

Does the mandatory adoption of IFRS influence the forecast of growth and profitability? An analysis in emerging countries

Adoção mandatória das IFRS influencia na previsão de crescimento e rentabilidade? Uma análise em países emergentes

¿Influye la adopción obligatoria de las NIIF en las previsiones de crecimiento y rentabilidad? Un análisis en países emergentes

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Abstract

This study aims to investigate the impact of mandatory IFRS adoption on growth and profitability forecasts for companies in emerging countries. It is investigated whether IFRS adoption by 324 publicly traded companies in emerging countries (South Africa, Brazil, Chile, Philippines, Malaysia, Mexico, Nigeria, Peru, Russia and Colombia) is associated with an increase in profitability forecast accuracy and growth, through the mean reversion model, considering the pre-IFRS and post-IFRS periods of each country analyzed, totaling 5,149 observations. The results suggest that the mandatory adoption of IFRS reduces the expected growth and profitability errors. This study contributes to the literature on the effect of IFRS on forecast analysis, and fills a gap in the empirical accounting literature.

Keywords: IFRS; Profitability; Growth; Emerging Countries

Resumo

Este estudo tem como objetivo investigar o impacto da adoção mandatória das *IFRS* nas previsões de crescimento e rentabilidade das empresas de países emergentes. É investigado se a adoção de *IFRS* por 324 empresas de capital aberto em países emergentes (África do Sul, Brasil, Chile, Filipinas, Malásia, México, Nigéria, Peru, Rússia e Colômbia) está associada a um aumento na precisão de previsão de rentabilidade e crescimento, através do modelo de reversão à média, considerando os períodos de pré-*IFRS* e pós-*IFRS* de cada país analisado, totalizando 5.149 observações. Os resultados sugerem que a adoção mandatória das *IFRS* reduz os erros de crescimento e rentabilidade previstos. Este estudo contribui para a literatura sobre o efeito das *IFRS* na análise de previsão e preenche uma lacuna na literatura empírica sobre contabilidade, que até o presente momento, concentra-se principalmente nas economias desenvolvidas.

Palavras-chave: IFRS; Rentabilidade; Crescimento; Países emergentes

Resumen

Este estudio tiene como objetivo investigar el impacto de la adopción obligatoria de las *IFRS* en las previsiones de crecimiento y rentabilidad para empresas de países emergentes. Se investiga si la adopción de las *IFRS* por 324 empresas que cotizan en bolsa en países emergentes (Sudáfrica, Brasil, Chile, Filipinas, Malasia, México, Nigeria, Perú, Rusia y Colombia) se asocia con un aumento de la precisión fuera de la muestra pronóstico de rentabilidad y crecimiento, a través del modelo de reversión promedio considerando los periodos pre- *IFRS* y post- *IFRS* de cada país analizado, totalizando 5,149 observaciones. Los resultados sugieren que la adopción obligatoria de las *IFRS* reduce los errores esperados de crecimiento y rentabilidad. Este estudio contribuye a la literatura sobre el efecto de las *IFRS* en el análisis de

Original Paper pronósticos y llena un vacío en la literatura contable empírica, que hasta el presente se ha concentrado principalmente en las economías desarrolladas.

Palabras clave: IFRS; Rentabilidad; Crecimiento; Paises emergentes

1 Introduction

The adoption of the International Financial Reporting Standards (IFRS) by countries all over the world has been occurring gradually, it is not an easy process because it involves several aspects: cultural, legal, local, in addition to accounting principles and others. This is noticeable when verifying that - even with similar characteristics and with the same classification as the International Monetary Fund (IMF) - emerging countries adhered to IFRS in different periods: While South Africa adhered to IFRS in 2005, Brazil, Chile and the Philippines only did so in 2010. In 2012, it was the turn of Malaysia, Mexico, Nigeria, Peru and Russia and, finally, Colombia, adopting IFRS only in 2015.

It is noteworthy that the purpose of adopting IFRS is to improve the quality of information and allow comparability between companies from different countries, benefiting different kind of market agents. This is corroborated by Masoud (2017), when mentioning the reduction of available accounting options, in addition to the increase in the amount of information disclosed in the financial statements after the mandatory adoption of IFRS. In opinion Gu, Ng and Tsang (2019), the increase in the comparability of financial reports due to the mandatory adoption of IFRS, not only facilitates companies' access to foreign capital markets, but also increases the diversity of investors, who tend to have greater demands for information.

According to Martinez and Dumer (2014), one of the justificatives given by some countries for adopting IFRS was that it would increase the quality and quantity of disclosures, allowing analysts to have a better understanding of corporate performance and, consequently, better forecasts. Thus, it is possible to recognize the relevance of convergence to IFRS in an international context. This allows the market to become more dynamic and global, reducing the barriers encountered by investors, in relation to the various accounting practices existing in the world.

In this scenario, the accounting information shown in the financial statements is considered of great importance for analysts' forecasts (Schipper, 1991, Barron, Byard & Kim, 2002, Barker & Imam, 2008). This is linked to the objective of accounting statements, which is part of providing useful information to users, also enabling the forecast of future results and returns for companies. In this regard, Martinez and Dumer (2014) point out that IFRS adoption also benefits analysts, allowing them to make more accurate and less biased forecasts. The results of surveys conducted in several countries (Cotter, Tarca & Wee, 2012, Masoud, 2017, Jiao, Koning, Mertens & Roosenboom, 2012, Demmer, Pronobis & Yohn, 2016, He & Lu, 2018, Santos, Silva, Sheng & Lora, 2018) found positive evidence that IFRS adoption results in an improvement in analysts' forecasts.

