



INSTITUTO
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Cross-Country Differences in Earnings Management: The Role of Economic and Institutional Factors

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PhD in Management, Specialization in Accounting

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University of Oklahoma

September, 2021



**BUSINESS
SCHOOL**

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Abstract

This thesis aims to analyze cross-country differences in earnings management practices, discussing about the role of country- and firm-specific economic and institutional factors. In order to achieve such broad objective, three studies were developed. The first study analyzes the effect of macroeconomic instability on earnings management and the moderating role of country-level institutions, explicitly examining how this phenomenon compares between developed and emerging market countries. The results shows that when facing greater macroeconomic instability, firms from developed (emerging market) countries decrease (increase) the level of accruals-based earnings management, and in both types of countries decrease the level of real earnings management. The empirical findings also evidence that the association between macroeconomic instability and accruals-based earnings management is lower in countries with stronger institutions, in both developed and emerging market countries. The second study examines the association between financial distress and accruals-based earnings management in emerging markets, and the role that auditors (Big 4 versus non-Big 4, and differences across Big 4 audit firms) play in such association. The results suggest that firms from emerging markets facing higher levels of financial distress engage in income-increasing accruals-based earnings management, and that such engagement is lower in firms audited by Big 4 compared to those audited by non-Big 4 auditors. Furthermore, the results also demonstrate a significant difference across Big 4 audit firms in their role of constraining income-increasing earnings management strategies in firms with high levels of financial distress. Finally, the third study analyzes the association between country-level ethical judgment and earnings management. It is also investigated the role that firm-level enforcement and the quality of accounting standards play in this association. The empirical results suggest that firms from countries where ethically suspect behaviors are less acceptable (i.e. higher ethical judgment) are associated with lower levels of accruals-based earnings management. Moreover, the results also provide evidence that firm-level enforcement and the quality of accounting standards play an important moderating role in the effect of national ethical judgment on earnings management, in order to dampen it. Taken together, our results contribute to the debate concerning the effect of economic and institutional factors on the accounting quality in an international context. Investors and regulators may be interested in such evidence. When it is known that economic and institutional factors are associated to firm-level earnings management, actions can be taken to build stronger and fairer societies, given that the quality of the financial reporting is inextricably linked to how well the economy works and how income and wealth are distributed.

Keywords: Earnings management, macroeconomic instability, financial distress, Big 4 auditors, national ethical judgement, economic and institutional factors.

JEL Classification: K42, F55, F23, M41, G33, G15, F44.

Resumo

Esta tese tem como objetivo analisar as diferenças entre os países no que diz respeito às práticas de gestão de resultados, discutindo sobre o papel dos fatores económicos e institucionais específicos dos países e das empresas. Para atingir esse objetivo amplo, três estudos foram desenvolvidos. O primeiro estudo analisa o efeito da instabilidade macroeconómica sobre a gestão de resultados e o papel moderador das instituições ao nível do país, examinando explicitamente como esse fenómeno se compara entre países desenvolvidos e emergentes. Os resultados sugerem que, ao enfrentar uma maior instabilidade macroeconómica, as empresas de países desenvolvidos (mercados emergentes) diminuem (aumentam) o nível de gestão de resultados por accruals e em ambos os tipos de países diminuem o nível de gestão de resultados por decisões operacionais. Também encontramos evidências de que a associação entre instabilidade macroeconómica e gestão de resultados com base em accruals é menor nos países com instituições mais fortes, tanto em países desenvolvidos quanto em mercados emergentes. O segundo estudo examina a associação entre dificuldades financeiras e gestão de resultados por accruals em mercados emergentes e o papel que os auditores (Big 4 *versus* non-Big 4, e diferenças entre as grandes empresas de auditoria) desempenham em tal associação. Os resultados apontam que as empresas dos países emergentes que enfrentam níveis mais elevados de dificuldades financeiras envolvem-se em estratégias de gestão de resultados por accruals que aumentam o lucro e que tal envolvimento é menor em empresas auditadas por Big 4, quando comparado com empresas não auditadas por Big 4. Além disso, também encontramos diferenças significativas entre as quatro grandes empresas de auditoria no seu papel de restringir as estratégias de gestão de resultados que aumentam o lucro em empresas com altos níveis de dificuldades financeiras. Finalmente, o terceiro estudo analisa a associação entre o julgamento ético ao nível do país e a gestão de resultados. Também é investigado o papel que o enforcement ao nível da empresa e a qualidade das normas contabilísticas desempenham nesta associação. Os resultados empíricos sugerem que as empresas de países onde comportamentos eticamente suspeitos são menos aceitáveis (i.e. maior julgamento ético) estão associadas a níveis menores de gestão de resultados por accruals. Além disso, fornecemos evidências de que o enforcement no nível da empresa e a qualidade das normas contabilísticas desempenham um papel moderador importante no efeito do julgamento ético nacional sobre a gestão de resultados, a fim de atenuá-lo. Em conjunto, os nossos resultados contribuem para o debate a respeito do efeito de fatores económicos e institucionais sobre a qualidade da informação contabilística num contexto internacional. Quando se sabe que fatores económicos e institucionais estão associados à gestão de resultados ao nível da empresa, podem ser tomadas ações para construir sociedades mais fortes e justas, uma vez que a qualidade dos relatórios financeiros está intrinsecamente ligada ao funcionamento da economia e à forma como a riqueza é distribuída.

Palavras-chave: Gestão de resultados, instabilidade macroeconómica, dificuldades financeiras, Big 4, julgamento ético nacional, fatores económicos e institucionais.

Classificação JEL: K42, F55, F23, M41, G33, G15, F44.

Summary

Abstract	i
Resumo	iii
Introduction	1
Chapter 1. Macroeconomic Instability, Institutions and Earnings Management: An Analysis in Developed and Emerging Market Countries	3
1.1. Introduction	3
1.2. Background and Development of Hypotheses	7
1.2.1. Macroeconomic Instability and Earnings Management	7
1.2.2. Macroeconomic Instability and Earnings Management: The Role of Institutions	13
1.3. Research Design	14
1.3.1. Sample and Data	14
1.3.2. Variables	15
1.3.2.1. Earnings Management	15
1.3.2.2. Macroeconomic Instability	17
1.3.2.3. Institutions	21
1.3.3. Empirical Model	21
1.4. Empirical Findings	24
1.4.1. Macroeconomic Instability Index Measurement	24
1.4.2. Descriptive Statistics	27
1.4.3. Regression Results	28
1.4.3.1. The Effect of Macroeconomic Instability on Earnings Management	28
1.4.3.2. Effect of Macroeconomic Instability on Earnings Management: The Role of Institutions	32
1.5. Sensitivity and Additional Analyses	35
1.6. Conclusions	41
References	43
Chapter 2. Financial Distress, Earnings Management and Big 4 Auditors in Emerging Markets	54
2.1. Introduction	54
2.2. Literature Review and Hypotheses	57
2.2.1. Financial Distress and Accruals-Based Earnings Management	57

2.2.2.	Financial Distress and Accruals-Based Earnings Management: The Role of Big 4 Audit	
Firms		61
2.3.	Research Design	63
2.3.1.	The Models	63
2.3.2.	Variables	66
2.3.2.1.	Earnings Management	66
2.3.2.2.	Financial Distress	67
2.3.3.	Sample	67
2.4.	Results	69
2.5.	Robustness Tests	76
2.6.	Conclusion	78
References		79
Chapter 3.	Does National Ethical Judgment Matter for Earnings Management?	85
3.1.	Introduction	85
3.2.	Background	89
3.2.1.	National Ethical Judgement and Earnings Management	89
3.2.2.	National Ethical Judgement, Earnings Management and The Role of Firm-level	
Enforcement and Mandatory IFRS Adoption		92
3.3.	Research Design	95
3.3.1.	Sample and Data	95
3.3.2.	Main Variables	97
3.3.2.1.	Earnings Management	97
3.3.2.2.	National Ethical Judgment	98
3.3.2.3.	Firm-level Enforcement	101
3.3.2.4.	Accounting Standards Quality	101
3.3.3.	Empirical Model	102
3.4.	Empirical Findings	104
3.4.1.	Descriptive Statistics and Correlations	104
3.4.2.	Regressions Results	107
3.4.3.	Robustness and Additional Analysis	110
3.5.	Conclusions	117
References		119
Conclusion		128

Introduction

Research on international accounting seems to be one of the most important topics in the current accounting research agenda¹. This is confirmed given, among others, their representativeness – in general considering large databases, with sample from different countries – and practical implications to the understanding of the accounting practices worldwide. Thus, considering the representativeness and relevance of international accounting research to market and academia, this thesis advance in this subject and aims to analyze cross-country differences in earnings management practices, discussing about the role of country- and firm-specific economic and institutional factors. Considering the extension of this broad objective, three studies were developed, as described as follow.

The first study, entitled “*Macroeconomic Instability, Institutions and Earnings Management: An Analysis in Developed and Emerging Market Countries*”, analyzes the effect of macroeconomic instability on earnings management and the moderating role of country-level institutions, explicitly examining how this phenomenon compares between developed and emerging market countries. The empirical study relies on a worldwide sample of 51,911 firm-year observations from 34 countries throughout the period 1998-2018. Based on several variables related to macroeconomic environment conditions, we construct a comprehensive macroeconomic instability index for each country allowing for changes over the years. Our findings suggest that when facing greater macroeconomic instability, firms from developed (emerging market) countries decrease (increase) the level of accruals-based earnings management, and both types of countries decrease the level of real earnings management. We also find evidence that the association between macroeconomic instability and accruals-based earnings management is lower in countries with stronger institutions, in both developed and emerging market countries. Focusing our analysis on macroeconomic instability instead of specific periods of financial crisis, we provide a more comprehensive view of the role played by the macroeconomic environment as a key determinant of accounting quality.

The second study, entitled “*The Association between Financial Distress and Earnings Management in Emerging Markets*”, investigates the association between financial distress and accruals-based earnings management in emerging markets, and the role that auditors (Big 4 versus non-Big 4, and differences across Big 4 audit firms) play in such association. This study relies on a sample of 32,196 firm-year observations from 20 emerging markets over the period 2002–2018. A multivariate analysis is performed by considering the level of financial distress as the dependent variable, and the accruals-based earnings management and dummies for the type of auditor as the main independent ones. We predict and find empirical evidence that firms facing higher levels of

¹ Gordon, E. A., Gotti, G., Ho, J. H., Mora, A., & Morris, R. D. (2019). Where is international accounting research going? Issues needing further investigation. *Journal of International Accounting, Auditing and Taxation*, 37, 1-15. <https://doi.org/10.1016/j.intaccaudtax.2019.100286>

financial distress engage in income-increasing accruals-based earnings management in emerging markets, and that such engagement is lower in firms audited by Big 4 compared to those audited by non-Big 4 auditors. Furthermore, we also find significant differences across Big 4 audit firms in their role of constraining income-increasing earnings management strategies in firms with high levels of financial distress. The study adds to previous literature by investigating the association between financial distress and accruals-based earnings management in a comprehensive sample of 20 emerging markets, by providing an important overall cross-country empirical evidence that has not been addressed by previous literature. We also bring new knowledge by discussing not only the role of the Big 4 audit firms but also how differences across them (i.e. according to the individual audit style intrinsic to each multinational auditing firm) play an important role in limiting earnings management practices by firms with high levels of financial distress in less developed markets.

Finally, the third study, entitled “*Does National Ethical Judgment Matter for Earnings Management?*”, examines the association between country-level ethical judgment and earnings management. It is also investigated the role that firm-level enforcement and the quality of accounting standards play in this association. Our analyses are based on a sample of 45,889 firm-year observations from 34 countries between 1998 and 2018. Relying on data from an international questionnaire developed by the World Values Survey, we construct a comprehensive index of the ethical judgment of each country. A multivariate analysis is performed by using this index and some metrics of accruals-based earnings management. Our empirical findings suggest that firms from countries where ethically suspect behaviors are less acceptable (i.e. higher ethical judgment) are associated with lower levels of accruals-based earnings management. Moreover, we provide evidence that firm-level enforcement and the quality of accounting standards play an important moderating role in the effect of national ethical judgment on earnings management, in order to dampen it. Our findings are robust considering a bunch of earnings management measures, as well as considering alternatives estimation scenarios to mitigate potential confounding effects. While previous literature documents that ethical judgment at both individual- and organizational-level matter as key determinants of the way managers are involved with unethical accounting practices, we investigate the role of ethical judgment at country-level in explaining earnings management. Additionally, we provide empirical evidence on firm characteristics that may attenuate the association between national ethical judgment and earnings management. Our results contribute to the debate about ethical issues on the accounting profession in an international context, aligned with an important and recent debate by international organizations such as the International Ethics Standards Board for Accountants (IESBA) and Committee of Sponsoring Organizations of the Treadway Commission (COSO). We also raise a relevant discussion for governing bodies and standards setters about the importance of considering aspects related to moral and ethical issues, besides economic and political issues.

The remainder of the thesis is organized as follows. Chapters 1, 2 and 3 present the first, second and third study, respectively. Finally, we provide a summary and concluding remarks.

CAPÍTULO 1

Macroeconomic Instability, Institutions and Earnings Management: An Analysis in Developed and Emerging Market Countries

1.1. Introduction

This study analyzes the effect of macroeconomic instability on earnings management and the moderating role of country-level institutions, explicitly examining how this phenomenon compares between developed and emerging market countries. Previous studies on the consequences of macroeconomic environment on earnings management seem to focus on financial crises (e.g., Kousenidis et al., 2013; Filip and Raffournier, 2014; Trombetta and Imperatore, 2014; Cimini, 2015; Arthur et al., 2015). These studies focus on samples predominantly comprising developed countries (primarily European Union countries), and usually take into account dummy variables or even gross domestic product to measure macroeconomic stress, which hardly captures the complexity linked to unstable economic environments. These studies report mixed findings.

We advance this discussion by proposing a measure of macroeconomic instability for each country that changes over the years and by providing empirical evidence that countries' macroeconomic instability levels affect earnings management practices in developed and emerging market economies in different ways. We also provide an important discussion on the role of institutions in dampening the effects of macroeconomic instability on earnings management, in both developed and emerging market countries. We find strong empirical evidence that changes in the macroeconomic environment do not affect firms uniformly, and that care should be taken when introducing a "one size fits all" approach. To the best of our knowledge this is the first empirical study with a cross-country approach addressing the way that firms from developed and emerging market countries react to macroeconomic instability through earnings management tactics, given the differences in the economic and institutional conditions in countries' development.

The instability of macroeconomic environments seems to be one of the most crucial issues in contemporary macroeconomics (Skorobogatova, 2016), in light of their negative effects on both private and public investment, by increasing uncertainty, reducing private and public investment, and aggravating fiscal stringency (Ismihan et al., 2005). Moreover, the recurring corporate scandals involving, in part, decisions related to the accounting process, always seem to highlight issues related to the manipulation of accounting performance measures. Well-publicized cases such as Enron and WorldCom in the United States, and even more recently the British Home Stores in the United Kingdom and Petrobras in Brazil, serve as a constant alert for investors and regulators about greater transparency in the accounting process.

Unfortunately, the situation seems to be even graver in emerging market countries², where greater information asymmetry faces investors (Martins and Barros, 2021) – making standard setters to take even more actions to mitigate these scandals in less developed economies. Recently, for example, the Securities and Exchange Commission (SEC) and the Public Company Accounting Oversight Board (PCAOB) highlighted emerging market risk disclosure and the inconsistency of the quality of financial information, requirements, and standards of such markets, stating that firms “that have operations in emerging markets, and investors in those companies, often face greater risks and uncertainties than in more established markets”³. This greater concern about fraud in emerging market countries compared to developed economies is corroborated by survey data from Ernst Young pointing out that among 2,550 executives from 55 countries, fraud and corruption remain more prevalent in emerging markets (Ernst and Young, 2018).

Discussed mainly in the economic literature, macroeconomic instability involves issues related to large swings in economic activity, high inflation rates, increasing unemployment, balance of payments disequilibrium, and excessive volatility in foreign exchange and financial markets. There are, indeed, several negative consequences of high levels of macroeconomic instability, such as increased uncertainty and erosion of confidence, and degradation in standards of living (IMF, 2020). In this discussion, even though unstable macroeconomic environments can also create investment opportunities for individuals and new business opportunities, at the aggregate level, countries with high levels of macroeconomic instability usually have more disadvantages than advantages in terms of socio-economic health (Ramstetter, 2011).

Moreover, although macroeconomic instability is often the focus in economic theory, the magnitude of unstable financial and economic environments calls for a fundamental reassessment of all areas of business and economic research, including accounting practices (Arnold, 2009). Previous earnings management literature empirically demonstrates how the macroeconomic environment affects managers’ (mis)behavior (e.g., Kousenidis et al., 2013; Filip and Raffournier, 2014; Trombetta and Imperatore, 2014; Arthur et al., 2015; Cimini, 2015). This line of research literature usually relies on the assumption that macroeconomic conditions become critical forces in shaping managers’ accounting choices. Moreover, this literature remains focused on periods of financial crisis, especially the 2007-2009 subprime crisis, usually demonstrating lower levels of earnings management during economic crashes, and based on samples mostly comprising developed countries (i.e., European Union market).

² The Economist (2014). The Dozy Watchdogs. In: The Economist, December 13, 2014, 24–26. www.economist.com/news/briefing/21635978-some-13-years-after-enron-auditors-stillcant-stop-managers-cooking-books-time-some.

³ PCAOB. (2020). Public Statement: Emerging Market Investments Entail Significant Disclosure, Financial Reporting and Other Risks; Remedies are Limited. Retrieved from <https://www.sec.gov/news/public-statement/emerging-market-investments-disclosure-reporting>.

We extend the literature by discussing a macroeconomic construct larger than financial crises. From this perspective, differently from moments of financial crisis, countries and jurisdictions worldwide are constantly facing a certain degree of macroeconomic instability. Therefore, given that “economic crises are episodes of severe macroeconomic instability” (Davoodi et al., 2021, p. 9), even though a country may not necessarily be going through a period of crisis, there will certainly always be a degree of macroeconomic instability that must be constantly monitored by governments. Thus, even in cases that are not extreme (i.e., financial crisis periods), macroeconomic instability can be perverse to the macroeconomy, given the increase of uncertainty and consequently the erosion of investors’ confidence (World Bank, 2014). Furthermore, in methodological terms, it is very difficult to precisely diagnose a crisis period *versus* a non-crisis period (Dimitras et al., 2015) – especially in an cross-country analysis involving several countries –, given that a financial crisis moment hardly affected all countries with the same intensity and in the same years.

We also argue that managers’ (dis)incentives to engage in earnings management during periods of higher macroeconomic instability could differ between developed and emerging market countries. Indeed, several important factors distinguish developed and emerging market economies. Overall, developed stock markets are assumed to be more liquid and efficient and less volatile (Kohers et al., 2006), enjoy better corporate governance systems (Bhagat et al., 2011), greater monitoring by shareholders (Djankov et al., 2008), higher levels of enforcement (Brown et al., 2014; Preiato et al., 2015), high levels of litigation risk (Arthur et al., 2015), and greater investors’ sophistication (Lima et al., 2018). Considering those evident differences between developed and emerging market countries, we assume that elevated levels of macroeconomic instability could create an environment of high pressure on preparers of financial information for firms in developed countries. More specifically, taking into account the greater scrutiny and pressure from the market and regulators regarding earnings management in those countries, and a potential increase of costs associated with those practices, we conjecture a negative association between macroeconomic instability and earnings management in such markets. In an opposite view, considering the poor institutional environment of emerging market economies – characterized by lower levels of enforcement and compliance, less investor protection, and lower audit quality, among other factors – we also argue that managers in these markets could feel more freedom to engage in more earnings management during periods of economic instability and thereby report better results.

Aside from differences between developed and emerging markets, prior research also demonstrates the role of country-level institutions as a key factor capable of dampening the influence of many external factors on both accounting and finance firm-level outputs, in firms from either developed or emerging market countries (e.g., Durnev and Kim, 2005; García-Sánchez and Noguera-Gámez, 2018; Ozili, 2019). From this perspective, the extent to which the countries’ institutions are stronger (i.e. country laws are effectively enforced, corruption mitigated, political instability is controlled, and political institutions constrain politicians and political elites), managers are no longer

less susceptible to external factors that may affect their decisions and choices regarding earnings manipulation. Based on this assumption, we also expect the effect of macroeconomic instability on earnings management to be less evident in both developed and emerging market countries having stronger institutions.

For these reasons, we hypothesize that macroeconomic instability affects earnings management practices in developed and emerging market economies, but in different ways. More specifically, we hypothesize that countries' macroeconomic instability levels are negatively (positively) associated with earnings management in developed (emerging market) countries. Moreover, we also expect that institutions moderate that effect, in both developed and emerging market countries, in order to diminish it. We test our hypotheses based on 51,911 firm-year observations from 34 countries using a large time window, covering around 20 years (1998 to 2018). Based on several variables related to economic environment conditions, we construct a macroeconomic instability index for each country analyzed, which changes over the years. Our findings suggest that when facing higher macroeconomic instability firms from developed (emerging market) countries decrease (increase) the level of accruals-based earnings management, and both types of countries reduce the level of real earnings management. We also find evidence that the association between macroeconomic instability and accruals-based earnings management is lower in countries with stronger institutions, in both developed and emerging market countries. We perform several robustness checks in order to mitigate endogeneity issues, as well as potential firm-level and industry-level differences among developed and emerging market firms that may underlie the differences behind developed and emerging market countries.

Our empirical study builds upon earlier research and makes contributions in the following ways. First, the literature on earnings management – specifically in emerging markets – is still under development. Chen et al. (2011), for instance, comment that compared with the vast literature on developed countries' accounting systems and managers' reporting incentives, scholarly studies on the role of accounting in emerging market economies are virtually nonexistent, despite its importance to international organizations such as the World Bank, the International Accounting Standards Board (IASB), and others. We advance this dialog and propose a specific discussion on the earnings management incentives in developed *versus* emerging market economies in an isolated way, broadening the conversation about the effect of macroeconomic instability on earnings management in different economic and institutional contexts.

Second, we contribute to the literature methodologically, using a cross-country index to capture the effect of macroeconomic instability on earnings management, involving different macroeconomic indicators related to this issue. Most previous research on this subject uses dummies to represent moments of financial crisis (e.g., Kousenidis et al., 2013; Xu and Ji, 2016; Cimini, 2015; Trombetta and Imperatore, 2014). Another stream of the literature pays strict attention to falls and variations in gross domestic product (GDP) (e.g., Filip and Raffournier, 2014; Dimitras et al., 2015; Paulo and

Mota, 2019). Although GDP is a key indicator of economic activity and is a vital factor in the decisions of businesses and policymakers (Henderson et al., 2012), recent empirical studies demonstrate that the quality of GDP can be lower for technical imperfections and intentional manipulations (Johnson et al., 2013; Lyu et al., 2018)⁴. By contrast, in order to obtain more specific results, we develop a measure to capture the macroeconomic instability phenomenon, for each year and country analyzed, drawing one factor in common from a group of macroeconomic indicators related to economic stress periods.

Third, while previous earnings management studies focus only on financial crises and consider only accruals-based earnings management (e.g., Filip and Raffournier 2014, Trombetta and Imperatore 2014), we discuss and provide empirical findings regarding how firms from developed and emerging market countries worldwide react toward macroeconomic instability by using different strategies of earnings management to manipulate accounting amounts.

Finally, in a more practical way, presenting empirical evidence regarding the interference of the macroeconomic conditions of the countries on the earnings management practices, it is expected that the theoretical content and the empirical aspects of this study may raise discussions with standards-setting authorities, investors, and other stakeholders. Considerable data about macroeconomic instability throughout the time period examined are presented and discussed, encompassing different indicators related to the economic environment between developed and emerging market economies, and giving a more holistic view of the phenomenon in countries with different institutional conditions.

The remainder of the paper is organized as follows. In the next section we present some information about the impact of the macroeconomic environment on the quality of accounting information, as well as a literature review on the relationship between macroeconomic instability and earnings management, outlining the hypotheses. In Section 3 we describe the research design, and in Sections 4 and 5 we present the main results and the sensitivity/additional analysis, respectively. Finally, we provide a summary and concluding remarks.

1.2. Background and Development of Hypotheses

1.2.1. Macroeconomic Instability and Earnings Management

“The macroeconomic instability is one of the most crucial issues in contemporary macroeconomics” (Skorobogatova, 2016, p. 63). Indeed, “global economic crises in the 20th century have made macroeconomic instability a key issue in the analyses of economic growth and development” (Cariolle and Goujon, 2015, p. 1). Differently from financial crisis moments, countries and jurisdictions worldwide are always facing a certain degree of macroeconomic instability, which makes it an object of constant concern on the part of governments and international authorities. From this perspective –

⁴ Johnson et al. (2013), for instance, demonstrate that the quality of GDP figures from developing economies is especially poor compared to developed economies, for methodological reasons.

given that “economic crises are episodes of severe macroeconomic instability” (Davoodi et al., 2021, p. 9) –, even though a country is not necessarily going through a period of crisis, there will certainly always be a degree of macroeconomic instability that must be constantly monitored by governments. In fact, “historically, market economies have exhibited an intrinsic propensity to fluctuate, sometimes with periods of more pronounced instability, including recurrent economic crises” – making some degree of macroeconomic instability inevitable (UNCTAD, 2016, p. 178). Thus, even in cases that are not extreme (i.e. financial crisis periods), macroeconomic instability can be perverse to the macroeconomy, given the increased uncertainty and consequently the corrosion of investors’ confidence (World Bank, 2014).

As discussed in the economic literature, therefore, macroeconomic instability involves issues related to large swings in economic activity, high inflation rates, increasing unemployment, balance of payments disequilibrium, and excessive volatility in foreign exchange and financial markets. From this perspective, the instability of the macroeconomic environment can increase uncertainty, discourage investment, prevent economic growth, and hurt standards of living (IMF, 2020). However, “macroeconomic instability is a two-edged sword”, creating investment opportunities for individuals and new business opportunities that multinational companies and other firms are often keen to exploit (Ramstetter, 2011, p. 2010). Some level of macroeconomic instability may even be desirable to the extent that development processes involve both quantitative and qualitative changes in all economic and social variables, and advance at uneven paces (UNCTAD, 2016). In this line, the uncertainty about firms’ profitability arising from periods of elevated macroeconomic instability can also increase stock market valuations in certain markets, given that, from this perspective, “higher uncertainty in the growth rate implies higher expected future earnings, and so leads to higher stock valuations” (Cremers and Yan, 2016, p. 86). Indeed, business cycles are intrinsic to modern economies, in which some degree of volatility in aggregate prices, output, and employment could be considered normal regarding macroeconomic management by the State (Kararach, 2014).

Even though macroeconomic instability can also generate some economic benefits, mainly in terms of investments, at the aggregate level, countries with high levels of macroeconomic instability usually have more disadvantages than advantages in terms of socio-economic health (Ramstetter, 2011). From this perspective, high macroeconomic instability is strongly detrimental to economic development and social welfare, inhibiting or distorting long-term economic decisions related to productive investment, employment creation and innovation. Moreover, large swings in economic activity, volatility in exchange rates and financial markets and boom-and-bust episodes entail large economic and social costs, such as credit crunches, fiscal constraints, firm bankruptcies, job and income losses, and increasing poverty (UNCTAD, 2016).

Previous economic literature provides empirical and theoretical discussion that macroeconomic instability changes the beliefs, expectations, and perceptions of market agents (Milani, 2008; Evans and Honkapohja, 2006; Honkapohja and Mitra, 2006; Anufriev et al., 2013; Bianchi and Ilut, 2017). In

the accounting area there is a stream of earlier studies that consistently demonstrate a potential association between the macroeconomic environment and managers' behavior concerning earnings management with a cross-country design (e.g., Kousenidis et al., 2013; Filip and Raffournier, 2014; Trombetta and Imperatore, 2014; Arthur et al., 2015; Cimini, 2015). These previous accounting studies usually rely on the assumption that macroeconomic conditions become critical forces in shaping managers' accounting choices.

Taking into account five EU countries, Kousenidis et al. (2013) find that during the 2007-2009 subprime crisis, the change in most determinants of earnings quality favors higher earnings quality (less earnings management). Filip and Raffournier (2014) also find that earnings management decreased significantly in 16 European Union (EU) countries during the 2008–2009 financial crisis. By analyzing a sample of 11,844 firm-year observations listed in 15 EU countries over the period 2006–2012, Cimini (2015) shows very similar results, suggesting that earnings management decreased in the large majority of the firms in EU countries after the onset of the financial crisis. Likewise, Arthur et al. (2015) compare the earnings quality of firms from 14 European countries during the 2005–2007 period and during the financial crisis period (2008–2010), and find that the sample firms tended to present higher-quality financial reports (less earnings management) during the financial crisis than prior to it. Outside of the EU market, the empirical findings of Trombetta and Imperatore (2014) suggest that overall US listed firms also engage in less earnings management during economic downturns, such as during the 2001-2002 Dotcom Bubble, and 2007-2009 subprime financial crisis.

At least two main points characterize these previous accounting studies. First, this literature is clearly concentrated on periods of financial crisis, especially on the 2007-2009 subprime crisis, usually demonstrating lower levels of earnings management during moments of economic crash. Second, these studies consistently concentrate on developed countries, more specifically in the European Union market. We add to these previous accounting studies by analyzing an economic construct that goes beyond financial crisis (macroeconomic instability), and its association with earnings management in a lengthy time window of analysis (1998-2018), and by discussing how this association compares between developed and emerging market countries.

Given the potential effects of the macroeconomic environment in shaping managers' behavior concerning earnings management strategies, we argue that there are some advantages of considering macroeconomic instability levels instead of only periods of crisis. The economic literature consistently comments that the level of countries' economic stability is a continuing concern for governments, regulators, and investors in general (e.g., Allen et al., 2018; Tamegawa, 2016; Pasini, 2013). Thus, regardless of whether facing economic crisis or not, economies worldwide always show some level of macroeconomic instability, which is a continuing matter of concern to governments and international authorities such as the International Monetary Fund (IMF, 2020), the United Nations (UN, 2012), and the Organization for Economic Cooperation and Development (OECD, 2014), among others. By analyzing a long period of analysis (1998-2018), including periods of high and low macroeconomic

instability, we add to the accounting literature that seems to be focused only on analyzing periods of severe instability of macroeconomic environment (financial crisis). Furthermore, it is difficult to precisely evaluate when an economic crisis effectively started in each country (Dimitras et al., 2015), given that the effect of financial crisis on the overall economy depends on factors intrinsic to each country, such as fiscal, monetary, and exchange rate policies, as well as the institutional setting (Serven and Montiel, 2004). Most accounting studies consider a restricted dummy variable to capture a crisis period (e.g., Cimini, 2015; Cohen et al., 2014; Trombetta and Imperatore, 2014; Kousenidis et al., 2013), which ends up generating an evident bias because the 2007-2009 subprime crisis, for instance, did not affect all countries with the same intensity and in the same years.

Theoretically, financial accounting preparers have incentives to both increase and decrease earnings management during periods of high macroeconomic instability. On the one hand, managers could compensate lower earnings by increasing earnings management during recession periods, to avoid a large drop in the firm's stock price that would negatively impact their compensation (Ahmad-Zaluki et al., 2011; Charitou et al., 2007). From this point of view, "managers can use earnings manipulation in order to affect market's evaluation of firm's probability to survive and, hence, reduce the average cost of capital" (Trombetta and Imperatore, 2014, p. 208). On the other hand, it is also possible to argue that the increment of general market uncertainty (Bloom, 2014; Nelson and Katzenstein, 2014), coupled with an increase in information asymmetry (Liao et al., 2014), makes investors and other stakeholders more careful when analyzing the information disclosed. Thus, with an increased scrutiny on the financial accounting information reported, firms would decrease earnings management during periods of greater macroeconomic instability.

Taking this discussion as a whole, we argue that managers' (dis)incentives to engage in earnings management in periods of higher macroeconomic instability differ between developed and emerging market countries. Indeed, several factors distinguish between developed and emerging market economies. In general, developed stock markets are assumed to be more liquid, efficient, and be less volatile compared with their counterparts in emerging market countries (Kohers et al., 2006). Also, developed countries usually have greater international experience and exposure, better corporate governance systems and government regulation, and maturity regarding the domestic capital market (Bhagat et al., 2011). Moreover, developed countries are characterized by greater monitoring by shareholders and protection of minority investors (Djankov et al., 2008), higher levels of enforcement (Preiato et al., 2015; Brown et al., 2014), lower-risk markets for lending purposes (Ballester and González-Urteaga, 2017), high levels of litigation risk (Arthur et al., 2015), greater investors' sophistication (Lima et al., 2018), and more robust institutional governance systems (e.g., Griffiths and Zammuto, 2005).

Concerning macroeconomic instability levels, from an historical point of view, emerging market countries have traditionally experienced much greater macroeconomic instability than developed economies (Serven and Montiel, 2004; Zagha, and Nankani, 2005; Montiel and Servén, 2006; Loayza

et al., 2007; Cariolle and Goujon, 2015; Ehigiamusoe et al., 2020). This happens because of (among other reasons) the lack of resources of emerging market countries to smooth out economic fluctuations (Gurtner, 2010), as well as the greater amount of financial innovation in developed countries, which can alleviate the impact of investment booms and busts on macroeconomics (World Bank, 2010). Also, according to Loayza et al. (2017, p. 343), “large external shocks, volatile macroeconomic policies, micro-economic rigidities, and weak institutions” seems to intensify macroeconomic downturns in emerging countries.

These characteristics that distinguish between developed and emerging market countries may influence the way that managers act during periods of greater (or less) macroeconomic instability. In developed countries more severe periods of macroeconomic instability may increase the scrutiny and monitoring by auditors, creditors, and other stakeholders (Pong et al., 2007; Alvarado et al., 2019), which should result in greater pressure on managers for higher quality information – and consequently less earnings management. From this perspective, higher levels of enforcement (Preiato et al., 2015; Brown et al., 2014) and more robust institutional governance systems (e.g., Griffiths and Zammuto, 2005) in developed countries could ease pressure on firms for less earnings management during periods of elevated macroeconomic instability. Second, conservatism is likely to increase in higher periods of economic instability in developed countries, especially due to the greater sophistication of investors, who appear to be even more risk averse (Jenkins et al., 2009). Thus, with more conservatism, earnings management is likely to decline (e.g., Bertomeu et al., 2017; García et al., 2005; Ahmed et al., 2002). Additionally, litigation risk is probably higher during periods of economic decline, when capital markets experience sharp drops in stock prices and volatility is exacerbated. “Managers should respond to this risk increase by a limitation of earnings management” (Filip and Raffournier, 2014, p. 6), especially in developed countries naturally characterized by high levels of risk of litigation, strong investor protection, and a diverse base of investors (Van Tendeloo, and Vanstraelen, 2005; Liao et al., 2013; Arthur et al., 2015). Indeed, the influence of litigation risk on earnings management is well documented (e.g., Huijgen, and Lubberink, 2005; Boone et al., 2011). Also, high levels of macroeconomic instability are likely to increase the costs associated with earnings manipulations, thereby discouraging managers from engaging in it (Trombetta and Imperatore, 2014). Finally, accounting standards-setting bodies, such as the IASB and the FASB, among others, and capital market regulators undertake actions during more severe recession moments to improve financial reporting quality in hopes of restoring investor confidence (Arthur et al., 2015)⁵. Thus, considering greater enforcement in developed countries, it is likely that some of these actions should

⁵ Arthur et al. (2015) and Liao et al. (2013), for instance, cite the fact that the IASB has modified its accounting standards for fair value accounting, and the Securities and Exchange Commission conducted a study on mark-to-market accounting at the beginning of the global subprime financial crisis. “These actions sent a clear message that these bodies were seriously concerned about the impact of financial reporting on investor confidence” (Arthur et al., p. 4).

generate even greater pressure on financial accounting preparers for higher quality information (less earnings management).

On the contrary, emerging market countries are characterized by institutional environment voids whereby firms must respond to unpredictable (but predictably frequent) shocks – political instability, violence, aggressive macroeconomic fluctuations, and even wars – without the benefit of specialized intermediaries that can analyze market information, facilitate transactions, and provide signals related to credibility (Gao et al., 2017). For emerging market countries, we can also mention a smaller volume of negotiations compared to large developed economies, which would give greater “freedom” to managers to manipulate accounting information due to a certain “lack of monitoring” by outsiders (Djankov et al. 2008). In such less developed markets, therefore, managers could take advantage of moments of uncertainty to manage the accounting information, given the lower scrutiny of auditors, regulators, and the market. In fact, “firms in emerging markets have been found to manage earnings to a much greater degree than those in developed economies” (Bao and Lewellyn, 2017, p. 828). Aligned with that, Durnev and Magnan (2017) demonstrate that firms domiciled in less stable countries with looser legal regimes are more likely to manage earnings. Lourenço et al. (2018) also demonstrates that greater perception of corruption is related to higher incentives for firms to manipulate earnings in the case of emerging market countries, and that such results are not identified in developed countries, where the level of minority investors’ protection is higher. Moreover, Lin and Wu (2014) suggest that corporate governance regulations play an important role in reducing the earnings manipulation practice overall, however this phenomenon seems to be less pronounced in emerging market countries than in developed markets.

Thus, taking advantage of a weaker institutional environment, managers from emerging market countries could engage in more earnings management during high levels of macroeconomic instability in order to avoid, for instance, a drop in the firm’s stock price that would negatively impact their compensation and variable bonus payments (Charitou et al., 2007). Another reason would be the attempt to avoid violations of debt covenants (Filip and Raffounier, 2014), or even to maintain the firm’s reputation in more uncertain periods (Gao et al., 2017; Podnar et al., 2012). Indeed, Graham et al.’s (2005) survey reveals that when the overall economy is down, managers makes choices that boost earnings. “The reversal or the catch-up to this action does not kick in until the economy recovers and earnings are increasing” (Graham et al., 2005, p. 41). Given that many emerging market economies do not have the resources to stimulate the economy and protect themselves against economic fluctuations (Gurtner, 2010), it is likely that operational losses are even greater in firms from these countries – which would ultimately increase the incentive for earnings management practices, especially considering the weaker enforcement (Preiato et al., 2015; Brown et al., 2014) and compliance (e.g., Samaha and Khelif, 2016) in these countries.

Taking those arguments together, we expect that high levels of macroeconomic instability could create an environment of high pressure on the preparers of the financial information of firms in

developed countries. Therefore, considering the greater scrutiny and pressure from the market and regulators regarding earnings management in those countries, and a potential increase of costs associated with those practices, we expect a negative association between macroeconomic instability and earnings management in those markets. However, in an opposite view, we also conjecture that the poor institutional environment of emerging market economies, coupled with lower levels of enforcement and compliance, less investor protection, and lower audit quality, among other factors, could create an encouraging environment for these companies to engage in more earnings management practices in periods of higher macroeconomic instability. Formally, we hypothesize that:

H1: The level of macroeconomic instability is negatively associated with the level of earnings management in developed countries.

H2: The level of macroeconomic instability is positively associated with the level of earnings management in emerging market countries.

1.2.2. Macroeconomic Instability and Earnings Management: The Role of Institutions

Beyond the analysis on the association between macroeconomic instability and earnings management, we explore the potential moderating role of institutions in each type of country (i.e., developed and emerging market countries). Previous literature argues that country-level institutions create incentives that influence the behavior of corporate executives, investors, standard setters, and other market participants, by shaping the properties of reported accounting numbers through a complex interplay of accounting standards, legal, market, regulatory, and political pressures, and reporting discretion exercised by managers (Bushman and Piotroski, 2006). From this perspective, preparers' (i.e. managers' and auditors') financial reporting incentives depend on the sources of demand for, and political influence on, financial reporting, involving the role of institutions (Ball et al., 2003). In this line, therefore, countries with stronger institutions constrain the actions of firms by increasing investor protections, causing several effects on the market in general, such as reducing the asymmetric information and agency conflicts (Ellahie and Kaplan, 2021).

Given the importance of institutions to the business environment, a consistent and important strand of research points out the role of institutions as a key moderator component, capable of dampening the effect of several external factors on both accounting and finance firm-level outputs, in firms from either developed or emerging market countries (e.g., Durnev and Kim, 2005; Chen et al., 2009; Choi et al., 2011; García-Sánchez and Noguera-Gámez, 2018; Ozili, 2019).

Relying on a sample of 27 countries in developed and emerging markets, Durnev and Kim (2005) demonstrate that even though the quality of governance practice is positively related to the growth opportunities, concentration of cash flow rights, and the need for external financing, these relationships are weaker in countries with strong institutions. Based on a sample of 25 emerging market countries, Chen et al. (2009) find that firm-level corporate governance has a significantly negative effect on the cost of equity capital in emerging markets, and that the effect is less pronounced

in countries with strong institutions. Choi et al. (2011) find that the Asian financial crisis of 1997–1998 led to a significant fall in the value relevance of discretionary accruals, based on a sample of 9 Asian countries, and that the fall was less severe for firms in countries with strong institutions. Based on a sample of 27 countries with developed and emerging markets, García-Sánchez and Noguera-Gómez (2018) show that firm-level contracting incentives are important determinants of the decision to disclose voluntary integrated information, but that such firm incentives are less important in countries with a strong institution environment. Ozili (2019) find evidence, based on 19 economies in Africa, that firms use loan loss provisions to smooth positive (non-negative) earnings, particularly in the post-2008 crisis period, and that this behavior is reduced by strong institutions.

Overall, the widespread idea behind these studies is that to the extent that the countries' institutions are stronger, external factors become less important as determinants of the quality of information. In other words, to the extent that country laws are effectively enforced, corruption mitigated, political instability is controlled, and political institutions constrain politicians and political elites (i.e. strong institutions) (Acemoglu et al., 2003), managers are no longer less susceptible to external variables that may eventually affect their decisions and choices regarding earnings manipulation. Based on this assumption, we therefore expect that the effect of macroeconomic instability on earnings management strategies by managers is less evident in both developed and emerging market countries with stronger institutions, formally stated in the following hypothesis:

H3: The negative (positive) association between macroeconomic instability and earnings management in developed (emerging market) countries is attenuated in countries with stronger institutions.

1.3. Research Design

1.3.1. Sample and Data

The empirical analysis relies on a sample composed of 9,109 non-financial firms from 34 countries. The firms are selected based on the availability of financial-economic information in the Thomson Reuters Datastream database. We use data from the years 1998 to 2018⁶ and we consider only observations with positive equity. Thus, the final sample is composed of 51,911 firm-year observations, with about 38% corresponding to developed countries (19,900) and the other part corresponding to the emerging market ones (32,011). The classification of the countries in developed and emerging market economies is based on a cross-referencing process using the International Monetary Fund, United Nations' UNCTAD, World Trade Organization, and Morgan Stanley Capital International (MSCI) classification (Trimble, 2018). Table 1 presents the sample distribution by

⁶ Given that the period encompasses the IFRS adoption, we also exclude the year of mandatory adoption to avoid the potential for confounding effects in the transition year, as broadly suggested in the previous literature (e.g., Trimble, 2018; Dhaliwal et al., 2019).

country. Among developed (emerging market) economies, Hong Kong, Germany, and Canada (China, Korea, and Brazil) are the most representative countries.

Table 1. Sample distribution by country

Developed Countries	Firm-Year Obs. (N)	% N	% N Cum.
Australia	305	1.53	1.53
Austria	342	1.72	3.25
Belgium	300	1.51	4.76
Canada	2,652	13.33	18.09
Denmark	113	0.57	18.65
Finland	96	0.48	19.14
France	1,248	6.27	25.41
Germany	3,337	16.77	42.18
Greece	1,126	5.66	47.83
Hong Kong	3,715	18.67	66.50
Hungary	34	0.17	66.67
Ireland	116	0.58	67.26
Israel	1,726	8.67	75.93
Italy	792	3.98	79.91
Luxembourg	102	0.51	80.42
Netherlands	886	4.45	84.87
Norway	647	3.25	88.13
Spain	202	1.02	89.14
Sweden	251	1.26	90.40
United Kingdom	1,910	9.60	100.00
Total – Developed Countries	19,900	100.00	-
Emerging Market Countries	Firm-Year Obs. (N)	% N	% N Cum.
Argentina	7	0.02	0.02
Brazil	2,187	6.83	6.85
Chile	992	3.10	9.95
China	10,792	33.71	43.67
Korea (South)	10,084	31.50	75.17
Malaysia	1,894	5.92	81.08
Mexico	642	2.01	83.09
Peru	292	0.91	84.00
Poland	1,225	3.83	87.83
Russian Federation	722	2.26	90.08
Singapore	1,712	5.35	95.43
South Africa	58	0.18	95.61
Sri Lanka	26	0.08	95.70
Turkey	1,378	4.30	100.00
Total – Emerging Market Countries	32,011	100.00	-

1.3.2. Variables

1.3.2.1. Earnings Management

The previous earnings management literature classifies the manipulation of accounting amounts into two categories, namely accruals-based earnings management (AEM) and real earnings management (REM). While AEM involves generally accepted accounting principles and resorts to accounting choices that seek to “obscure” or “mask” true economic performance (Dechow and Skinner, 2000), REM occurs when managers undertake actions that change the timing or structuring of an operation, investment, and/or financing transaction in an effort to influence the output of the accounting system

(Gunny 2010). We consider in our analyses both AEM and REM. Regarding the earnings manipulation through AEM, following previous literature (e.g., Jeanjean and Stolowy 2008; Doukakis, 2014; Black et al., 2017; Lo et al., 2017; Commerford et al., 2018; Larson et al., 2018; Trimble, 2018; Campa et al. 2019; Kim et al., 2019; Pham et al. 2019; Fan et al., 2020; and Cunningham et al., 2020), earnings management is measured by using the amount of discretionary accruals. We consider the modified version of the model proposed by Jones (1991) to measure discretionary accruals, proposed by Dechow et al. (1995), according to Equation (1). Following Kothari et al. (2005), we include as additional regressor a measure of firm performance, namely return on assets. We estimate Equation (1) by taking into account cross-sectional industry regressions by country groups for each year, by requiring at least eight observations for each country-industry-year group. Using this approach, we expect to partially control for the industry-country-wide changes in economic conditions that could affect the dependent variables and allow the coefficients to vary across time (Doukakis, 2014). We use the unsigned residuals from this model as our measure of AEM.

$$TA_{it} = \alpha_0 + \beta_1 \frac{1}{Ats_{it-1}} + \beta_2 \frac{(\Delta Sales_{it} - \Delta REC_{it})}{Ats_{it-1}} + \beta_3 \frac{GPPE_{it}}{Ats_{it-1}} + \beta_4 ROA_{it} + \varepsilon_{it} \quad (1)$$

where,

$$TA_{it} = \frac{(\Delta CA_{it} - \Delta CL_{it} - \Delta CASH_{it} + \Delta STDEBT_{it} - DEP_{it})}{Ats_{it-1}} \quad (2)$$

where, for each firm i in year t , TA are the total accruals. ΔCA is the change in current assets for each firm i from year $t-1$ to year t . ΔCL is the change in current liabilities. $\Delta CASH$ is the change in total cash reserve. $\Delta STDEBT$ is the change in the short-term debt. ΔDEP is the amount of depreciation expenses. Ats is the total assets. $\Delta Sales$ is the change in sales. ΔREC is the change in accounts receivables. $GPPE$ is the gross amount of property, plant, and equipment. ROA is the net income before extraordinary items scaled to total assets.

Following the previous literature on REM (e.g., Cohen et al., 2010; Zang, 2012; Doukakis, 2014; Black et al., 2017; Lo et al. 2017; Trimble, 2018), we consider the empirical models provided by Roychodhury (2006) regarding specifically to the abnormal levels of productions costs (ABN_PROD), cash flows from operations (ABN_CFO), and discretionary expenses (ABN_DISX), according to Equations (3), (4), and (5), respectively. The models are estimated taking into account cross-sectional industry regressions by country groups for each year, by requiring at least eight observations for each country-industry-year group. We use the residuals from these models as our measures of REM. We multiply ABN_CFO and ABN_DISX by -1 so that the higher the amount of these variables, the more

likely it is that the managers are practicing price discount and cutting discretionary expenses, respectively (Zang, 2012; Cohen and Zarowin, 2010). Additionally, following Doukakis (2014), Trimble (2018), and Black et al. (2017), among others, we aggregate all three REM proxies into one single variable, *REM*, which represents the sum of *ABN_PROD*, *ABN_CFO*, and *ABN_DISX*. Thus, the higher the amount of *REM*, the more likely it is that the firm engaged in REM practices.

$$\frac{PROD_{it}}{Ats_{it-1}} = \alpha_0 + \beta_1 \frac{1}{Ats_{it-1}} + \beta_2 \frac{Sales_{it}}{Ats_{it-1}} + \beta_3 \frac{\Delta Sales_{it}}{Ats_{it-1}} + \beta_4 \frac{\Delta Sales_{it-1}}{Ats_{it-1}} + \varepsilon_{it} \quad (3)$$

$$\frac{CFO_{it}}{Ats_{it-1}} = \alpha_0 + \beta_1 \frac{1}{Ats_{it-1}} + \beta_2 \frac{Sales_{it}}{Ats_{it-1}} + \beta_3 \frac{\Delta Sales_{it}}{Ats_{it-1}} + \varepsilon_{it} \quad (4)$$

$$\frac{DISX_{it}}{Ats_{it-1}} = \alpha_0 + \beta_1 \frac{1}{Ats_{it-1}} + \beta_2 \frac{Sales_{it}}{Ats_{it-1}} + \varepsilon_{it} \quad (5)$$

where, for each firm *i* in year *t*, *PROD* is the amount of production costs, defined as the sum of cost of goods sold and changes in inventory from the year *t-1* to *t*. *CFO* is the amount of cash flows from operations calculated indirectly as net income minus total accruals. *DISX* is the amount of discretionary expenses, defined as the sum of research and development (R&D), and selling, general, and administrative (SG&A) expenses. All other variables are as previously defined.

1.3.2.2. Macroeconomic Instability

Macroeconomic instability is a complex and multidimensional phenomenon that cannot be measured directly, as it is affected by a variety of factors, such as inflation, market capitalization, and gross domestic product, among others (Cariolle and Goujon, 2015). Indeed, international organizations such as the United Nations (UNCTDA, 2016) and the European Union⁷ recognize this complexity and assess macroeconomic instability not only through one but considering a bunch of macroeconomic indicators. Therefore, given this complexity, we measure macroeconomic instability by constructing an index that takes into account different indicators linked to the countries' macroeconomic environment. Brave and Butters (2011) highlight that the construction of an index through the involvement of different (but connected) variables has the advantage of capturing the interconnection of different indicators, an advantageous characteristic to allow the assessment of the intrinsic importance of each variable⁸.

⁷ European Union, Treaty on European Union (Consolidated Version), Treaty of Maastricht, 7 February 1992, Official Journal of the European Communities C 325/5; 24 December 2002, retrieved from <https://www.refworld.org/docid/3ae6b39218.html>.

⁸ Brave and Butters (2011) use a similar approach in order to measure financial stability of the U.S. banking system between 1973 and 2010, by taking into account 100 financial indicators.

Table 2. Macroeconomic Instability Index: proxies, references, and data source

Variable	General description	Specific descriptions	Source
<i>Inflation_{ij}</i>	Inflation, consumer prices (annual %)	Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used.	International Monetary Fund
<i>Market Capitalization_{ij}</i> (Inverted signal)	Natural logarithm of stock market capitalization (% of GDP)	Market capitalization (also known as market value) is the share price times the number of shares outstanding (including their several classes) for listed domestic companies. Investment funds, unit trusts, and companies whose only business goal is to hold shares of other listed companies are excluded. Data are end of year values.	World Bank
<i>GDPperCap_{ij}</i> (Inverted signal)	Natural logarithm of GDP per capita (current US\$)	GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars.	World Bank
<i>Balance_{ij}</i> (Inverted signal)	Current account balance (% of GDP)	Current account balance is the sum of net exports of goods and services, net primary income, and net secondary income.	World Bank
<i>Exports_{ij}</i> (Inverted signal)	Exports of goods and services (% of GDP)	Exports of goods and services represent the value of all goods and other market services provided to the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial information, business, personal, and government services. They exclude compensation of employees and investment income (formerly called factor services) and transfer payments.	World Bank
<i>Unemployment_{ij}</i>	Unemployment, total (% of total labor force)	Unemployment refers to the share of the labor force that is without work but available for and seeking employment.	International Labour Organization, ILOSTAT database

We use a Macroeconomic Instability Index (*MacroInstab*) constructed by using principal component analysis (PCA) applied to six variables related to economic environment conditions, namely inflation rate, market capitalization, GDP per capita, current account balance, exports of goods and services, and unemployment rate. Table 2 shows the description and measurement of each of those variables. We take into account relevant previous economic studies linked to macroeconomic instability in order to select these indicators (e.g., Komulainen and Lukkarila, 2003; Montiel and Servén, 2006; Loayza et al., 2007; Stein, 2012; Corsetti et al., 2013; Ehigiamusoe et al., 2020). We invert the scale of some of these indicators in order to interpret a high value of these indicators as

higher levels of macroeconomic instability, based on the economic literature⁹. Therefore, to construct the *MacroInstab* we use a group of factors, the information of which is collected from different sources for each country and year, according to Table 2. The index is represented by the factor scores associated with the first principal component, presented in a standardized way in the interval [0, 1]. Thus, countries with higher *MacroInstab* should have greater macroeconomic instability.

Previous economics literature provides a consistent theoretical and empirical support on the association between the variables included in our Index and macroeconomic instability levels, as we detail as follows. Some negative consequences in the macroeconomic environment can be seen with a rise of inflation, such as higher unemployment and lower consumer spending, which can lead to falls in company sales volumes and consequently a fall in profits (e.g., Kyrtsov and Labys 2006). Indeed, inflation targeting as a stabilization policy is adopted by many central banks (Drumond and Porcile, 2012), with direct impacts and consequences for wages, the level of employment, or the exchange rate. Chenaf-Nicet and Rougier (2016) also suggest that a high rate of inflation creates uncertainty for organizations in relation to their assets and liabilities.

Concerning the market capitalization – the natural logarithm of stock market capitalization (% of GDP) – previous economic literature also provides evidence of a positive relationship between stock market development and long-run economic growth (Singh, 1997). This is consistent with the assumption that macroeconomic instability seems to discourage internal and external investors from participating in the stock market largely because the investment environment becomes unpredictable (Kemboi and Tarus, 2012). The Economics literature consistently demonstrates “the importance of stock markets in promoting economic growth through various channels” (Ho and Odhiambo, 2018, p. 4). A sound and developed stock market plays a vital role in stimulating economic activity and enhancing growth and development; an increase in the capital formation enhances the existing stock of capital in an economy; it helps to improve the performance and growth of agriculture, industry and services; it provides funds for long-run investment projects and attracts investors by providing investment avenues to earn suitable investment returns; it increases research and development expenditures to improve production and sectoral productivity by providing employment opportunities and infrastructure development; and it also attracts foreign direct investment in domestic industry and contributes to economic growth (Shahbaz et al., 2016).

The concept of macroeconomic instability could also be linked to countries’ GDP (e.g., Sutherland et al., 2012; Creel et al., 2015). Related to economic performance (Creel et al., 2015), in a broad way GDP measures the monetary value of goods and services produced in a country in a given period, and also includes some non-market production, such as defense or education services provided by the government (World Bank, 2018). According to Claessens et al. (2012, p. 179), “GDP is the

⁹ For example, high levels of GDP per capita are associated with lower levels of macroeconomic instability (e.g., Sutherland et al., 2012; Creel et al., 2015). Thus, we invert the GDP measurement scale, based on the values of our sample, in such a way as to interpret high GDP per capita values as the higher levels of macroeconomic instability. We proceed with the same logic for all indicators (see Table 2).

most comprehensive measure to track economic activity for a large group of countries over a long time period”, considering its direct reflection on the real situation of the economic environment. The GDP per capita – GDP divided by midyear population, according to the IMF – is “generally used as the core indicator in judging the position of the economy of a country over time or relative to that of other countries” (Bergh, 2009, p. 117).

Despite some criticism (Obstfeld, 2012), the countries’ account balance – measured by the sum of net exports of goods and services, net primary income, and net secondary income scaled by countries’ GDP – seems to remain an important indicator in debates around economic frictions and macroeconomic instability (e.g., Corden, 2007; Gruber and Kamin, 2007). In practical terms, account imbalances refer to the deficits and surpluses of the current account positions. “Persistent global imbalances can be seen as continuous financing of net negative consumption of deficient economies by net savings of surplus economies” (Sadiku et al., p. 91). Based on a sample of 19 countries, Gruber and Kamin (2007) show empirically that economic downturns are systematically associated with higher current account imbalances. In addition to the evident economic consequences, high levels of account imbalances also appear to have adverse effects on countries’ internal political negotiation, especially among businesses, trade unions, and parliamentarians on unfair practices (Ghosh and Ramakrishnan, 2020).

Countries’ export levels – measured by the exports of goods and services scaled by countries’ GDP – also have a strong effect on macroeconomic growth, tax, and redistribution policy (Cariolle and Goujon, 2015). High levels of export directly encourages the production of goods for exports, increases the specialization in order to exploit economies of scale, and incentivizes the imports of high quality products and technologies, “which in turn may have a positive impact on technological change, labor productivity, capital efficiency and, eventually, on the nation’s production” (Konya, 2006, p. 979). In fact, several empirical studies point to a positive association between exports and the economic development of countries (e.g., Feder, 1983; Sun and Parikh, 2001; Sanjuá-López and Dawson, 2010). Exports may also be an important channel for firms to increase innovation (Aboushady and Zaki, 2021). Additionally, the knowledge acquired through interactions with customers in exporting activities may enhance own productivity, and encourage allocative efficiency (Foster, 2006).

High levels of unemployment also seem to be a concern for many governments and jurisdictions and are considered a symptom of instability of the macroeconomic environment (e.g., Boukhatem et al., 2021; Folawewo and Adeboje, 2017; Ali and Rehman, 2015; Byrne and Strobl, 2004). Even though unemployment is an issue of concern for policymakers in developing economies, the developed countries are not exempt (Folawewo and Adeboje, 2017). Indeed, “the unemployment rate is the most widely used indicator of the well-being of a labor market and an important measure of the state of an economy in general” (Byrne and Strobl, 2004, p. 465). Moreover, the unemployment rate reveals the aggregate performance of the economy, that is, it mirrors aggregate economic activities

(Folawewo and Adeboje, 2017). Beyond its impact on macroeconomic outputs, unemployment has devastating long-lasting effects on people’s lives, affecting living standards in retirement, prospects of generations, and damaging small businesses and family expenditures. Such consequences increase the instability of the macroeconomic environment by reducing current and future tax revenues and receipts, increasing government support on health, education, and other social services, and consequently resulting in lower economic growth¹⁰.

1.3.2.3. Institutions

Following previous literature (Álvarez-Botas et al., 2021; Chen et al., 2019; Poretti et al., 2018; Khyareh, 2017; Yu et al., 2015; Daske et al., 2008; Rigobon and Rodrik, 2005), we measure country-level institutions based on the Rule of Law index (Kaufmann et al., 2009), which captures “the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence”¹¹. The Rule of Law index includes indicators such as the “degree of enforcement of court orders”, “confidence in judicial system”, “intellectual property rights protection”, “efficiency of legal framework in challenging regulations”, “practical ability of the administration to limit tax evasion”, and “the risk that the state or other sovereign political authority will deprive”, among others. In addition to being widely used and validated by previous literature, the Rule of Law index has the advantage of being measured by each country over the years, giving greater variability to the concept of institutions both within and between countries.

1.3.3. Empirical Model

Our empirical estimations consider both AEM and REM as the dependent variables, and the macroeconomic instability index (*MacroInstab*) as the main independent variable. To test hypothesis H1 (H2) – whether macroeconomic instability is negatively (positively) associated with earnings management in developed (emerging market) countries – we estimate Equation (6):

$$EM_{itj} = \alpha_0 + \beta_1 MacroInstab_{tj} + \beta_2 MacroInstab_{tj} \times CountryType_j + \gamma \sum Controls + \varepsilon \quad (6)$$

where, for each firm *i* in year *t* and country *j*, *EM* is both AEM and REM. *MacroInstab* is the index of macroeconomic instability for each country *j* and year *t*. *Country Type* represents both *Developed* and *Emerging*, which are dummy variables equaling 1 for firm-year observations from developed and emerging market countries, respectively, and zero otherwise.

¹⁰ Parliament of Australia (2000). House of Representatives Committees. Inquiry into issues specific to older workers seeking employment, or establishing a business, following unemployment. Chapter 2 - Consequences of unemployment.

¹¹ See <https://info.worldbank.org/governance/wgi/Home/Documents> for a full definition, data, and sources.

In Equation (6), when firm-year observations are from developed countries (i.e., *Developed* = 1), we expect the sum of the coefficients β_1 and β_2 to be significantly negative, indicating that macroeconomic instability decreases earnings management in developed economies. On the contrary, when firm-year observations are from emerging market countries (*Developed* = 0), we expect coefficient β_1 to be significantly positive, indicating that macroeconomic instability increases earnings management in emerging economies.

Looking for more robust estimates based on an extensive literature (e.g., Barth et al. 2008; Jeanjean and Stolowy 2008; Doukakis, 2014; Black et al., 2017; Lo et al., 2017; Commerford et al., 2018; Larson et al., 2018; Trimble, 2018; Campa et al. 2019; Kim et al., 2019; Pham et al. 2019; Fan et al., 2020; Cunningham et al., 2020), control variables related to earnings management are considered in all estimations. All variables are described in detailed in Table 3.

To test hypothesis H3 – whether the negative (positive) association between macroeconomic instability and earnings management in developed (emerging market) countries is mitigated in countries with stronger institutions – we estimate Equation (7) as follows:

$$EM_{itj} = \alpha_0 + \theta_1 MacroInstab_{tj} + \theta_2 MacroInstab_{tj} \times CountryType_j + \theta_3 MacroInstab_{tj} \times CountryType_j \times Institutions_{tj} + \gamma \sum Controls + \varepsilon \quad (7)$$

where, *Institutions* is the country-level institutions, measured by the Rule of Law index, according to the World Justice Project (Kaufmann et al., 2009). All other variables are as previously defined.

In Equation (7), we expect that the coefficients θ_1 and θ_2 remain the same as those concerning their respective variables presented in Equation (6). Moreover, when firm-year observations are from developed countries (i.e. *Developed* = 1), and from countries with stronger institutions (i.e. *Institutions* > 0), we expect the sum of the coefficients θ_1 , θ_2 and θ_3 to be significantly positive, indicating that institutions attenuate the negative effect of macroeconomic instability on earnings management in developed economies. Similarly, when firm-year observations are from emerging market countries (i.e. *Emerging* = 1), and from countries with stronger institutions (i.e. *Institutions* > 0), we expect the sum of the coefficients θ_1 , θ_2 and θ_3 to be significantly negative, indicating that institutions attenuate the positive effect of macroeconomic instability on earnings management in emerging market economies.

Table 3. Variables description

Main independent variables	
<i>AEM_{itj}</i>	represents the accruals-based earnings management, based on the modified version of the model proposed by Jones (1991) to measure discretionary accruals, proposed by Dechow et al. (1995), by additionally considering return on assets (Kothari et al., 2005).
<i>REM_{itj}</i>	represents the real earnings management according to Roychowdhury (2006), by the sum of abnormal production costs (<i>ABN_PROD</i>), abnormal discretionary expenses (<i>ABN_DISX</i>) multiplied by minus one, and abnormal cash flows from operations (<i>ABN_CFO</i>) multiplied by minus one.
Main independent variables	
<i>MacroInstab_{jt}</i>	is the macroeconomic instability level for each year <i>t</i> and country <i>j</i> .
<i>Developed_j</i> (<i>Emerging_j</i>)	is a dummy variable, which equals one for firm-year observations from developed (emerging market) countries, and zero otherwise.
<i>Size_{itj}</i>	is the natural logarithm of end of year total assets.
<i>Return on Assets_{itj}</i>	is the net income scaled by end of year total assets.
<i>Long-Term Debt_{itj}</i>	is the end of year long-term debt scaled by end of year total assets.
<i>Growth_{itj}</i>	is the percentage change in sales from the year <i>t-1</i> to <i>t</i> .
<i>Loss_{itj}</i>	is a dummy variable, which equals one for firm-year observations if net income is lower than 0, and zero otherwise.
<i>Cash_{itj}</i>	is the annual net cash flow from operating activities divided by end of year total assets.
<i>Big Four_{itj}</i>	is a dummy variable, which equals one for firm-year observations if the firm's auditor is PwC, KPMG, EY, or DTT, and zero otherwise.
<i>IFRS_{itj}</i>	is a dummy variable, which equals one for firm-year observations referring to financial statements prepared according to IFRS standards only in post-IFRS mandatory period, and zero otherwise.
<i>Tangibility_{itj}</i>	is the property, plant, and equipment scaled by end of year total assets.
<i>Dissue_{itj}</i>	is the percentage change in total liabilities.
<i>Eissue_{itj}</i>	is the percentage change in common stock.
<i>Institutions_{itj}</i>	is the rule of law index, according to the World Justice Project (Kaufmann et al., 2009).
<i>Country Debt_{itj}</i>	is the total stock of loans and debt securities issued by nonfinancial corporations as a share of GDP, according to the IMF.
Robustness test variables	
<i>AEM_Alternative1_{itj}</i>	is an alternative measure of the accruals-based earnings management, based on the modified version of the model proposed by Jones (1991) to measure discretionary accruals, proposed by Dechow et al. (1995) without any additional regressor.
<i>AEM_Alternative2_{itj}</i>	is an alternative measure of the accruals-based earnings management, based on the modified version of the model proposed by Jones (1991) to measure discretionary accruals, proposed by Dechow et al. (1995), by additionally considering the one-year lag of total accruals (Dechow et al., 2012).
<i>REM_Alternative1_{itj}</i>	is an alternative measure of the real earnings management according to Roychowdhury (2006), by the sum of only the abnormal levels of discretionary expenses (<i>ABN_DISX</i>) multiplied by minus one, and the abnormal levels of productions costs (<i>ABN_PROD</i>).
<i>REM_Alternative2_{itj}</i>	is an alternative measure of the real earnings management according to Roychowdhury (2006), by the sum of only the abnormal levels of discretionary expenses (<i>ABN_DISX</i>) multiplied by minus one, and the abnormal levels of cash flows from operations (<i>ABN_CFO</i>) multiplied by minus one.

Equations (6) and (7) are estimated by using Ordinary Least Squares (OLS) approach¹², controlling for industry-, year-, and country-fixed effects. Moreover, given the evidence in previous literature that macroeconomic variables and institutions are endogenous (e.g., Acemoglu et al., 2003), we also estimate Equations (6) and (7) using two-stage least squares (2SLS), considering an instrument for institutions (see Section 5. Sensitivity and Additional Analyses). To adjust for possible cross-sectional and serial correlations, standard errors are corrected for firm-clustering effects

¹² Considering possible inconsistencies of the estimated parameters due to the truncation of the dependent variable (absolute values), we re-ran all AEM models considering Tobit (1958) regression approach, following previous earnings management literature (see i.e., Kim et al., 2012; Cassell et al., 2015). In untabulated results, the coefficients of the variables of interest remain unchanged from those presented in our main analysis.

(Petersen, 2009). In order to avoid outlier bias, we do not consider observations below (above) the 1st (99th) percentile for each continuous variable included in the estimation models¹³.

1.4. Empirical Findings

1.4.1. Macroeconomic Instability Index Measurement

Our main independent variable is the Macroeconomic Instability Index (*MacroInstab*) constructed by using principal component analysis (PCA) applied to six variables related to economic environment conditions, namely inflation rate, market capitalization, GDP per capita, current account balance, exports of goods and services, and unemployment rate (see Table 2 for description and measurement of each of those variables).

Table 4. Macroeconomic Instability Index: Principal component analysis

Panel A – Correlation among macroeconomic instability variables						
	1.	2.	3.	4.	5.	6.
1. <i>Inflation_{ij}</i>	1.0000					
2. <i>Market Cap_Invert_{ij}</i>	0.4033***	1.0000				
3. <i>GDPperCap_Invert_{ij}</i>	0.1571***	0.4521***	1.0000			
4. <i>Balance_Invert_{ij}</i>	0.0232***	0.3264***	0.3031***	1.0000		
5. <i>Exports_Invert_{ij}</i>	0.0483*	0.4141***	0.3241***	0.4275***	1.0000	
6. <i>Unemployment_{ij}</i>	0.0529*	0.0805**	0.1688***	0.3216***	0.2201***	1.0000

Panel B – Principal component analysis (<i>MacroInstab_{ij}</i>)				
Bartlett test = 938.19***				
KMO = 0.704				
Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	2.5259	1.3211	0.4210	0.4210
Factor2	1.2048	0.3534	0.2008	0.6218
Factor3	0.8514	0.2569	0.1419	0.7637
Factor4	0.5944	0.0984	0.0991	0.8627
Factor5	0.4960	0.1685	0.0827	0.9454
Factor6	0.3275	—	0.0546	1.0000
Variables	Factor1	Factor2	Uniqueness	
<i>Inflation_{ij}</i>	0.4997	-0.5088	0.4914	
<i>Market Cap_Invert_{ij}</i>	0.7207	-0.3179	0.3796	
<i>GDPperCap_Invert_{ij}</i>	0.6766	-0.3152	0.4428	
<i>Balance_Invert_{ij}</i>	0.7270	0.4091	0.3041	
<i>Exports_Invert_{ij}</i>	0.8228	0.2143	0.2770	
<i>Unemployment_{ij}</i>	0.3056	0.7295	0.3745	

Inflation_{ij} is the inflation according to the International Monetary Fund. *Market Capitalization_Invert_{ij}* is the stock market capitalization to GDP (inverted signal). *GDPperCap_Invert_{ij}* is the amount of GDP per capita according to the World Bank (inverted signal). *Balance_Invert_{ij}* is the current account balance over countries' GDP (inverted signal). *Exports_Invert_{ij}* is the exports of goods and services over countries' GDP (inverted signal). *Unemployment_{ij}* is the total unemployment (% of total labor force).

¹³ Our empirical findings remain the same by winsorizing each continuous variable included in the estimation models at 1% and 99% tail in order to avoid outliers.

Table 4, Panel A, shows the correlations among the selected countries' macroeconomics indicators used to construct the variable *MacroInstab*. As expected, all the indicators are positively and significantly correlated with one another. Panel B details the results of PCA considering the six selected countries' macroeconomics indicators. Also, both the Kaiser-Meyer-Olkin measure of adequacy ($KMO = 0.704$) and the Bartlett's test of sphericity ($\chi^2 = 938.19$, $p\text{-value} < 0.000$) suggest that PCA procedures are adequate.

Taking into consideration the more traditional rule of considering only eigenvalues greater than 1, the findings indicate the extraction of two factors, which explains around 70% of the total variables' variance. Thus, in order to extract only one index that represents the total variance of the six selected countries' macroeconomic indicators, we consider the weighted rank-sum criterion, in which, the values of the two factors obtained are weighted by the respective proportions of shared variance, with the subsequent ranking of the observations based on the findings obtained. This criterion is well accepted because it considers the performance of all the selected variables, since considering only the first factor may not consider the positive performance, for instance, obtained in a certain variable that may possibly share a considerable proportion of variance with the second factor (Favero and Belfiore, 2019).

Figure 1 shows the mean of *MacroInstab*, over the years, separately for the developed and emerging market countries. In general, the index clearly captures three moments of high levels of macroeconomic instability, namely the 1997 Asian financial crisis¹⁴, the 2002 stock market crash, and the 2007-2009 subprime mortgage crisis. Previous economic literature provides robust evidence of worldwide economic meltdown due to financial contagion for all three of those events (e.g., Arestis et al., 2005; Boschi, 2005; Samarakoon, 2011; Boubaker et al., 2016; McAleer et al., 2016). We also highlight that during the entire temporal window investigated, as expected, developed countries present, on average, lower levels of *MacroInstab* compared to emerging market ones. In fact, “[emerging market] countries have traditionally experienced much greater macroeconomic instability than [developed] economies” (Zagha, and Nankani, 2005, p. 95), either by the lack of resources of emerging market countries to sustain against economic downturns (Gurtner, 2010), or even by the higher levels of financial innovation in developed countries, which can alleviate the impact of economics booms and busts on macroeconomics (World Bank 2010).

¹⁴ Despite the high levels of the *MacroInstab* for the year 1997, we recognize the limitation of our analysis with regard to capturing greater instability for the 1997 Asian financial crisis given that we do not have enough data to calculate the index before that year for the purposes of comparison.

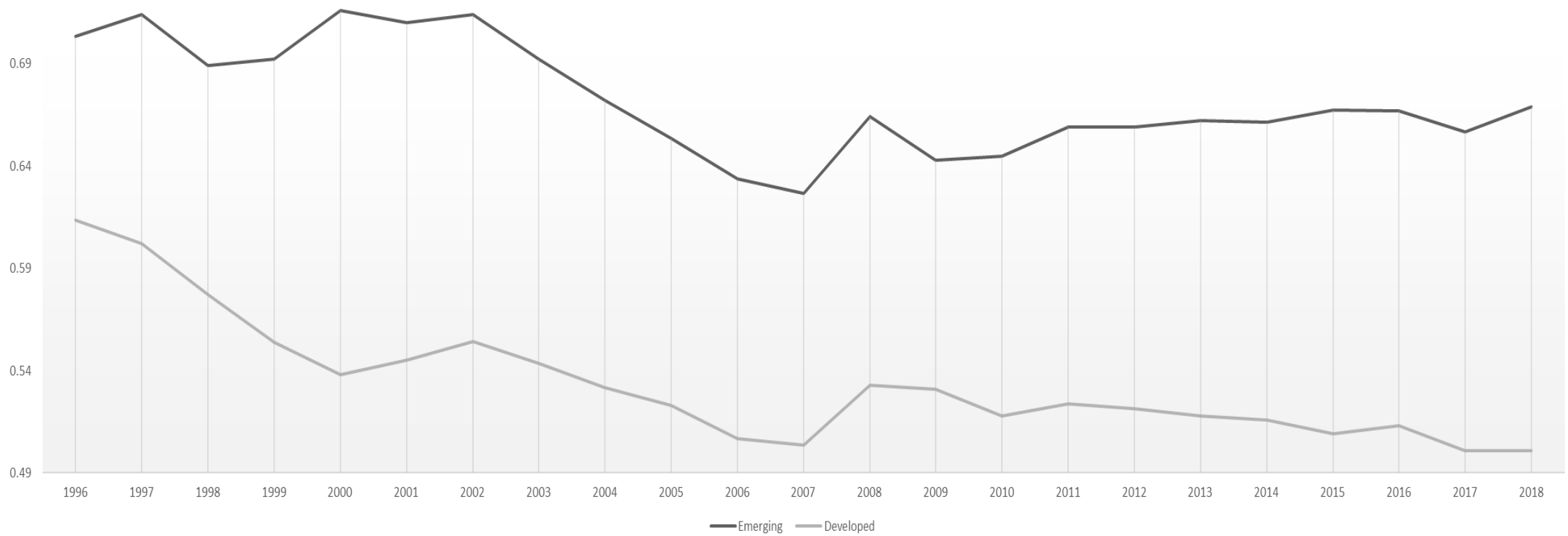


Figure 1. Temporal analysis of the Macroeconomy Instability Index

Table 5. Descriptive statistics of firm-level variables

Panel A: Developed Countries						
	N	Mean	Median	Max	Min	SD
<i>AEM</i>	19,900	0.0629***	0.0434	0.4847	0.0000	0.0639
<i>REM</i>	19,900	-0.0107***	0.0112	0.9142	-1.2407	0.2999
<i>Size</i>	19,900	20.3899***	20.2093	25.5024	15.0630	2.0289
<i>Return on Assets</i>	19,900	0.0126***	0.0308	0.2861	-0.7027	0.1065
<i>Long-Term Debt</i>	19,900	0.1741***	0.1488	0.6825	0.0000	0.1420
<i>Growth</i>	19,900	0.1230	0.0619	5.3761	-0.7788	0.4038
<i>Cash</i>	19,900	0.0556***	0.0676	0.4712	-0.6910	0.1179
<i>Tangibility</i>	19,900	0.6106***	0.5474	2.3125	0.0068	0.4241
<i>Dissue</i>	19,900	0.1572**	0.0466	5.4356	-0.7275	0.4972
<i>Eissue</i>	19,900	0.0667***	0.0000	2.8052	-0.6260	0.2349
<i>BigFour</i>	19,900	0.7569***	—	—	—	—
<i>IFRS</i>	19,900	0.6574**	—	—	—	—
<i>Loss</i>	19,900	0.2608***	—	—	—	—

Panel B: Emerging Market Countries						
	N	Mean	Median	Max	Min	SD
<i>AEM</i>	32,011	0.0721***	0.0509	0.4683	0.0000	0.0700
<i>REM</i>	32,011	0.0164***	0.0386	0.6254	-0.9522	0.2111
<i>Size</i>	32,011	20.2453***	20.1798	24.5111	16.4657	1.6512
<i>Return on Assets</i>	32,011	0.0268***	0.0287	0.2491	-0.4094	0.0684
<i>Long-Term Debt</i>	32,011	0.1225***	0.0913	0.5081	0.0000	0.1119
<i>Growth</i>	32,011	0.1259	0.0850	2.3754	-0.6350	0.2936
<i>Cash</i>	32,011	0.0460***	0.0500	0.4235	-0.4051	0.1020
<i>Tangibility</i>	32,011	0.5794***	0.5486	1.8152	0.0077	0.3492
<i>Dissue</i>	32,011	0.1692**	0.0802	3.6962	-0.6364	0.4105
<i>Eissue</i>	32,011	0.0909***	0.0000	2.3137	-0.3276	0.2683
<i>BigFour</i>	32,011	0.5069***	—	—	—	—
<i>IFRS</i>	32,011	0.6441**	—	—	—	—
<i>Loss</i>	32,011	0.1806***	—	—	—	—

Continuous variables. *AEM* is the accruals-based earnings management. *REM* is the real earnings management. *Size* is the natural logarithm of end of year total assets. *Return on Assets* is the net income scaled by end of year total assets. *Long-Term Debt* is the end of year long-term debt scaled by end of year total assets. *Growth* is the percentage change in sales. *Cash* is the annual net cash flow from operating activities divided by end of year total assets. *Tangibility* is the property, plant, and equipment scaled by end of year total assets. *Dissue* is the percentage change in total liabilities. *Eissue* is the percentage change in common stock. **Dummy variables.** *Big Four* is a dummy variable, which equals one for firm-year observations if the firm's auditor is PwC, KPMG, EY, or DTT, and zero otherwise. *IFRS* is a dummy variable, which equals one for firm-year observations referring to financial statements prepared according to IFRS standards only in post-IFRS mandatory period, and zero otherwise. *Loss* is a dummy variable, which equals one for firm-year observations if net income is lower than 0, and zero otherwise. The mean of dummy variables represents the percentage of firm-year observations that assumed value one.

*, **, *** denote significance difference of means considering Student's *t*-test (test of proportions) for continuous (dummy) variables between developed and emerging groups at 10%, 5%, and 1%, respectively.

1.4.2. Descriptive Statistics

Table 5 shows the descriptive statistics of the variables included in the estimation models, segregating the observations by developed and emerging market economies. Overall, the mean values of both *AEM* and *REM* are statistically lower for developed countries (0.0629 and -0.0107, respectively) when compared to the emerging market ones (0.0721 and 0.0164, respectively). This is consistent with previous accounting literature that provides empirical evidence of higher levels of earnings

management in emerging market countries, compared to developed ones (e.g., Lin and Wu, 2014; Lourenço et al. 2018).

Table 5 also suggests that firms from developed countries seem to be, on average, larger (*Size*) and less profitable (*Return on Assets*), and to issue more long-term debt (*Long-Term Debt*) compared to those from emerging market countries. Moreover, developed countries' firms also seem to have higher operating cash-flows (*Cash*), tangibility (*Tangibility*), and lower levels of growth concerning both total liabilities (*Dissue*) and common stock (*Eissue*). Finally, we also find evidence that developed countries present high proportions of firms audited by Big 4 auditors (*Big Four*), financial statements according to IFRS (*IFRS*), and reported losses (*Loss*).

Table 6 presents the Pearson correlation matrix between the continuous variables, with the developed (emerging market) countries sample presented below (above) the diagonal. The *MacroInstab* is negatively and statistically correlated with AEM (-0.0778, p -value < 0.000), and REM (-0.0343, p -value < 0.000) in developed countries. In addition, *MacroInstab* is positively correlated with both AEM (0.0071, p -value > 0.10) and REM (0.0025, p -value > 0.10) emerging market countries, even though not statistically significant at conventional levels. Although based only on univariate analysis, these findings are overall aligned with H1 and H2, which state that the level of macroeconomic instability is negatively (positively) associated with the level of earnings management in developed (emerging market) countries.

We observe that *AEM* and *REM* are also significantly correlated at conventional levels with the majority of control variables, whether in developed or emerging market countries, suggesting the importance of controlling for these variables in multivariate analyses as observed in the previous literature (e.g., Jeanjean and Stolowy 2008; Doukakis, 2014; Black et al., 2017; Lo et al., 2017; Commerford et al., 2018; Larson et al., 2018; Trimble, 2018; Campa et al. 2019; Kim et al., 2019; Pham et al. 2019; Fan et al., 2020; Cunningham et al., 2020). Finally, multicollinearity problems also seem to be negligible considering that the association between independent variables is still below 0.65.

1.4.3. Regression Results

1.4.3.1. The Effect of Macroeconomic Instability on Earnings Management

Table 7 reports the H1 and H2 test results using OLS regression estimates, according to Equation (6). Taking into account developed countries as the basis (i.e., *Developed* = 1), for *AEM* estimation we find that the coefficient *MacroInstab* is significantly positive (0.033***, t -stat = 3.05), and *MacroInstab x Developed* is significantly negative (-0.055***, t -stat = -3.34). Moreover, we find that the sum of *MacroInstab* and *MacroInstab x Developed* is negative (0.033 - 0.055 = -0.022). These empirical findings suggest that higher levels of macroeconomic instability are negatively (positively) associated with accruals-based earnings management in developed (emerging market) countries. In other words, it seems that managers in developed (emerging market) countries engage less (more) in

earnings management by accruals when the macroeconomic environment where firms are situated is more unstable. Moreover, for *REM* estimation, the coefficient *MacroInstab* is significantly negative (-0.110***, *t*-stat = -2.58), and *MacroInstab x Developed* is not statistically significant at conventional levels (-0.026, *t*-stat = -0.28). These empirical findings suggest that higher levels of macroeconomic instability are negatively associated with real earnings management, whether in developed or emerging market countries. In other words, it seems that managers from both developed and emerging market countries engage less in earnings management by real operations when the macroeconomic environment where firms are situated is more unstable.

Furthermore, intuitively, taking into account emerging market countries as the basis (i.e. *Emerging* = 1), our results reveal the same interpretation, where, for *AEM* estimation, *MacroInstab* is significantly negative (-0.022*, *t*-stat = -1.68), *MacroInstab x Emerging* is significantly negative (0.055***, *t*-stat = 3.34), and the sum of *MacroInstab* and *MacroInstab x Emerging* is positive (-0.022 + 0.055 = 0.033); and for *REM* estimation, *MacroInstab* is significantly negative (-0.135***, *t*-stat = -1.72), and *MacroInstab x Developed* is not statistically significant at conventional levels (0.026, *t*-stat = 0.28). These findings support H1 and H2.

Previous accounting studies in developed countries already suggest lower levels of earnings management during periods of severe instability of macroeconomic environment (e.g., Kousenidis et al., 2013; Filip and Raffournier, 2014; Trombetta and Imperatore, 2014; Arthur et al., 2015; Cimini, 2015). However, these studies are concentrated only in *AEM*. Therefore, despite the relevance of earlier accounting literature in investigating the association between macroeconomics and earnings management through *AEM*, “examination of [*REM*] is critical, because while accrual-based earnings management activities have no direct cash flow consequences, real earnings management does affect cash flows” (Doukakis 2014, 552). We add to previous studies and consider in our analyses both *AEM* and *REM*.

Hence, we argue that in developed countries – characterized, e.g., by better corporate governance systems and government regulation (Bhagat et al., 2011), greater monitoring by shareholders and protection of minority investors (Djankov et al., 2008), high of enforcement (Brown et al., 2014; Preiato et al., 2015), and greater investor sophistication (Lima et al., 2018) – a higher level of macroeconomic instability generates a generalized feeling of conservatism, increasing the scrutiny of the financial reporting, and therefore a lower level of earnings management. Furthermore, high levels of macroeconomic instability are likely to increase the costs associated with earnings manipulations, given that such managerial practices could arise from the possible actions by auditors, and legal liability (Trombetta and Imperatore, 2014), especially in developed countries distinguished by a superior level of audit quality.

Table 6. Correlation matrix

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. MacroInstab	—	0.0071	0.0025	0.2404***	0.0281***	0.1262***	0.0342***	0.0151**	0.0727***	0.0475***	0.0247***	-0.5826***	-0.1107***
2. AEM	-0.0778***	—	0.0035	-0.0775***	-0.0103	-0.0687***	0.1262***	-0.1118***	-0.1632***	0.2009***	0.1204***	-0.0688***	0.1074***
3. REM	-0.0343***	0.0169*	—	-0.0108	-0.4110***	0.0443***	-0.0355***	-0.2641***	0.0250***	-0.0123*	0.0143*	-0.0011	0.0353***
4. Size	-0.0392***	-0.1917***	-0.0393***	—	0.1426***	0.3587***	0.0410***	0.0843***	0.0251***	0.0128*	-0.0006	-0.3720***	0.1411***
5. Return on Assets	-0.0503***	-0.0838***	-0.2883***	0.2492***	—	-0.0851***	0.2088***	0.4300***	-0.0152**	0.0443***	-0.0190***	-0.0650***	-0.0992***
6. Long-Term Debt	0.0941***	-0.0938***	0.0668***	0.2423***	-0.0630***	—	0.0186***	-0.0124*	0.1957***	0.0525***	-0.0038	-0.0917***	-0.1545***
7. Growth	-0.0629***	0.1209***	-0.0380***	-0.0422***	0.0800***	0.0085	—	-0.0296***	-0.0837***	0.3321***	0.1337***	-0.0583***	0.0050
8. Cash	0.0456***	-0.0971***	-0.2501***	0.2014***	0.6603***	-0.0246***	-0.0209**	—	0.2334***	-0.1466***	-0.1078***	-0.0017	-0.1365***
9. Tangibility	0.1804***	-0.1370***	0.0211**	0.0899***	-0.0240***	0.2142***	-0.0684***	0.1470***	—	-0.1211***	-0.0721***	0.0371***	-0.2479***
10. Dissue	-0.0685***	0.1924***	-0.0249***	-0.0277***	0.0214**	0.0534***	0.3077***	-0.0709***	-0.0875***	—	0.1132***	-0.0752***	0.0309***
11. Eissue	-0.0175*	0.1086***	0.0225**	-0.0369***	-0.1009***	0.0140*	0.1606***	-0.1341***	-0.0115	0.2068***	—	-0.0737***	0.0561***
12. Institutions	-0.4011***	-0.0076	-0.0416***	0.0837***	0.0003	0.0090	0.0463***	0.0178*	0.0442***	0.0443***	0.0568***	—	-0.1869***
13. Country Debt	-0.6448***	0.0181*	-0.0135	0.1647***	0.0031	0.0007	0.0301***	-0.0617***	-0.1300***	0.0299***	0.0236***	0.2930***	—

This table presents the Pearson correlation matrix between the continuous variables. Developed (emerging) countries sample results are presented below (above) the diagonal. *MacroInstab* is the macroeconomic instability index for each year t and country j . *AEM* is the accruals-based earnings management. *REM* is the real earnings management. *Size* is the natural logarithm of end of year total assets. *Return on Assets* is the net income scaled by end of year total assets. *Leverage* is the end of year total liabilities scaled by end of year total assets. *Growth* is the percentage change in sales. *Cash* is the annual net cash flow from operating activities divided by end of year total assets. *Tangibility* is the property, plant, and equipment scaled by end of year total assets. *Dissue* is the percentage change in total liabilities. *Eissue* is the percentage change in common stock. *Institutions* is the rule of law index, according to the World Justice Project (Kaufmann et al., 2009). *Country Debt* is the total stock of loans and debt securities issued by nonfinancial corporations as a share of GDP, according to the IMF.

***, **, and * indicate significance at 1%, 5%, and 10% levels of statistical significance for two-tailed tests.

Table 7. Effect of macroeconomic instability on earnings management

	<i>Type Country (i.e. Developed = 1)</i>				<i>Type Country (i.e. Emerging = 1)</i>			
	<i>AEM</i>		<i>REM</i>		<i>AEM</i>		<i>REM</i>	
	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat
<i>const</i>	0.171***	4.83	-0.260**	-2.10	0.142***	12.17	-0.162**	-2.29
<i>MacroInstab</i>	0.033***	3.05	-0.110***	-2.58	-0.022*	-1.68	-0.135*	-1.72
<i>MacroInstab x Developed</i>	-0.055***	-3.34	-0.026	-0.28	—	—	—	—
<i>MacroInstab x Emerging</i>	—	—	—	—	0.055***	3.34	0.026	0.28
Control Variables								
<i>Size</i>	-0.004***	-16.81	0.014***	7.31	-0.004***	-16.81	0.014***	7.31
<i>Return on Assets</i>	0.011	1.37	-0.871***	-27.81	0.011	1.37	-0.871***	-27.81
<i>Long-Term Debt</i>	-0.018***	-5.95	0.036**	1.97	-0.018***	-5.95	0.036**	1.97
<i>Growth</i>	0.010***	7.82	0.007**	2.02	0.010***	7.82	0.007**	2.02
<i>Loss</i>	0.007***	6.86	0.003	0.76	0.007***	6.86	0.003	0.76
<i>Cash Flows</i>	-0.019***	-2.75	-0.256***	-17.87	-0.019***	-2.75	-0.256***	-17.87
<i>Big Four</i>	-0.001	-1.32	-0.028***	-4.70	-0.001	-1.32	-0.028***	-4.70
<i>IFRS</i>	-0.005***	-4.37	0.015***	2.96	-0.005***	-4.37	0.015***	2.96
<i>Tangibility</i>	-0.017***	-15.10	0.022***	3.03	-0.017***	-15.10	0.022***	3.03
<i>Dissue</i>	0.022***	21.52	-0.013***	-4.57	0.022***	21.52	-0.013***	-4.57
<i>Eissue</i>	0.016***	11.30	-0.007*	-1.70	0.016***	11.30	-0.007*	-1.70
<i>AEM</i>	—	—	-0.004	-0.18	—	—	-0.004	-0.18
<i>REM</i>	-0.000	-0.18	—	—	-0.000	-0.18	—	—
<i>Institutions</i>	0.002	0.88	-0.008	-0.74	0.002	0.88	-0.008	-0.74
<i>Country Debt</i>	0.000***	5.64	-0.000***	-2.81	0.000***	5.64	-0.000***	-2.81
<i>Developed</i>	-0.029	-0.80	0.098	0.73	—	—	—	—
<i>Emerging</i>	—	—	—	—	0.029	0.80	-0.098	-0.73
<i>Country-FE</i>	YES		YES		YES		YES	
<i>Industry-FE</i>	YES		YES		YES		YES	
<i>Year-FE</i>	YES		YES		YES		YES	
Observations	51,911		51,911		51,911		51,911	
R-squared	0.1073		0.1539		0.1073		0.1539	

In AEM (REM) estimations, the dependent variable is the absolute amount of discretionary accruals (real earnings management). *MacroInstab* is the Macroeconomic Instability Index for each year t and country j . *Size* is the natural logarithm of end of year total assets. *Return on Assets* is the net income scaled by end of year total assets. *Long-Term Debt* is the end of year total long-term debt scaled by end of year total assets. *Growth* is the percentage change in total liabilities. *Cash* is the annual net cash flow from operating activities divided by end of year total assets. *Tangibility* is the property, plant, and equipment scaled by end of year total assets. *Dissue* is the percentage change in total liabilities. *Eissue* is the percentage change in common stock. *Big Four* is a dummy variable, which equals one for firm-year observations if the firm's auditor is PwC, KPMG, EY, or DTT, and zero otherwise. *IFRS* is a dummy variable, which equals one for firm-year observations referring to financial statements prepared according to IFRS standards only in post-IFRS mandatory period, and zero otherwise. *Loss* is a dummy variable, which equals one for firm-year observations if net income is lower than 0, and zero otherwise. *Institutions* is the rule of law index for each year t and country j , according to the World Justice Project (Kaufmann et al., 2009). *Country Debt* is the total stock of loans and debt securities issued by nonfinancial corporations as a share of GDP, according to the IMF. Estimations based on ordinary least squares regression.

***, **, and * indicate significance at 1%, 5%, and 10% levels of statistical significance for two-tailed tests.

Moreover, the weaker institutional environment of emerging market countries – characterized, e.g., by lower levels of enforcement, compliance (e.g., Samaha and Khlif, 2016), and audit quality – could in fact create an enabling environment for firms in these markets to become more involved in accrual practices. From this perspective, therefore, managers from emerging market countries could engage in more AEM during high levels of macroeconomic instability to avoid, for instance, a large drop of the firm’s stock price that would have negative consequences on their compensation and variable bonus payments (Charitou et al., 2007). Also, the negative association between the macroeconomic instability and REM in emerging market countries could be the result of a potential trade-off between the two different earnings manipulation practices. In fact, the accounting literature provides results on this trade-off between AEM and REM (Cohen, 2008; Zang, 2012; Wongsunwai, 2013; Braam et al., 2015; Ipino and Parbonetti, 2017; