Does earnings quality impact firms' performance? The case of Portuguese SMEs from the mold sector

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Abstract

Purpose: This work aims to study the impact of earnings quality on firms' financial performance.

Design/methodology/approach: An unbalanced panel data of 237 small and medium-sized Portuguese companies from the mold industry, using 2010-2018 yearly data was analyzed. While most studies focus only on earnings management when assessing earnings quality, in this study six proxies for earnings quality are used, namely accruals quality (a proxy for earnings management), earnings persistence, earnings predictability, earnings smoothness, earnings timeliness, and earnings conservatism. Moreover, two proxies of financial performance are considered, the return on assets and the economic value added. An econometric model was estimated using either a fixed-effects or a random-effects specification to account for the individual firm-specific effects and ensure heteroscedasticity corrected estimates.

Findings: The results show that managers must be concerned with the quality of reported earnings, as it can affect positively firms' financial performance, especially regarding accruals quality. Persistence, predictability, smoothness, timeliness, and conservatism are shown not to exert significant influence on financial performance in the sample.

Research limitations/implications: This work contributes not only as a literature review on these thematic but also to firms' managers and stakeholders, who have information that helps them select strategies that guarantee earnings quality and improve firms' financial performance.

Originality/value: We proposed an econometric model that studies the relationship between earnings quality (using several proxies for it) and financial performance that can be applied to all companies.

Keywords: earnings quality, financial performance, small and medium-sized enterprises, mold industry, Portugal.

JEL Classification: M40, M41, G32

1. Introduction

Earnings quality is a widely discussed topic given that the lack of financial information quality harms the allocation of the firm's resources (Francis, LaFond, Olsson & Schipper, 2004; Gaio & Raposo, 2011; Perotti & Wagenhofer, 2014; Latif, Bhatti & Raheman, 2017; Huynh, 2019).

This paper plans to understand and explain how earnings quality can be measured in small and medium enterprises (SMEs), and to explore if it impacts firms' financial performance. The lack of quality in financial information leads managers to make decisions based on incorrect data. Thus, the firm's resources may not be efficiently allocated, negatively affecting financial performance. Improving earnings quality will allow for a greater alignment of incentives and information between managers and shareholders and better decision-making (Zimmerman, 2013).

As an unobservable variable, earnings quality is a multidimensional concept that can be evaluated based on several factors, including accruals quality, earnings persistence, earnings predictability, earnings smoothness, value relevance, earnings timeliness, and earnings conservatism (Penman & Zhang, 2002; Schipper & Vincent, 2003; Dechow & Schrand, 2004; Francis et al., 2004; Barth, Landsman & Lang, 2008; Dechow, Ge & Schrand, 2010; Gaio & Raposo, 2011; Perotti & Wagenhofer, 2014; Latif et al., 2017). While most studies on earnings quality focus only on accruals quality, which is related to earnings management practices, in the present study only value relevance is not analyzed, as it is exclusive to listed companies. By using six proxies for earnings quality, this study intends to allow for a deeper understanding of the impact of different characteristics of earnings quality on SMEs' financial performance, contributing to enlarging the literature on this thematic. In detail, in this study, we present a way to measure each characteristic of earnings quality in SMEs, and we propose a model that can be used to understand how financial performance is affected by earnings quality that can be used for all types of firms, industries, and countries.

Financial performance is analyzed here from two main perspectives: profitability (through the ROA - return on assets ratio) and value creation (by the EVA - economic value-added indicator). Indeed, few studies measure financial performance based on the EVA indicator, although it has been proven to be more relevant than profitability ratios, as it combines a firm's return with the cost supported with the financing of the invested capital (Martani & Saputra, 2009).

To achieve our goals, a sample of Portuguese SMEs from the mold industry is analyzed. The choice of SMEs is explained by the fact that the existing literature on the impact of earnings quality on firms' performance is mostly directed to listed companies (for example Francis et al., 2004; Gaio & Raposo, 2011; Dang, Nguyen & Tran, 2020). Moreover, while the main users of financial information of listed firms are financial investors, regarding SMEs these are the banks, which makes singular the characteristics of earnings quality of SMEs. Finally, 99.9% of the Portuguese firms are SMEs (National Statistics Institute – INE, 2020), making it relevant to explore this specific type of firm.

We study a single specific industry given that some quality and performance characteristics, which impact financial ratios, are specific to a sector. By considering a single sector, we avoid potentially biased conclusions, and we can understand the target industry in detail. Portugal is the eighth largest producer of molds in the world and the third in Europe, exporting around 90% of its production (675 million euros in 2017) to 93 markets (Cefamol, 2019). This industry is composed of five hundred firms, mostly located in the center (Marinha Grande - Leiria) and north of the country (Oliveira de Azeméis), employing approximately 10,500 workers (Cefamol, 2019). It contributed to 2.8% of the Portuguese Gross Domestic Product (GDP) in 2017 (Cefamol, 2019). The conclusions of this study are expected to contribute to managers of Portuguese firms, including those within the mold industry, through a better understanding of how they can improve the firm's financial position. In addition, they should also be relevant for the stakeholders of Portuguese firms, who can have additional insight into whether reported information has quality and if they can trust it when making their investment and business decisions.

Finally, Portugal is an underexplored small-sized European country (most studies on earnings quality focus on large-size countries outside Europe, e.g. Latif et al., 2017 – Pakistan, Machdar, Manurung and Murwaningsari, 2017 – Indonesia and Singapore, Dang et al., 2020 – Vietnam), but also because several financial scandals occurred in the country (e.g. Banco Português de Negócios, Banco Privado Português, Banco Espírito Santo), increasing the relevance of firm's

earnings quality (Gaio & Raposo, 2011). As a code-law country, where financial investors are less protected by law, information asymmetries prevail in Portugal, which increase managers' opportunities to engage in earnings management or similar practices (Dimitras, Kyriakou & Iatridis, 2015).

The final sample includes 237 companies, observed during the period between 2010 and 2018. Our main results suggest that increasing the quality of reported earnings can contribute to improving firms' financial performance, especially through accruals quality. There is no evidence that earnings persistence, predictability, smoothness, timeliness, and conservatism significantly affect financial performance.

The rest of the paper is organized as follows. After this introduction, section 2 provides a literature review on the thematic associated with the study and presents the research hypotheses. Section 3 describes the data, variables, and methodology. Then, results and discussion are given in the fourth section, and the main conclusions are drawn in the fifth and final section.

2. Literature review and Research Hypotheses

Earnings quality

Financial information is the first source of firms' specific information (Latif et al., 2017) and is the basis for the decision-making process (Francis et al., 2004), so it must have quality. According to Dechow et al. (2010), earnings quality occurs when reported information reflects current performance, is a good indicator of future performance, and reflects the firm's intrinsic value.

