economic and accounting point of view, as well as financial and management, the annual accounts, the report on sustainability, and other documents that collect any other type of information about the company or entities, they contribute to value it and differentiate it. Undoubtedly, those corporations, companies, institutions, and entities that operate in an increasingly globalized world – whether through direct investment, exports, other international businesses, access to financing, and other national interests – must prepare and publish not only "traditional" financial information but also non-financial or sustainability information, and not only for their management interest but for the necessary translation to the market.

In addition, not only in large and medium-sized corporations but ever more increasingly in SMEs and other entities, the disclosure of non-financial or sustainability information becomes a key element too, for example, to have first access to markets, obtain financing in a more agile way, arouse interest to establish the first contacts with customers, suppliers, investors, partners, participants or donors; or to comply with the requirements of information on sustainability that is demanded being part of the "value chain" (suppliers, customers, partners, among others) of other obligated corporations (Ortiz-Martinez, 2021; Ortiz Martinez & Marín-Hernández, 2021).

All this makes it very appropriate that SMPs (accountants), on the one hand, continue to acquire the knowledge and skills necessary to coordinate and prepare sustainability reports, which undoubtedly implies the study, analysis, and understanding of everything related to sustainability (taxonomy, standards, requirements) that contribute to adopting the culture of sustainability and therefore comply with corporate reporting requirements in the Environmental, Social and Governance (ESG) areas, and on the other hand update and develop the basic knowledge for its verification (assurance).

2. New Corporate Sustainability Reporting Directive 2022/2464/EU (CSRD)

On April 21, 2021, the European Commission published the proposal for a Directive on Corporate Sustainability Reporting (CSRD), thus revising the previous Non-Financial Reporting Directive 2014/95/EU. The proposal for a Directive on sustainability reporting was part of the Sustainable Finance Action Plan.

As we have already indicated, at the end of 2022, more specifically on December 16, 2022, the new directive 2022/2464/EU of the European Parliament and of the Council of December 14, 2022, amending Regulation (EU) No. 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU was published, as regards to sustainability reporting by companies.

It revises the disclosure requirements for non-financial information set out in the Non-Financial Reporting Directive 2014/95/EU to be consistent with the broader legal framework on sustainable finance, including Regulation 2019/2088/EU on disclosures on sustainable finance and Regulation 2020/852/EU on EU taxonomy, as well as intended to be in line with the objectives of the European Green Deal.

Its objective is to improve sustainability information at the minium possible cost. The main characteristics and news of the proposal for a Directive on sustainability reporting are the following (Marín et al., 2023):

1. It extends the scope of non-financial reporting requirements: the Non-Financial Reporting Directive 2014/95/EU (NFRD) covered only large public-interest entities with more than 500 employees (around 11,700 companies). The scope of the proposed Sustainability Reporting Directive extends to all large companies and all companies listed on EU regulated markets, except micro-enterprises (which can cover around 50,000 companies). This includes non-EU-established companies listed on EU regulated markets and EU subsidiaries of non-EU companies. Insurance undertakings and credit institutions, irrespective of their legal form, are also included in the scope. For listed SMEs, the rules will be adapted to the capacities and resources of these companies (principle of proportionality), and they are given three years from the entry into application of the proposed Sustainability Reporting Directive to submit the information under it (i.e., from 1 January 2026), unlisted SMEs (the majority in UE and Portugal) can decide to use them voluntarily; however, EFRAG itself, with the acceptance of the European Commission and the strong support of the EFAA for SMEs, has also managed to develop voluntary standards for SMEs (VSMEs) that will soon be published (November 2023) for comments.

2. It specifies, in more detail, the information that companies must submit:

- Description and relevant indicators of the business model and strategy of the enterprise indicating: (i) the resilience of the business model and strategy to risks related to sustainability issues; (ii) opportunities arising from sustainability issues; (iii) resources to ensure that the business model and strategy are compatible with the transition to a sustainable economy; (iv) how the business model and strategy take into account stakeholder interests and the impact of the strategy on sustainability issues; (v) how the strategy has been implemented concerning sustainability issues.

- Description and relevant indicators of the sustainability objectives and the progress made towards achieving them.

- Description and relevant indicators of the role of administrative, management, and supervisory bodies in sustainability issues.

- Description and relevant policy indicators about sustainability issues.

- Description and relevant indicators of the due diligence process applied to sustainability issues.

- Description and relevant indicators of the negative impacts (actual and potential) on the most significant sustainability factors related to the

company's value chain (including its operations, products and services, business relationships, and supply chain), as well as the measures taken to prevent, mitigate or remedy such effects and the outcome thereof.

• Description and relevant indicators of the main risks related to sustainability issues and their management.

• Information on intangible assets, defined as the non-physical resources that contribute to the creation of value of the company (including intellectual, human, social, and relational capital).

• Information about the process for determining disclosed information.

• About its scope, the information referred to in the previous points will be both prospective and retrospective, qualitative and quantitative. It must take into account short, medium, and long-term time horizons.

• In addition, it clarifies the principle of dual significance set out in the Non-Financial Reporting Directive 2014/95/EU, removing any ambiguity about the fact that companies must provide the information necessary to understand how sustainability issues affect them, as well as the information necessary to understand the impact they have on people and the environment.

3. It requires verification of sustainability information (assurance). At first, there is talk of limited verification, including the option of moving towards a reasonable verification requirement at a later stage. This includes amendments to Directive 2006/43/EC (Audit Directive) and Regulation (EU[i]) No 537/2014 (Audit Regulation[ii]).

4. The possibility for companies to be allowed to present the required information in a separate report that is not part of the annual report is removed.

5.A single electronic reporting format is established: information must be disclosed in a digital and machine-readable format.

6. The definition of "sustainability factors" is incorporated to refer to all information related to environmental and social issues, as well as personnel issues, and to respect human rights and the fight against corruption and bribery under Regulation (EU) 2019/2088 on sustainability-related disclosures in the financial services sector. It also refers to the presentation standards (Standards – ESRS UE) of information on sustainability. It is noted that those standards shall require that the information to be submitted be understandable, relevant, representative, verifiable, comparable, and fairly represented and that, taking into account the purpose of each standard, they shall:

• Specify the information that companies are required to disclose on environmental factors, including information on (i) climate change mitigation, (ii) adaptation to climate change, (iii) marine waters and resources, (iv) resource use and the circular economy, (v) pollution; and (vi) biodiversity and ecosystems.

• Specify the information that companies should disclose on social factors, including information on (i) equal opportunities for all, including gender equality and equal pay for equal work, training and skills development, employment and inclusion of persons with disabilities; (ii) working conditions, including safe and adaptable employment, wages, social dialogue, collective bargaining and worker participation, reconciliation of family and private life and a healthy, safe and adapted working environment; and (iii) respect for human rights, fundamental freedoms, democratic principles and the standards set out in the International Bill of Human Rights and other fundamental United Nations human rights conventions, the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work, the fundamental conventions of the International Labour Organization and the Charter of Fundamental Rights of the Union European.

• Specify the information that companies are required to disclose on governance factors, including information on (i) the role of the administrative, management, and supervisory bodies of the company, including sustainability issues, and their composition; (ii) business ethics and corporate culture, including the fight against corruption and bribery; (iii) the company's political commitments, including its lobbying activities; (iv) the management and quality of relationships with trading partners, including payment practices; and (v) the company's internal risk management and control systems, including about the company's reporting process.

3. First set of ESRS-EU standards

As a result of the above, also at the end of 2022, although worked throughout that year, the draft of the first set of European sustainability reporting standards (ESRS – EU) was already available, which, as we said in the previous section, were referenced in the new directive.

The EFRAG, within the European Reporting Lab, set up the so-called *Project Task Force on preparatory work for the elaboration of possible European nonfinancial reporting standards* (PTF-NFRS). The creation of this ad-hoc technical working group aimed to advise the European Commission on future sustainability reporting

standards so that a series of recommendations or proposals would be issued to the future European body issuing corporate sustainability reporting standards.

The final report of the PTF-NFRS published in February 2021: *Proposals for a Relevant and Dynamic EU Sustainability Reporting Standard Setting*, is worth mentioning. Among its main conclusions can be highlighted:

- the demand for sound conceptual guidelines when addressing non-financial reporting standards, highlighting the public good, qualitative characteristics of information, time horizons, clear boundaries, double materiality, and connectivity between financial and sustainability reporting;

- the establishment of a coherent and comprehensive architecture, with a layered design – information independent of the sector in which the company operates (referred to in the report as sector agnostic), sector-specific and organization-specific –, relevant reporting areas and coverage for ESG classification; and

- the requirement that information should be presented with the sustainability benchmark should be connected to internal information systems, and digitization should be ensured.

The final report by the TFP-NFRS raised 54 proposals or recommendations on the scope and structure of future sustainability reporting standards without specifying specific disclosure requirements, indicators, or metrics.

Once this work was concluded, it was analysed and discussed within the Su*stainability Reporting Standard Board* during the year 2022, in more than 45 sessions, opening in parallel a period of public consultation during the summer of 2022, which concluded on August 8, 2022. As we have indicated, this first set of ESRS had been developed within EFRAG as a continuation of PTF-NFRS, specifically in the PTF-ESRS (*Project Task Force on European Sustainability Reporting Standards*), the technical working group that was intended to develop the standards for the EFRAG *Sustainability Reporting Pillar,* a newly created Board (SRB), to continue the work with the support of the Technical Expert Group (SR-TEG).

The structure of EFRAG was thus doubled, differentiating between the traditional part of financial information (FRB) and that of information on sustainability (SRB). The new pillar is the one that has finally taken up the ESRS to approve them. The first set of standards cited above was approved by the SRB on November 14, 2022, and sent to the European Commission for follow-up. Recently, on July 31, 2023, the European Commission announced its adoption of the Delegated Act on the first

set of ESRS (press announcement, Q&As webpage & implementing and delegated acts – CSRD webpage). The Commission submitted the ESRS delegated act to the European Parliament and Council for scrutiny. If approved (it happened in October 2023), the ESRS delegated act will take effect on January 1, 2024.

On the other hand, EFRAG is now developing a separate proportionate standard for listed SMEs (LSME ESRS), as the CSRD requires, and a standard for voluntary reporting by non-listed SMEs (VSME). These SME standards will be subject to public consultation in late November 2023.

