

Adoption of the International Accounting Standard by Small and Medium-Sized Entities and its Effects on Credit Granting

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ABSTRACT

This research examines the relationship between the adoption of the international accounting standard by small and medium-sized entities in Brazil and the cost of credit granted by financial institutions. The literature about this subject discusses accounting regulation as a response to the existence of environments having information asymmetry and the Disclosure Theory studies the phenomenon of accounting disclosure, from the viewpoint of its causes and effects. The International Accounting Standards Board (IASB) suggests that an accounting standard with higher information quality tends to reduce the funding cost for small enterprises and, thus, this paper has as its main aim investigating whether the adoption of the international accounting standard has caused some effect on the cost of banking credit. The investigation was conducted through a theoretical and empirical approach, where the statistical analyses involved a sample of 179 enterprises subject to the Brazilian Technical Pronouncement – Accounting for Small and Medium-Sized Entities (CPC-SMEs), which underwent descriptive analysis, sample means testing, panel data analysis, and quantile regressions, with data from financial statements for three years (2009 to 2011). Evidence suggests a weak association between measures of the accounting information quality (disclosure and exposure of the adoption of the accounting standard based on the CPC) and the cost of banking credit for these enterprises. However, such evidence did not prove to be consistent over time and, furthermore, through regression analysis, the variables were not significant. So, it is possible to observe only a slight influence of accounting information in the sector under analysis, at least at this very first moment of changes in the accounting standards, on the cost of banking credit. Thus, this study contributes to examine the relationship between accounting information quality and the cost of banking credit among small and medium-sized entities.

Keywords: small and medium-sized entities, accounting standards and statements, disclosure of financial information, banking credit.

1 INTRODUCTION

Issues involving the field of international accounting have been object of intensive study in recent years, especially considering the advances triggered by globalization, but, nevertheless, there are still many gaps to be bridged by the academy and one of them is the research universe aimed at the Micro, Small, and Medium-Sized Entities (MSMEs). The theme of this paper refers to one of the many effects of changes in the accounting criteria proposed by the International Accounting Standards Board (IASB), more specifically on the accounting convergence for small and medium-sized entities (SMEs).

The effect of changes in the accounting standards on the costs of funds for banking credit to SMEs in Brazil was analyzed in these entities and banking institutions with which companies maintain relationships. In this way, at first some concepts concerning the origins of accounting regulations reported by the literature are discussed to ground discussions on asymmetric information, such as the differences between regulatory environments (“Common Law” and “Code Law”).

Also from the theoretical perspective, in order to shape the constructs analyzed in this paper, examining the aspects related to the phenomenon of accounting information disclosure played a major role, as for the incentives and effects, as well as their relationship with information quality. According to the International Accounting Standards Board (IASB, 2009), there are advantageous consequences that justify adopting an international accounting standard, such as: (i) increased comparability of financial information, elucidating the comparisons made by investors, lenders, and others; (ii) possibility of reducing uncertainties related to effective capital allocation and pricing, benefiting not only those who provide third-party capital or capital of their own, but also companies that seek capital, by reducing uncertainties about the costs; (iii) ease of education and training for employees; and (iv) improved audit quality.

Particularly in relation to make credit-granting decisions, some studies (Lardon & Deloof, 2014; Zuelch & Burghardt, 2010; Chen, Hope, Li, & Wang, 2011; Hope, Thomas, & Vyas, 2009) found evidence that the quality of financial statements and financial transparency positively affects capital allocation effectiveness in emerging markets. However, it was also possible to observe, in the literature, some doubts about the need to establish an international accounting standard for SMEs, among them: (i) disproportionate implementation costs of a new standard (Neag, Masca, & Pascan, 2009; Wright et al., 2012; Litjens, Bissessur, Langendijk, & Vergoossen, 2012); (ii) technical capacity of SME accountants and the other stakeholders regarding the interpretation and opinion on standards based on concepts and principles (Herman, 2010; Bertoni & De Rosa, 2010; Wright et al., 2012; Lenormand, Poulard, & Touchais, 2012); (iii) need for comparability of financial statements (Herman,

2010; Neag et al., 2009; Pacter, 2009); and (iv) identification of users of accounting information, as well as issues concerning the size of small businesses, especially micro-enterprises, and the influence of tax legislation (Lenormand et al., 2012), explored in the literature review.

Subsequently, SMEs were contextualized, and credit was approached with a focus on small-sized entities and we sought to identify the various relationships between accounting (among the various information sources of borrowers), small and medium-sized entities, and credit granting by financial institutions, through previous investigations. Credit restriction has been pointed out as one of the difficulties faced by SMEs (Carvalho & Abramovay, 2004; Ortiz-Molina & Penas, 2008; Binks & Ennew, 1996; Van Caneghem & Van Campenhout, 2012) and, thus, accounting, hitherto used solely for tax purposes, begins to shift the focus of its purpose not only to assist in business management, but mainly to bring transparency. So, it was found that a more reliable set of financial statements, more transparent, and closer to companies’ reality can interfere with the bank credit granting decisions.

This paper is justified, first, due to lack, in the Brazilian academy, of studies addressing SMEs, relevant to the national economy, and papers addressing aspects of the international accounting standards (which also have been poorly studied in terms of SMEs). On the other hand, this study may trigger discussions on the need to adopt a set of international standards specific to SMEs. The standard-setting bodies in Brazil have anticipated to several other countries of advanced economy, by adopting the International Financial Reporting Standards (IFRS) for SMEs, approved by the Brazilian Technical Pronouncement – Accounting for Small and Medium-Sized Entities (CPC-SMEs), turned into standard by the end of 2009. However, many countries are still examining the feasibility of a full or partial implementation of the international standard for SMEs.

Indeed, the economic foundation does not have a direct relation between the requirement of international accounting standards and a reduced cost of capital, let alone when it comes to the universe of SMEs. It is noticed, through the literature review, that the IFRS might have an indirect effect on reducing borrowing costs, as they contribute to an increased transparency, thus resulting in a reduced informational asymmetry at various global proportions, which needs to be identified by resource providers, especially the banking sector. However, despite CPC-SMEs accounting standard adoption in Brazil has as one of its purposes the possibility of achieving greater transparency and higher financial information quality among small companies, tangible benefits are not provided to these entities, as for improved bank funding costs. So, this research seeks to answer the following question: What is the relationship between the adoption of an international accounting standard for

small and medium-sized entities (CPC-SMEs) in Brazil and the cost of credit granted by financial institutions?