Financial reported information must be relevant and reliable. On the relevancy dimension (i.e., without earnings management or similar practices), earnings quality is measured through accruals quality, smoothness, and earnings conservatism (Gaio & Raposo, 2011). On the reliability dimension (i.e., information without bias), earnings should be persistent, predictable, timely, and value relevant. Usually, earnings quality is related to the absence of earnings management (Kamarudin & Ismail, 2014). Nevertheless, as a multidimensional concept, earnings quality should be evaluated based on several factors, and stakeholders should not rely only on one singular characteristic (Latif et al., 2017).

Dechow (1994) argues that earnings quality is a summary measure of the firm's financial performance as it shows the company without any anomalies or accounting tricks, allowing for assessing effective value creation. Earnings quality impacts firms' performance in three ways: 1) providing accurate information that helps in the selection of investment projects; 2) reducing managers opportunistic behaviors; and 3) reducing information asymmetries (Latif et al., 2017).

Managers sometimes feel pressure to engage in earnings management practices, either for compensation reasons (i.e., to increase personal wealth) or to fulfill financial investors' expectations, sustain debt contracts or comply with legal reasons (McNichols & Stubben, 2008; Dechow et al., 2010; Huynh, 2019). Naturally, adopting earnings management practices reduces the quality of the firm's financial information. In its turn, this can harm the quality of the firm and investors' decisions since they are based on incorrect information, causing an increase in the probability of financial distress and a decrease in financial performance (Martínez-Ferrero,

2014). Francis *et al.* (2004) and Leuz and Verrecchia (2005) found that high information quality reduces information risk and a firm's cost of capital, which can impact a firm's performance.

Earnings quality contributes to decreasing agency costs between the principal and the agent. When the manager and the principal are not the same person, some agency problems can occur as managers tend to behave in their own interests, instead of maximizing the firm's value (Jensen & Meckling, 1976). The agency theory suggests that a high quality of financial reported information acts as a mechanism for controlling managers' opportunistic behavior. Zimmerman (2013) argues that earnings quality promotes the alignment of incentives between managers and shareholders, avoiding expropriation of the firm's wealth.

The lack of earnings quality increases information asymmetries (Latif et al., 2017). Managers will have preferential information as compared to other stakeholders, which increases their opportunity to engage in opportunistic behavior that can lead to a firm's wealth expropriation (Stiglitz & Weiss, 1981). When the reported financial information is more complete and without bias, information is more transparent and has more quality so that all stakeholders can have an accurate picture of the firm's value.

Earnings quality can thus be seen as a vehicle to acquire competitive advantage and superior performance (Huynh, 2018). Poor earnings quality misleads the information available to the stakeholders, who can misallocate their money, obtaining inadequate outcomes from their investments (Schipper & Vincent, 2003). Therefore, financial investors will lose confidence in reported earnings, and firms' reputation can be jeopardized (Cao, Myers & Omer, 2012; Huynh, 2019).

Earnings quality impact on company's performance

Studies analyzing the impact of earnings quality on companies' performance are scarce. Gaio and Raposo (2011), in a study comprising more than 7,000 firms from 38 countries, analyzed the relationship between earnings quality (considering seven characteristics of earnings quality) and the firm's value (measured by Tobin's Q) and found a positive and significant relationship between the two variables. Latif et al. (2017) also found that earnings quality (measured through five earnings quality characteristics) maximizes the firm's performance (measured by ROA), considering a sample of 214 non-financial firms listed on the Pakistan Stock Exchange between 2003 and 2014. Similar results were obtained by Machdar et al. (2017), who analyzed 2,300 manufacturing firms listed on the Indonesia Stock Exchange and Singapore Exchange between 2004 to 2013 and used information asymmetries as a moderator of the relationship between earnings quality and firm's profitability, and by Dang et al. (2020), who studied non-financial audited firms listed on the Vietnam Stock Exchange, for the 2010-2018 period.

Huynh (2019) analyzed the 50 best listed Vietnamese firms selected by Forbes Vietnam, during the period from 2012 to 2015, and found that the link between earnings quality and financial performance is a vicious circle, where earnings quality for the period is the cause of current financial performance that impact future earnings quality.

In contrast, Hutagaol-Martowidjojo, Valentinic and Warganegara (2019), analyzing a sample of firms listed on the Indonesia Stock Exchange, during the period between 1995 and 2015, found the opposite relation. They found that earnings quality is negatively correlated with the firm's

market value (measured by Tobin's Q), suggesting that earnings management is seen by the Indonesian capital market as an efficient practice.

In addition, Istianingsih (2021), using a sample of 570 manufacturing firms listed on the Indonesia Stock Exchange during the period between 2015 and 2019, found that earnings quality (measured by accruals quality) does not impact the firm's performance (measured by ROA), suggesting that financial investors know that managers can act optimistically when reporting earnings.

Nevertheless, these last studies focus exclusively on listed firms, which means that the relation between earnings quality and financial performance for the case of SMEs is still to receive proper research.

SMEs are different from large-sized firms. SMEs tend to be actively managed by their owners, who usually engage in multi-tasking, sometimes without specific knowledge of business management. Therefore, agency costs between the principal and the agent are eliminated or at least reduced. However, these firms are highly dependent on internal funds, since they have no access to financial markets and have greater difficulties in obtaining loans (Russo & Perrini, 2010). Thus, the market demand for financial information is singular and less demanding than the one for large-sized firms (Ball & Shivakumer, 2005).

SMEs are also subject to less monitoring, both internal, by the board of directors, and external, by the market (Russo & Perrini, 2010). Finally, in SMEs information asymmetries are enlarged, and managers can more easily engage in earnings management or similar practices that may jeopardize earnings quality (Dimitras et al., 2015).

Research hypotheses

Earnings quality is essential to making accurate decisions regarding investments and financial mix that can lead to an increase in firms' financial performance (Gaio & Raposo, 2011; Latif et al., 2017; Machdar et al., 2017; Huynh, 2019; Dang et al., 2020). In this sense, it is expected that firms reporting financial information with quality tend to achieve superior financial performance. Thus, the main hypothesis of this study is formulated as follows:

The higher the earnings quality of Portuguese SMEs in the mold industry, the greater their financial performance.

More specifically, this work aims to assess whether each characteristic of earnings quality, namely accruals quality, earnings persistence, earnings predictability, earnings smoothness, earnings timeliness, and earnings conservatism, affects financial performance.

Earnings are the sum of total accruals, which result from estimations, and cash flows, that are effectively executed (Francis et al., 2004). Accruals can be related to the firm's current activity (non-discretionary accruals), but also to earnings management practices (discretionary accruals), due to the flexibility of the generally accepted accounting principles (GAAP). Managers can use the gaps in accounting rules to report a positive picture of the firm's business activity and financial position, misleading investors, and other stakeholders (Schipper, 1989).

The smaller the discretionary component of accruals (fewer earnings management practices), the greater their quality and the quality of financial information, as it reflects the firm's financial position in an appropriate way (Healy & Wahlen, 1999). If this is the case, stakeholders can

efficiently allocate resources as they know the firm's real financial situation, which can contribute to improving its financial performance (Dang et al, 2020). The first hypothesis is thus formulated as follows:

Hypothesis 1: The quality of accruals contributes positively to the financial performance of Portuguese SMEs in the mold industry.