4. SMPs (accountants) and sustainability

Following what was developed by the EFAA for SMEs (2018, 2021, 2021a, 2021b) and pointed out by Marín & Thompson (2022), the various ways and forms (activities) in which SMPs (accountants) have an opportunity and responsibility to contribute to sustainability would be mainly focused through the ***preparation (elaboration), publication and verification (assurance) of that corporate information (sustainability),*** and we can summarize it in the following aspects.

- *Advising on best practices in sustainability*: SMPs (accountants) can and should advise our companies, entities, and institutions where we work, our partners, or clients on how they can adopt sustainable management practices within ESG and improve their sustainability performance. Among other aspects, and without wishing to be exhaustive, these can be how to reduce the carbon footprint, or how to comply with health, safety, environment, compliance governance, or how to create the necessary databases.

- *Adopting sustainable practices*: SMPs (accountants) are responsible for changing their work to be more sustainable. Therefore, they must adopt sustainable management best practices - ESG.

- *Preparing sustainability* reports: SMPs (accountants) are the trusted business advisors of their SME clients. SMPs have traditionally collaborated and prepared financial information and reports, both for management purposes and external reports, for our companies, entities, institutions, and clients. In the future, it is already happening like this; SMPs (accountants) must be prepared because a growing number of clients, or the companies, entities, or institutions in which we work, will request or it will be essential to prepare, coordinate and prepare information and sustainability reports. In fact, for many of them, it is already "mandatory," or it is highly recommended for others for reasons of competitiveness or requirements from its so-called "value

chain". For that reason, to be a proficient advisor, SMPs need to maintain a thorough understanding of their clients' strategies. Understanding and helping shape their sustainability strategy is a logical part of this. In addition, in terms of opportunity, clients could voluntarily disclose sustainability information and, in doing so, position themselves as leaders or preferred partners in the markets in which they operate. Sustainability reporting can also be considered a management tool to improve performance in general. Voluntary reporting can help make their businesses attractive destinations for capital, customers, and employees as well as valued members of the local communities in which they operate.

• *Providing assurance on sustainability reporting*: SMPs (accountants) typically perform the audit or provide other forms of assurance/verification on financial information and customer reports. In the future, SMPs (accountants) can expect – in fact, it is already happening – that an increasing number of companies, entities, institutions, and clients seek guarantees on their sustainability information and reports that they prepare and publish (verification). In addition, for the interested parties' stakeholders, it is an additional requirement practically inalienable. In fact, the CSRD requires the company's statutory auditor, another auditor (according to Member State's option), or an independent assurance services provider (IASP) (Member State's option) to provide limited assurance on a company's reported sustainability information. As we have mentioned, there is also the option of moving toward reasonable assurance at a later stage. Member States should set out equivalent requirements for IASPs around quality, independence, and oversight in line with the Audit Directive. In the same way it did for the sustainability reporting standards, the European Commission will issue a delegated act for the standard for sustainability reporting assurance. The European Commission will likely want to leverage the work of the International Audit and Assurance Standards Board (IAASB). The IAASB is developing a standard for sustainability reporting assurance. Presently, the IAASB is publicly consulting on its proposed International Standard on Sustainability Assurance (ISSA) 5000, *General Requirements for Sustainability Assurance Engagements*, and plans to issue a final standard in 2024.

Therefore, as we have already indicated, SMPs (accountants) will need to continue to develop the capacities to provide high-quality sustainability services. In the coming years, sustainability reporting and verification (assurance) will grow exponentially in number and sophistication. Developing these new capabilities will be vital to being competitive in the market for sustainability reporting and verification services for large companies and, of course, SMEs too; it will be a crucial element to competitiveness. (Marín et al., 2021; Ortiz-Martinez et al., 2023).

5. Conclusions

SMPs (accountants) have a crucial role in developing sustainability reporting and a sustainable economy in the EU. This situation presents a double challenge, namely a significant opportunity and responsibility (Marín Hernández, 2021). Undoubtedly, our leading organizations related to the profession, such as EFRAG or IFRS Foundation, have already unfolded their activity and committees for these two areas, those dedicated to financial reporting and those dealing with sustainability reporting, a clear and unequivocal signal that sustainability has come to stay and that our profession and the SMPs are and will be an indispensables (crucial) actor.

Likewise, professional organizations such as IFAC or EFAA for SMEs (with all its members organizations-PAOs) have worked in the same direction. In the specific case of Portugal, from the OCC, a pioneering and intense activity has been carried out and continues in this field, both in training and preparation of guides and support texts and in terms of collaboration with national and international authorities for the adequate development of regulations. Likewise, bridges have been drawn between the University, our faculties, and the profession's representatives to continue growing in this area.

SMPs (accountants) have proven time and again that we can overcome similar challenges, seize opportunities, and fulfil our responsibilities. It is the responsibility of the profession, as well as its interest. However, more importantly, it is a matter of public interest for a sustainable and competitive economy in the EU and, therefore, in Portugal.