To answer the study question, we sought support from the Disclosure Theory and the objectives proposed

by regulators, through which empirically testable hypotheses could be designed, where good-quality accounting information might justify a reduction in costs. The hypotheses of this study are presented in Table 1:

Table 1 *Hypotheses of the study*

| | |
|----------------------------------|--|
| Hypothesis I (H _I) | Companies with good quality of accounting information obtain banking credits at better cost conditions than companies with poor quality of accounting information. |
| Hypothesis II (H _{II}) | Companies that demonstrate their accounting standards based on the standards issued by the CPC obtain banking credits at better cost conditions than companies that do not demonstrate them in accordance with such standards. |

This article is structured into five parts, in addition to the references. After the introduction, there is the theoretical framework, then the methodological approach is introduced.

Next, the fieldwork results are listed with a quantitative analysis of the financial statements by SMEs. Finally, the paper refers the collected information to the theoretical framework.

2 THEORETICAL FRAMEWORK

This section firstly addresses concepts from the economic theory and research that addresses issues involving the regulation and the disclosure of accounting information. Subsequently, accounting standards are contextualized for SMEs and, finally, the relationship between credit, SMEs, and accounting information is addressed.

2.1 The Accounting Standards

Regulation as a determining factor of the level of accounting information disclosure has several arguments for and against it. Cardoso, Saravia, Tenório and Adriano Silva (2009) highlight some economic theories of regulation that can help understanding accounting regulation: (i) the public interest theory, which – as suggested by the name itself – claims that regulation is something good, which has the purpose of protecting collective interest, an interest that the market might not be able to produce by itself; (ii) the capturing theory, prepared as a counterpart of the first one, since, in practice, regulation favors companies regulated at the expense of society; and (iii) the theory of competition between stakeholder groups, whose regulation is not imbued with the public spirit, but with competition for power, a consequence of pressure from stronger groups (lobbying). The first theory mentioned fits the purpose of this paper, as the Brazilian regulatory agency has required the adoption of an accounting standard for SMEs, in an attempt to reduce information asymmetry in this market.

According to Lopes and Martins (2005), an argument favorable to information as a public good is the fact that government agencies have advantages when compared to the market in terms of the requirement to provide information to favor minority investors, for instance. However, the authors also argued that there is no clear empirical evidence on this regard, highlighting the case of the British market and accounting practice as an opposite example. La Porta, Lopez-de-Silanes, Shleifer and Vishny

(1997, 2000) investigated issues concerning corporate governance, related to the origins of legal systems in various countries in the world, mainly due to opposition from regulatory environments in “Common Law” countries, whose decisions were based on principles, and “Code Law” countries, based on the letter of the law, an environment which characterizes the legal systems of Latin countries. Their studies revealed the existence of differences between countries with regard to protecting the rights of minority shareholders, enforcement quality, and development of capital markets at higher levels in “Common Law” countries, hence there is less information asymmetry (La Porta et al., 1997, 2000). Jaggi and Low (2000) specifically tested the impact of legal systems on financial disclosure and the results indicate that companies from “Common Law” countries are associated with higher quality financial disclosure when compared to companies from “Code Law” countries. Biddle and Hilary (2006) examined how accounting information quality is related to capital investment effectiveness by reducing asymmetries between managers and capital providers. Their results were consistent with their hypotheses, and they corroborate that this relationship is stronger in economies having rather developed capital markets than in countries with funding based on the banking sector.

2.2 The Disclosure Theory

In addition to aspects related to the regulation theory, some elements concerning the Disclosure Theory are highlighted, whose main objective is explaining phenomena with regard to financial information disclosure (Salotti & Yamamoto, 2005), as it seeks to investigate the effects on borrowing costs. Verrecchia (2001) introduced a classification of research models for understanding the phenomenon of accounting information disclosure. In this way, the author’s taxonomy suggests three research categories on the subject: (i) association-based disclosure, which consists

in studying exogenous effects of accounting disclosure in investors' attitudes, especially on prices and trading volume of stocks; (ii) disclosure based on discretion or opinion, concerning studies where disclosure is regarded as endogenous, having incentives due to which managers decide to disclose or conceal information; and, finally, (iii) disclosure based on effectiveness, about unconditional disclosure choices, through which players choose between maximizing social welfare and reducing asymmetries.

Salotti and Yamamoto (2008), in turn, investigated accounting information disclosure from the viewpoint of the second research line proposed by Verrecchia (2001), i.e. the motives or incentives that influenced certain companies to disclose their respective cash flow statements (CFS) were addressed. That is, the validity of justifications proposed by the theory to explain the reasons leading companies in the Brazilian capital markets to voluntarily disclose the CFS was examined. According to Lima (2009), such a categorization is associated with the theory of accounting choices, because managers influence them due to market imperfections (agency costs, information asymmetry, and external factors). Lima (2009) inferred about disclosure based on effectiveness by referring the disclosure behavior to the cost of third-party capital in the Brazilian listed companies. According to Verrecchia (2001), among the studies associating effectiveness with disclosure, both in the context of welfare and efficiency for the firm, the one showing the greatest potential associates disclosure with reduced information asymmetry. Initially, the studies by Leuz and Verrecchia (2000) analyzed the relationship between disclosure and reduced information asymmetry and the cost of capital for companies, and they still have not confirmed a significant relationship, at least in the U.S. On the other hand, tests performed in Germany already brought a significant effect on reduced capital cost. So, in later study, Lambert, Leuz and Verrecchia (2007) found strong evidence of an unmistakable decline in the cost of capital due to accounting information quality.

The purpose of this research is studying the phenomenon of disclosure according to the line investigated by Lima (2009), but it also considers aspects of the Disclosure Theory through discretion, addressed by Salotti and Yamamoto (2008), with regard to players' behavior when they lack information (adverse selection), differing from the scope of SMEs. Several financial institutions classify their credit areas by the borrowers' size, because the so-called *Middle Market*, name assigned to a credit bureau focusing on SMEs, has risks peculiarities of its own.