However, earnings management practices through the discretionary component of accruals can have consequences not only in the current period but also in the future (Huynh, 2019). Indeed, when firms engage in earnings management practices, stakeholders are negatively affected in the current period while simultaneously losing confidence in the firm for the future. This reputation effect may cause a decline in its competitive advantages (Huynh, 2019). Therefore, to distinguish the immediate (current period) from the lagged effects of accruals quality on financial performance, hypothesis 1 is divided into the following two specific sub hypotheses:

Hypothesis 1a: The quality of accruals in year t contributes positively to the financial performance of Portuguese SMEs in the mold industry in year t.

Hypothesis 1b: The quality of accruals in years t-1 and t-2 contributes positively to the financial performance of Portuguese SMEs in the mold industry in year t.

Earnings persistence is related to earnings sustainability, i.e., their propensity to be repeated in the future (Francis et al., 2004). This characteristic is desirable by investors as it shows that the firm is trying to sustain its activity over the years (Penman & Zhang, 2002) and that financial statements present an accurate and unbiased picture of the firm (Aguguom, Dada & Nwaobia, 2019). Less persistent earnings, which have a transitory nature, are perceived by investors as less interesting since they are not useful for decision-making and do not accurately reflect equity valuations (Dechow et al., 2010). Therefore, earnings persistence is a good indicator of financial information quality (Penman & Zhang, 2002), which can impact firms' financial performance. Dang et al. (2020) found that earnings persistence positively influences firm value. Nevertheless, earnings persistence should not result from earnings management practices, otherwise, it is inaccurate to forecast future earnings (Aguguom et al., 2019). The following hypothesis can be formulated.

Hypothesis 2: Earnings persistence contributes positively to the financial performance of Portuguese SMEs in the mold industry.

Earnings predictability is the ability of reported (past) earnings in predicting future ones (Lipe, 1990). When past earnings are good estimates of current ones, predictability increases (Schiemann & Guenther, 2013). This characteristic is related to persistence since persistent earnings are those that tend to be repeated in the future - more predictable. Earnings predictability is desirable by investors and considered essential for firms' evaluation (Francis et al., 2004). Latif et al. (2017) found that stakeholders that can forecast future earnings make better decisions as the future is less uncertain. It is thus expected that earnings predictability affects positively the firm's financial performance, which forms hypothesis 3.

Hypothesis 3: Earnings predictability contributes positively to the financial performance of Portuguese SMEs in the mold industry.

Earnings smoothness is related to the absence of variation in earnings (Eckel, 1981). Dechow et al. (2010) argue that earnings smoothness is common in various countries. It can be divided into natural smoothing, when it naturally results from the firm's operations, or intentional when it is

related to the effort made by managers to reduce earnings variations (Francis et al., 2004). Intentional smoothness can be further divided into real smoothing, which results from controlling current economic events that affect future cash flows, and artificial smoothing, when current economic events are smoothed by transferring income/expenses from one period to another, without impacting cash flows (Eckel, 1981).

Smoothness is an attribute of earnings quality studied by researchers, but without a conclusive impact (Machar et al., 2017). On the one hand, reduced earnings fluctuations are seen by investors as more desirable and relevant for decision making, as it may signal more persistent and predictable earnings. But, on the other hand, smoothness can also be seen as an undesirable characteristic by investors (Perotti & Wagenhofer, 2014), when it is caused by earnings management practices to achieve a representative level of earnings (Francis et al., 2004). Most previous researchers relate earnings smoothness with earnings management practices (Francis *et al.*, 2004; Gaio & Raposo, 2011; Latif *et al.*, 2017). Thus, hypothesis 4 is thus as follows.

Hypothesis 4: Earnings smoothness contributes negatively to the financial performance of Portuguese SMEs in the mold industry.

Timeliness is the period between the moment in which information gets available and its incorporation into earnings (Ball, Kothari & Robin, 2000). Less timely earnings do not fully reflect the firm's information, being less useful for decision making (Raonic, McLeay & Asimakopoulos, 2004). For listed firms, the quicker the financial information is incorporated in accounting after the market recognized it in the firm's share price, the higher the quality of such information (Gaio & Raposo, 2011), and the timelier the investors' decisions. For unlisted firms, timeliness is usually linked to cash flows. When the total accruals component rapidly reflects cash flow information, it reveals that earnings are timelier, with more quality (Ball & Shivakumar, 2005). Dang et al. (2020) found that earnings timeliness positively influences the firm value. Therefore, we formulate hypothesis 5.

Hypothesis 5: Earnings timeliness contributes positively to the financial performance of Portuguese SMEs in the mold industry.

Earnings conservatism refers to the asymmetric recognition between different economic events in accounting earnings, i.e., the different degrees of recognition of good news and bad news (Basu, 1997). It can be divided into conditional conservatism, which is required by the GAAP and consists of more timely recognition of bad news than good news in earnings (Basu, 1997; Givoly & Hayn, 2000), and unconditional conservatism, not required by GAAP, which is an ex-ante policy to lower total assets and increase total liabilities (Dechow et al., 2010). Researchers typically focus on conditional conservatism.

Conservatism plays an important role in protecting investors, as it helps to reduce the negative impacts of information asymmetries between managers and investors (Herrmann et al., 2008; LaFond & Watts, 2008). In a more conservative accounting practice (higher level of conservatism), bad news are recognized in earnings earlier and with more extension than good news, which are recognized later and more gradually (Basu, 1997; Givoly & Hayn, 2000; Chen, Folsom, Paek & Sami, 2014). Therefore, the higher level of conservatism, the lower the persistence of earnings (Basu, 1997; Chen et al., 2014). Regardless of the period in which the effects of bad news occur (in the current period or a future period), conservative firms recognize it immediately and completely, which leads to bad news becoming a transitory component of the results (Chen et al., 2014). Also, for conservative firms, good news may be associated with more persistent earnings, because verification requirements for good news are more stringent

and because they are recognized when they occur. The firms delay the recognition of good news for several periods, which leads to good news becoming a persistent component of results (Chen et al., 2014). Therefore, a positive influence of earnings conservatism on the financial performance of firms is expected. The last hypothesis is thus formulated as follows.

Hypothesis 6: Earnings conservatism contributes positively to the financial performance of Portuguese SMEs in the mold industry.

3. Sample, variables, and methodology

Sample

This work analyzes Portuguese SMEs operating in the mold industry. As previously referred, in Portugal there is little research on earnings quality and, as a code-law country, there are large information asymmetries. That only SMEs were selected for the study is explained by the fact that 99.9% of Portuguese firms are micro or SMEs (INE, 2020) and because previous literature focused essentially on listed companies, which makes it more relevant to study a different type of firms. In addition, the mold industry was selected because it exports a large part of its production, is relevant to worldwide stakeholders, and makes a great contribution to the Portuguese GDP (Cefamol, 2019). Moreover, analyzing a single business sector avoids biased results as firms' reported information differs by sector.