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[i] Directive 2006/43/CE of the European Parliament and of the Council, of 17 May 2006, relative to the statutory audit of the annual accounts and of the consolidated accounts, by which modify the Directives 78/660/CEE and 83/349/CEE of the Council and derogates the Directive 84/253/CEE of the Council. Available in: https://eur-lex.europa.eu/legal-content/ES/TXT/?uri=celex%3A32006L0043

[ii] Regulation (EU) No 537/2014 of the European Parliament and of the Council of 16 April 2014 on specific requirements for statutory audit of public-interest entities and repealing Commission Decision 2005/909/EC. Available in: https://eur-lex.europa.eu/legal-content/ES/ALL/?uri=uriserv:OJ.L_.2014.158.01.0077.01.SPA

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Accounting and Management Review
Revista de Contabilidade e Gestão

ISSN 2795-4412

No. 27, 2023
pp. 157-160
Published by OCC
DOI https://doi.org/10.55486/amrrgg.v27i1.7

www.accountingmanagementreview.occ.pt

BOOK REVIEW

"European Public Sector Accounting" (2nd edition)

edited by Peter Lorson, Susana Jorge and Ellen Haustein (2023)

Patrícia Gomes[a]

The second edition of the book "European Public Sector Accounting", edited by Peter Lorson, Susana Jorge and Ellen Haustein, published in 2023, was written around 4 years after the first edition, against the backdrop of a span of developments in European politics, the Covid-19 pandemic, and the ongoing war in Ukraine. It presents a general overview of public sector accounting (PSA) in Europe.

Since its first edition, the book has contributed to building capacities for harmonizing and standardizing PSA in Europe, taking International Public Sector Accounting Standards (IPSAS) as a reference. Keeping these topics in mind, this second edition added new alternative and non-financial reporting formats looking to the abroad concept of sustainability and enlarged the context to other European countries.

Although the commitment of the European Commission (EC) to boost the harmonization of PSA, it is currently still very heterogeneous among the member states. In addition, the transition and movement to European Public Sector Accounting Standards (EPSAS) was postponed to the next European Commission (2025-2029 election period). So, the harmonization of PSA in the European context became a big challenge to professionals and academics which led to the need to reflect and discuss new approaches and diverse views on this topic. The inclusion of a country perspective (Austria, Finland, Germany, Portugal, Uk, Italy) and some comparative studies across the book is an interesting way to provide new approaches looking at different contexts and specificities. For example, Germany and Finland are not implementing IPSAS with the same rhythm like other European countries (Brusca et al., 2015; Christiaens et al., 2015; Oularvirta, 2014; Polzer et al., 2022) because they are reluctant to its application to the specific context of the public sector. This textbook is enriched by different views

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of all authors that contribute to the final output without take the position of one or other approach to PSA.

The book is organized by 14 chapters written by a team of 14 authors. After the first chapter which offers a map through the book by explaining important terms with respect to European PSA, Chapter 2 sketches the key developments of PSA, and explains its specificities compared to standards applied to the private sector. Budgeting and budgetary accounting are addressed in Chapter 3 considering that this topic takes a centre stage in PSA nowadays. In Chapter 4 a more theoretical lens on PSA is applied which may influence and interact with financial accounting standards and practices.

The challenges of accounting harmonization, not only between the accounting standards of the private and the public sector but also with the government statistics, is addressed in Chapter 5 which looks at International Financial Reporting Standards (IFRS), Government Finance Statistics (GFS) and IPSAS. The book continues the Chapter 6 until Chapter 12 to address the topic of harmonization and dissemination of IPSAS which show a high relevance devoted to these accrual-based standards for PSA development in Europe. In these six chapters different topics are addressed concerning IPSAS, like their history, spread and use (Chapter 6), the conceptual framework (Chapter 7), the reporting components and reliability issues, including transparency and auditing (Chapter 8). An overview of IPSAS on public sector specific topics (like the accounting treatment of property, plant and equipment, the revenue from non-exchange transactions, service concessions and accounting for social benefits) and an IPSAS case study are presented in Chapter 9 and 10, respectively. This case study is based on IPSAS 17, 21, 23, 26, 32 and 42, and includes accounting records and illustrations with the consequences on the financial statements. Until now financial statements are presented for a single public sector entity (individual financial statements).

Chapter 11 is devoted to consolidated financial statements where the basic ideas, theories and consolidation techniques are addressed. The same topic is continued in Chapter 12, but with a focus on the IPSAS application. Although this book is not about the EPSAS project, the Chapter 13 describes PSA future challenges by giving an EPSAS outlook. This is also a political contribution that can have high value for the next steps to be developed by the EC. To finish, a new topic was added to this second edition of the textbook which discusses alternative reporting and non-financial accounting formats to annual General Purpose Financial Reports (GPFR) increasingly important in PSA, including popular reporting, sustainability reporting, SDGs reporting and integrated reporting. The alternative formats to GPFR are characterised by multidimensional dimensions like 'ESG' (environmental, social, governance), 'social, ecologic, economic', '3 P's (PPP; people, planet, profit)

or 5 P's (people, planet, prosperity, peace and partnership). The different types of reports may support public entities in satisfying their stakeholders' information needs (Cohen et al., 2022) toward the creation of public value.

This book is an intellectual output that, in my view, aims three main purposes. First, it aims to develop teaching materials concentrated on existing methods and systems of PSA in Europe, especially to support the development of academic modules for Bachelor's or Master's degree programmes. The introduction of assessment questions (both multiple-choice and open questions), per each chapter, with the respective solutions, helps the students assess the knowledge gained.