2.3 IFRS for Small and Medium-Sized Entities

After several years of discussion, the IASB prepared, in 2009, an independent set of accounting principles based on the full version of the IFRS, but simplified for small and medium-sized entities. The IFRS for SMEs comparable between countries are needed for these reasons: (i) financial institutions provide credit abroad and in most jurisdictions, even though over half of SMEs have banking credits, and banks, in turn, are based on financial statements when

making decisions with regard to credit granting; (ii) suppliers intend to assess the financial health of buyers in other countries before selling products or services with payment term; (iii) credit rating agencies try to devise ratings uniformly at the international level and financial information are key to the rating process; (iv) many SMEs have suppliers overseas and use financial statements from one supplier to assess the prospects of a feasible long-term business relationship; (v) venture capital firms invest in SMEs from other countries; and (vi) occasional SMEs with external investors do not participate in the daily management of the entity (IASB, 2009).

Still according to the international standard, the main external user groups might be: (i) banks that provide banking credit to SMEs; (ii) providers that sell to SMEs and use financial statements of SMEs to make decisions on credit and prices; (iii) credit rating agencies and other users of financial statements of SMEs to rate SMEs; (iv) customers of SMEs that use financial statements of SMEs to decide whether doing business; (v) shareholders of SMEs that are not managers of their SMEs at the same time. Brazil anticipated to several other countries of advanced economy in adopting the IFRS for SMEs, with approval of the CPC for SMEs, making it a standard, and by the end of 2009, the Brazilian Federal Accounting Council (CFC) approved, through Resolution CFC 1,255/2009, the standard "Accounting for SMEs," derived from the Technical Pronouncement CPC-SMEs, prepared by the Brazilian Accounting Pronouncements Committee (CPC), based on the IFRS for SMEs by the IASB, and its validity starts from the exercises started on January 1, 2010 (CFC, 2010).

Thus, the set consists of closed societies without public obligation to disclosure accounts adopted, necessarily, an accounting standard convergent with the current international standards. The term SME used in the standard did not include (i) listed companies, regulated by the Brazilian Securities and Exchange Commission (CVM); (ii) large companies, as defined by Law 11,638/2007; and (iii) companies regulated by the Central Bank of Brazil, the Brazilian Superintendency of Private Insurance, and other companies whose accounting policy is dictated by the corresponding regulatory agency with legal power to do so (CFC, 2010).

After nearly two years of receiving the IASB standard through the CPC, the CFC issued Resolution 1,418/2012, approving a new optional accounting model for micro and small businesses, considered by the Brazilian Complementary Law 123/2006, referring to the Pronouncement CPC-SME. This is a document consisting of 13 pages with standards, whose content is very brief and user friendly. In this document, there are recommendations for even more simplified accounting standards, such as, e.g. providing a linear depreciation calculation of fixed assets, assessment of stocks through the first-in, first-out method (FIFO), among others. Thus, we notice the first reactive responses produced by the standard.

Internationally, studies such those by Chen, Hope, Li and Wang (2011) and Hope, Thomas and Vyas (2009) were mentioned by Pacter (2010) as evidence that better quality produce information impact on SME access to capital, one

of the reasons to adopt IFRS for SMEs. Other authors, such as Jermakovicz and Epstein (2010), Seifert and Lindberg (2010), and Fitzpatrick and Frank (2009) also highlighted potential benefits in the standard, particularly with regard to simplifications when compared to the full IFRS. On the other hand, there are much criticism in the world concerning its arrangement and several authors point out the difficulty of finding the comparability intended by the new standard (Herman, 2010; Neag et al., 2009; Pacter, 2009). Other authors criticize the adverse cost-benefit ratio of this standard (Neag et al., 2009; Wright et al., 2012; Litjens et al., 2012) and also the negative impact of the need for accounting education compatible with the new standard, something which requires qualification for accounting assessment at fair value (Herman, 2010; Bertoni & De Rosa, 2010; Wright et al., 2012; Lenormand, Poulard, & Touchais, 2012). Besides, there is criticism related to the strong culture of using statements with a view to mere fiscal record by SMEs (Lenormand et al., 2012).

In Brazil, on the business media, Meirelles (2012) reported that the adoption of changes is a slow process, because the CFC is a body without supervision power and ineffective in order to apply fines for non-compliance with the new accounting standards and, as a consequence, companies have not adopted the needed changes.

2.4 Credit, Small and Medium-Sized Entities, and Accounting Information

According to the Brazilian Institute of Geography and Statistics (IBGE, 2012), in 2010, out of the total number of Brazilian companies, 99.7% were micro, small, and medium-sized. As for the capital structure of these enterprises, Barros, Nakamura and Forte (2013) examined the determinants in Brazil and the authors found that their debt ratios are negatively related to their profitability ratios, but positively associated with the growth of their assets. According to the authors, these results suggest that Brazilian SMEs tend to finance their expansion through banking debt only after exhausting their internal resources. Also according to these authors, to a lesser extent, companies' size is directly related to leverage, something which was interpreted as the prevalence of a less restricted access to the credit market by larger companies.

In a similar study, Degryse, de Goeij and Kappert (2012) addressed the characteristics of Dutch SMEs and found out that earned profits are often used to reduce the indebtedness figures, and they only seek leverage as they grow, demonstrating, again, the existence of a stronger connection between company size and debt. According to Carvalho and Abramovay (2004), restricted access to credit by smaller borrowers in Brazil may be analyzed from the perspective of adverse selection and information asymmetry, as well as from the perspective of the oligopolistic structure of the financial sector. Banks can organize competition in order to avoid "price wars" and increased supply towards the sectors traditionally excluded from their activities.

As reported by the Brazilian newspaper *Valor Econômico* ("PMEs pagam", 2012), which highlights a study

jointly conducted by the Organization for Economic Cooperation and Development (OECD) and the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), Brazilian SMEs receive only 12% of the credit available in the country, while in developed countries this figure reaches 25%; besides, long-term funding is more expensive when compared to that provided to large companies. Ortiz-Molina and Penas (2008) and Binks and Ennew (1996) studied credit restrictions for the SME sector in the U.S. and the U.K., respectively, both addressing the amounts and funding conditions (terms, prices), and both of them were associated with higher risks and also information asymmetry problems found in the studies by Van Caneghem and Van Campenhout (2012), too, when they examined Belgian companies. Moreover, these authors found evidence that both the quantity and quality of accounting information are associated with the capital structure of SMEs. In contrast, another study conducted in the U.S. small business market (Levensoon & Willard, 2000) pointed out a limitation in the belief that there are credit restriction in this sector, since most of the small U.S. companies that gained access to the credit market in the late 1980s managed their requests. The few that were unable to do so, however, were characterized by being smaller in size, newer, and owned by their founding partners. Berger, Klapper and Udell (2001) tested Argentine banks and identified that these institutions faced difficulties to extend the lending conditions based on relationship from their customers to the companies named by them as "opaque small companies in informational terms." According to these authors, the reaction of borrowers might be seeking funding from various banks, causing an increase in funding costs, destroying the benefits of relationship.

Another interesting evidence of credit relationship was found in the study by Degryse and Cayseele (2000), where over 18,000 bank loans to SMEs in continental Europe were investigated (a region with funding system based on banking credit). Two opposite effects were observed: on the one hand, the time of relationship between the company and the bank was reflected in an increase in lending rates, as this relationship extended to other banking products, the rates decreased, i.e. the dimension of relationship had greater influence than its length of time. Although the authors have not studied SMEs on a specific basis, Bharath, Sunder and Sunder (2008) investigated the impact of accounting information quality concerning borrowers on the U.S. loan contracts and they found evidence that poor quality books hinders the estimation of the cash flows of a company that seeks credit. Consequently, this risk is priced in the cost of capital, in addition to produce a search by the creditor in other sources of credit risk information. In a way, this study goes again towards information asymmetry.

According to Fazzari and Athey (1987), financial information increase explanatory power with regard to the assessment of investments in companies and, as a consequence, the capital cost for a firm. Lardon and Deloof (2014) speci-

fically investigated the disclosure policy in SMEs in Europe and their findings suggest that these companies highlight financial information to the extent they identify further benefits of disclosure, especially when they issue stocks, i.e. to the extent that these companies grow, they are keen to reduce information asymmetry. Zuelch and Burghardt (2010) also corroborate these findings by asking the analysts of German financial institutions whose customers are SMEs: (i) during the credit analysis process, to what extent the financial statements were adjusted to the IFRS and which adjustments were badly needed?; (ii) does transition from statements to the IFRS bring advantages or disadvantages in terms of

rating?; and, especially, (iii) do German banks better assess businesses that have migrated to the IFRS than businesses whose statements are in accordance with commercial law? According to the authors, for German SMEs, the internal credit assessment by banks may be the motivation for an accounting system change, indeed, coming from the national standard to the international standard, and, moreover, such a change can have a positive effect on the decision to borrow from the bank, by informing that the company has a well-organized accounting department. Surprisingly, these companies, in some cases, may even expect a bonus in the credit price rating, if they provide statements under the IFRS.

3 METHODOLOGY

This research was conducted through a theoretical and empirical approach, by using mainly quantitative techniques. We sought to identify the evidence of relationship between the new standard with economic theory, especially with regard to information asymmetry, the Disclosure Theory, and the reality of credit granting analysis process of Brazilian financial institutions towards Brazilian SMEs, thus setting the theoretical research platform. In a later research stage, primary data from SMEs were collected, identifying practical evidence about the use of new accounting standards by SMEs and its effects on the costs of banking credit provided by financial institutions.

Field research was characterized by manual survey of financial statements for the years 2009 to 2011 from companies at the database of the Foundation Institute for Accounting, Actuarial, and Financial Research (FIPECAFI), which covers the collection of companies from the yearbook *Me-*

lhores & Maiores [Best & Biggest] developed by the magazine *Exame*. From this universe, companies framed into the concept of “Small and Medium-Sized Entities” used by the CPC-SMEs and not eligible for the categorization of large companies, as provided for by Law 11,638/2007, i.e. large companies with total assets over R\$ 240 million or annual gross revenues over R\$ 300 million. In order to further restrict the sample, we also removed the companies regarded as micro and small businesses, according to the Brazilian Statute of Micro and Small Entities, i.e. companies with annual revenues lower than R\$ 3.6 million. Thus, this was a content analysis of balance sheets, intending to demonstrate the effects on the methodology for descriptive and inferential statistical analysis. The list of companies with the size pattern requested to the FIPECAFI has resulted in a total of 195 companies, which were adjusted to allow statistical processing, as described in Table 2.

Table 2 *Sample adjustments*

| Number of observations | Adjustments | Motivation |
|------------------------|--|--|
| 195 | Initial sample | - |
| (15) | Cooperatives | Not subject to the CPC-SMEs |
| (1) | Pension company | Not subject to the CPC-SMEs |
| (43) | Companies without bank loans | No financial expenses |
| (11) | Companies that did not submit statements | No disclosure note |
| (3) | Companies that did not report their financial expenses in the Income Statement for the Fiscal Year (DRE) | Impossibility to analyze financial expenses |
| (7) | Companies with uncovered liability | Data with negative Equity (PL) make the sample subject to misleading information when used in the variables of some indexes adopted (Return over Equity - ROE, financial expenses) |
| 115 | Final sample | - |

For addressing the cost of banking credit for companies, we used three different proxies with accounting bases: (a) the ratio of financial expenses (DF) registered in the statement of net results of taxes (a 34% rate was used) within the period and the average balance of the financial liability (PF) from the previous year and the current year

(I_1), similar to that used by Lima (2009) to analyze the impact of accounting disclosure on the cost of credit for listed companies; (b) the ratio of DF and the average balance of third-party capital (CT) from the previous year and the current year (I_2), to capture the cases where financial liability is not apparent; and (c) the ratio of DF and average

equity from the previous year and the current year (I_3), to capture situations where companies in this sector can maintain high volume of financial expenses (mainly due to the use of working capital), without necessarily maintaining balance in loans at the period end.

To investigate the impact of the adoption of an international accounting standard on the cost of banking credit taken by SMEs, these variables were chosen as hypothesis testing objects: (i) accounting disclosure level (disclosure) and (ii) adoption of an international accounting standard. To measure the disclosure level, we

used the same technique employed by Lopes and Rodrigues (2007) in their analysis on adherence to disclosure for financial instruments in Portugal and also used by Lima (2009), by designing indexes based on disclosure categories with check items, typically dichotomous, which assume a value one (1), if the item is observed, and zero (0), if not, with the accounting standard changes making effects on the disclosure required for SMEs. As for the analytical description referred to above, we have observed in the companies' balance sheets references linked to the items displayed in Table 3.