In the data collection process, three databases were used: the SABI database (*Sistema de Análise de Balanços Ibéricos* - Iberian Balance Sheet Analysis System) from Bureau Van Dijk, the Damodaran website, and the Pordata database from *Fundação Francisco Manuel dos Santos*.

From the full population of Portuguese firms in the mold industry (initial sample), only SMEs were considered, i.e., firms with less than 250 employees and more than 10, with total assets between 2 million and 43 million euros and/or a total turnover greater than 2 million and less than 50 million euros (Law n. 81/2017, 2017). This means that micro and large-size firms were thus deleted from the initial sample.

The sampled firms were then observed for nine years, from 2010 to 2018, with 2010 being the implementation year of the current Portuguese accounting standards, and 2018 the last year in which the required data is fully available. The final dataset is an unbalanced panel, comprising 237 firms and 9 years, with a total of 2,133 observations.

Variables

Financial performance proxies

Companies' financial performance can be measured through several proxies, which can be divided into accounting-based and market-based. Market-based variables are built on information provided by financial markets and are exclusive of listed firms (Gaio & Raposo, 2011; Zeitun & Tian, 2014). Therefore, this work uses accounting proxies of financial performance, which can be applied to all firms.

Profitability ratios assess whether firms are efficient in generating profits. The most frequently adopted ratios are the ROA - return on assets (Waddock & Graves, 1997; Lisboa & Augusto,

2003; Kothari, Leone & Wasley, 2005; Lee, Li & Yue, 2006; Larcker, Richardson & Tuna, 2007; Zeitun & Tian, 2007; Serrasqueiro & Nunes, 2008; Wang & Huynh, 2014; Latif *et al.*, 2017; Husain, Sarwani, Sunardi & Lisdawati, 2020) and the ROE - return on equity (Waddock & Graves, 1997; Lisboa & Augusto, 2003; Zeitun & Tian, 2014; Wang & Huynh, 2014).

More recently, value creation proxies have gained acceptance, particularly the indicator EVA - economic value-added, as it shows not only if the firm is generating earnings, but also if earnings are enough to cover the costs required to finance the invested capital (Purwantini & Prabhata, 2019; Tripathi, Kashiramka & Jain, 2019).

In the present study, we use the ROA as a profitability proxy and the EVA as a value creation proxy. While both indicators focus on earnings and invested capital, the use of two indicators increases the robustness of the results. Moreover, as studies using EVA as a proxy of performance are scarce, its consideration extends the empirical literature in this area.

For firm i in year t, ROA is measured as the ratio between net income and total assets, i.e.,

$$ROA_{i,t} = \frac{\text{Net income}_{i,t}}{\text{Total assets}_{i,t}},$$

while EVA is calculated using the formula:

$$EVA_{i,t} = \text{Net Operating Profit After Taxes (NOPAT)}_{i,t} - \text{Invested Capital}_{i,t-1} \times WACC_{i,t},$$

where (for any firm in any year):

- Invested capital = Total equity + non-current liabilities;
- $WACC = K_e \times \frac{\text{Equity}}{\text{Equity} + \text{Debt}} + K_d \times \frac{\text{Debt}}{\text{Equity} + \text{Debt}} \times (1 - \tau).$

In WACC's formula:

- K_e is the cost of equity, computed using the Capital Asset Pricing Model (CAPM), i.e.,

$$K_e = R_f + \beta_e \times (R_{m-}R_f);$$

  - R_f is the risk-free return (10-year treasury bill obtained in Pordata database);

  - β_e is the levered beta, i.e., the systematic risk index, assessed by the formula $\beta_e = \beta_u \times \left[1 + (1-t) \times \frac{\text{Debt}}{\text{Equity}}\right]$, where β_u is the unlevered beta by industry (obtained in Damodaran's website);

  - $(R_{m-}R_f)$ is the country risk premium (obtained on Damodaran's website);

- K_d is the ratio between interests and financial debt;

- τ is the effective income tax rate, computed by the ratio between income taxes and earnings before taxes).

Earnings quality variables

Previous literature suggests several proxies for measuring the quality of financial information, namely: accruals quality, earnings persistence, earnings predictability, earnings smoothness, value relevance, timeliness, and conservatism (Penman & Zhang, 2002; Schipper & Vincent, 2003; Dechow & Schrand, 2004; Francis et al., 2004; Barth et al., 2008; Dechow et al., 2010; Gaio

& Raposo, 2011; Perotti & Wagenhofer, 2014; Latif et al., 2017). Even though accruals quality is seen as the most pricing attribute of earnings quality (Francis et al., 2004), it does not allow for a complete understanding of earnings quality. In this study, we consider all proxies except for value relevance, which cannot be applied to SMEs.

Accruals quality (AQ) is related to earnings management practices, i.e., the discretionary behavior of managers. It is measured by the symmetric of the absolute value of discretionary accruals (-|DA|), i.e., by the symmetric of the absolute value of the residuals of the total accruals' model since earnings can be managed either in a positive or in a negative direction. The higher (near zero) the value of -|DA|, the higher the accruals quality and, consequently, the higher the earnings quality (Jones, 1991).

Several models can be used to estimate accruals. The Jones (1991) model is a classic and one of the most established. It defines total accruals as a function of variations in revenues and property, plant, and equipment. Dechow, Sloan and Sweeney (1995) adapted the Jones model by deducting receivables from revenues. Kothari et al. (2005) added a new variable (ROA) to the Jones model to deal with differences in performance. From another perspective, Dechow and Dichev (2002) establish that total accruals are a function of the present, past, and future cash flows. Finally, McNichols (2002) joined the Jones (1991) model with the one of Dechow and Dichev (2002).

In the present study, both the Jones model and the McNichols model are employed, for robustness purposes. The Jones model was estimated using the equation

$$\frac{TA_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1\left(\frac{1}{A_{i,t-1}}\right) + \beta_2\left(\frac{\Delta REV_{i,t}}{A_{i,t-1}}\right) + \beta_3\left(\frac{PPE_{i,t}}{A_{i,t-1}}\right) + \varepsilon_{i,t}$$

where TA is total accruals measured as [Δcurrent assets - Δcash - Δcurrent liabilities - short-term debt - amortizations and depreciations], ΔREV is the growth in annual revenue, PPE is the value of property, plant, and equipment, EBIT is the earnings before interests and taxes, and A is the total assets.

The McNichols model (2002) was estimated using the equation

$$\frac{WCA_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1\left(\frac{OCF_{i,t-1}}{A_{i,t-1}}\right) + \beta_2\left(\frac{OCF_{i,t}}{A_{i,t-1}}\right) + \beta_3\left(\frac{OCF_{i,t+1}}{A_{i,t-1}}\right) + \beta_4\left(\frac{\Delta REV_{i,t}}{A_{i,t-1}}\right) + \beta_5\left(\frac{PPE_{i,t}}{A_{i,t-1}}\right) + \varepsilon_{i,t}$$

where WCA is equal to [TA + amortizations and depreciations] and OCF is the operational cash flow, measured as [net income - TA].