Second, this textbook can also support young researchers in developing a comprehensive approach concerning the PSA in Europe, both in theoretical and practical terms, because it presents an overarching European perspective and integrates different views. The introduction of case studies and examples of application in different chapters, combined with more theoretical and fundamental chapters that look to accounting foundations and principles of PSA, offers an opportunity to understand the specificities of PSA in different economic, social, and environmental contexts, which is highly valuable in research projects. Each chapter offers topics for discussion and reflection that can also serve for to use in essays or seminal papers.

Third, the reflection and discussion about the EPSAS project can also support politics and legislators in the design and set of harmonized standards to be applied in the context of the European Union. So, although to supports students and professionals to be better knowledgeable in PSA, this book can be also valuable to politicians and standards-setters, while making them aware of the still considerable heterogeneity of PSA systems across Europe.

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Accounting and Management Review
Revista de Contabilidade e Gestão

ISSN 2795-4412

No. 27, 2023
pp. 161-168
Published by OCC
DOI https://doi.org/10.55486/amrrgg.v27i1.8

www.accountingmanagementreview.occ.pt

EXTENDED DOCTORAL ABSTRACT

The enforcement of accounting standards and the quality of financial information

Adriana Filipa de Jesus Silva[a]

ABSTRACT

The adoption of a set of high-quality standards by companies – the International Financial Reporting Standards (IFRS) – was considered one of the biggest steps in the recent accounting history. However, the existence of high-quality standards per se is no guarantee of quality financial information and financial reporting (Cho et al., 2015; Quagli et al., 2018). Recently, the literature (e.g., Alexandre & Clavier, 2017; Demmer et al., 2019; Gao & Sidhu, 2018; Gu et al., 2019; Oz & Yelkenci, 2018; Wijayana & Gray, 2019) argues that the quality of financial information is only possible with rigorous accounting enforcement.

Enforcement is considered a compliance analysis of financial information disclosed by entities to ensure that IFRS are being correctly applied (ESMA, 2014, p.9). It is a system to prevent, identify and take necessary actions in cases of material errors or omissions in the application of IFRS (or other accounting standards). Therefore, according to the Federation of European Accountants (FEE), currently designated Accountancy Europe, accounting enforcement comprises six levels: self-enforcement; statutory audit of financial statements; approval of the financial statements (administration boards); institutional oversight systems; court complaints and sanctions; and public and press reactions (FEE, 2001).

In recent years, enforcement has been growing in importance (Anagnostopoulou, 2017; Daher, 2017; Duru et al., 2018; Eutsler et al., 2016; Preiato et al., 2015). It is recognized that it plays a key role in encouraging the production of high quality

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financial information (Alexandre & Clavier, 2017; Brown et al., 2014; Christensen et al., 2013; Gu et al., 2019; Kavanagh, 2017; Leuz, 2010; Oz & Yelkenci, 2018; Peña & Franco, 2017).

However, although the concept of enforcement appeared after the wide acceptance of IFRS (in the European Union (EU), particularly from 2005), enforcement mechanisms have not yet been implemented in some countries or, where implemented, the consequences and impacts of enforcement on the quality of accounting information, have not been empirically assessed yet (ESMA, 2017; Mantzari & Georgiou, 2019). The literature has also been arguing about the scarcity of studies that actually assess the enforcement practices of countries (e.g., Böcking et al., 2015; Guerreiro et al., 2020; Kleinman et al., 2019; Moura & Gupta, 2019; Preiato et al., 2015; Silva & Rodrigues, 2017).

The main overall objectives of this thesis were understanding how enforcers work/act to ensure compliance with business accounting standards, and the impact of their action on the quality of financial information, taking Portugal as the context for the empirical study. To achieve these objectives, four scientific articles were prepared as presented below:

Paper 1 – The aim is to identify, recap and analyze the current state of research on the relationship between IFRS enforcement and accounting quality, in order to provide a critical overview of publications in this field, and to identify future areas of interest. Supported by a structured literature review, this paper fills in a research gap by conducting a scientometric analysis of papers on the relationship between IFRS enforcement and accounting quality understood in a broad sense. It reviews papers published between 2006 and 2019 selected from the Web of Science database, particularly analyzing main journals, authors, geographic areas of study, research methods applied, specific topics explored and future lines of research to be developed. Main findings showed a scarcity of studies analyzing IFRS enforcement practices in individual countries and, subsequently, of the impact these practices may have on the accounting quality. Also, they evidenced prevalence of quantitative approaches. This research corroborated the studies of Guerreiro et al. (2020), Kleinman et al. (2019), Mantzari and Georgiou (2019) and Moura and Gupta (2019), which indicate the lack of studies actually assessing the enforcement practices of countries. The gap found calls for further research to know the effectiveness of the IFRS-related enforcement mechanisms, in practice, namely resorting to qualitative analyses.