Thus, this study aims to investigate the impact of mandatory IFRS adoption on growth and profitability forecasts for companies in emerging countries. More specifically, it is investigated whether IFRS adoption by 324 publicly traded companies in emerging countries is associated with an increase in profitability and growth forecast accuracy, using the mean reversion model, and considering pre-IFRS periods and post-IFRS for each country. A total of 5,149 annual observations were analyzed.

The present study contributes to the literature in several ways: first, it adds to the empirical literature of the IFRS standard, with a focus on emerging markets. Although the mandatory adoption of the international standard has already been completed in more than 10 years in important developed countries, with the mandatory adoption in 2005, by the European Union, the requirement - by regulatory bodies - to apply IFRS in emerging countries remains a recent phenomenon.

It is possible to identify studies that address the effects of IFRS on the level of forecasting results. In countries such as Brazil (Martinez & Dumer, 2014) and Jordan (Masoud, 2017), however, due to the various used methodologies, a real understanding of this phenomenon is practically unfeasible in less developed countries. Thus, this study advances this discussion by including the 10 least developed economies (Brazil, Chile, Colombia, Malaysia, Mexico, Nigeria, Peru, Philippines, Russia and South Africa), that are important for economic development in different parts of the world, such as, some Latin American and European countries.

Second, contributions are also added to the forecast analysis around IFRS adoption, including financial information from different companies. Studies seem to focus only in the effect of IFRS on company-specific characteristics, such as, variables related to analysts' earnings forecasts (Martinez & Dumer, 2014, Masoud, 2017) and sales (He & Lu, 2018). This study amplifies this discussion, including different metrics related to the profitability and growth of companies, as well as the specific effect of IFRS on these variables, which gives a more holistic view of the influence of this international standard on the predictive capacity of economic-financial information.

Finally, considering that emerging countries are so called, because they have several characteristics, associated with the degree of disclosure of corporate governance, due to their level of development, it is expected to offer a contribution to the market, in a more structured way, mainly aimed at creditors and



shareholders, as well as regulatory agencies, which may be interested in supervising and controlling companies.

2 Research Background and Hypothesis

2.1 Theoretical scenario

As shown by the literature on the mandatory adoption of IFRS, there were several objectives to be achieved with this practice. Among them, it is possible to highlight the increase on the level of disclosure of such information. This is corroborated by Masoud (2017), who emphasizes that one of the objectives of mandatory IFRS adoption was to increase the amount of information disclosed in companies' financial statements, and reduce the discretionary nature of accounting choices. Therefore, there was also greater availability of information for financial analysts to use this information to make future projections regarding the performance of companies.

Theoretically, the explanation of the influence of the mandatory IFRS adoption on the improvement of accounting numbers forecast can be done through the Agency Theory and Signaling Theory, as suggested by Masoud (2017). In principle, the agency relationship, advocated by the Agency Theory, refers to the role of the owner who is delegated to a third part (agent), who may act for its own benefit (Jensen & Meckling, 1976), enabling the existence of conflict between them and - consequently - higher costs (called agency costs) for the owner.

Understanding the adoption of IFRS as a change to accounting standards, based on principles that tend to lead to an improvement in the quality of accounting information, and an increase in the disclosure of this information, as Masoud (2017), it is possible to consider this fact as a mechanism for reduction of conflicts and agency costs.

As for the Signaling Theory, it is assumed that organizations can transmit signals to users in general that reflect their current conditions, in order to reduce the asymmetry of information between them (Spence, 1973). Initially, this theory was applied by Spence (1973) in the labor market, considereted asymmetric, as a way of explaining that education works as a sign of differentiation between the types of workers.

In the context of the influence of mandatory IFRS adoption in forecasting the growth and profitability of companies, it is argued that this change in accounting standards can be considered a positive sign for stakeholders, as the information disclosed under international standards is of high quality and improve analysts' earnings forecasts (Masoud, 2017). Following these theoretical justifications, it is clear that decision-making, as reflected in financial analysts' earnings forecasts, can be affected by mandatory IFRS adoption.

2.2 Mandatory adoption of IFRS in emerging countries, and the accuracy of company growth and profitability forecasts

The mandatory adoption of IFRS brings with it the need for greater judgment and adoption of criteria by the management, which allows reporting the activities of companies in a way that reflects their trustworthy reality (Gordon, 2019). With the adoption of IFRS, some other benefits were perceived in the accounting information of companies and, among them, it is possible to mention the improvement in quality. This can be seen through the studies of Barth, Landsman and Lang (2008), Houqe, Monem and Ahmed (2012), Houqe, Easton and Zijl (2014), Naranjo, Saavedra and Verdi (2017) and Beneish, Miller and Yohn (2014).

The study by Barth et al. (2008), for example, indicates that companies that adopted IFRS have better accounting information quality than those that did not, in addition to improved quality in the post-IFRS period. In a scenario formed by countries with low investor protection, Houge et al (2014) were able to verify that with the mandatory adoption of IFRS, there is also an improvement in the quality of accounting information. On the other hand, Daske, Hail, Leuz and Verdi (2013) and Christensen, Hail and Leuz (2013), argue that the characteristics of accounting information are more impacted by IFRS in capital markets, in economies with greater investor protection, because there is a significant growth of transparency standards in countries that adhere to international standards. One way or another, it is clear that the adoption of the IFRS standard promotes changes in the quality of accounting information. Therefore, it is assumed that IFRS are considered to be a high quality accounting standard. Thus, providing more financial transparent reporting (Jiao et al., 2012; Horton et al. 2013).

