The impact of IFRS on financial report quality in Latin America and the Caribbean

Impacto de las IFRS en la calidad del reporte financiero en Latinoamérica y el Caribe

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Abstract

This paper examines the impact generated for the application of International Financial Reporting Standards (IFRS) on financial report quality (accounting quality) for Latin American and Caribbean economies, by using five measurement proxies related to the magnitude of absolute discretionary accruals; accounting quality is assessed during the periods 2006 to 2014. At the same time, the effects of institutional factors and management incentives on the use of such accruals are examined as a mechanism for earnings management. The results show that during the period of application of IFRS, companies report lower magnitude of absolute discretionary accruals, indicating an inverse relationship between these two variables; these results suggest less earnings management, which is the same as higher financial report quality. It is intended to contribute to the literature by presenting generalized findings for the Latin and Caribbean region, by including in this study the majority of countries of the region over a wide period of application of IFRS, in addition to using different measurement metrics to give greater robustness to the findings.

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Resumen

Este artículo examina el impacto generado por la aplicación de las Normas Internacionales de Informa-
ción Financiera (IFRS, por sus siglas en inglés) en la calidad del reporte financiero (calidad contable)
para las economías latinoamericanas y del Caribe, utilizando cinco proxies de medición relacionados con
la magnitud absoluta de los ajustes por devengo discrecionales, se valora la calidad contable durante los
periodos contables 2006 a 2014. Al mismo tiempo, se examina los efectos de los factores institucionales
e incentivos de la gerencia sobre el uso de dichos ajustes como mecanismo de manipulación del resultado.
Los resultados evidencian que durante el periodo de aplicación de IFRS, las empresas reportan menor
magnitud absoluta de los ajustes por devengo discrecionales, indicando una relación inversa entre estas
dos variables; dichos resultados sugieren una menor manipulación del resultado, lo que es lo mismo,
una mayor calidad del reporte financiero. Se pretende contribuir a la literatura presentando los hallazgos
generalizados para la región latina y del Caribe, incluyendo en el estudio, a casi la totalidad de los países
de esta región durante un amplio periodo de aplicación de IFRS, además de utilizar diferentes métricas de
medición para dar mayor robustez a los hallazgos.

Código JEL: M41; M42; M48
Palabras clave: Ajustes por devengo; Calidad contable; Calidad del reporte financiero; Manipulación del resultado

Introduction

The extended use in the implementation of the International Financial Reporting Standards
(IFRS) by many nations, has led academic researchers and the regulators at a national and
international level to prove the relevance of said standards for each country that implemented
them, even considering the institutional differences in each of them that could condition the
relevance of the same. Specifically, it is proven whether said standards improve the quality of
the accounting information through the use of several expressions or proxy measures, which, in
the last three decades, have been used more frequently not only to support the analyses, but also
to improve the comparability of the results among the analyzed countries. Generally, the studies
focus their attention on the application of the IFRS in strong economies and capital markets,
such as Australia, the United Kingdom and the countries of Continental Europe, the countries
with a greater number of reported studies. Even the relevance of said standards for emerging
economies and regulated markets such as those in China has been evaluated. However, despite
the fact that almost all Latin American and Caribbean countries have adopted IFRS as their
regulatory accounting framework and their financial markets are in continuous development,
there is still a lack of sufficient empirical evidence on the relevance of said standards under
a multi-country analysis. For this reason, we propose verifying the quality of the financial
report for the Latin American and Caribbean economies through the magnitude of discretionary
accruals during the periods of IFRS implementation.

This work is organized as follows: the second section presents the review of the literature
regarding the impacts of the implementation of IFRS in the measure expressions of the
level of earnings manipulation (measure models for discretionary accruals), while defining
the hypotheses to be contrasted; in the third and four sections, the methodology used to test
the hypotheses is described, and the selection and distribution of the sample are presented,
respectively; finally, the results and the conclusions are presented in the fifth and sixth sections,
respectively.

Review of the literature and development of the hypothesis

Chronologically, the first studies to develop a set of measure expressions for accounting quality through the observance of accounting data were proposed by Healy (1985) and DeAngelo (1986), who estimate and interpret the adjustments for total accruals, and the variation between the adjustments for accrual from one year to another, respectively, as a measure of the magnitude of discretion carried out by the management (discretionary accruals). Subsequently, Friedlan (1994) proposes a modification to the model that was initially suggested by DeAngelo (1986), estimating the variation of the accrual adjustments from one year to another, taking into consideration the operation activity in each period. At the beginning of the 1990s, Jones (1991) proposes a new model to estimate the discretion of those accrual adjustments that are considered normal (non-discretionary). This model is, without a doubt, the starting point for the measure and comparison of the level of earnings management between countries, with it being, until now, the model with the most use at an international level to analyze the changes in accounting quality, and on which subsequent authors have suggested modifications and new variables to potentialize the same (Dechow, Richardson and Tuna, 2003; Dechow, Sloan and Sweeney, 1995; Kothari, Leone and Wasley, 2005; Larcker and Richardson, 2004).

One of the first works to use the methodology proposed by Jones (1991), when analyzing the changes in the accounting quality, was that conducted by Van Tendeloo and Vanstraelen (2005), who examine the effects of the voluntary implementation of the IFRS in German companies during the years of 1999 to 2001, finding that earnings management does not vary with regard to those companies that did not implement it. This same study was also done by Watrin and Ullmann (2012), who considered an extended observation period (from 1994 to 2005). However, the results of this study (use of the model proposed by Dechow *et al.*, 1995) indicate a decrease in the quality of the earnings with regard to the companies that apply the German GAAP.

For their part Liu, Yip Yuen, Yao and Chan (2014), compare the variation in the accounting quality among German companies that voluntarily apply IFRS and US GAAP for the periods from 1999 to 2004, and suggest that the magnitude of the discretionary accruals (use of the model by Dechow *et al.*, 1995) does not significantly vary among the analyzed accounting regimes. Subsequently, Salewski, Teuteberg and Zülch (2014), once again apply the study for German companies, but in this occasion they analyze the accounting quality considering the enforceability in the application of IFRS (use of the model proposed by Kothari *et al.*, 2005) by incorporating observations between the years of 1995 and 2014. Their results indicate the significant existence of an increase in the level of manipulation of the result in the post-implementation periods, for which a decrease has been observed over time and in which, according to the authors, the experience in the implementation, the gradual change to IFRS, and the increase in the effectiveness of the reinforcement measures to guarantee the accounting quality played an important role.

The studies on accounting quality under the model proposed by Jones (1991) or its subsequent modifications, were also implemented on different European countries that were individually considered. One of these is the case of the companies in Romania, which authors such as Istrate *et al.* (2015) and Brad, Dobre and Ciobanu (2014) have used to analyze the implementation of IFRS in an obligatory manner on the consolidated (between 2006 and 2014) and individual (between 2012 to 2012) financial statements, respectively, obtaining evidence

that suggests a decrease in the use of discretionary accruals for the first case (use of the Jones model, 2001). While for the individual annual accounts (use of the model by Kothari *et al.,* 2005), the evidence indicates that said accrual adjustments do not significantly vary under the IFRS with regard to the implementation period of the Romanian GAAP.

Additionally, quality accounting in France, Greece, and the United Kingdom with the enforcement of IFRS has also been the object of analysis. Studies carried out by Zéghal, Chtourou and Sellami (2011) between the years of 2003 and 2006, Dimitropoulos, Asteriou, Kousenidis y Leventis (2013) between the years of 2001-2008 e Iatridis (2010) between the years of 2004 and 2005 respectively, have suggested that the quality in accounting information improves with the use of said standards, as they provide evidence of a significant decrease in the level of earnings management with regard to the application of the local GAAP of each country. These findings were conducted using the model proposed by Kothari *et al.* (2005) for the two first countries mentioned, and the basic Jones model (1991) for the United Kingdom.

The model proposed by Jones (1991) and its subsequent modifications have also been widely employed in eastern countries, with Korea and Chine being the countries with the highest number of reported studies. For the Korean case, several studies have been documented on the road to accounting quality with the voluntary implementation of IFRS during the period of 2007-2010 (Kim, 2013), and by the obligatory implementation of the same (Kim, 2014), considering for this last case, a maximum period of analysis of 6 years, between 2007 and 2012 (Kwon and Whan Oh, 2015) and between 2008 and 2013 (Jong-Il, 2015). The analyses indicate that the magnitude of discretionary accruals increases during the voluntary period of IFRS implementation, while it decreases with the obligatory implantation of the same. All of these results were obtained using the model proposed by Dechow *et al.* (1995), with exception of Jong-Il (2015) who employs the model proposed by Kothari *et al.* (2005).

The findings reported for the companies listed in China with regard to the change in accounting quality with the obligatory enforcement of IFRS suggest different results. Zhang, Uchida and Bu (2013) carried out a study between the years of 2001 to 2010 using the model by Kothari *et al.* (2005); these authors indicate a significant increase in the level of earnings management, while Ho, Liao and Taylor (2015) suggest the opposite, a lower probability in the use of discretionary accruals (lower level of earnings management) when using the model proposed by Dechow *et al.* (1995) between the years of 2002 and 2011. Once again, there is evidence of the diversity in the results concerning the enforcement of IFRS for other oriental economies. For example, for the companies in the capital markets of India, there is an increase in the level of earnings management with regard to those companies that did not implemented them during the year 2010 (Rudra and Bhattacharjee, 2012). For their part, Adibah, Wan Ismail, Anuar Kamarudin, Van Zijl and Dunstan (2013) suggest a decrease in said level of manipulation for the companies of Malaysia, comparing 3 years before and 3 years after the implementation of said standards. Finally, Bryce, Ali and Mather (2015) indicate that the implementation of the IFRS does not have significant effects on the quality of the accounting information in Australia, jointly analyzing the years comprised between 2003 and 2008. All of these studies have been executed under the model proposed by Dechow *et al.* (1995).

During the last decade, the obligatory enforcement of the IFRS in almost all countries in the American continent has brought along several studies on accounting quality by academics and regulatory bodies in the subject, with Mexico and Brazil being the Latin American countries where the majority of these studies concentrate. Initially, Conesa, Manzano and Sánchez

(2011), when analyzing the adaptation of the Mexican GAAP towards the IFRS, suggest a decrease in the level of earnings management under an extended period of analysis (1997 to 2009). However, Palacios Manzano and Martínez Conesa (2014), directing their analysis between the years of 1997 and 2008, report that the discretionary accruals do not decrease with the use of IFRS (the level of earnings management does not decrease) for those non-financial Mexican companies listed in the NYSE. These studies were conducted utilizing the models by Jones (1991) and Dechow *et al*. (1995).

For the case of the companies listed in the Brazilian capital market, Pelucio-Grecco, Geron, Grecco and Lima (2014) direct their study during the periods of 2006-2011, using a great variety of models to test their hypothesis (use of the models by Dechow *et al*., 1995; Jones, 1991; Kothari *et al*., 2005); their results indicate that the transition to IFRS restricts the level of earnings management after completing the implementation with regard to the periods before the use of said standards. However, Santana, Timm, Costa and Zoboli (2014), when comparing the magnitude of discretionary accruals (using the models by Dechow *et al*., 1995; Jones, 1991) among the companies in Brazil and Chile with regard to the United Kingdom and Australia, and compared to France and Germany, suggest that Latin companies report a lower level of accounting quality during the years 2011 and 2012. The report of studies on the accounting quality in the American continent finalizes with Canada, with Leung (2015) conducting a study concerning the years 2005 to 2014, and considering the effects of the obligatory implementation of IFRS in the Canadian territory; he obtained evidence that suggests an increase in the accounting quality given a decrease in the level of discretionary accruals (use of the models by Dechow *et al*., 1995; Kothari *et al.*, 2005).

In general, the majority of multi-country studies on accounting quality based on the use of IFRS correspond to countries from the European Union. Said studies are applied to the companies that participate in the markets of these countries, from which diverse results concerning the effects of the implementation of said standards in the level of earnings management are obtained. Studies like the ones directed by Chen, Tang, Jiang and Lin (2010) (using the Jones model and its subsequent modifications indicated to this date) and by Zeghal, Chtourou and Fourati (2012) (using the model by Dechow *et al*., 1995, between the years 2001 to 2007), both applied to 15 European countries, indicate that accounting quality increases given the decrease in the magnitude of the discretionary accruals during the periods after the implementation of said standards. Additionally, Aussenegg, Inwinkl and Schneider (2008) apply the same study to 17 European countries under the model proposed by Dechow *et al*. (1995) and incorporating some variations. Although their results indicate a decrease in the level of earnings management, the findings suggest that said level of management does not significantly vary for those countries with an English (United Kingdom and Ireland) and Scandinavian (Northern countries) influence, given that before the obligatory implementation of the IFRS, these countries reported a lower earnings management with regard to the other European countries.

Other studies applied on countries from the European Union suggest that the obligatory use of IFRS does not have a significant impact on the magnitude of the direction adjustments, using as example the studies conducted between the years 2000 to 2010 by Doukakis (2014) on 22 European countries (use of the model by Dechow *et al*., 1995) and by Gray, Kang, Lin and Tang (2015) on 14 of these countries (use of the Jones model, 1991; Kothari *et al.*, 2005). In line with the above, Callao and Jarne (2010) analyze the implementation of the IFRS on 11

European economies between the years 2003 to 2006 (use of the model proposed by Larcker and Richardson, 2004); their results indicate that the obligatory use of the IFRS has negative effects on the level of earnings management, providing evidence that suggests a significant increase in the discretionary accruals.

The other multi-country studies reported to date, in addition to including countries that are part of the European Union, also incorporate oriental and Latin American countries, with all of them arriving to the same conclusion: IFRS do not improve the quality of accounting information for the analyzed countries in their corresponding samples, or at least, on their own; conversely, they tend to decrease quality during the period of implementation of said standards. Studies that support this statement are those directed by Sang-Ae, Nam-Ryoung and Sang-Bum (2011) between the years of 2001 to 2008 (use of the model by Kothari *et al.*, 2005), Ahmed, Neel and Wang (2013) for 20 economies that adopted IFRS in the year 2005 when compared to those that did not, and finally Houqe, Van Zijl, Dunstan and Karim (2012) on 46 countries, between the years of 1998 and 2007 (both using the model by Dechow *et al.*, 1995).

In accordance with the aforementioned findings at a global level, and specially with those obtained for the main economies of the American continent that were individually considered, the following hypotheses are presented:

Hypothesis 1 (H1). The absolute magnitude of the discretionary accruals significantly decreases during the period of implementation of the IFRS (lower earnings management) with regard to the period before the implementation of IFRS for the Latin American and Caribbean companies.

Hypothesis 2 (H2). There is a statistically negative relation between the absolute magnitude of discretionary accruals and the periods of implementation of the IFRS by the Latin American and Caribbean companies (impact of the IFRS at the level of earnings management).

Methodology

Previous researches utilize the magnitude of discretionary accruals as a measure indicator of the earnings management, and they use the latter in turn as a measure proxy for the quality of the financial report.

Magnitude of discretionary accruals

The starting point in previous researches on the evaluation of earnings management based on the magnitude of the accrual adjustments was the model proposed by Jones (1991). At one point in this research the linear regression model was used through temporary series, which proposes the capacity of change in sales and the gross magnitude of the property, plant and equipment to explain the import of the total accrual adjustments. The basic Jones model—as has commonly been called in the literature—has been the starting point for subsequent researches to modify said model and test their results; therefore, the basic Jones model and its subsequent modifications are utilized to analyze the level of earnings management.