Table 3 Composition of the Disclosure Index

| | |
|----------------------------|---|
| Accounting standard | Standard disclosure based on the CPC |
| | Submission of the administration report |
| | Disclosure of the company's main activity |
| | Submission of the notes |
| | Detailed disclosure of the notes |
| | Disclosure of DFC and Statement of Changes in Equity (DMPL) |
| Fixed assets | Disclosure of accounting practice |
| | Disclosure of asset composition |
| | Deemed cost, disclosure at the first adoption |
| | Disclosure of practice and provision of impairment |
| | Disclosure of market life considering economic depreciation |
| Intangible assets | Use of the accounting signature |
| | Disclosure of accounting practice |
| | Disclosure of asset composition |
| | Disclosure of market life amortization within 10 years |
| Stocks | Disclosure of accounting practice |
| | Disclosure of stocks composition |
| | Disclosure of accounting at fair value |
| Loans and funding | Disclosure of accounting practice for financial instruments |
| | Disclosure of costs |
| | Disclosure of creditors |
| | Disclosure of financial products |
| | Disclosure of deadlines |
| Auditing | Disclosure of external audits |
| | Submission of audit opinion |

The items were categorized into three possible configurations: (i) meet the disclosure required by the CPC standard; (ii) does not meet the disclosure required by the CPC standard; or (iii) does not apply (N/A), because there is no need for registration and/or disclosure in certain accounts of certain companies (i.e. stocks in service-providing companies).

For representing the adoption of the international accounting standard, we used a binary variable, named as *Dcpc*, which has a value one (1), if the company has evidenced using the pattern in accordance with the standards issued by the CPC, either based on the full IFRS or the IFRS for SMEs, and zero (0), otherwise. Having the full IFRS as a basis was considered, since the research analyzes the international accounting standard in association with disclosure quality, and failing to observe such a pattern may bring

unwanted distortions. First, we analyzed the existence of differences in the median values of banking credit funding costs among companies with above-average quality in the sample (group 1) and companies below the average (group 2), as well as the same differences between companies that adopted an accounting standard based on the CPC (group 1) or not (group 2). For such an analysis, non-parametric Mann-Whitney tests were used, whose null hypotheses have equality between the sample median values as a pattern. Then, we evaluated the significance and the sign of parameters related to variables also subject to the prior tests and the variable associated with quality, i.e. it was considered the value of the disclosure index (*discl*) and the variable associated with the accounting standard, dichotomous with regard to disclosure in the standard CPC (*Dcpc*). These variables are independent on a regression with panel data against the va-

riables dependent on the cost of credit in the year following the publication of balance sheets.

In order to control other relevant factors that could influence the cost for SMEs we included in the econometric model several variables associated with characteristics drawn from the companies' financial statements (company size [net income]; profitability [ROE]; indebtedness [third-party capital/total assets]; independent audit [reviews provided by the "Big 4" audit firms]), as well as aspects related to economic factors, such as interest rate and credit level in

the economy (binary variable of year) and the lagged cost of borrowing within a period itself, in order to capture the influence of relationship between financial institutions and the companies. Loan prices tend to vary from pre-existing levels of funding conditions. The assessment of parameters allows investigating the same hypothesis analyzed in non-parametric tests, from a different viewpoint. The models consider the variables of interest mentioned above, separately and together (additive form and multiplicative form), in addition to the control variables, as described in Table 4.

Table 4 Regression models

$$\begin{aligned}
 (1) \quad I_{i,t,j} &= \alpha + \beta 1. (discl_{i,t-1}) + \gamma 1. (size_{i,t-1}) + \gamma 2. (roe_{i,t-1}) + \gamma 3. (debt_{i,t-1}) + \gamma 4. (I_{i,t-1,j}) \\
 &+ \delta 2. (Dbig4_{i,t-1}) + \psi t + \varepsilon_{i,t,j} \\
 (2) \quad I_{i,t,j} &= \alpha + \beta 1. (Dcpc_{i,t-1}) + \gamma 1. (size_{i,t-1}) + \gamma 2. (roe_{i,t-1}) + \gamma 3. (debt_{i,t-1}) + \gamma 4. (I_{i,t-1,j}) \\
 &+ \delta 2. (Dbig4_{i,t-1}) + \psi t + \varepsilon_{i,t,j} \\
 (3) \quad I_{i,t,j} &= \alpha + \beta 1. (discl_{i,t-1}) + \beta 2. (Dcpc_{i,t-1}) + \gamma 1. (size_{i,t-1}) + \gamma 2. (roe_{i,t-1}) + \gamma 3. (debt_{i,t-1}) \\
 &+ \gamma 4. (I_{i,t-1,j}) + \delta 2. (Dbig4_{i,t-1}) + \psi t + \varepsilon_{i,t,j} \\
 (4) \quad I_{i,t,j} &= \alpha + \beta 1. (discl_{i,t-1}) \cdot (Dcpc_{i,t-1}) + \gamma 1. (size_{i,t-1}) + \gamma 2. (roe_{i,t-1}) + \gamma 3. (debt_{i,t-1}) \\
 &+ \gamma 4. (I_{i,t-1,j}) + \delta 2. (Dbig4_{i,t-1}) + \psi t + \varepsilon_{i,t,j}
 \end{aligned}$$

Note: i corresponds to the company, t to the period, and j to the proxy cost of credit (I_1 , I_2 , or I_3).

In order to provide the regression results using panel data with greater robustness, quantile regressions were performed using the original sample data to analyze the

impact of the variables of interest along the distribution of the dependent variable.

4 RESULTS

Before the actual results, to check the reliability of the disclosure measure designed in the research, we calculated the Cronbach's alpha. Depending on the 25 items analyzed, the average score correlations between each item and the scores of the other items has resulted in a 97.31% rate, validating the measurement instrument.

Through the descriptive statistics analysis, it was found that for the first year, 2009, when the CPC-SMEs standard was not yet in force, 35% of the companies studied, although it was not mandatory, yet, already submitted their financial statements having the CPC standard as a basis, i.e. much of the international standards already existed before their legal validity

in Brazil. As for the CPC-SME itself, we can see that the adoption of the specific standard was observed in the years 2010 and 2011, after the entry into force of the standard, but there was a still incipient implementation degree, representing only 11% of references to the accounting standard in the notes included in the sample. However, the companies that since 2009 have increased their levels of compliance with the international standards, at least in the label, as the accounting standard disclosure having the CPC standard as a basis (including both the CPC-SMEs and the full CPC) has increased every year, often voluntarily, because this universe of companies does not require disclosure based on the full IFRS.

Table 5 Summary of the results from non-parametric tests (Mann-Whitney)

| Null hypotheses | Variables | p value (2010) | p value (2011) |
|--|---------------------------------------|----------------|----------------|
| $H_I: (I_{n,t} disc1_{1,t-1} = I_{n,t} disc2_{2,t-1})$ | $I_1(DF_i / ((PF_{t-1} + PF_t) / 2))$ | 0.001 *** | 0.130 |
| | $I_2(DF_i / ((CT_{t-1} + CT_t) / 2))$ | 0.008 *** | 0.099 * |
| | $I_3(DF_i / ((PL_{t-1} + PL_t) / 2))$ | 0.066 * | 0.284 |
| $H_{II}: (I_{n,t} cpc_{1,t-1} = I_{n,t} cpc_{2,t-1})$ | $I_1(DF_i / ((PF_{t-1} + PF_t) / 2))$ | 0.143 | 0.105 |
| | $I_2(DF_i / ((CT_{t-1} + CT_t) / 2))$ | 0.133 | 0.126 |
| | $I_3(DF_i / ((PL_{t-1} + PL_t) / 2))$ | 0.093 * | 0.266 |

Note: *: p value is significant at a 10% significance level; **: p value is significant at a 5% significance level; ***: p value is significant at a 1% significance level.

Regarding the results of the total sample of non-parametric tests of average values, for the disclosure level, the null hypothesis was rejected in the three indexes of financial expenses in 2010, i.e. it may be inferred that the cost of banking credit is lower for financial statements disclosed with values above average in the previous year. The same happened to the index I_3 , when analyzing disclosure of the accounting standard based on the CPC in the previous year. The results were repeated the next year for the variable I_2 with regard to disclosure, but not to the other five variables. Because of the predominance of inconsistency between the years, it was not possible to generalize the behavior of variables for the sample according to the hypotheses. However, it seems there is a small influence on the credit level with regard to the level of last disclosure. So, the tests have not allowed a complete rejection of the null hypotheses I and II. It is worth highlighting that, although it was not adopted before 2009, some companies have already submitted their statements having the CPC as a basis (Full IFRS).

Following the results of panel data analysis, where at first data from 115 cross-sectional units used in non-parametric tests were modeled by using the method pooled ordinary least squares with data for two years, with the control variables added and their assumptions have been tested, according to the model in Table 4.

For panel data analysis, the models showed significant regression parameters, however, they violated the assumptions joint linearity, normality, and heteroskedasticity. In an attempt to fix problems that prevented estimating the parameters, we chose to perform Box-Cox transformations in the dependent and independent variables. Through the transformation proposed by Box and Cox, we replaced the dependent variable Y and the independent variables X_n by $(Y^\lambda - 1) / \lambda$ e $(X_n^\theta - 1) / \theta$, respectively, where λ and θ are the transformation parameters. These expressions might seem indeterminate when λ and θ were zero, however, by providing their expansions in a Taylor series, for $\lambda = 0$, there is $(Y^\lambda - 1) / \lambda = \ln Y$ (Fávero, Belfiore, Silva, & Chan, 2009). Table 6 displays the results of Box-Cox transformations detailing the parameters calculated.

Table 6 Parameters of the Box-Cox transformation of variables

| Variable | λ | Transformation |
|-------------|-----------|---------------------------------|
| I_1 | - 0.278 | $(I_1^\lambda - 1) / \lambda$ |
| I_2 | 0.278 | $(I_2^\lambda - 1) / \lambda$ |
| I_3 | 0.000 | $\ln I_3$ |
| $I_{1(-1)}$ | 0.000 | $\ln I_{1(-1)}$ |
| $I_{2(-1)}$ | 0.000 | $\ln I_{2(-1)}$ |
| $I_{3(-1)}$ | 0.000 | $\ln I_{3(-1)}$ |
| Size | 0.631 | $(size^\lambda - 1) / \lambda$ |
| Debt | 0.732 | $(debt^\lambda - 1) / \lambda$ |
| Discl | 1.035 | $(discl^\lambda - 1) / \lambda$ |

In addition to this procedure, concomitantly, the outliers were eliminated and the Winsorization technique was used to do this, which consists in replacing records with values above or below certain limits, lower or higher, by the highest and lowest remaining value from the limit set. The limit used for technical employment of the technique was that from the Box-Plot curve, according to which the need to change the outliers of I_1 , I_2 , $I_{1(-1)}$, $I_{2(-1)}$, and ROE was found. The next step was providing diagnoses to define the best fit of panels. Thus, the best fit for

the dependent variable I_1 was the panel of fixed effects for the four models tested and, for the variables I_2 and I_3 , the most appropriate regressions could be made by using the method of the ordinary least squares (OLS) of pooled panel data. Regressions with the variables I_1 and I_2 produced results whose validation tests did not allow observing the assumptions for proper analysis of parameters, both for fixed effects and OLS. However, models having the variable I_3 formed the basis for conclusions about the parameters (table 7).

Table 7 OLS using 230 observations, including 115 cross-sectional units and length of the 2-year time series for the 4 models with the dependent variable I_3

| Dependent variable = I_3 | 1 | | 2 | | 3 | | 4 | |
|-----------------------------|--------|----------|--------|----------|--------|----------|--------|----------|
| | Coeff. | p value |
| Variables | | | | | | | | |
| Const | 0.06 | 0.746 | 0.00 | 0.988 | 0.04 | 0.844 | -0.02 | 0.932 |
| Discl | 0.09 | 0.561 | | | 0.06 | 0.743 | | |
| Dcpc | | | 0.04 | 0.597 | 0.02 | 0.825 | | |
| discl. Dcpc | | | | | | | -0.17 | 0.499 |
| Size | 0.00 | 0.142 | 0.00 | 0.157 | 0.00 | 0.151 | 0.00 | 0.191 |
| Roe | -0.78 | 0.000*** | -0.77 | 0.000*** | -0.78 | 0.000*** | -0.77 | 0.000*** |
| Debt | 1.37 | 0.000*** | 1.38 | 0.000*** | 1.37 | 0.000*** | 1.39 | 0.000*** |
| $I_{3(-1)}$ | 0.70 | 0.000*** | 0.70 | 0.000*** | 0.70 | 0.000*** | 0.69 | 0.000*** |
| Dbig4 | -0.18 | 0.108 | -0.17 | 0.115 | -0.18 | 0.109 | -0.15 | 0.147 |
| Dt | 0.30 | 0.000*** | 0.29 | 0.000*** | 0.30 | 0.000*** | 0.29 | 0.000*** |
| Validation tests | | | | | | | | |
| R-squared | 0.82 | | 0.82 | | 0.82 | | 0.82 | |
| Adjusted R-squared | 0.81 | | 0.81 | | 0.81 | | 0.81 | |
| F (a) | 143.98 | 0.00 | 143.94 | 0.00 | 125.45 | 0.00 | 144.08 | 0.00 |
| RESET test (b) | 0.54 | 0.58 | 0.53 | 0.59 | 0.53 | 0.59 | 0.58 | 0.56 |
| White test (LM) (c) | 50.31 | 0.03 | 44.33 | 0.07 | 54.11 | 0.08 | 49.86 | 0.03 |
| Normality residual test (d) | 8.24 | 0.02 | 8.25 | 0.02 | 8.22 | 0.02 | 8.30 | 0.02 |
| Non-linearity test (e) | 0.44 | 0.99 | 0.36 | 0.99 | 0.48 | 0.99 | 0.74 | 0.98 |

Note: *: p value is significant at a 10% significance level; **: p value is significant at a 5% significance level; ***: p value is significant at a 1% significance level.

Tests for the variable I_3 pointed out that the parameters estimated for the variables “discl” and “Dcpc” are not significant, having p values much above 10% for the four models tested, with the variables included separately and together (in an additive and multiplicative way), something which means there are no relationship between these variables and the variable dependent on funding costs, at least in the early years after the standard entered into force. As for the other variables, indebtedness, profitability, year, and the lagged dependent variable showed up as significant. The signals may be

interpreted as a higher indebtedness level, generating higher financial expenses to companies, and profitability is inversely proportional to the costs of borrowing, economic factors that influence credit prices for those two years analyzed and a direct relation to the funding conditions of the previous year. On the other hand, the variables related to size and auditing were not significant.

Table 8 summarizes the results of quantile regressions in the original sample observations, displaying results only for the variables of interest for the research. Altogether, 60 regressions were performed.

Table 8 Summary of quantile regression (quantiles 0.05, 0.25, 0.5, 0.75, and 0.95) for the variables of interest with the 230 original sample observations

| Model | Dependent variable | Variables of interest | 0.05 | | 0.25 | | 0.5 | | 0.75 | | 0.95 | |
|-------|--------------------|-----------------------|--------|---------|--------|----------|--------|---------|--------|---------|--------|---------|
| | | | Coeff. | p value | Coeff. | p value | Coeff. | p value | Coeff. | p value | Coeff. | p value |
| 1 | I_1 | discl | 0.00 | 0.776 | -0.01 | 0.041** | -0.01 | 0.532 | 0.02 | 0.686 | 0.10 | 0.730 |
| | I_2 | discl | -0.01 | 0.421 | -0.00 | 0.561 | -0.00 | 0.599 | -0.00 | 0.841 | 0.03 | 0.274 |
| | I_3 | discl | 0.01 | 0.224 | 0.00 | 0.572 | 0.01 | 0.409 | 0.02 | 0.048** | 0.03 | 0.535 |
| 2 | I_1 | Dcpc | 0.00 | 0.774 | -0.01 | 0.270 | 0.00 | 0.818 | 0.01 | 0.510 | 0.09 | 0.724 |
| | I_2 | Dcpc | -0.00 | 0.652 | -0.00 | 0.237 | 0.00 | 0.445 | 0.00 | 0.606 | 0.00 | 0.813 |
| | I_3 | Dcpc | -0.01 | 0.022** | 0.00 | 0.481 | 0.00 | 0.496 | 0.02 | 0.023** | 0.03 | 0.482 |
| 3 | I_1 | discl | 0.01 | 0.490 | -0.02 | 0.007*** | -0.02 | 0.333 | 0.01 | 0.906 | 0.10 | 0.582 |
| | I_2 | discl | -0.01 | 0.543 | 0.00 | 0.499 | -0.00 | 0.641 | -0.01 | 0.436 | 0.02 | 0.583 |
| | I_3 | discl | 0.01 | 0.447 | 0.00 | 0.703 | 0.01 | 0.191 | 0.00 | 0.873 | -0.01 | 0.929 |
| | I_1 | Dcpc | -0.01 | 0.422 | -0.01 | 0.184 | 0.01 | 0.375 | 0.01 | 0.670 | 0.05 | 0.837 |
| | I_2 | Dcpc | 0.00 | 0.958 | -0.01 | 0.085* | 0.00 | 0.572 | 0.00 | 0.528 | 0.00 | 0.912 |
| | I_3 | Dcpc | -0.01 | 0.386 | -0.00 | 0.959 | 0.00 | 0.559 | 0.01 | 0.084* | 0.03 | 0.498 |
| 4 | I_1 | disc. Dcpc | -0.00 | 0.647 | -0.02 | 0.082* | -0.00 | 0.962 | 0.01 | 0.240 | 0.11 | 0.762 |
| | I_2 | disc. Dcpc | -0.00 | 0.628 | -0.01 | 0.008*** | -0.00 | 0.812 | 0.00 | 0.557 | 0.00 | 0.777 |
| | I_3 | disc. Dcpc | -0.01 | 0.063* | 0.00 | 0.980 | 0.00 | 0.351 | 0.02 | 0.031** | 0.05 | 0.216 |

Note: *: p value is significant at a 10% significance level; **: p value is significant at a 5% significance level; ***: p value is significant at a 1% significance level.

In all models, for quantile 0.75, some of the variables of interest were significant in the proxy for cost of borrowing I_3 , however, they showed an unexpected signal for an influence inversely proportional to the cost of borrowing.

In just 7 regressions significant interest variables were found: for quantile 0.05, variable $Dcpc$ with dependent variable I_3 in model 2 and $discl.Dcpc$ with I_3 in model 4; and for quantile 0.25, $discl$ with I_1 in models 1 and 3, $Dcpc$ with I_2 in model 3, and $discl.Dcpc$ with variables I_1

and I_2 in model 4. It is inferred that for financial costs at lower levels (quantiles 0.05 and 0.25), disclosure and the CPC standard may have a significant relationship. Just as in non-parametric tests, there was no strong consistency of results over the distribution of the dependent variable, something which corroborates the results of panel data.