Both models were estimated per firm, using the respective time series. The discretionary accruals (DA) of each firm are thus the abnormal deviations of the total accruals to its average historical pattern. This time-series regression method has strong acceptance in the literature and was chosen instead of cross-section regressions (one per year, with all firms) due to the presence of strong heterogeneity within the sample, even though all firms are SMEs and belong to the same industry.

Earnings persistence is related to earnings sustainability. Persistent earnings are desirable to financial investors as they tend to be repeated in the future (Schipper and Vincent, 2003). Persistence of earnings (PERS), for firm i, is estimated as in Francis et al. (2004), Larcker et al. (2007), Gaio and Raposo (2011), Perotti and Wagenhofer (2014), and Huynh (2019), as the slope coefficient (β_1) of the regression:

$$\frac{NIBE_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \left(\frac{NIBE_{i,t-1}}{A_{i,t-1}}\right) + \varepsilon_{i,t}$$

where NIBE is the net income before extraordinary items and A is the total assets.

Earnings predictability is the ability of reported earnings in predicting future earnings (Lipe, 1990). It has some relation with persistence given that persistent earnings are more predictable (Carmo, 2013), due to trend effects, but predictability also includes the cases in which β_1 is negative (seasonality). The highest the predictability, the highest earnings quality (Schiemann & Guenther, 2013). Predictability (PRED) for firm i, is estimated as the R-squared of the persistence equation above, as in Perotti and Wagenhofer (2014), and Huynh (2019).

Earnings smoothness is the absence of earnings variation. It can be natural or intentional. The existing literature emphasizes intentional smoothness, which is done by managers to reduce variations in current earnings (Francis et al., 2004). Here, earnings smoothness (SMOOTH) for firm i is measured as in Perotti and Wagenhofer (2014), and Huynh (2019), who propose, among other possibilities, the use of the correlation coefficient below.

$$SMOOTH_i = \rho\left(\frac{TA_{i,t}}{A_{i,t-1}}, \frac{OCF_{i,t}}{A_{i,t-1}}\right)$$

The higher the correlation coefficient, the lower the smoothing practices, and the higher the earnings quality. On the contrary, the closer it is to -1, the more evidence exists that the firm adopts earnings smoothing practices.

Earnings timeliness refers to the time earnings take to incorporate relevant information (Ball et al., 2000; Beekes, Pope & Young, 2004). Reported earnings are timely when they fully reflect the information that was incorporated by the market in the company's share price and are less timely when the changes in value recognized by the market in the current period are not incorporated in the accounting calculations in some future period (Raonic et al., 2004). Timely information is more useful for decision-making. Ball and Shivakumar (2005), based on the model proposed by Basu (1997), develop the equation

$$\frac{TA_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 DOCF_{i,t} + \beta_2\left(\frac{OCF_{i,t}}{A_{i,t-1}}\right) + \beta_3 DOCF_{i,t}\left(\frac{OCF_{i,t}}{A_{i,t-1}}\right) + \varepsilon_{i,t}$$

where DOCF is a dummy variable that takes the value 1 if OCF is negative (bad news), and 0 otherwise (good news). Earnings timeliness (TIME) is then estimated as the R^2 of the equation for firm i:

$$TIME_i = R_i^2$$

The higher (low) the value of TIME, the more (less) timely earnings are, as the accruals component of earnings reflects rapidly (slowly) the cash flow information.

Finally, **earnings conservatism** is the ability of earnings to reflect positive and negative information (Basu, 1997) differently. It can be divided between conditional and unconditional conservatism (Dechow et al., 2010). Researchers focus on conditional conservatism, which consists of a more timely recognition of bad news than good news in earnings (Basu, 1997; Givoly & Hayn, 2000). In a more conservative accounting practice (higher level of conservatism), bad news are recognized in earnings earlier and with more extension than good news, which are

recognized later and more gradually (Basu, 1997; Givoly & Hayn, 2000; Chen, Folsom, Paek & Sami, 2014).

Based on Ball and Shivakumar model (2005) presented above for earnings timeliness, Francis et al. (2004), Larcker et al. (2007), and Gaio and Raposo (2011) measure earnings conservatism (CONS) as:

$$CONS_i = \frac{\beta_2 + \beta_3}{\beta_2}$$

where the equation is again estimated per firm.

This equation captures the extent to which bad news are incorporated into earnings relative to good news (Larcker et al., 2007). The higher the (positive) coefficient β_3, the more conservative earnings, since bad news are recognized in earnings more quickly than good news (Basu, 1997; Givoly & Hayn (2000); Francis et al., 2004; Gaio & Raposo, 2011). As conditional conservatism is generally seen as a quality practice, despite its relationship with earnings persistence, the higher the CONS indicator of firm i, the higher its earnings quality.

Control variables

Additionally, three control variables are considered as there is strong evidence in the literature that they can affect financial performance: firm size, leverage, and sales growth.

Firm size is introduced given that larger firms have greater business diversification, more resources, and skills, and tend to disclose more information. These firms are more likely to benefit from economies of scale and greater bargaining power with their stakeholders (Serrasqueiro & Nunes, 2008; Latif et al., 2017). On the other hand, smaller firms can more easily recognize growth opportunities, establish networks with others, and better adjust to innovation processes. In this case, smaller firms can also be efficient, leading to increases in performance (Serrasqueiro & Nunes, 2008).

The impact of size on financial performance is thus ambiguous. Lisboa and Augusto (2003), in a study on the relation between firm size and the performance of Portuguese firms in the manufacturing industry, concluded that firm size has no influence. Zeitun and Tian (2007), in a study on capital structure and corporate performance in Jordan, concluded that firm size has a positive and significant impact on performance (both measured by ROA and Tobin's Q), essentially because the probability of bankruptcy decreases with size. Finally, Gaio and Raposo (2011) found that firm size is negatively related to a firm's value (measured by Tobin's Q).

Firm size can be measured in several ways, namely using total assets, turnover, or the number of employees (Zeitun & Tian, 2007; Serrasqueiro & Nunes, 2008; Gaio & Raposo, 2011; Huynh, 2019). In this study, the size of firm i in year t is calculated as the logarithm of total assets, in euros, in that year, as it is the most used proxy.

Firm leverage is related to its indebtedness and, therefore, reflects the firm's dependence on third parties and acts as a proxy for its financial risk (Carmo, 2013). Indebtedness is measured as the ratio between total liabilities and total assets, usually referred to as the debts-to-assets ratio (Serrasqueiro & Nunes, 2008; Latif et al., 2017; Huynh, 2019).

Indebtedness can negatively affect the financial performance of firms, as increased liabilities represent higher efforts in paying the interests associated with them and create difficulties in obtaining new financing that may be required to invest in new opportunities (Goddard, Tavakoli & Wilson, 2005; Serrasqueiro & Nunes, 2008). On the other hand, a high indebt can also affect positively the firm performance, due to the higher pressure to manage the firm's resources more efficiently (Serrasqueiro & Nunes, 2008). Indeed, at an empirical level, the impact of indebtedness on performance is also controversial. Zeitun and Tian (2007) show that the higher the indebtedness, the lower the firms' performance (measured by ROA), while Serrasqueiro and Nunes (2008) conclude that there is a negative relationship between indebtedness and the financial performance of SMEs.

Finally, sales growth is measured as the annual growth of turnover in year t (increase in sales to year t-1), as a percentage of turnover in year t- 1. Considered a proxy for growth opportunities, sales growth is likely to affect financial performance. Zeitun and Tian (2007) found that a growth context contributes positively to firm performance (measured as ROA), as growing firms can generate more profit from their investments. Latif et al. (2017) found similar results and concluded that growing firms have access to more resources.

Methodology

To test the research hypotheses of the study, the following general econometric model of panel data regression was developed:

$$\text{Performance}_{i,t} = \beta_0 + \beta_1 X_{i,t} + \sum_{j=1}^{3} \alpha_j \text{CONTROL}_{j,i,t} + \varepsilon_{i,t}$$

where Performance is measured by one of two alternative variables (ROA or EVA) and X_{it} is one of the earnings quality variables ($AQ_{i,t}$, $AQ_{i,t-1}$, $AQ_{i,t-2}$, $PERS_i$, $PRED_i$, $SMOOTH_i$, $TIME_i$ or $CONS_i$), to be selected according to the research hypothesis to test. AQ is accruals quality, also evaluated by one of two variables, AQ_Jones, which employs the Jones model to assess discretionary accruals, or AQ_McNic., in which discretionary accruals are estimated under the McNichols model, PERS is earnings persistence, PRED is earnings predictability, SMOOTH is earnings smoothness, TIME is earnings timeliness, and CONS is earnings conservatism. Finally, CONTROL represents control variable j, with j=1 (Size), j=2 (Leverage) and j=3 (Growth). That the model considers each one of the earnings quality variables in an isolated regression is to avoid potential multicollinearity problems that would arise if they were jointly considered, as they are expected to be correlated.

The model was estimated under a fixed-effects specification when the earnings quality variable included in the regression was one of the AQ variables. This was because the AQ variables are not time-invariant, thus making fixed effects estimation feasible, and because all Hausman tests on fixed vs random effects signaled the existence of fixed effects. When it included a time-invariant earnings quality variable (PERS, PRED, SMOOTH, TIME, and CONS) so that fixed effects estimation was not feasible, it was estimated using the random effects GLS estimator ("Generalized Least Squares") to account for the individual firm-specific effects and ensure heteroscedasticity corrected estimates. In all these latter cases, Breusch-Pagan tests confirmed the random effects specification against the alternative of pooled OLS.

4. Results

In this section, together with the testing of the research hypotheses, we aim to assess to what extent international results apply to the Portuguese SMEs and to identify the singularities of the Portuguese SMEs from the mold industry.

Table 1 presents some descriptive statistics of the variables included in the study, namely mean, minimum, maximum, and standard deviation. The number of observations (N. obs) in the sample varies across variables due to the existence of missing values.

Table 1: Descriptive Statistics

Variable	N. Obs	Mean	Minimum	Maximum	Std. Dev.
ROA	2122	0.0391	-0.5122	0.4988	0.0661
EVA	1675	-0.0139	-2.1580	3.4598	0.2956
AQ_Jones	2132	-0.1031	-0.6678	0.0000	0.1007
AQ_McNic.	1658	-0.0106	-0.1115	0.0000	0.0148
PERS	2124	0.3800	-1.1760	3.1390	0.5562
PRED	2124	0.2232	0.0000	0.8924	0.2160
SMOOTH	2123	-0.9333	-1.0000	-0.3944	0.0927
TIME	2124	0.9131	0.3388	0.9999	0.1089
CONS	2133	1.198	-8.4320	32.0000	2.4810
SIZE	2119	6.1878	4.0334	7.3756	0.4627
LEV	2122	0.6484	0.0166	1.8217	0.2005
GROWTH	2113	0.1756	-1.0000	18.738	0.8007

ROA is, on average, positive (3.91%), while EVA is negative (-0.0139 million euros), with both variables showing a relatively high dispersion and a large Min-Max range, particularly EVA.

The accruals quality proxy AQ_Jones has an average value of -0.1031 and AQ_McNic. -0.0106. Similar results were found by Xie (2001), Perotti and Wagenhofer (2014), and Dang et al. (2020), regarding AQ_Jones, and by Francis et al. (2004) and Perotti and Wagenhofer (2014) regarding AQ_McNic.

The variable PERS (earnings persistence) has a mean of 0.3800, suggesting that the higher the earnings of year t-1, the higher the earnings of year t, even though the relation is not exponential, since the mean value is smaller than 1. Similar results were found by Francis et al. (2004), and Perotti and Wagenhofer (2014).

Concerning the PRED (predictability) variable, the sample mean is 0.2232, similar to Perotti and Wagenhofer (2014). The low average value of the R^2 statistics behind PRED shows that, on average, reported earnings by Portuguese SMEs in the mold industry are not very predictable, i.e., earnings of year t-1 have limited capacity in predicting earnings of year t. Nevertheless, the value of PRED varies a lot across firms, as there are firms with very high earnings predictability (PRED close to 0.9) and others with essentially unpredictable earnings (PRED close to zero).

The variable SMOOTH (earnings smoothness) exhibits a mean of -0.9333, showing that on average Portuguese SMEs in the mold industry engage heavily in income smoothing practices.

Timeliness observes a mean of 0.9131, suggesting that Portuguese SMEs in the mold industry are timely in incorporating accounting information in their earnings, which can indeed be a singularity of Portuguese SMEs, as different values were found by Francis et al. (2004), and Dang et al. (2020), who studied listed firms.

The variable CONS (conservatism) displays an average value of 1.198, meaning that Portuguese SMEs in the mold industry indeed adopt conservative accounting practices, i.e., they tend to recognize bad news as soon as they are known, and to recognize good news only when they produce cash-flow benefits. Again, different mean values were found for listed firms by Givoly and Hayn (2000) and Francis et al. (2004).

Finally, regarding control variables, the firm size is approximately 1.5 million euros of assets (on average). Leverage is in mean 65%, showing that Portuguese SMEs in the mold industry are, in general, highly indebted, even though there are companies with only 1% indebtedness and others with 182% (negative equity). Average sales growth is 17.56%, revealing that the Portuguese mold industry was growing during the 2010-2018 period.

Table 2 reports the Pearson correlation coefficients between the main variables used in the study.