According to the statements by Osma, Enguídanos, Clemente and Lara (2004), when utilizing a temporary series model, a minimum number of observations per company throughout several continuous periods is necessary, and this entails a reduction in the sample of observations that do not comply with this requirement. Therefore, DeFond and Jiambalyo (1994) have proposed estimating the model using the data under a cross-sectional study, classifying the companies by country and industry in each year and this, in addition to decreasing the effect generated by

using the data organized in series of time, also presumes that the coefficients generated are not constant by company over time, and assumes constant coefficients in the companies that belong to the same industry and country for a determinate period of time.

The basic Jones model (1991) is based on the magnitude of cross-sectional absolute discretionary accruals. This indicator is based on the estimation of discretionary accruals, where they are defined as the result of the total accrual adjustments observed minus the estimation of the normal accrual adjustments (non-discretionary) through the Jones model (1991), that is, the discretionary accruals are the residues of the regression. Said components, discretionary and non-discretionary, are determined through five (5) models of discretionary accruals, which were commonly utilized in previous researches. However, it is less frequent for all these models to be utilized together in the same research: basic Jones model, modified Jones model, adapted Jones model, modified Jones model with the book to market ratio and the operating cash flow, and the modified Jones model with the current year ROA (Dechow *et al*., 2003; Dechow *et al*., 1995; Kothari *et al.*, 2005; Larcker and Richardson, 2004). It is expected that with a lower absolute magnitude of discretionary accruals, the lower the level of manipulation of the results will be, meaning a greater accounting quality.

Due to the fact that the discretionary accruals could result in the increase or decrease of the result with aim towards an objective earning, the absolute magnitude of said adjustments is considered to assess the degree of earnings management. Each model is applied in each period of analysis (Local GAAP and IFRS) and for every industry; first, the accrual adjustments are estimated in each of the five models, subsequently, the estimated coefficients of these regression models are used to calculate the discretionary accruals (total observed accrual adjustments minus the non-discretionary accruals).

Jones model (cross-sectional): In the expectation model proposed by Jones (1991), short and long-term accrual adjustments are utilized. The aim is to return the total observed accrual adjustments on change in sales, which models the normal component of adjustments for short-term accruals and the level of tangible fixed assets (property, plant and equipment), which models the non-discretionary component of the long-term adjustments by expense, depreciation and amortization.

According to Osma *et al.* (2004), depending on the characteristics of the countries, it is preferable to use both components in the researches, the normal component of the short and long-term accrual adjustments, while others prefer the normal short-term component. This selection is based on the degree of visibility that the users of the information exercise on the accounts, therefore, if in a country one of the main financers of the companies is the capital market and there is a disperse property structure, then it is possible to forego the normal component of the long-term accrual adjustments; otherwise, it is fairly likely this will not be forgone. Due to the above, this research utilizes both components.

$$\frac{ACC_{it}}{A_{it-1}} = \frac{\alpha 1}{A_{it-1}} + \beta_1 \frac{\Delta REV_{it}}{A_{it-1}} + \beta_2 \frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it} \qquad (1)$$

Where:

ACC= are the total observed accrual adjustments, defined as the net operating profits (before extraordinary items) minus the operating cash flow of the period; *A=* represents the total asset; *REV=* represents the change in the sales of the period; *PPE=* is the net amount of the property, plant and equipment; *E=* represents the error term of the model; the i and t sub-indexes represent the company and the period, respectively. All variables of the model are divided by the total asset at the beginning of the period to avoid possible problems of heteroscedasticity.

The coefficients from the aforementioned estimated model are utilized to calculate the discretionary accruals.

$$DACC_{it} = \left(\frac{ACC_{it}}{A_{it-1}}\right) - \left(\frac{\alpha 1}{A_{it-1}} + \beta_1 \frac{\Delta REV_{it}}{A_{it-1}} + \beta_2 \frac{PPE_{it}}{A_{it-1}}\right) \qquad (2)$$

Where:
DACC = are the discretionary accruals; the rest of the components are defined above.

Modified Jones model (cross-sectional): Dechow *et al.* (1995) add that the expectation model by Jones is based on the assumption that the sales do not present any discretion. It is inevitable for the discretion estimated by their model to not present any error, due to the fact that the direction can manage earnings through sales. Therefore, Dechow *et al.* (1995) add the change variable to the accounts receivable, arguing that this would likely eliminate the imprecision presented in the basic Jones model. For this reason, this model estimates the coefficients with equation (1) under an ordinary least-squares model (OLS) and said coefficients are used in the following equation to estimate the discretionary accruals:

$$DACC_{it} = \left(\frac{ACC_{it}}{A_{it-1}}\right) - \left(\frac{\alpha 1}{A_{it-1}} + \beta_1 \left[\frac{\Delta REV_{it}}{A_{it-1}} - \frac{\Delta REC_{it}}{A_{it-1}}\right] + \beta_2 \frac{PPE_{it}}{A_{it-1}}\right) \qquad (3)$$

Where:
$\Delta REC_{it}=$ Is the change in the accounts receivable; the other variables are described above.

Adapted Jones model (cross-sectional): The above model has received criticism at an academic level, as has been manifested by Dechow *et al.* (2003), who add that the modified Jones model assumes that all credit sales in each period are discretionary adjustments, therefore, this leads to a positive correlation between the discretionary accruals and the growth in the sales of each period; due to this, an unexpected portion of the change in the accounts receivable in the discretionary accruals is included. The estimated coefficients are still calculated according to equation 1, and said coefficients must be used in the following equation to calculate the discretionary accruals:

$$DACC_{it} = \left(\frac{ACC_{it}}{A_{it-1}}\right) - \left(\frac{\alpha 1}{A_{it-1}} + \beta_1 \left[(1+k)\frac{\Delta REV_{it}}{A_{it-1}} - \frac{\Delta REC_{it}}{A_{it-1}}\right] + \beta_2 \frac{PPE_{it}}{A_{it-1}}\right) \qquad (4)$$

Where:

The *k* coefficient is estimated from the following equation by period and in each industry, capturing the expected change in the accounts receivable by a determinate change in sales.

$$\Delta REC_{it} = (\alpha + k_1 \Delta REV_{it} + \varepsilon_{it}) \tag{5}$$

Modified Jones Model with book to market ratio and operating cash flow (cross-sectional): According to Lacker and Richardson (2004), two variables are added to the modified Jones model in order to mitigate the magnitude of the error contained in the estimated discretionary accruals. Therefore, these control variables are added: Book to market and operating Cash Flow. Equation (6) presents the coefficients estimated per industry in each period, and these coefficients are implemented in equation (7) to find the discretionary accruals.

$$\frac{ACC_{it}}{A_{it-1}} = \frac{\alpha 1}{A_{it-1}} + \beta_1 \frac{\Delta REV_{it}}{A_{it-1}} + \beta_2 \frac{PPE_{it}}{A_{it-1}} + \beta_3 BM_{it} + \beta_4 \frac{CFO_{it}}{A_{it-1}} + \varepsilon_{it} \tag{6}$$

$$DACC_{it} = \left(\frac{ACC_{it}}{A_{it-1}}\right) - \left(\frac{\alpha 1}{A_{it-1}} + \beta_1 \left[\frac{\Delta REV_{it}}{A_{it-1}} - \frac{\Delta REC_{it}}{A_{it-1}}\right] + \beta_2 \frac{PPE_{it}}{A_{it-1}} + \beta_3 BM_{it} + \beta_4 \frac{CFO_{it}}{A_{it-1}}\right) \tag{7}$$

Where:

BM= is the book to market ratio for company i in year t; *CFO=* Is the operating Cash Flow from the operation scaled by the total assets; the rest of the variables were indicated above.

Modified Jones model with the ROA of the current year (cross-sectional): The addition to the modified Jones model was developed by Kothari *et al.* (2005), who argue that the accrual adjustments of companies that have an unusual performance (profit) are expected to be different to zero. For this reason, the performance of the company and the accrual adjustments are correlated. According to this, Kothari *et al.* (2005) add a new variable to the modified Jones model, the ROA of the current year, in order to control performance. Therefore, equation (8) estimates the coefficients which are used in the model contained in equation (9) to find the discretionary accruals.

$$\frac{ACC_{it}}{A_{it-1}} = \frac{\alpha 1}{A_{it-1}} + \beta_1 \frac{\Delta REV_{it}}{A_{it-1}} + \beta_2 \frac{PPE_{it}}{A_{it-1}} + \beta_3 ROA_{it} + \varepsilon_{it} \tag{8}$$

$$DACC_{it} = \left(\frac{ACC_{it}}{A_{it-1}}\right) - \left(\frac{\alpha 1}{A_{it-1}} + \beta_1 \left[\frac{\Delta REV_{it}}{A_{it-1}} - \frac{\Delta REC_{it}}{A_{it-1}}\right] + \beta_2 \frac{PPE_{it}}{A_{it-1}} + \beta_3 ROA_{it}\right) \tag{9}$$

Where:

ROA= Is the Return on Assets for company i in year t; the other variables were defined above.

The models contained in equations 1 to 9 are returned by the ordinary least squares model (OLS) classified by standard framework and by type of industry to follow the indications of Osma *et al*. (2004) with regard to a cross-sectional study.

Models to relate the effects of management incentives on the discretionary accruals

Following Chen *et al.* (2010) and Van-Tendeloo and Vanstraelen (2005), the absolute magnitude of the discretionary accruals, obtained in each of the aforementioned models, is individually returned on a set of control variables, which collect the economic characteristics of each company and the effects of each country in which the same operates. Said characteristics possibly suggest the incentives that each of them would have to use discretionary accrual adjustment as a measure for earnings management. The following equation estimates the effect of the implementation of the IFRS and management and country incentives on the absolute magnitude of the discretionary accruals.

$$|DACC_{it}| = \alpha + \beta_1 POST_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 GROWTH_{it} + \beta_5 TURN_{it} + \beta_6 CFO_{it} + \beta_7 AUD_{it}$$

$$+ \beta_8 NUMEX_{it} + \beta_9 LOSS_{it} + \beta_{10} XLIST_{it} + \sum_{l=1}^{24} \beta_{l+10} Country_i + \varepsilon_{it} \qquad (10)$$

Where:

$|DACC_{it}|$ Is the absolute magnitude of the discretionary accruals found through the 5 Jones models, being defined as follows: $|DACC_{it}|1$= is the absolute magnitudes of the discretionary accruals in the basic Jones model; $|DACC_{it}|2$= is the absolute magnitude of the discretionary accruals in the modified Jones model; $|DACC_{it}|3$= is the absolute magnitude of the discretionary accruals in the Adapted Jones model; $|DACC_{it}|4$= is the absolute magnitude of the discretionary accruals in the Jones model modified with the book to market ratio and operating Cash Flow; $|DACC_{it}|5$= is the absolute magnitude of the discretionary accruals in the modified Jones model with the ROA of the current year for company i in year t; *POST*= is a variable indicator, it takes the value of 1 in the periods in which the companies implemented the IFRS and of 0 otherwise, a negative coefficient in *POST* indicates that the companies have a lower absolute magnitude in discretionary accruals in the periods of post-implementation than in the pre-implementation of the IFRS. *SIZE*= is the natural logarithm at the end of the year of the total assets and indicates the size of the company; *LEV*= total liabilities at the end of the period divided by the book value of the property at the end of the period. It indicates the level of debt; *GROWTH*= percentage change in sales; *TURN*= sales divided by the total assets at the end of the year. It indicates the turn or management of assets; *CFO*= Operating Cash Flow at the end of the year divided by the total assets at the end of the year; AUD= is a dichotomous variable that has the value of one (1) if the companies are audited by one of the Big4 (PWC, KPMG, EY or DELOITTE) and of zero (0) otherwise; *NUMEX*= number of stock markets where each company is listed; *LOSS*= is a variable indicator that takes the value of 1 for the observations with a net income lower than zero, and of 0 otherwise; XLIST= dichotomous variable that has a value of one (1) if the company is listed in an equity market in the United States, and said market is not their

main stock exchange; *Country=* is a variable indicator, with Argentina used as benchmark. The total countries in the sample is 25, for the econometric model 24 variables are established to avoid the problem of perfect multicollinearity, this applies to calculate models 1 to 3 and model 5. Given that for the calculation of model 4 the sample only represents 18 countries, the econometric model will include 17 countries to prevent perfect multicollinearity problems. In all variables, with the exception of binary variables, the effects of the outlier values are controlled (winsorized) in percentiles 5 and 95.

Sample and distribution

The sample is comprised of companies in Latin American and Caribbean countries that report accounting and stock information available in the ORBIS financial database and that are or have been listed for all or any of the periods from 2006 to 2014. The sample includes those companies that during this period have implemented the IFRS, regardless of whether its implementation was voluntary or obligatory. ORBIS identifies the regulatory framework in which each company annually reports its financial statements. Only those companies with available data both in their local GAAP for their pre-implementation period and IFRS for their post-implementation period are included. The data are grouped under a cross-sectional study comparing the period before and after the implementation of the IFRS, both with reference to the same period of analysis (2006-2014). This is to avoid changes in accounting quality attributable to the economic conditions of different years.

Table 1 describes in detail the sample selection, starting with all the companies listed and located in Latin America and the Caribbean. Subsequently, those companies with available continuous data no older than three years were filtered, as were those companies that during the period of analysis (2006 to 2014) did not report any information under the IFRS. Thus, a general sample of 925 companies was obtained, 854 of which were from Latin America and the rest from countries in the Caribbean. From this general sample of companies and the total number of analyzed years, a total of 5,978 observations were obtained, 2,133 (35.7%) observations pertained to the pre-implementation period (Local GAAP) and the remaining 3,845 (64.3%) to the post-implementation period (IFRS). Parting from this total, the observations that do not present the necessary information to calculate each of the variables of the different models defined in the methodology are filtered. Therefore, a final sample of 5,490 observations are obtained for the basic Jones, adjusted Jones and adapted Jones (Sample A) models. For the modified Jones model with the book to market ratio of the property and operating cash flow (Sample B) a total of 4,020 observations are obtained, while for the last model used, the modified Jones model with the ROA of the current year, is comprised of 5,436 observations.

Table 1
Sample selection

General sample selection (classified by number of companies)			
	Latin America	The Caribbean	Total
Companies classified as active in ORIBS, presently or previously listed during the years of 2006 to 2014, located in Latin America or the Caribbean.	1,515	2,292	3,807
Companies that are not listed in Latin American or Caribbean stock markets.	0	(2,147)	(2,147)
Companies with no available information (with less than 3 continuous years of accounting information)	(264)	(28)	(292)
Companies that did not report information under IFRS during the years of 2006 to 2014.	(397)	(46)	(443)
General sample total (classified by number of companies)	854	71	925
General sample total (classified by number of observations and accounting regulatory framework)	GAAP Local	IFRS	Total
	2,133	3,845	5,978

Selection of the sample for each accrual adjustments model from the general sample (classified by number of observations and accounting regulatory framework)

Selection of sample A: accrual adjustments models 1 (basic Jones model), 2 (adjusted Jones model), 3 (adapted Jones model)			
Regulatory Framework	Local GAAP	IFRS	Total
Number of observations from the general sample (classified by number of observations and accounting regulatory framework)	2,133	3,845	5,978
Lost data for the measure variables of the accrual adjustments, models 1, 2 and 3	(156)	(332)	(488)
Total observations for sample A (corresponds to 876 Companies)	1,977	3,513	5,490

Selection of sample B: accrual adjustments model 4 (modified Jones model with the book to market ratio of the property and operating cash flow)			
Regulatory Framework	Local GAAP	IFRS	Total
Number of observations from the general sample (classified by a number of observations and accounting regulatory framework)	2,133	3,845	5,978
Lost data for the measure variables of the accrual adjustments model 4	(801)	(1,157)	(1,958)
Total observations for sample B (corresponds to 691 Companies)	1,332	2,688	4,020

Selection of sample C: accrual adjustments model 5 (modified Jones model with ROA of the current year)			
Regulatory Framework	Local GAAP	IFRS	Total
Number of observations from the general sample (classified by number of observations and accounting regulatory framework)	2,133	3,845	5,978
Lost data for the measure variables of the accrual adjustments model 5	(169)	(373)	(542)
Total observations for sample C (corresponds to 870 Companies)	1,964	3,472	5,436

Source: Own elaboration

Table 2 presents the distribution of the observations by country, while Table 3 presents them by Industry. In Table 2, samples A and C (sample B) present observations from 25 countries (18 countries) in Latin America and the Caribbean, from which 33% (35%) of the observations pertain to Brazil, followed by 19% (21%) to Chile, 12% (13%) to Mexico, while 9% (8%) pertain to Peru, followed by 7% (7%) to Argentina.

Table 2
Distribution of the sample by country

Country	SAMPLE A		SAMPLE B		SAMPLE C	
	No. Obs.	% Obs.	No. Obs.	% Obs.	No. Obs.	% Obs.
Argentina	390	0.07	293	0.07	389	0.07
Barbados	41	0.01	40	0.01	41	0.01
Bermuda	38	0.01	27	0.01	38	0.01
Bolivia	96	0.02	40	0.01	96	0.02
Brazil	1,822	0.33	1,424	0.35	1,790	0.33
Bahamas	27	0.00	27	0.01	27	0.00
Chile	1,051	0.19	840	0.21	1,044	0.19
Colombia	158	0.03	88	0.02	158	0.03
Costa Rica	27	0.00	15	0.00	27	0.00
Dominica	8	0.00	0	0.00	8	0.00
Ecuador	123	0.02	72	0.02	123	0.02
Granada	7	0.00	0	0.00	7	0.00
Guatemala	9	0.00	0	0.00	9	0.00
Guyana	14	0.00	0	0.00	8	0.00
Jamaica	129	0.02	120	0.03	128	0.02
San Cristobal	14	0.00	0	0.00	14	0.00
Caiman Islands	4	0.00	0	0.00	4	0.00
Mexico	649	0.12	508	0.13	649	0.12
Panama	64	0.01	50	0.01	64	0.01
Peru	479	0.09	307	0.08	479	0.09
Paraguay	123	0.02	0	0.00	123	0.02
El Salvador	24	0.00	8	0.00	24	0.00
Trinidad and Tobago	101	0.02	100	0.02	94	0.02
Uruguay	26	0.00	1	0.00	26	0.00
Venezuela	66	0.01	60	0.01	66	0.01
Total	5,490	1	4,020	1	5,436	1

Source: Own elaboration
The observations reported in Table 2, with a participation percentage of (0.00) and with an observation number greater than 0, present a lower participation to 1% of the total of each sample.

Table 3 shows that for the samples A and C (sample B) there are observations from 18 industries (18 industries), 36% (40%) of which pertain to the manufacturing industry, 12% (11%) to the electrical industry, followed by wholesale and retail trade and the financial industry, represented by 8% (8%) and 7 (7%), respectively.

Table 3
Distribution of the sample by Industry

Industry	SAMPLE A		SAMPLE B		SAMPLE C	
	No. Obs.	% Obs.	No. Obs.	% Obs.	No. Obs.	% Obs.
Agriculture, livestock, and fisheries	297	0.05	174	0.04	297	0.05
Extractive industries	175	0.03	132	0.03	172	0.03
Manufacturing industry	1,980	0.36	1,594	0.40	1,949	0.36
Electric energy supply	678	0.12	435	0.11	677	0.12
Water supply and sanitation	68	0.01	40	0.01	68	0.01
Construction	253	0.05	210	0.05	253	0.05
Wholesale and retail trade	413	0.08	326	0.08	413	0.08
Transportation and warehousing	257	0.05	184	0.05	253	0.05
Hospitality industry	111	0.02	68	0.02	110	0.02
Information and communication	266	0.05	179	0.04	265	0.05
Financial and insurance activities	404	0.07	267	0.07	399	0.07
Business activities	283	0.05	214	0.05	278	0.05
Professional, scientific and technical activities	53	0.01	40	0.01	53	0.01
Administrative activities	26	0.00	13	0.00	26	0.00
Education	40	0.01	9	0.00	40	0.01
Sanitation and social services activities	49	0.01	48	0.01	49	0.01
Artistic and recreational activities	94	0.02	71	0.02	92	0.02
Other services	43	0.01	16	0.00	42	0.01
Total	5,490	1	4,020	1	5,436	1

Source: Own elaboration
The observations reported with participation percentages of (0.00) present a participation lower than 1% of
the total of each sample.

Results

Table 4 includes the mean and median comparison statistical analysis between both periods
for the variable necessary to estimate the absolute magnitude of the discretionary accruals. The
descriptive results demonstrate that the total accrual adjustments observed (ACC), the total
assets at the beginning of the period (1/A), the sales variation (ΔREV), the accounts receivable
variation (ΔREC), the import of the property, plant and equipment, the operating cash flow
(CFO), and the return on assets (ROA) have a significantly lower mean (with a significance
level of 1%) during the post-implementation period when compared to the pre-implementation
period, with the exception of the total accrual adjustments observed and the return on assets,
which do not have a statistically significant difference between periods. Regarding the book
to market ratio of the property, it has a greater mean during the implementation period of the
IFRS with regard to the implementation of the local standards (Local GAAP), although said
difference is not statistically significant.

The results also show a statistically significant increase in the mean for the size of
companies (SIZE) and the percentage variation in sales (GROWTH), which negatively affects
asset management (TURN), observing in the mean (median) a significant decrease for this
last variable during the post-implementation period with regard to the pre-implementation
period. In the same manner, a significant statistical increase is observed on average, at the
level of indebtedness of the companies (LEV) and in the contracting of audit services by the
Big4 (AUD). At the same time, an increase in the mean is documented with regard to the
number of stock markets where the companies are listed (NUMEX) and especially in the listing

of Latin American and Caribbean stock in the capital markets of the United States (XLIST) during the period of implementation of the IFRS with regard to the pre-implementation period. The (LOSS) variable, despite having a lower mean during the implementation of the IFRS, does not present a significant difference between both periods, which could possibly indicate that during the post-implementation period, the Latin American and Caribbean companies continue acknowledging the losses in the financial statements, with the same frequency as in the implementation period of local standards.

Table 4
Descriptive statistic

Control variables used when estimating the absolute magnitude of discretionary accruals

		Pre-implementation period (Local GAAP)				Post-implementation period (IFRS)			
	Variance comparison	**Obs.**	**Mean**	**Median**	**Standard Dev.**	**Obs.**	**Mean**	**Median**	**Standard Dev.**
ACC	*	1,977	-0.027	-0.023	0.104	3,510	-0.026	-0.024	0.078
1/A	*	1,977	0.000	0.000	0.000	3,510	0.000*	0.000*	0.000
ΔREV	*	1,977	0.118	0.063	0.219	3,510	0.019*	0.005*	0.129
ΔREC	*	1,977	0.020	0.005	0.066	3,510	0.001*	0.000*	0.038
PPE	*	1,977	0.705	0.711	0.297	3,510	0.639*	0.654*	0.238
BM	*	1,332	1.371	0.875	1.546	2,688	1.458	0.862	1.674
CFO	*	1,977	0.122	0.108	0.144	3,510	0.108*	0.096*	0.113
ROA	*	1,964	5.875	5.395	8.540	3,472	5.839	5.315	8.009
SIZE	*	1,977	12.096	12.272	2.286	3,510	12.915*	13.012*	2.143
GROWTH	*	1,977	0.228	0.146	0.465	3,510	0.350*	0.016*	0.242
LEV	*	1,977	1.185	0.847	1.413	3,510	1.291*	0.916*	1.215
TURN	*	1,977	0.810	0.677	0.621	3,510	0.716*	0.628*	0.503
AUD	*	1,977	0.745	1.000	0.435	3,510	0.856*	1.000*	0.350
NUMEX	*	1,977	1.177	1.000	0.537	3,510	1.465*	1.000*	1.112
XLIST	*	1,977	0.012	0.000	0.109	3,510	0.071*	0.000*	0.257
LOSS	*	1,977	0.159	0.000	0.366	3,510	0.143	0.000	0.350

Source: Own elaboration
*, **, *** Indicates a significant difference between periods with a level of p< 0.01, p< 0.05 and p< 0.1, respectively (two-tailed test). The assumption of normality in the distribution of each variable is not confirmed with the Shapiro-Wilk test. This assumption is loosened as the size of the sample is sufficiently large (more than 30 observations); normalcy is assumed according to the Central Limit Theorem. A test for the equality of variance was done for the significance analysis of means between both periods for each variable, providing results of a significant variance between them, therefore, the equality t-test of means with different variances is carried out. The test for equality of medians is proven for all variables through the Mann-Whitney-Wilcoxon rank sum test, except for variables AUD, XLIST and LOSS, in which the test for the comparison of proportions based on Fisher's exact test is used.

Table 5 provides an invariable analysis of the absolute magnitude of the discretionary accruals, calculated under the 5 expressions for the two periods of study; in all of them, for the post-implementation period, the accrual adjustments are significantly lower regarding their mean (median) with regard to the pre-implementation period, which indicates a decrease in the level of earnings management by Latin American and Caribbean companies, and this in turn validates the defined hypothesis (H1).

Table 5
Comparison of the absolute magnitude of discretionary accruals between the periods of Local GAAP and IFRS

Measure	Obs.		Mean		Difference	Median		Difference
	Local GAAP	IFRS	Local GAAP	IFRS		Local GAAP	IFRS	
$|DACC_{it}|1$	1,977	3,510	0.074	0.057	-0.016*	0.052	0.040	-0.011*
$|DACC_{it}|2$	1,977	3,510	0.074	0.057	-0.016*	0.052	0.040	-0.011*
$|DACC_{it}|3$	1,977	3,510	0.074	0.057	-0.016*	0.053	0.041	-0.012*
$|DACC_{it}|4$	1,332	2,688	0.054	0.041	-0.013*	0.041	0.030	-0.011*
$|DACC_{it}|5$	1,964	3,472	0.072	0.056	-0.015*	0.052	0.040	-0.012*

Source: Own elaboration
*, **, *** Indicates a significant difference between periods with a level of p< 0.01, p< 0.05 and p< 0.1, respectively (two-tailed test). The assumption of normality in the distribution of each variable is not confirmed with the Shapiro-Wilk test. This assumption is loosened as the size of the sample is sufficiently large (more than 30 observations); normalcy is assumed according to the Central Limit Theorem. A test for the equality of variance was done for the significance analysis of means between both periods for each variable, with the majority of results indicating significant variance between them, therefore, the equality t-test of means with different variances is carried out. The test for equality of medians is proven for all variables through the Mann-Whitney-Wilcoxon rank sum test.

Table 6 provides the results of the regression of the absolute magnitude of discretionary accruals between the implementation of IFRS and the control variable sunder an ordinary least squares model (OLS). In the five (5) measure models for the magnitude of discretionary accruals $|DACC_{it}|$ and their interaction with their POST and control variables. The adjusted R2 indicates that models number 2 (Adjusted Jones model) and number 4 (modified Jones model with book-to-market ratio and operating cash flow) are those that present a higher level of association between said variables and their respective magnitude of discretionary accruals (0.0929 and 0.1287, respectively). Additionally, there is evidence that in the 5 analyzed models, the relation between the discretionary accruals and the *POST* variable is statistically negative at a significance level of 1%, which suggests that the companies use the discretionary accruals less during the period of implementation of the IFRS when compared to the pre-implementation periods. This is evidence of the negative effect that IFRS have in the use of said discretionary adjustments (it is consistent with hypothesis 2).

Regarding the control variables and absolute magnitude of the discretionary accruals, a statistically significant negative relation is observed between the five expressions used to measure said adjustments and the variables of company size (*SIZE*) and the listing of stocks from companies in a stock market of the United States (*XLIST*), with the relation regarding this last variable not being significant. These results suggest that with a larger size, Latin American and Caribbean companies decrease the use of discretionary accruals or earnings management. This could be due to the fact that the biggest companies are followed, with regard to their performance, by a greater number of investors and analysts.

At the same time, a statistically positive relation can be seen between the magnitude of the discretionary accruals under their five expressions and the level of indebtedness (*LEV*), the percentage change in sales (*GROWTH*), the management of assets (*TURN*) and the cash flows generated in the operation (*CFO*), suggesting incentives for a greater use of discretionary accruals, and translating into a greater earnings management. This possibly suggests, for the case of the level of indebtedness, that the most indebted companies require the use of discretionary accruals for the compliance of their covenants. A positive relation is also observed between the discretionary accruals and the audit service provision variables by a Big4 company (*AUD*),

number of stock markets in which the shares of the companies are listed (*NUMEX*) and the report of losses (*LOSS*), this indicates the incentives or pressures that Latin American and Caribbean companies have to increase the use of discretion in their accounting estimations.

However, the results obtained are, for the most part, different to those documented by Chen *et al.* (2010), applied to countries that are a part of the European Union, in which they demonstrate a negative relation between the different magnitudes of discretionary accruals and operating cash flows, the audit services provided by a Big4, and the number of stocks where the shares of the companies are listed. This indicates that the institutional environment in which each company operates—weak laws for the protection to the investor, the lack of litigation risk in several economies, and the degree of effectiveness and development in the enforcement mechanisms (to guarantee the correct implementation of accounting standards)—suggest different incentives that promote each of them for the manipulation of accounting information.

Table 6
Results of the regression of the absolute magnitude of discretionary accruals between the IFRS and the control variables.

Explicative variable	Expected sign	Dependent variable (5 models)		Coefficient/ (Standard deviation		
		$|DACC_{it}|1$	$|DACC_{it}|2$	$|DACC_{it}|3$	$|DACC_{it}|4$	$|DACC_{it}|5$
Intercept	?	0.082*	0.083*	0.083*	0.064*	0.08*
		(0.006)	(0.006)	(0.006)	(0.006)	(0.007)
POST	-	-0.013*	-0.013*	-0.013*	-0.008*	-0.012*
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
SIZE	-	-0.003*	-0.003*	-0.003*	-0.003*	-0.003*
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LEV	+	0.004*	0.004*	0.004*	0.000	0.005*
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
GROWTH	+	0.015*	0.015*	0.014*	0.007*	0.013*
		(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
TURN	+	0.009*	0.009*	0.009*	0.013*	0.008*
		(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
CFO	-	0.039*	0.036*	0.038*	0.027*	0.039*
		(0.010)	(0.010)	(0.010)	(0.007)	(0.01)
AUD	-	0.006**	0.005**	0.006**	0.005**	0.005**
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
NUMEX	-	0.000	0.000	0.000	0.002**	-0.001
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LOSS	+	0.025*	0.025*	0.025*	0.030*	0.023*
		(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
XLIST	-	-0.002	-0.002	-0.002	0.000	-0.001
		(0.004)	(0.004)	(0.004)	(0.003)	(0.004)
R2 (Chi square)		0.0984	0.0976	0.098	0.1346	0.0929
Adjusted R2 (adjusted Chi square)		0.0928	0.0929	0.0924	0.1287	0.0872
F Value		15.36	15.52	15.45	22.99	14.49
Obs.		5 487	5 487	5 487	4 020	5 436

Source: Own elaboration
*, **, *** Indicates a significant difference of zero with a level of p< 0.01, p< 0.05 and p< 0.1, respectively (two-tailed test). The assumptions of the linear regression models are evaluated under minimum least squares (MLS). There is no evidence of multicollinearity between the regressors, observing the Variance Inflation Factors (VIF), which mostly report values lower than 5. The White test executed through the STATA software indicates a lower probability than 0.05, which suggests a high falsehood probability that the hypothesis of the error term variance is constant. Therefore, homoscedasticity is assumed once again returning to the models with White Robust test in STATA. The

Central Limit Theorem is used to assume normalcy in the disturbances of the models, as it is not confirmed with the Shapiro-Wilk test. The self-correlation assumption is evaluated through the Durbin-Watson test and the Durbin test, and for all models there is a probability higher than 0.10, which indicates a low probability of falsehood in the no self-correlation hypothesis. Therefore, no correlation is assumed between the error terms.

Conclusions

This research aims to prove whether the quality in the financial reports (measure expression for accounting quality) improves after the implementation of the IFRS for companies located and listed in the capital markets of Latin America and the Caribbean, which present evidence of a change in their accounting framework from their local GAAP to the IFRS during the periods of 2006 to 2014. Specifically, it is examined whether the implementation of the IFRS in 15 Latin American countries and 10 Caribbean countries is associated with a lower magnitude in discretionary accruals. Said accruals are obtained from five models, all of which depart form the basic Jones model (1991) and its subsequent modifications.

After controlling the fixed effects of the industry and the country that affect the magnitude of the discretionary accruals reported by the companies, the results obtained indicate a decrease in the use of discretionary accruals (abnormal), seen from a lower absolute magnitude in said adjustments during the implementation periods of the IFRS and from a statistically negative relation between these two last variables. Therefore, this indicates a lower level of earnings management, which is the same as a significant improvement in the quality of the financial report (accounting quality). The results obtained in this Latin American multi-country study correspond to everything documented on the different Latin American economies that were individually considered; for example, the results documented by Pelucio-Grecco *et al.* (2014) for the Brazilian case, and the results by Conesa *et al.* (2011) for the Mexican case.

With regard to the incentives used by management to promote a greater use of discretionary accruals, it was possible to confirm through the results that the institutional environment in which each company operates along with the level of development of protection laws for investors and the effectiveness of enforcement mechanism to guarantee the quality of the financial report, condition the divergence of said incentives from one country to another. This is the opposite of what was documented for the European Union (Chen *et al.,* 2010). It is surprising, to an extent, the fact that a Latin American or Caribbean company that obtains positive cash flows is listed in several capital markets or is audited by a company from the Big4, and this determines the use of a higher level of earnings management (increase in the absolute magnitude of the discretionary accruals).

Parting from the limitation identified in previous literature, in which the findings on the accounting quality cannot be generalized at a Latin American and Caribbean level given that the only available information was from one country in particular during a limited range of years of IFRS implementation, this article contributes to the literature by solving this limitation, presenting the generalized results for the Latin and Caribbean region, and including in the study almost the totality of the countries from this region during an extended period of analysis of the IFRS (2006-2014). It also utilizes several measure metrics to strengthen the findings on the use of these international standards for the quality of the financial report in said countries, considered as those with French influences in the definition of their accounting system (La Porta, Lopez De Silanes, Shleifer and Vishny, 1997).

Future researches could corroborate the level of earnings management for Latin American and Caribbean countries and could also even identify the differences in the degree of discretion of

accruals between the main Latin American economies with regard to countries with accounting systems that have an English, Scandinavian, or German influence (La Porta *et al.,* 1997).

References

Adibah Wan Ismail, W., Anuar Kamarudin, K., van Zijl, T., & Dunstan, K. (2013). Earnings quality and the adoption of IFRS-based accounting standards: Evidence from an emerging market. *Asian Review of Accounting,* 21(1), 53-73. http://dx.doi.org/10.1108/13217341311316940

Ahmed, A. S., Neel, M., & Wang, D. (2013). Does mandatory adoption of IFRS improve accounting quality? Preliminary evidence. *Contemporary Accounting Research,* 30(4), 1344-1372. http://dx.doi.org/10.1111/j.1911-3846.2012.01193.x

Aussenegg, W., Inwinkl, P., & Schneider, G. T. (2008). Earnings management and local vs. international accounting standards of European public firms. https://dx.doi.org/10.2139/ssrn.1310346

Brad, L., Dobre, F., & Ciobanu, R. (2014). Evidence of no difference between the values of discretional accruals computed using the Romanian accounting standards and the international financial reporting standards. *Amis 2014, n.d.*, 556-567. http://dx.doi.org/10.13140/2.1.4756.2247

Bryce, M., Ali, M. J., & Mather, P. R. (2015). Accounting quality in the pre-/post-IFRS adoption periods and the impact on audit committee effectiveness—Evidence from Australia. *Pacific-Basin Finance Journal*, 35, 163-181. https://doi.org/10.1016/j.pacfin.2014.12.002

Callao, S., & Jarne, J. I. (2010). Have IFRS affected earnings management in the European Union? *Accounting in Europe*, 7(2), 159-189. http://dx.doi.org/10.1080/17449480.2010.511896

Chen, H., Tang, Q., Jiang, Y. & Lin, Z. (2010). The role of international financial reporting standards in accounting quality: Evidence from the European Union. *Journal of International Financial Management & Accounting, 21*(3), 220-278. http://dx.doi.org/10.1111/j.1467-646X.2010.01041.x

Conesa, I. M., Manzano, M. P., & Sánchez, H. G. (2011). La calidad del resultado pre y post-adaptación a las IFRS en México por el CINIF. (Disponible en: http://www.aeca1.org/pub/on_line/comunicaciones_aal2011/cd/54a.pdf) y (Consultado: 15/05/2017)

DeAngelo, L. E. (1986). Accounting numbers as market valuation substitutes: A study of management buyouts of public stockholders. *Accounting Review, n.d,* 400-420. (Disponible en: https://www.jstor.org/stable/247149) y (Consultado: 15/05/2017)

Dechow, P. M., Richardson, S. A. & Tuna, I. (2003). Why are earnings kinky? an examination of the earnings management explanation. *Review of Accounting Studies,* 8(2-3), 355-384. http://dx.doi.org/10.1023/A:1024481916719

Dechow, P. M., Sloan, R. G. & Sweeney, A. P. (1995). Detecting earnings management. *Accounting Review,* 70(2), 193-225. (Disponible en: http://www.jstor.org/stable/248303) y (Consultado: 15/05/2017)

Defond, M. L. & Jiambalvo, J. (1994). Debt covenant violation and manipulation of accruals. *Journal of Accounting & Economics,* 17(1-2), 145-176. http://dx.doi.org/10.1016/0165-4101(94)90008-6

Dimitropoulos, P. E., Asteriou, D., Kousenidis, D., & Leventis, S. (2013). The impact of IFRS on accounting quality: Evidence from Greece. *Advances in Accounting*, 29(1), 108-123. https://doi.org/10.1016/j.adiac.2013.03.004

Doukakis, L. C. (2014). The effect of mandatory IFRS adoption on real and accrual-based earnings management activities. *Journal of Accounting and Public Policy*, 33(6), 551-572. https://doi.org/10.1016/j.jaccpubpol.2014.08.006

Friedlan, J. M. (1994). Accounting choices of issuers of initial public offerings. *Contemporary Accounting Research,* 11(1), 1-31. http://dx.doi.org/10.1111/j.1911-3846.1994.tb00434.x

Gray, S. J., Kang, T., Lin, Z., & Tang, Q. (2015). Earnings management in Europe post IFRS: Do cultural influences persist? *Management International Review*, 55(6), 827-856. http://dx.doi.org/10.1007/s11575-015-0254-7

Healy, P. M. (1985). The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics,* 7(1-3), 85-107. https://doi.org/10.1016/0165-4101(85)90029-1

Ho, L. J., Liao, Q., & Taylor, M. (2015). Real and Accrual Based earnings management in the Pre and Post IFRS periods: Evidence from china. *Journal of International Financial Management & Accounting,* 26(3), 294-335. http://dx.doi.org/10.1111/jifm.12030

Houqe, M. N., van Zijl, T., Dunstan, K., & Karim, A. W. (2012). The effect of IFRS adoption and investor protection on earnings quality around the world. *The International Journal of Accounting,* 47(3), 333-355. https://doi.org/10.1016/j.intacc.2012.07.003

Iatridis, G. (2010). International financial reporting standards and the quality of financial statement information. *International Review of Financial Analysis*, 19(3), 193-204. https://doi.org/10.1016/j.irfa.2010.02.004

Istrate, C., Eugenia, I., Carp, M., Bogdan Robu, I., & Pavaloaia, L. (2015). Accruals earnings management in emerging markets under the transition to IFRS: The case of Romanian listed companies. *Transformations in Business & Economics,* 14(2 A), 393-411. (Disponible en: https://www.researchgate.net/profile/Ioan-Bogdan_Robu/publication/290820080_Accruals_earnings_management_in_emerging_markets_under_the_transition_to_IFRS_The_case_of_Romanian_listed_companies/links/569bfd7708aea147695466b8.pdf) y (Consultado: 15/05/2017)

Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research,* 29(2), 193-228. http://dx.doi.org/10.2307/2491047

Jong-Il, P. (2015). The Effect of IFRS Adoption on Real Earnings Management. 세무와 회계저널, 16(5), 65-110. (Disponible en: http://www.papersearch.net/thesis/article.asp?KEY=3369225) y (Consultado: 15/05/2017)

Kim, J. (2013). The effect of adopting K-IFRS on financial Reports–Case study with KT&G. *International Journal of Multimedia and Ubiquitous Engineering. n.d,* 1-8. (Disponible en http://www.sersc.org/journals/IJMUE/vol8_no2_2013/19.pdf) y (Consultado: 15/05/2017)

Kim, K. (2014). The association between K-IFRS adoption and earnings management: Focusing on external auditor size. *Accounting, Tax & Auditing Research,* 56(1), 117-146. (Disponible en: https://www.google.es/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjU1dbz1a_UAhXMn-BoKHbt3BQAQFggpMAA&url=http%3A%2F%2Fcentral.oak.go.kr%2Fjournallist%2Farticlepdf.do%3Bjsessionid%3DAC7AB273A01DD37715F2F9C8A91F8750%3Furl%3D%2Frepository%2Fjournal%2F19105%-2FNRF027_2014_v56n1_117.pdf&usg=AFQjCNG8pAYQ_KLM1RjWNge4JkB-1GolyQ) y (Consultado: 15/05/2017)

Kothari, S. P., Leone, A. J. & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting & Economics,* 39(1), 163-197. http://dx.doi.org/10.1016/j.jacceco.2004.11.002

Kwon, S., & Whan Oh, J. (2015). Attributes of K-IFRS Reported Earnings. 대한경영학회지, 28(3), 1047-1064. (Disponible en: http://www.dbpia.co.kr/Journal/ArticleDetail/NODE06270524) y (Consultado: 15/05/2017)

La Porta, R., Lopez De Silanes, F., Shleifer, A. & Vishny, R. M. (1997). Legal determinants of external finance. *Journal of Finance*, 52(3), 1131-1150. http://dx.doi.org/10.1111/j.1540-6261.1997.tb02727.x

Larcker, D. F. & Richardson, S. A. (2004). Fees paid to audit firms, accrual choices, and corporate governance. *Journal of Accounting Research,* 42(3), 625-658. http://dx.doi.org/10.1111/j.1475-679X.2004.t01-1-00143.x

Leung, R. (2015). Earnings management motives and firm value following mandatory IFRS Adoption–Evidence from Canadian companies. http://dx.doi.org/10.2139/ssrn.2688220

Liu, C., Yip Yuen, C., J. Yao, L., & H. Chan, S. (2014). Differences in earnings management between firms using US GAAP and IAS/IFRS. *Review of Accounting and Finance,* 13(2), 134-155. https://doi.org/10.1108/RAF-10-2012-0098

Osma, B. G., Enguídanos, A. M., Clemente, A. G., & Lara, J. M. G. (2004). La comparabilidad de la información contable en Europa: efectos de la manipulación contable sobre el nivel de conservadurismo. *Trabajo presentado en Congreso AECA. Universidad de Valencia.* (Disponible en: http://www.ivie.es/downloads/docs/wpasec/wpasec-2004-14.pdf) y (Consultado: 15/05/2017)

Palacios Manzano, M., & Martinez Conesa, I. (2014). Assessing the impact of IFRS adaptation on earnings management: An emerging market perspective. *Transformation in Business & Economics,* 13(1), 21-40. (Disponible en: http://www.transformations.knf.vu.lt/31/ge31.pdf) y (Consultado: 15/05/2017)

Pelucio-Grecco, M. C., Geron, C. M. S., Grecco, G. B., & Lima, J. P. C. (2014). The effect of IFRS on earnings management in Brazilian non-financial public companies. *Emerging Markets Review*, 21, 42-66. https://doi.org/10.1016/j.ememar.2014.07.001

Rudra, T., & Bhattacharjee, C. D. (2012). Does IFRs influence earnings management? Evidence from India. *Journal of Management Research,* 4(1), 1-13. https://doi.org/10.5296/jmr.v4i1.849

Salewski, M., Teuteberg, T., & Zülch, H. (2014). Short-term and long-term effects of IFRS adoption on disclosure quality and earnings management. http://dx.doi.org/10.2139/ssrn.2398305

Sang-Ae, P., Nam-Ryoung, L., & Sang-Bum, P. (2011). Earnings Quality Changes Around IFRS Adoption: Evidence from an Emerging Market. 대한경영학회지, 24(1), 73-96. (Disponible en: http://www.dbpia.co.kr/Journal/ArticleDetail/NODE01639733) y (Consultado: 15/05/2017)

Santana, V., Timm, A., Costa, I., & Zoboli, F. (2014). IFRS accounting quality in Latin America: A comparison with Anglo-Saxon and continental European countries and the role of cross listing in the US. (Disponible en: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2438268) y (Consultado: 15/05/2017)

Van Tendeloo, B. & Vanstraelen, A. (2005). Earnings management under German GAAP versus IFRS. *European Accounting Review*, 14(1), 155-180. http://dx.doi.org/10.1080/0963818042000338988

Watrin, C., & Ullmann, R. (2012). Improving earnings quality: The effect of reporting incentives and accounting standards. *Advances in Accounting*, 28(1), 179-188. https://doi.org/10.1016/j.adiac.2012.03.001

Zeghal, D., Chtourou, S. M., & Fourati, Y. M. (2012). The effect of mandatory adoption of IFRS on earnings quality: Evidence from the European Union. *Journal of International Accounting Research,* 11(2), 1-25. https://doi.org/10.2308/jiar-10221

Zéghal, D., Chtourou, S., & Sellami, Y. M. (2011). An analysis of the effect of mandatory adoption of IAS/IFRS on earnings management. *Journal of International Accounting, Auditing and Taxation*, 20(2), 61-72. https://doi.org/10.1016/j.intaccaudtax.2011.06.001

Zhang, Y., Uchida, K., & Bu, H. (2013). How do accounting standards and insiders' incentives affect earnings management? Evidence from china. *Emerging Markets Review*, 16, 78-99. https://doi.org/10.1016/j.ememar.2013.04.002