So, the hypotheses I and II, based on panel data analysis, along with quantile regressions, were rejected, since it was not possible to consistently infer on the parameters in both regression techniques.

5 CONCLUSIONS

This research examined the relationship of adopting an international accounting standard for SMEs, associating it with an improved accounting information quality and a better cost of credit granted by financial institutions. The main aim of this paper was investigating whether the adoption of the international accounting standard by SMEs caused an impact on the cost of banking credit. Regarding the accounting standard CPC-SMEs itself, it might be noticed, by a descriptive analysis of the sample of companies that the adoption of this accounting standard is still very incipient. Although it is mandatory from 2010, only 11% on average of the total sample specifically mentioned in the notes they adopted the CPC-SMEs standard within the first two years of its entry into force. On the other hand, positively, the use of principiologically accounting standards based on the CPC was noticed, indicating that international accounting standards are already part of the procedures for medium-sized companies since 2009.

Statistical results showed a still very incipient inverse relationship between cost of credit and accounting disclosure quality. Average tests showed differences between accounting disclosure groups as for the costs of borrowing that could not be regarded as statistically negligible, particularly with regard to disclosure level, but they still need consistency over time. Panel data analysis and quantile regressions, in turn, dismissed the statistical significance of relationships related to accounting disclosure with the cost of credit, contrary to the IASB and other researchers, such as Lardon and Deloof (2014) and Zuelch and Burghardt (2010). However, the relationships of the other variables were statistically significant and, especially with regard to the relationship with the variables 'indebtedness,' 'time dummy,' and the dependent variable lagged by a year. The indebtedness factor emerged in line with the studies by Barros et al. (2013) and Degryse et al. (2012), where SMEs tend to use inner resources rather than raising funds from banks. The sample itself suggested such a result, since 24% of companies in the sample did not have any debt with financial institutions in any of the three years analyzed. The time dummy variable indicated that macroeconomic factors (interest rates, credit level in the economy, etc.) had significant influence on credit rates for

these two years. The lagged dependent variable showed up as in line with the fact that financial institutions seek other information sources about credit risk, such as, e.g. relationship history, as observed by Bharath et al. (2008), and effect of the relationship studied by Degryse and Cayseele (2000). Furthermore, a significant relationship was also found for the variable profitability, having a reverse signal to the costs of borrowing, suggesting that banks assess the financial conditions in the pricing of loans. On the other hand, the variables size and auditing were not significant in statistical analysis; the first variable was opposite to Barros et al. (2013) and the second is indirectly opposite to several studies that associate accounting information quality with costs of funding, such as Ortiz-Molina and Penas (2008) and Binks and Ennew (1996).

It is worth emphasizing this study has limitations inherent to data unpublished by official institutions. That is, a number of simplifications were provided so that data under analysis could be approached, such as: application of the hypothesis of no inbreeding problems on data collected from companies to allow processing through the panel data technique; and the assumption of an uniform standard among companies for accounting values with financial expenses, even if these premises do not invalidate the results. In addition, although the statistical validation method has been used, disclosure measurements and adoption of the international standard (CPC) are subject to criticism, and once again we chose a simplification. Add to this the fact that the control variables included in the model may fail to capture all the effects that occur over time with the surveyed companies, in addition to adopting the CPC-SMEs.

The main contribution of this paper is to examine the relationship between the accounting information quality and the cost of banking credit, in the context of small-sized companies, a poorly explored subject in the academy. To find out more evidence that there were benefits in costs of borrowing, there is a need to consider whether an investment in accounting information could translate into further gains for the company. The entrepreneur himself is the most appropriate individual to deal with this issue and decide how to use his resources also in better accounting information, according to the

need observed in his daily life, and not as another obligation imposed by standard setters anymore.

The results of quantitative analyses, related to effects on the cost of banking credit, may bring useful implications to the various stakeholders, such as: (i) **credit analysts** – a group of users with greater importance in the sector of companies addressed by this research. If information is useful insofar as it serves to make decisions, in this case it emerges in the form of determination of rating classifications, which, in turn, influence the bank funding costs. Hardly the credit granting processes undergo changes before the adoption of a new accounting standard by companies, at least in the short term. The short time of maturity for the international standards, especially concerning SMEs, does not allow a decisive contribution by accounting in decision-making, as in the case of large companies; (ii) **standard setters** – the results indicate a weak relationship between accounting information disclosure degree and bank funding costs, something opposite to one of the arguments on which the IASB leaned to design the IFRS for SMEs. What is put into question in the Brazilian case is the mandatory nature of the CPC-SMEs standard for a certain group of companies based on this cost of borrowing. What if the company does not use third-party resources, specifically financial institutions? The standard should be reconsidered, just as it happened to the micro and small businesses with the advent of Resolution CFC 1,418/2012, which allows a more simplified accounting method, consistent with the size of these entities. The same reasoning may be applied to the cost-benefit ratio, even if there are no studies supporting the benefits that arise from the adoption of the international accounting standards in relation to disclosure costs (qualified personnel, systems, procedures, etc.). One way to adapt the accounting standards to

the companies' needs might be the agreement to voluntarily adopt accounting standards by the companies themselves. For instance, a company discloses its accounting statements having the full CPC as a basis, requiring no explicit legal provision, something which reveals that, at some time, it have assessed the benefits to employ this kind of disclosure. Finally, it is also important to emphasize that, although the companies analyzed in the research are required to prepare their accounting statements having the CPC as a basis since 2010, a considerable part of the sample under investigation has not been complying with the regulatory determinations of the CFC (47% in 2010, 40% in 2011); (iii) **entrepreneurs** – this group of users may identify, when providing good-quality accounting information disclosure, a diversification ratio of investment funding and not simply recognizing it as another tax obligation and an obstacle to their business. The international accounting standard can not only be requested, but also preferred to others, to the extent that banking credit providers, or even new entrepreneurs, signal towards the usefulness of good-quality information, based on a financial situation that represents the companies' economic reality, both for credit granting under better conditions and for opening new business opportunities for companies, both nationally and also internationally. On the other hand, if a company has not reached a development planning level, yet, with a long-term view, investment in information is not a priority, and such a behavior is perfectly understandable, but the formality degree becomes compromised.

Regarding the adoption of the accounting standard, finally, we suggest to extend this research in so far as further information is gathered over the years and the accounting standards become increasingly widespread among companies.

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