Table 2: Correlation matrix

Variáveis	ROA	EVA	AQ_JONES	AQ_MCNIC.	PERS	PRED	SMOOTH	TIME	CONS	Size	Lev
ROA	–										
EVA	+0.343***	–									
AQ_JONES	+0.000	-0.092***	–								
AQ_MCNIC.	-0.057**	-0.090***	+0.052**	–							
PERS	-0.001	-0.009	+0.041*	+0.014	–						
PRED	-0.051**	-0.056	+0.043**	+0.030	+0.616***	–					
SMOOTH	+0.030	+0.040	+0.096***	-0.143***	-0.011	-0.092***	–				
TIME	-0.065***	-0.060**	-0.110***	+0.140***	-0.004	+0.063***	-0.862***	–			
CONS	+0.029	+0.001	-0.007	-0.065***	-0.010	+0.005	+0.029	-0.010	–		
SIZE	+0.052**	+0.022	+0.154***	-0.001	-0.004	-0.024	-0.075***	+0.023	-0.019	–	
LEV	-0.379***	-0.080***	-0.132***	+0.020	+0.063***	+0.008	-0.098***	+0.170***	-0.022	+0.035	–
GROWTH	+0.147***	+0.024	-0.003	+0.027	+0.036	-0.008	+0.051**	+0.040*	+0.004	-0.071***	+0.080***

The two financial performance proxies (ROA and EVA) are positively and strongly correlated, which is expected since both measure financial performance, albeit from different perspectives.

Regarding the correlations between the financial performance proxies and the control variables, all of them are as expected. Firm size and growth opportunities are positively related to both financial performance proxies, suggesting that the largest and fastest-growing companies are the ones with the greatest financial performance. Concerning indebtedness, it is negatively associated with both measures of financial performance, revealing that the most indebted Portuguese SMEs in the mold industry are also the firms with the lowest financial performance. The correlations within the set of control variables also suggest that, among Portuguese SMEs in the mold industry, smaller companies are those with more growth opportunities, and that larger companies tend to have a higher indebtedness index.

On the earnings quality variables, they are overall strongly correlated, as expected. In particular, the two accruals quality proxies (AQ_Jones and AQ_McNic.) are positively and significantly correlated. Persistence (PERS) and predictability (PRED) are also positively correlated, with a

strong correlation of 0.616, which comes from their intrinsic relationship referred to earlier. Regarding the other correlations, the strong negative correlation between smoothness (SMOOTH) and timeliness (TIME) constitutes additional evidence that Portuguese SMEs in the mold industry use earnings management practices to smooth earnings, but are, at the same time, timely in incorporating accounting information in their earnings.

Testing Hypothesis 1 - Impact of accruals quality

Tables 3 and 4 exhibit the results of the regressions for the impact of accruals quality on ROA and EVA, respectively. In each table, regressions (1), (2) and (3) assess the impact of current and lagged accruals quality measured by the Jones model, and regressions (4), (5) and (6) assess the impact of accruals quality measured by the McNichols model.

Table 3: Results of econometric model estimation *(fixed effects estimator; dependent variable: ROA_t; independent variables: AQ and Controls)*

	(1) β	Sig.	(2) β	Sig.	(3) B	Sig.	(4) B	Sig.	(5) β	Sig.	(6) β	Sig.
Constant	-0.287	***	-0.260	***	-0.258	***	-0.218	***	-0.255	***	-0.241	***
AQ_JONES_t	-0.005											
$AQ\_MCNIC._t$							0.194	*				
AQ_JONES_{t-1}			0.002									
$AQ\_MCNIC._{t-1}$									0.405	***		
AQ_JONES_{t-2}					-0.003							
$AQ\_MCNIC._{t-2}$											0.358	**
SIZE	0.070	***	0.065	***	0.065	***	0.061	***	0.066	***	0.065	***
LEV	-0.174	***	-0.164	***	-0.175	***	-0.182	***	-0.178	***	-0.189	***
GROWTH	0.016	***	0.024	***	0.025	***	0.025	***	0.025	***	0.025	***
N. Obs	2111		1875		1642		1638		1642		1409	
corr(y,ŷ)	0.670		0.692		0.705		0.717		0.708		0.723	

***; **; * level of significance of 1%; 5%; 10%, respectively.

Table 4: Results of econometric model estimation *(fixed effects estimator; dependent variable: EVA_t; independent variables: AQ and Controls)*

	(1) β	Sig.	(2) β	Sig.	(3) B	Sig.	(4) B	Sig.	(5) β	Sig.	(6) B	Sig.
Constant	3.645		-1.463	***	-1.562	***	-1.125	***	-1.619	***	-1.372	***
AQ_JONES_t	14.405	***										
$AQ\_MCNIC._t$							0.777					
AQ_JONES_{t-1}			-0.007									
$AQ\_MCNIC._{t-1}$									0.704			
AQ_JONES_{t-2}					0.299							
$AQ\_MCNIC._{t-2}$											0.081	
SIZE	-0.932		0.253	***	0.270	***	0.213	***	0.280	***	0.229	***
LEV	5.041	**	-0.225	***	-0.220	***	-0.352	***	-0.230	***	-0.120	***
GROWTH	-0.052		0.032	**	0.033	**	0.035	**	0.034	***	0.040	***
N. Obs.	1781		1572		1365		1354		1365		1156	
corr(y,ŷ)	0.375		0.708		0.720		0.747		0.720		0.750	

***; **; * level of significance of 1%; 5%; 10%, respectively.

A general view of the results allows us to conclude that all twelve regressions provide a good fit (measured by the correlation coefficient between the actual and predicted values). Also, the regressions in which the accruals quality are measured by the McNichols models seem to reveal strong explanatory power, both for ROA (Table 3) and for EVA (Table 4).

Now testing Hypothesis 1a, it can be observed that accruals quality positively and significantly affects current year ROA when measured by the McNichols model, and EVA of the current year when measured by the Jones model. The effects of AQ_Jones on current year ROA and of AQ_McNichols on current year EVA are both non-significant. Overall, the results on AQ_t reveal that an increase in accruals quality is likely to generate immediate improvements in financial performance. Therefore, Hypothesis 1a is validated.

When assessing for lagged effects of AQ on financial performance, our results show a strong positive influence of the accruals quality in years t-1 and t-2 on ROA of period t when AQ is measured using the McNichols model. Moreover, in the other regressions, even though non-significant, the coefficients are in general positive. These results allow us to validate Hypothesis 1b. In the Portuguese mold industry, it thus seems that a high accruals quality generates financial benefits both in the current period and in the future. These results are consistent with those of Huynh (2019) and constitute a clear signal for managers of Portuguese SMEs regarding the importance of improving accruals quality.

Testing Hypotheses 2 to 6 - Impact of persistence, predictability, smoothness, timeliness, and conservatism

Tables 5 and 6 exhibit the results of the regressions for the impact of all earnings quality variables, other than AQ, on ROA and EVA, respectively.