Considering that, in the post-IFRS period, financial reports have better quality, as shown by the evidence in Barth et al. (2008), Houqe et al. (2012), Houqe et al. (2014), Naranjo et al. (2017) and Beneish et al. (2014), users of this information tend to benefit from having more representatively, transparency and more reliable information, being able to make decisions more adjusted to the reality of the business, whatsoever. Among these users, there are also financial analysts, who use the accounting information disclosed by companies to assemble forecast models, as well as carry out analyzes and forecasts regarding profits and other future results of companies.

Soon, Ashbaugh and Pincus (2001) argue that high-quality information can benefit analysts, as the forecast accuracy increases, while forecast dispersion can decrease in the post-adoption period (Moura & Gupta, 2019). Furthermore, the hypothesis of this study is related to the improvement in the accuracy of forecasts in the post-IFRS period, being analyzed under two aspects: growth and profitability of companies.

Hypothesis: Mandatory IFRS adoption in emerging countries increases the accuracy of growth and profitability forecasts.

Because of this, since the adoption of the IFRS standard, there has been an improvement in the quality of financial information. Therefore, an improvement in analysts' forecast is also expected, as it is based on the statements released by the companies. Furthermore, IFRS allowed greater levels of disclosure and comparability, which could also lead to an overall increase in the accuracy of analysts' forecasts (Holthausen, 2009, Demmer et al., 2016).

This hypothesis predicts that after the adoption of IFRS, the forecast accuracy for the growth and profitability of firms increases, because with the adherence of accounting reports to IFRS, there is an improvement in the quality of the information disclosed. Consequently, the forecasts based on this information will be more accurate. This thought corroborates Moura and Gupta (2019), who believes that analysts should take advantage of the increase in accounting quality, which will lead to more accurate and less dispersed forecasts.

In this sense, Demmer et al. (2016), point out that, despite the significant impact of IFRS adoption on accounting and measurement recognition rules, the literature provides few knowledge about the effect of mandatory IFRS adoption on the predictive capacity of financial statements. It is important to emphasize that this study verifies whether the adoption of IFRS improves the forecast of accounting numbers, with regards to the growth and profitability of firms located in emerging countries, which have peculiar characteristics related to the governance structure and, consequently, to the protection of minority shareholders.

Regarding the hypothesis seen on in this study, some researches already show evidence that cannot be rejected. (Houge et al., 2014, Demmer et al., 2016, Masoud, 2017, Moura & Gupta, 2019, He and Lu, 2018). Houge et al. (2014) report - in their research - that there was an improvement in the accuracy of analysts' forecasts in European countries, such as, France, Germany and Sweden, considereted countries with low investor protection mechanisms. In the perception of Hope, Jin and Kang (2006), this can be justified by the fact that countries that have weak investor protection have more incentives to adopt IFRS, in order to improve the quality of accounting information.

Demmer et al. (2016) investigated companies in 22 countries, and found out that, there was a significant improvement in the accuracy of profitability forecasts based on financial statements around mandatory IFRS adoption. For this, the authors used parameter estimates, calculating forecast errors based on financial statements, such as the difference between expected and actual Return on Equity (ROE) in the pre-IFRS and post-IFRS periods.

Masoud (2017) analyzed the impact of mandatory IFRS adoption on analysts' forecasts in the country of Jordan, covering the periods of 2002 to 2013. The results of this study pointed to a reduction in forecast errors, that is, there was an improvement in the capacity of earnings forecast, carried out by analysts in the post-IFRS period.

Through the research by Moura and Gupta (2019), carried out with firms located in Latin American countries, it was possible to verify that as the accuracy of accounting information is improved, the explanation for the adoption of IFRS increases the quality of information available to analysts; compared to the quality of the information provided by the previous domestic standards of each of the countries, that were mainly designed for tax purposes.

And finally, He and Lu (2018) studied mandatory IFRS adoption as a shift to the analyst information environment, and found out that - after companies adopt the IFRS standard - analysts are more likely to issue more accurate sales forecasts and less dispersed ones. The authors also show that the effect of IFRS adoption is stronger in legalistic countries that have a large difference between local and international Generally Accepted Accounting Principles (GAAP) standards.

Thus, even with scarce and limited empirical evidence regarding emerging countries, there is evidence that the mandatory adoption of IFRS in these countries can improve the forecast of growth and profitability, according to the hypothesis outlined in this study.

3 Methodology

3.1 Composition of the sample

This empirical study is based on a sample of 324 companies, from 10 emerging countries, selected biased on the classification proposed by the International Monetary Fund (2017). Since the change from local standards to IFRS did not take place in the same year in all countries, the pre-IFRS and post-IFRS periods differ from country to country. Based on the time gap between the mandatory year of the IFRS standard for each country, up to the most recent year analyzed, available in the Compustat database (2017), the same time gap (two years) for the pre-IFRS period was calculated, in the perspective of maintaining



comparability in terms of the number of observations by one-year companies. The final sample is composed of 5,149 company-year observations, while the financial data were all extracted in a single currency: the dollar. Brazil, Chile and Malaysia were the most representative countries, with, respectively, 28%, 22% and 16% of the sample. The smallest representation is from Nigeria, Peru and Colombia, in which, all together, represent almost 10% of the sample.