Paper 2 – This paper analyzes the enforcement practices regarding the international accounting standards in Portugal, seeking to understand how enforcers act to control IFRS compliance. The study relies on deep analysis of documentary

sources and semi-structured interviews about the institutionalization of IFRS enforcement in Portugal, adapting the institutional model of Dillard et al. (2004) and the deinstitutionalization concept of Oliver (1992) to interpret the main findings. Accordingly, there is evidence that legitimacy structures characterize the performance of Portuguese official entities responsible for controlling the application of IFRS, namely by Securities Markets Authority (*Comissão de Mercado de Valores Mobiliários* – CMVM). With this legitimacy, the actors exercise structures of domination and signification spread across lower institutional levels (Institute of Certified Auditors (*Ordem dos Revisores Oficiais de Contas* – OROC); statutory auditors of public-interest entities). However, due to bidirectional pressures between the levels of action, there is a significant part of the control of compliance with IFRS which, despite provided for by law, is not being exercised (Institute of Certified Accountants (*Ordem dos Contabilistas Certificados* - OCC), leading to the deinstitutionalization of enforcement practices. Considering several scandals involving Portuguese banks, for example, and the empirical data collected, the study showed that, although the enforcement mechanisms are provided for in the Portuguese legislation, they may not be working in practice.

Paper 3 – This study analyses the practices of enforcement concerning the national accounting standards (*Normas Contabilísticas e de Relato Financeiro* – NCRF) in Portugal, seeking to understand how enforcers act to control compliance with those financial reporting standards. As in the second paper, this research relies on documentary analysis and semi-structured interviews to the various enforcers. Findings were framed within institutional dynamics, following the Dillard et al. (2004) model and Oliver's (1992) deinstitutionalization concept too. Main conclusions revealed that, although the criteria are defined at the economic and political levels (by the Accounting Standards Board (*Comissão de Normalização Contabilística* - CNC)), control has not been put into practice (decoupling), failing to comply with their duties of controlling the application of accounting standards. At the organizational field level, although the quality control system of OROC is being applied, this is not the case for the quality control of OCC. OCC's quality control has been suspended due to the pressure exercised by the professionals (certified accountants). Decoupling practices can be observed (the criteria exist but they are not being applied) and, consequently, there was a deinstitutionalization of practices previously institutionalized. This calls into question the effectiveness of the enforcement system of the country (Portugal) and ultimately the true and proper view to be offered by the companies' financial statements (in this case, those prepared under the Portuguese Accounting Standardization System (*Sistema de Normalização Contabilística* - SNC).

Paper 4 – This study aims to analyze the impact of the three levels of enforcement (audit committee, external audit, and oversight system) on the quality of financial

reporting. Data was collected from 76 Portuguese companies for the years 2017-2018, the only years with availability of data at the moment of the analysis. The quality of financial reporting was measured using discretionary accruals (Kothari et al., 2005). This panel regression considers both the cross-sectional and time-series effects and is based on firm-year observation with a Fixed Effects Model. The results of the multiple regression analysis showed that only the independence of the audit committee and the quality of the external auditor have a positive impact on the quality of financial reporting. The association between the two enforcers (audit committee and external auditor) also has a positive impact on the quality of the financial reporting. However, the oversight system has no impact on the quality of the information reported, which agrees with the findings of the qualitative papers in this research (papers 2 and 3), where accounting enforcement (namely from CMVM) does not appear to be very effective in practice yet.

This thesis is composed of a set of four research papers. By using a variety of methodologies (qualitative and quantitative), as well as different perspectives of the institutional theory in the research process, the study contributes to a better understanding of the enforcement of accounting standards, in Portugal and overall, and of its impact on the quality of financial information.

As to contributions for practice, this thesis in general underlines the leading role of ESMA but, at the same time, shows, taking evidence from Portugal, that enforcers in member states may not be working as they should, so the quality of IFRS-based financial information ultimately published may not be as expected. Therefore, our research is of particular interest to standard-setting bodies, regulators, enforcers, and users of financial information, especially in Europe, inasmuch as it may support policy-making in terms of accounting standards enforcement regulations.

Another important implication for practice to derive from this study is that, in countries such as Portugal, where the standard-setter (CNC) ends up to have weak enforcement power, tax authorities need to ensure the control of implementation of national accountings standards, hence safeguarding that accounting and financial reporting quality is attained.

Moreover, while highlighting that enforcement mechanisms are provided for in the Portuguese legislation, but they may not be working in practice, this research points out the need of Portuguese authorities to establish policies to make IFRS enforcement more effective, particularly regarding banks and insurance companies, and unlisted companies that are using IFRS. As to the enforcement of the SNC, it shows the need for more means to be provided to CNC, so they can exert proper control of the enforcement of the national accounting standards.

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CALL FOR PAPERS - CONFERENCE

IV International Congress of Public Sector Accounting

Challenges in a Changing World

The IV International Congress of Public Sector Accounting (ICPSA), under the theme "Challenges in a changing world", will be held on 14 and 15 March, 2024 at the School of Technology and Management (ESTG) of the Polytechnic of Leiria (Portugal). It will bring together academics, researchers and professionals from this area of knowledge to discuss the new challenges of public sector accounting in a changing world. This Congress will be jointly organized by ESTG and the Portuguese Institute of Chartered Accountants.

Challenges faced by governments and other public sector entities in the pursuit of accountability have increased. Today's society requires public sector entities to have progressively higher levels of dialogue, transparency and accountability.

Public sector managers are increasingly required to behave responsibly in the administration of resources, demanding adequate accountability through financial and non-financial information, including economic, social and environmental information. Public sector accounting has followed part of this evolution by approximating private sector models, adopting the International Public Sector Accounting Standards (IPSAS) and implementing monitoring mechanisms, namely internal control and auditing measures. But new trends, such as integrated reporting and public sector sustainability reports, require changes in public sector accounting.