Table 5: Results of econometric model estimation (random effects estimator; dependent variable: ROA$_t$; independent variables: PERS, PRED, SMOOTH, TIME, CONS, and Controls)

	(1)		(2)		(3)		(4)		(5)	
	B	Sig.	β	Sig.	B	Sig.	β	Sig.	β	Sig.
Constant	-0.032		-0.022		-0.032		-0.025		-0.027	
PERS	0.001									
PRED			-0.014							
SMOOTH					-0.008					
TIME							-0.001			
CONS									0.001	
SIZE	0.027	***	0.026	***	0.026	***	0.026	***	0.026	***
LEV	-0.152	***	-0.152	***	-0.153	***	-0.153	***	-0.152	***
GROWTH	0.015	***	0.017	***	0.017	***	0.017	***	0.017	***
N. Obs.	2111		2109		2108		2109		2109	
corr(y,ŷ)	0.422		0.433		0.430		0.430		0.431	

***; **; * level of significance of 1%; 5%; 10%, respectively.

Table 6: Results of econometric model estimation (random effects estimator; dependent variable: EVA$_t$; independent variables: PERS, PRED, SMOOTH, TIME, CONS, and Controls)

	(1)		(2)		(3)		(4)		(5)	
	B	Sig.	β	Sig.	B	Sig.	B	Sig.	β	Sig.
Constant	0.812		0.652		0.802		0.909		0.634	
PERS	-0.302									
PRED			0.071							
SMOOTH					0.162					
TIME							-0.307			
CONS									0.016	
SIZE	0.009		0.017		0.019		0.020		0.018	
LEV	-1.581		-1.620		-1.609		-1.585		-1.605	
GROWTH	0.176		0.169		0.168		0.171		0.169	
N. Obs.	1779		1779		1778		1779		1779	
corr(y,ŷ)	0.034		0.030		0.030		0.030		0.030	

Comparatively to the regressions in Table 3 and Table 4, the first main conclusion is that the quality of the fitting reduced significantly, even though the explanatory power is expected to decrease when shifting from fixed effects to random effects estimation (as the latter estimates only one constant while the former estimates one constant per firm), especially regarding EVA.

Second, and concerning research hypotheses 2 to 6, no significant coefficient was obtained for the effect of persistence, predictability, smoothness, timeliness, and conservatism on financial performance (either assessed by ROA or by EVA). Hence, none of the hypotheses is validated.

It thus seems that more persistent earnings are not seen by investors of Portuguese SMEs in the mold industry as less risky and as a good indicator of future earnings. Also, earnings predictability seems not to reduce the information asymmetry risk in the Portuguese mold industry nor increase the security perceived by its investors.

Likewise, earnings smoothness has no confirmed impact on the financial performance of Portuguese SMEs from the mold industry. Even if managers engage in earnings management practices to reduce variations in earnings, it seems that such practices have no impact on the decision-making of the industry's stakeholders. Finally, timeliness and conservatism also seem not to impact the financial performance of the Portuguese SMEs from the mold industry. For these two dimensions of earnings quality, the literature regarding their impact on financial performance is ambiguous, which also applies here.

Summarizing the above results, two of the research hypotheses were validated (hypotheses 1a and 1b), related to the immediate and lagged impact of accruals quality on financial performance, while, for all the remaining hypotheses (2, 3, 4, 5, and 6), earnings persistence, predictability, smoothness, timeliness and conservatism, no evidence was found of a significant relationship between earnings quality and firms' financial performance. This is consistent with Francis et al. (2004), who found that accruals quality has more impact on the cost of equity than earnings persistence, predictability, value relevance, timeliness, and conservatism, concluding that accrual quality is the most priced characteristic of earnings quality.

Regarding the control variables, in an overall analysis, firm size positively impacts financial performance, confirming that larger firms benefit from economies of scale as they possess more resources, leading to increased performance (Latif et al., 2017). Firms' indebtedness decreases financial performance, probably due to debt obligations (Latif et al., 2017; Dang et al., 2020). Finally, growth opportunities are observed to affect positively both ROA and EVA, which can be justified by the fact that growing firms have access to more resources (Latif et al., 2017).

5. Conclusions

The present research aimed to understand the relationship between earnings quality and financial performance of small and medium-sized Portuguese firms operating in the mold industry.

Most studies on earnings quality are based on a single variable – accruals quality – which is a proxy for earnings management. However, earnings quality is a more complex and multidimensional concept. Thus, this study used six different proxies of earnings quality, that can be applied to all firms: accruals quality, earnings persistence, earnings predictability,

earnings smoothness, earnings timeliness, and earnings conservatism. In addition, studies analyzing the impact of earnings quality on the financial performance of firms are relatively scarce, and the existent ones focus exclusively on listed companies.

The findings achieved after a statistical analysis of a panel data sample of 237 Portuguese SMEs in the mold industry, observed yearly over the 2010-2018 period, show that managers of Portuguese SMEs should be careful with the quality of reported earnings if they want to improve financial performance. Even though earnings persistence, predictability, smoothness, timeliness, and conservatism may not affect the financial performance of Portuguese SMEs, the results show that accruals quality contributes positively to financial performance both in the present and in the future. In particular, the lagged effects of accruals quality on financial performance reveal the presence of a permanent reputation effect and suggests that managers of Portuguese SMEs should not engage in earnings management practices regarding accruals as it can harm a firm's value.

There is thus partial statistical evidence that high earnings quality enhances coordination between the firm and the various stakeholders (Francis et al., 2004), reducing both information asymmetries and incorrect reporting (Latif et al., 2017). Financial statements of greater quality contribute to increasing the confidence of stakeholders in the decision-making process, improving investment efficiency, and increasing a firm's value.

This research contributed to the empirical literature on the relation between earnings quality and firms' financial performance, a topic in which studies are relatively scarce. Moreover, we focused on SMEs, which apply to most firms in the world, rather than on the minority of listed companies. Also, several proxies of earnings quality were considered, as opposed to using the typical (single) proxy (accruals quality). Regarding financial performance, we used both a profitability measure (ROA) and a value creation indicator (EVA), which is less often employed in the literature but can provide additional insights about firms' performance, beyond increasing the robustness of the results. Finally, we proposed a general econometric model that studies the relationship between earnings quality and financial performance that can be applied to all companies, regardless of their size and of whether they are listed in stock markets.

Our results also contribute to the management practice, as they help the different stakeholders of Portuguese SMEs better understand the financial information and how they can make better decisions to increase firms' value.

However, this work is not exempt from limitations. First, by focusing on a sample of small and medium-sized companies from only one specific industry and only one country, the findings are difficult to generalize to the international context. Second, although two distinct measures of financial performance were used, one on profitability, and the other on value creation, it would be interesting to analyze the impact of earnings' quality on other financial and non-financial performance measures. A suggestion for future research is thus to replicate this study in a pooled sample of firms of all sizes, from multiple industries and countries, and using a broader range of performance measures, to obtain more robust and generalizable results.

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