3.2 Measuring Prediction Accuracy

According to Fairfield, Ramnath, and Yohn (2009); Demmer et al. (2016) and Vorst and Yohn (2018), there are three measures that were used for companies growth [sales (SALE), net operating assets (NOA) and book value of equity (CEQ)] and two related to profitability [return on assets (ROA) and return on equity (ROE)]. For each one of the three growth measures, the percentage change between the previous year and the current year was calculated. Net operating assets are defined as the sum of the values of common stock, preferred stock, long and short-term debt and minority interest, less cash and short-term investments, as done by Vorst and Yohn (2018).

The return on equity was used as a way to estimate profitability and growth forecasts, the mean reversion methodology was used, in the same perspective as in previous studies (Fairfield et al., 2009; Demmer et al., 2016; Vorst & Yohn, 2018), as per the models represented in Equations (1) and (2). Vorst and Yohn (2018) clarify that in estimating the mean-reverting profitability model, the distinction between profitable and loss-making companies seems to be relevant, as there is considerable evidence that losses are less persistent and less informative about future performance companies (Hayn, 1995). Thus, the coefficient of PROFIT_{t-1} captures the persistence of profitability for profitable companies, while the coefficient of NEG_{t-1} x PROFIT_{t-1} captures the differential persistence of profitability for companies with negative results.

$$GROWTH_{i,t} = \alpha_t + \beta_t GROWTH_{i,t-1} + \varepsilon_{i,t}$$

(Equation 1)

 $PROFIT_{i,t} = \alpha_t + \beta_t PROFIT_{i,t-1} + \gamma_t NEG_{i,t-1} + \lambda_t NEG_{i,t-1} \times PROFIT_{i,t-1} + \varepsilon_{i,t} \quad (Equation 2)$

In which:

GROWTH = represented by sales, net operating assets or book value of equity; PROFIT = represented by return on equity and return on net operating assets; NEG = dummy variable indicating negative results, to which 1 is assigned if the company's result in that year is negative and 0 otherwise;

Using the within-sample parameter estimates of equations (1) and (2), forecasts for growth and profitability for the pre and post-IFRS adoption periods were calculated. Forecasts refer to those performed by calculating the absolute error, in which estimated values of growth and profitability are also used, as can be seen in equations (3) and (4). Following Demmer et al. (2016), to control the intertemporal instabilities that probably violate the assumption of constant parameters, the coefficients in the sample were estimated using, for each year t, rotating regression models; using data from the previous two years (t-2 and t-1). Thus, continuous regressions were estimated country by country, considering the companies' sectors and separately for the pre and post-IFRS adoption period.

In this way, considering the mandatory adoption of IFRS in 2010 by Brazilian companies, for example, in the post-IFRS adoption period for the year 2012, the regression models use two years of data. Therefore, 2010 and 2011; and, for the pre-IFRS period, for the year 2008, the regression models used the data from 2007 and 2006.

After estimating the baselines, through equations (1) and (2), the growth and profitability forecasts for year t were calculated. Using the rotational regression approach of the estimative of the sample coefficients and multiplying them by the growth and profitability realized in year t-1, the predicted growth and profitability values in year t were achieved at. Then, the real values of growth and profitability in year t were compared with their predicted values, to obtain the absolute forecast error, according to equations (3) and (4):

 $GROWTH_{AFF} = | GROWTH_{i,t} - E(GROWTH_{i,t}) |$

 $PROFIT_{AFE} = | PROFIT_{i,t} - E(PROFIT_{i,t}) |$

(Equation 3) (Equation 4)

In which:

GROWTHAFE e PROFITAFE = represent the errors in the forecasts of growth (sales, net operating assets, or book value of equity) and profitability (return on assets, or return on equity), respectively;

GROWTH e PROFIT= represent real growth (sales, net operating assets or book value of equity) and real profitability (return on assets, or return on equity), respectively;

E(GROWTHi,t) = E(PROFITi,t) = represent the expected growth (sales, net operating assets, or book value of equity) and the expected profitability (return on assets, or return on equity), respectively.



3.3 Econometric model

Finally, the equation (5) is made considering the absolute forecast error of growth and profitability as dependent variables, and the dummy for IFRS, as an independent variable. Control variables were insert based on the studies by Cheong Kim and Zurbruegg (2010); Cotter et al. (2012); Jiao et al. (2012); Martinez and Dumer (2014); Demmer et al. (2016); Masoud (2017) and He and Lu (2018):

$AFE_{i,t} =$

 $\beta_0 + \beta_1 IFRS_t + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 EBIT_{i,t} + \beta_5 CASH_{i,t} + \beta_6 TURN_{i,t} + \beta_7 ADR_{i,t} + \sum_{n=1}^5 \delta_n INDUSTRY_{i,t} + \sum_{n=1}^{11} \delta_n COUNTRY_{i,t} + \varepsilon_{it}$ (Equation 5)

In which:

AFE = represents the absolute forecast error for measures of growth and profitability;

IFRS = is a dummy variable, to what a value equals to 1 is assigned for the company-year that ends after the date of local mandatory IFRS adoption, and 0 otherwise;

SIZE = represents the size of the company, measured by the natural log of total assets;

LEV = represents the company's leverage, measured by total liabilities divided by total assets;

EBIT = represents the company's profitability, measured by earnings before interest and taxes divided by total assets; CASH = represents the company's operating cash flow, measured by the annual net cash flow from operating activities divided by total assets;

TURN = sales divided by total assets;

ADR = dummy variable that equals 1 if a company trades ADRs listed on a US stock exchange and zero otherwise;

INDUSTRY = dummy variable indicative of the sector to which the company belongs;

COUNTRY = dummy variable indicative of the country to which the company belongs.

Thus, considering the theorical basis proposed for the mandatory adoption of IFRS, the coefficient is expected to be negative, considering the dependent variables related to the absolute forecast error for measures of growth and profitability, suggesting that the IFRS standard reduces the forecast error, and, as for the control variables, the relationship between the SIZE variable and the dependent ones, it is argued that the larger the company, the smaller the forecast errors tend to be (Jiao et al., 2012). Considering that larger companies are more structured and have better conditions to issue better quality reports, and, consequently, fewer forecast errors. Like Domingues and Nakao (2017) said, it is believed that the greater the leverage (LEV), the greater the forecast errors for profitability and growth, considering that a lower leverage leads to an improvement in forecasts (Vorst & Yohn, 2018).

Considering the predictive value of the information on cash flows (Mota, Silva Filho, Oliveira & Paulo, 2017), mainly from the operational ones, it is expected that the CASH variable presents a negative relationship with the forecast errors, so that the greater these flows, the smaller the errors in forecasting profitability and growth. Regarding the EBIT and TURN variables, which represent company results, a negative relationship is expected, as according to Martinez and Dumer (2014), forecasts for the Brazilian market have more errors in companies with low return and profitability. The ADR variable was inserted with the intention of controlling the amount of information the company is required to provide, for its cross-listing on various foreign stock exchanges, as was done by Gu, Ng and Tsang (2019), when inserting a variable with the amount of scholarships that the company is listed. And finally, like Jiao et al. (2012), the dummy variables INDUSTRY and COUNTRY were used in order to control for unobservable factors associated with the characteristics of sectors, and countries that may influence forecast errors.

The coefficients of the equation were estimated by means of ordinary least squares (OLS) analysis and unbalanced panel data analysis. The estimated baseline are robust to heteroscedasticity (White, 1980), also considering the application of the Variance Inflation Factor (VIF), in order to control for possible multicollinearity effects. Continuous variables were winsorized at 1% and 99% in order to avoid outliers (Cox, 2006).

4 Presentation and Analysis of Results

At table 1 it is possible to verify the descriptive statistics (mean, median, standard deviation, minimum value, maximum value and coefficient of variation) of the analyzed variables.

Overall, it is possible to observe smaller mean and median for all variables related to the forecast error. Both for growth and profitability measures. These results suggest an influence of IFRS in reducing forecast errors. Equivalent results are presented by Demmer et al. (2016), analyzing European firms during the mandatory adoption of IFRS in 2005. From this perspective, it is still possible to observe lower minimum values in the post-IFRS period, reinforcing the decrease in forecast errors of the analyzed variables.

| Table 1: | |
|-------------|------------|
| Descriptive | Statistics |

| PRE-IFRS | | | | | | | |
|----------------------|-------|---------|---------|-----------------|---------|---------|-----------|
| Variables | Ν | Average | Median | Desvation P. | Min | Max | Coe. Var. |
| GSALE _{AFE} | 1.728 | 18,5344 | 11,9508 | 19,4652 | 0,0191 | 99,5354 | 1,0502 |
| GNOA _{AFE} | 1.728 | 16,4690 | 11,1987 | 16,7853 | 0,0514 | 98,5086 | 1,0192 |
| GCEQAFE | 1.728 | 13,1586 | 7,5963 | 16,0936 | 0,0095 | 97,3864 | 1,2231 |
| ROE _{AFE} | 1.728 | 0,1256 | 0,0678 | 0,1844 | 0,0000 | 2,1489 | 1,4679 |
| ROAAFE | 1.728 | 0,1063 | 0,0535 | 0,1689 | 0,0001 | 1,9585 | 1,5895 |
| SIZE | 1.728 | 8,4449 | 8,1975 | 2,8260 | 1,2398 | 16,2524 | 0,3346 |
| LEV | 1.728 | 0,5918 | 0,4829 | 0,9441 | 0,0068 | 15,7739 | 1,5954 |
| EBIT | 1.728 | 0,1207 | 0,1135 | 0,1250 | -1,0101 | 0,8930 | 1,0348 |
| CASH | 1.728 | 0,0823 | 0,0832 | 0,1399 | -1,5919 | 0,9401 | 1,6988 |
| TURN | 1.728 | 0,8734 | 0,7480 | 0,6530 | 0,0001 | 6,6551 | 0,7476 |
| POST-IFRS | | | | | | | |
| Variables | Ν | Average | Median | Desvation P. | Min | Max | Coe. Var. |
| GSALE _{AFE} | 3.421 | 14,6997 | 9,6400 | 15,6911 | 0,0026 | 98,7273 | 1,0674 |
| GNOA _{AFE} | 3.421 | 14,5378 | 9,1853 | 15,9285 | 0,0036 | 98,2008 | 1,0957 |
| GCEQ _{AFE} | 3.421 | 13,0029 | 7,2376 | 15,7714 | 0,0047 | 99,7875 | 1,2129 |
| ROE _{AFE} | 3.421 | 0,1160 | 0,0547 | 0,2000 | 0,0001 | 2,9734 | 1,7237 |
| ROA _{AFE} | 3.421 | 0,0847 | 0,0445 | 0,1655 | 0,0000 | 3,5460 | 1,9545 |
| SIZE | 3.421 | 8,4727 | 8,2310 | 2,6745 | 2,1949 | 16,6518 | 0,3157 |
| LEV | 3.421 | 0,4978 | 0,4913 | 0,3073 | 0,0003 | 5,6225 | 0,6174 |
| EBIT | 3.421 | 0,0985 | 0,0931 | 0,1105 | -2,7363 | 1,2234 | 1,1212 |
| CASH | 3.421 | 0,0761 | 0,0710 | 0,0961 | -0,7930 | 1,1461 | 1,2637 |
| TURN | 3.421 | 0,7477 | 0,6398 | 0,5835 | 0,0001 | 7,4469 | 0,7803 |
| FULL SAMPLE | | | | | | | |
| Variables | Ν | Average | Median | Desvation P. | Min | Max | Coe. Var. |
| GSALE _{AFE} | 5.149 | 15,9866 | 10,3524 | 17,1451 | 0,0026 | 99,5354 | 1,0725 |
| GNOA _{AFE} | 5.149 | 15,1859 | 9,6957 | 16,2451 | 0,0036 | 98,5086 | 1,0697 |
| GCEQAFE | 5.149 | 13,0552 | 7,3937 | 15,8789 | 0,0047 | 99,7875 | 1,2163 |
| ROE _{AFE} | 5.149 | 0,1192 | 0,0586 | 0,1949 | 0,0000 | 2,9734 | 1,6347 |
| ROA _{AFE} | 5.149 | 0,0919 | 0,0474 | 0,1669 | 0,0000 | 3,5460 | 1,8162 |
| SIZE | 5.149 | 8,4634 | 8,2170 | 2,7261 | 1,2398 | 16,6518 | 0,3221 |
| LEV | 5.149 | 0,5293 | 0,4884 | 0,6031 | 0,0003 | 15,7739 | 1,1394 |
| EBIT | 5.149 | 0,1060 | 0,1002 | 0,1160 | -2,7363 | 1,2234 | 1,0944 |
| CASH | 5.149 | 0,0782 | 0,0748 | 0,1127 | -1,5919 | 1,1461 | 1,4423 |
| TURN | 5.149 | 0,7899 | 0,6726 | 0,6105 | 0,0001 | 7,4469 | 0,7729 |

Note: GSALE_{AFE}, GNOA_{AFE}, GCEQ_{AFE}, ROA_{AFE} and ROE_{AFE} are the absolute forecast errors related to growth in sales (GSALE), growth in net operating assets (GNOA), growth in book value of equity (GCEQ), return on equity (ROE) and return on net operating assets (ROA), respectively.

Table 2 presents the mean test for the five variables related to forecast error, showing the mean difference between the pre- and post-IFRS periods.

| Table 2: |
|--|
| Average absolute forecast error before and after IFRS by country |

| Ŭ | 1 | N | | GROWTH | | F | PROFIT |
|--------------|-------|-------|----------|-----------------|-----------|----------------------|---------|
| COUNTRIES | Pré- | Post- | GSALEAFE | GNOA AFE | GCEQAFE | ROEAFE | ROAAFE |
| | IFRS | IFRS | (Diff) | (Diff) | (Diff) | (Diff) | (Diff) |
| Brazil | 545 | 921 | 1,3199 | 2,3351 | -1,3485 | 0,0133 | 0,0229 |
| Chile | 527 | 591 | 3,8816 | 5,1518 | 2,8483 | -0,0001 | 0,0249 |
| Malaysia | 137 | 688 | 26,2925 | 1,9022 | -1,2439 | 0,0155 | -0,0068 |
| Mexico | 90 | 203 | 1,3489 | 1,6015 | -1,4127 | 0,0294 | 0,0177 |
| Nigeria | 42 | 129 | -4,4246 | -2,0795 | -6,3825** | -0,0754 [*] | -0,0092 |
| Peru | 60 | 122 | 10,0249 | 2,5053 | 1,5027 | -0,0109 | 0,0634 |
| Philippines | 134 | 367 | 0,5545 | -2,4895 | 8,2524 | 0,0538 | 0,0059 |
| Poland | 33 | 112 | -0,6785 | 11,9454 | 1,0693 | 0,0381 | 0,0374 |
| Russia | 148 | 265 | 7,4584 | 3,3595 | -3,9343 | 0,0131 | 0,0911 |
| South Africa | 12 | 23 | 8,0563 | -4,5896 | 5,8640 | 0,1575 | 0,1575 |
| TOTAL | 1.728 | 3.421 | 3,8346 | 1,9312 | 0,1556 | 0,0095 | 0,0215 |

Note: $GSALE_{AFE}$, $GNOA_{AFE}$, $GCEQ_{AFE}$, ROA_{AFE} and ROE_{AFE} are the absolute forecast errors related to growth in sales (GSALE), growth in net operating assets (GNOA), growth in book value of equity (GCEQ), return on equity (ROE) and return on net operating assets (ROA), respectively. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively.



A positive difference shows that the forecast error of the post-IFRS period is smaller than the pre-IFRS period. Thus, considering the results as a whole, it is possible to observe that most tests have a positive sign; signaling a decrease in errors in forecasting growth and profitability in the period after the mandatory adoption of IFRS. Considering the total number of year-company observations analyzed, there was a decrease in the average forecast for the Pre-Post-IFRS period, with the exception of the GCEQ_{AFE} variable.

In Table 3, it is possible to observe the matrix correlation for all analyzed variables. In general, there is a significant correlation between the independent variables, selected according to the literature, and the variables related to the forecast error, suggesting the relevance of the baselines for equation (5).

There is also a negative correlation between SIZE, EBIT, CASH with all variables related to errors in forecasting growth and profitability, suggesting that larger companies, with more profitability and more cash flow operations, have fewer forecast errors.

| Table 3: | |
|-------------|--------|
| Correlation | Matrix |

| | 1. | 2. | 3. | 4. | 5. |
|-------------------------------|------------|------------|------------|------------|------------|
| 1. GSALE _{AFE} | 1,000 | | | | |
| 2. GNOA _{AFE} | 0,1927*** | 1,000 | | | |
| 3. GCEQ _{AFE} | 0,1784*** | 0,3786*** | 1,000 | | |
| 4. ROA _{AFE} | 0,1486*** | 0,2218*** | 0,4665*** | 1,000 | |
| 5. ROE _{AFE} | 0,1861*** | 0,2870*** | 0,1908*** | 0,3250*** | 1,000 |
| 6. SIZE | -0,1781*** | -0,0972* | -0,0612*** | -0,0973*** | -0,1316*** |
| 7. LEV | 0,0170 | 0,0660* | 0,0769*** | 0,1016*** | 0,0452*** |
| 8. EBIT | -0,1480*** | -0,0228** | -0,0673*** | -0,1006*** | 0,0309** |
| 9. CASH | -0,1176*** | -0,0276** | -0,0590*** | -0,0612*** | 0,0434*** |
| 10. <i>TURN</i> | -0,0473*** | 0,1253*** | 0,0411*** | 0,0537*** | 0,1901*** |
| | 6. | 7. | 8. | 9. | 10. |
| 6. SIZE | 1,000 | | | | |
| 7. LEV | -0,0870*** | 1,000 | | | |
| 8. EBIT | 0,1508*** | -0,0483*** | 1,000 | | |
| 9. CASH | 0,1398*** | -0,1247*** | 0,6782*** | 1,000 | |
| 10. <i>TURN</i> | -0,1017*** | 0,0797*** | 0,2394*** | 0,1358*** | 1,000 |

Note: GSALE_{AFE}, GNOA_{AFE}, GCEQ_{AFE}, ROA_{AFE} and ROE_{AFE} are the absolute forecast errors related to growth in sales (GSALE), growth in net operating assets (GNOA), growth in book value of equity (GCEQ), return on equity (ROE) and return on net operating assets (ROA), respectively. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively.

Finally, the baselines estimative were carried out considering what was proposed in equation (5), as shown in Table 4. In general, the coefficient for the IFRS variable, in all models related to growth and profitability forecast errors, as the dependent variables, is negative and significant, suggesting that the mandatory adoption of IFRS has a negative impact on forecasts, with the exception of estimative for the GCEQ_{AFE}, in which the IFRS variable was not significant in explaining the variation in growth in the book value errors. The results are high considering the estimative of OLS, fixed and random effects, corroborating our theoretical framework proposed by the previous literature (Cheong et al., 2010, Cotter et al., 2012, He & Lu, 2018), allowing for non-rejection of the study hypothesis.

Table 4: Effects of mandatory IFRS adoption on forecast error PANEL A: Ordinary Least Squares (OLS)

| PANEL A: Ordinary Least Squares (OLS) | | | | | | |
|---------------------------------------|------------|-----------------|------------|------------|------------|--|
| | GSALEAFE | GNOA AFE | GCEQAFE | ROAAFE | ROEAFE | |
| IFRS | -5,2588*** | -2,0985*** | -0,4543 | -0,0121** | -0,0131*** | |
| | (0,55) | (0,49) | (0,49) | (0,01) | (0,00) | |
| SIZE | -0,9195*** | -0,3905*** | -0,0777 | -0,0024* | -0,0099*** | |
| | (0,12) | (0,12) | (0,11) | (0,00) | (0,00) | |
| LEV | 0,4430 | 1,2933** | 1,2625** | 0,0198*** | 0,0081** | |
| | (0,45) | (0,59) | (0,54) | (0,01) | (0,00) | |
| EBIT | -2,0260*** | -8,5188** | -1,5010*** | -0,3191*** | -0,0797 | |
| | (4,50) | (3,99) | (4,04) | (0,06) | (0,06) | |
| CASH | -3,5404 | -1,9413 | -1,0503 | 0,0705 | 0,0961** | |
| | (4,15) | (3,64) | (3,76) | (0,05) | (0,04) | |
| TURN | -1,0251* | 4,1403*** | 1,2805** | 0,0260*** | 0,0620*** | |
| | (0,57) | (0,62) | (0,52) | (0,01) | (0,01) | |
| ADR | 0,4893 | 0,1336 | 0,7947 | -0,0212 | 0,0072 | |
| | (0,98) | (1,14) | (1,19) | (0,01) | (0,01) | |
| R^2 | 0,1072 | 0,0656 | 0,0502 | 0,0676 | 0,1012 | |
| Test F | 22,34*** | 15,10*** | 11,31*** | 15,21*** | 15,90*** | |



| PANEL B: Fixed Effects | | | | | | |
|-------------------------------|-----------------------------|------------------|------------------|------------------|------------------|--|
| | GSALE AFE | GNOA AFE | GCEQ AFE | ROAAFE | ROEAFE | |
| IFRS | -4,5604*** | -2,0421*** | -0,3753 | -0,0072 | -0,0122** | |
| | (0,73) | (0,63) | (0,63) | (0,01) | (0,01) | |
| SIZE | -0,1694 | -0,3313 | 0,1033 | -0,0045 | 0,0044 | |
| | (0,41) | (0,36) | (0,35) | (0,00) | (0,00) | |
| LEV | 1,4060 | -0,0814 | 3,1750* | 0,0683* | 0,0130 | |
| | (1,09) | (1,51) | (1,66) | (0,03) | (0,02) | |
| EBIT | -9,6036 | 7,6632 | -9,1656 | -0,3100*** | 0,0185 | |
| | (7,02) | (6,62) | (6,66) | (0,09) | (0,09) | |
| CASH | 1,6233 | -4,4184 | 8,0671* | 0,0355 | 0,0362 | |
| | (4,66) | (4,68) | (4,36) | (0,05) | (0,05) | |
| TURN | 1,0775 | 4,6839*** | 2,9295** | 0,0406* | 0,1017*** | |
| | (1,66) | (1,58) | (1,36) | (0,02) | (0,03) | |
| ADR | omitted | omitted | omitted | omitted | omitted | |
| | - | - | - | - | - | |
| R ² overall | 0,0246 | 0,0204 | 0,0067 | 0,0267 | 0,0284 | |
| Test F | 7,37*** | 5,18*** | 2,25*** | 3,35*** | 6,00*** | |
| PANEL C: Rand | om Effects | | | | | |
| | GSALEAFE | GNOA AFE | GCEQAFE | ROAAFE | ROEAFE | |
| IFRS | -5,2532*** | -2,1905*** | -0,5930 | -0,0115* | -0,0152*** | |
| | (0,63) | (0,54) | (0,56) | (0,01) | (0,01) | |
| SIZE | -0,8496*** | -0,4464*** | -0,1481 | -0,0016 | -0,0060** | |
| | (0,17) | (0,14) | (0,15) | (0,00) | (0,00) | |
| LEV | 0,3389 | 0,8462 | 1,0946 | 0,0229** | 0,0090 | |
| | (0,56) | (0,68) | (0,71) | (0,01) | (0,01) | |
| EBIT | -1,8380*** | -5,8115 | -1,3496*** | -0,3162*** | -0,0591 | |
| | (4,82) | (4,35) | (4,53) | (0,07) | (0,07) | |
| CASH | -2,7433 | -3,2487 | 1,8099 | 0,0392 | 0,0477 | |
| | (4,15) | (3,82) | (3,82) | (0,05) | (0,04) | |
| TURN | -0,9476 | 4,2761*** | 1,4197** | 0,0233** | 0,0761*** | |
| | (0,65) | (0,73) | (0,64) | (0,01) | (0,01) | |
| 400 | A A - / / | 0 5557 | 0 0243 | -0 0283 | -0 0072 | |
| ADR | -0,2714 | -0,5557 | 0,0245 | 0,0200 | 0,0072 | |
| ADR | -0,2714 (1,14) | (1,22) | (1,61) | (0,02) | (0,01) | |
| ADR R ² overall | -0,2714 (1,14) 0,1065 | (1,22) 0,0644 | (1,61) 0,0485 | (0,02) 0,0661 | (0,01) 0,0973 | |

Note: $GSALE_{AFE}$, $GNOA_{AFE}$, $GCEQ_{AFE}$, ROA_{AFE} and ROE_{AFE} are the absolute forecast errors related to growth in sales (GSALE), growth in net operating assets (GNOA), growth in book value of equity (GCEQ), return on equity (ROE) and return on net operating assets (ROA), respectively. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively.

Through an analysis of the values corresponding to R^2 and R^2 , overall, it is still possible to see - in general - that the proposed model explains the variation the best, in errors for the profitability variables, when compared to the growth variables. From this perspective, other variables could be added with the intention of relating estimates to growth variables. Thus, it occurred that the positive (negative) and significant coefficient of the selected control variables suggests that smaller companies (SIZE), with lower operating results (EBIT) and lower profitability (TURN), have a greater forecast error; both by growth and by profitability measures analyzed.

Thus, the results suggest that IFRS is able to increase accounting quality through better information; considering that it is capable of reducing the absolute forecast error, even in emerging countries when - in theory - the applicability of the law is lower, and the local GAAPs are considered of lower quality, when compared to developed countries.

5 Conclusions

In this study, it is possible to provide evidence on the effect of mandatory IFRS adoption on companies' profitability, and growth forecasts, in 10 emerging countries. In general, mandatory IFRS adoption has a negative effect on forecasting, with the exception of estimates to explain growth variation in estimation errors, which were not significant. This implies that - with the adoption of IFRS - forecasting errors decreased, allowing the non-rejection of the research hypothesis that - after IFRS adoption - accuracy of predictions increases.

It was also observed that the proposed model better explains the variation of errors for the profitability variables when compared to the growth variables. Regarding the controls included in the model, the results suggest that smaller companies, with lower results and profitability, have higher error predictions, both for profitability and growth errors. Therefore, all results suggest that the mandatory adoption of IFRS increases the quality of accounting information through better information, in which it is capable of reducing the absolute forecast error in emerging countries when, theoretically, it is considered that the local GAAP is



of lower quality compared to developed countries. These findings corroborate to the evidence of Houqe et al. (2014), for some countries in Europe - which are also considered to have low investor protection - such as France, Germany and Sweden; in which there has been an improvement in the accuracy of analysts' forecasts.

Thus, this study provides important information about the effect of mandatory IFRS adoption on the accounting quality of companies in emerging countries, showing that, although they have poor protection for minority shareholders, they tend to show better quality statements, as a form of compensation (Hope et al., 2016).

In addition, the results of this research can be useful for investors who are evaluating companies, in order to realize that statements after IFRS adoption have a better accounting quality; which, consequently, improves their rating. These insights also offer opportunities for future research to improve understanding the relationship between financial analysis and forecasting companies' growth and profitability, which, combined with other accounting metrics, can provide a holistic view of the full influence of IFRS on the ability to forecast the economic and financial information.

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