A transparent public administration must be based on communication, and there must be an effective dissemination of public information. In today's democratic society, characterised by low levels of trust in public institutions, transparency is one of the most effective tools in the fight against corruption.

To face these new challenges, in this Congress, themes such as accountability in financial management, non-financial reporting, and management of corruption risks in public sector entities will be widely debated with contributions from specialists of recognized national and international merit.

Authors from a wide range of countries and professional organizations are encouraged to submit, for the parallel sessions, papers on different topics of

current trends in public sector accounting and financial management. It will be an excellent opportunity to disseminate scientific knowledge, exchange experiences and transfer knowledge among academics, researchers and chartered accountants. Thus, the proposed areas are:

- Public sector reforms and Accounting Harmonization;
- Budget and Public Financial Management;
- Financial Reporting in the Public Sector;
- Management Accounting in Public Sector Entities;
- Sustainability Reporting in the Public Sector;
- Accountability in the Public Sector;
- Digital technologies and sustainability of public entities;
- Audit and internal control in the public sector;
- Challenges in the teaching of public sector accounting;
- Fraud and forensic accounting.

Deadlines

Deadline for submission of full paper - December 31, 2023
Notification of the decision - February 4, 2024
Deadline for registration of authors with accepted papers - February 15, 2024
Congress dates - March 14–15, 2024

Submission Guideline

All submissions should be sent in a communication format, in accordance with the general and specific rules defined below, through the Easychair platform.

The Organizing Committee will assume that the submission of works is known to all the authors involved.

Full papers have a limit of 9,000 words (approximately 25 pages), including references, abstracts, figures and tables.

All papers presented at the Congress will be analyzed and discussed during the session by a discussant expert in the field of public sector accounting, namely another author presenting work in the same session or an expert.

Format of papers to be submitted

Papers should be submitted in two files, typed using Times New Roman (regular style and font size 12) and in MS Word. Page size should be A4, a single column with a 2.5 cm margin on both sides, double line spacing, and justified text. All pages of the manuscript (including tables and figures) should be numbered.

The first file must include the title and typology of the work (full article or abstract); submission area; abstract, not exceeding 150 words; name, email and institution of the authors; contact of the author(s); and keywords (a maximum of five). Authors should indicate whether they authorize their papers to be submitted for publication on the website of OCC.

The second file must contain the paper, beginning with the title and typology of the work and an abstract (at most 150 words). It must not include any information that identifies the author(s).

Papers may be submitted in Portuguese, Spanish or English. However, abstracts must always have an English version.

All references should use the Harvard reference method.
Peer review and notification

The submitted papers will be evaluated by two members of the Scientific Committee (double-blind preview process).

Congress registration
The Congress programme will include only complete papers whose presenting author completes the registration process.
The cancellation policy is available on the Congress website.

Publication of papers
The full text of the papers included in the Congress programme will be published in a digital format with an ISBN unless authors clearly state they would not wish so.

Best paper award, 4th ICPSA
The Scientific Committee will award the "Best Paper Award, 4th ICPSA" based on the evaluation of the double-blind review process. The winner will be announced at the closing session, and the award will be presented to the authors at the Congress.

Congress dates
14 - 15 March 2024.

Venue
School of Technology and Management, Polytechnic of Leiria, Campus 2 - Morro do Lena - Alto do Vieiro, 2411 - 901 Leiria.

City of Leiria

The municipality of Leiria is the capital of a Portuguese district located in western Central Portugal on the coast. Its attraction is evident: rivers, beaches, pine forests, lagoons, salt pans, rock shelters, religious and civil architecture, museums, spas, popular traditions in their purest manifestations, handicrafts, and rich and varied gastronomy.

Travelling to Porto

In the heart of Portugal, Leiria is about 120 km from Lisbon, 180 km from Porto, and is served by four highways (A1, A8, A17 and A19) and a railway line; the Linha do Oeste.

CALL FOR PAPERS - CONFERENCE

First International Congress of Accounting History
The Cultural and Social Dimensions of Accounting: An Historical Perspective

Portugal has a long and rich history and, in recent decades, accounting history research has increased in popularity among Portuguese academics. As always, there are many interesting possibilities for future historical accounting research. The Portuguese Order of Certified Accountants aims to contribute to the development of accounting history research through the organisation of a Congress where international and Portuguese researchers, from accounting and other fields, can discuss and debate research topics and interests, assist each other, as an international community, in the development of their research, and provide a stimulus for cross-national collaboration.

For the First International Congress of Accounting History, the broad theme "The Cultural and Social Dimensions of Accounting: An Historical Perspective" has been adopted. The international accounting literature has generally assumed a conception of accounting that goes beyond its understanding as a mere technical practice. Rather than a neutral and technical devise whose aim is to support decision-making, accounting is foremost a social and institutional practice. Its pervasive and enabling attributes, especially pertaining to ascertaining how it impacts on organisational, cultural and social functioning, widen the possibilities for accounting history research. From an historical perspective, the cultural and social dimensions of accounting may contribute not only to a better understanding of the role it has played in society in the past, but also to comprehend how accounting may contribute to dealing with the challenges faced globally in the present.

Accordingly, submissions are encouraged based on empirical studies, case studies and different times and spaces where the cultural and social dimensions of accounting are explored. Expected contributions should address, but are not limited to the following issues:

- The history of cultural organizations through their accounting practices;
- The role of culture in the development of accounting practices and accounting knowledge;
- The interface of accounting and society, such as relating to cultural and social events;

- The history of social movements through an accounting perspective;
- The history of cultural movements through an accounting perspective;
- The roles of accounting within different organizations that play a cultural or social role in society, such as hospitals, museums, churches, monasteries, theaters, and so on;
- Accounting past's and the exploitation of or the preservation of the natural environment;
- The role of accounting in periods of financial crises and natural disasters;
- The social role of accounting in periods of famine, plagues and diseases;

Submission of contributions

Scholars interested in presenting their own original and unpublished contribution (also in a preliminary form) at the Congress are invited to submit their work by midnight on 12 April, 2024 as a full paper by means of the dedicated online process available on the webpage of the Portuguese Order of Certified Accountants, see:https://icah.occ.pt/en/. A full paper must have no less than 6,000 words and a maximum length of 10,000 words. Full papers must be submitted in Word format.

Contributions can be submitted either in the Portuguese or English languages and will be presented and discussed accordingly at the Congress. All submitted papers meeting the above word length criteria will be evaluated by the Scientific Committee. The evaluation will be based on the following elements: relevance of the topic for the advancement of knowledge, originality, clarity of the objectives and research questions, quality of references, methodological rigor.

Deadlines

Full paper submission	**12 April 2024**
Notification full paper acceptance	**1 june 2024**
Early bird registration	**30 June 2024**
Full paper submission deadline	**15 July 2024**
Final Registration	**30 July 2024**
Congress dates	**10-11 October 2024**

Congress Venue

Ordem dos Contabilistas Certificados/ Portuguese Order of Certified Accountants, Largo 1.º dezembro, n.º 43 - 4050- 115 Porto.

The Portuguese Order of Certified Accountants is the largest Portuguese professional organization with 69,000 members and is led by the President (Bastonária), Paula Franco. Under the terms of the Portuguese law, the Order of Certified Accountants (OCC) mission is to regulate the practice of the certified accounting profession, in addition to inform and train all of its members, and to develop all actions to improve the credibility of the profession. With offices in all the Portuguese administrative regions and its headquarters in Lisbon, OCC has offices in Porto and a state of the art congress center able to host 1.500 people.

Porto City

As the Portuguese saying goes: "Coimbra sings; Braga prays; Lisbon shows off; and Porto works." The city's fascination lies very much in the life and energy of the city, with its long-standing prosperous business core surrounded by smart suburbs and elegant villas, side by side with its distinctive cramped streets and ancient alleys which have been declared a UNESCO World Heritage Classified Area. Together with Rotterdam, Porto was jointly declared the European City of Culture in 2001. The stifled streets of the old town rarely permit any sort of overall view, so it is a good idea to climb the 250 steps to the Baroque Igreja e Torre dos Clérigos to get your bearings.

The Northern coastal Portuguese city itself has a majestic look and feel. It is rare to be disappointed by the history and culture of Porto, which immerses visitors. The city is a perfect spot for those who love to take in world famous wines of many different varieties. The quiet calm of the Douro River is a truly splendid attraction of Portugal, Europe and the World. Porto is a truly must-see city for visitors to Portugal.

Traveling to Porto

You can easily take an aircraft to Porto International Airport – Francisco Sá Carneiro from all over the world or take a train or bus from Lisbon, which is a comfortable sightseeing trip that only takes approximately three hours.

Accounting History Committee members

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CALL FOR PAPERS - SPECIAL ISSUE AMR

The Cultural and Social Dimensions of Accounting: An Historical Perspective

A special thematic issue of Accounting History is scheduled to be published in mid 2026 drawing on conference papers presented at the First International Congress of Accounting History of the Accounting History Committee of the Portuguese Order of Certified Accountants International Conference on this theme.

Accordingly, submissions are encouraged based on empirical, case studies and different times and spaces, where the cultural and social dimensions of accounting are explored. Submitted manuscripts should address, but are not limited to the following issues:

- The history of cultural organizations through their accounting practices;
- The role of culture in the development of accounting practices and accounting knowledge;
- The interface of accounting and society, such as relating to cultural and social events;
- The history of social movements through an accounting perspective;
- The history of cultural movements through an accounting perspective;
- The roles of accounting within different organizations that play a cultural or social role in society, such as hospitals, museums, churches, monasteries, theatres, and so on;
- Accounting past's (or past?) and the exploitation of or the preservation of the natural environment;
- The role of accounting in periods of financial crises and natural disasters;
- The social role of accounting in periods of famine, plagues and diseases.

The review process for the special issue will be conducted separately from, and subsequent to, the conference review process. Authors of accepted conference papers are encouraged to consider the comments of the conference reviewers, as well as any feedback received at the conference, in revising their paper prior to submitting it for consideration for publication in this special issue of the Accounting and Management Review (AMR).

Submissions written in accordance with Accounting and Management Review style guidelines should be submitted electronically in Word format as per the submission instructions on the journal website: https://accountingmanagementreview.occ.pt/index.php/AMR-RCG/about/submissions, by 10th February 2025.

Authors who have queries about the special issue should contact the Editor and Associate Editors of the Accounting and Management Review (AMR):

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Print: 200

Legal deposit: 230013/05

ISSN: 2795-4412

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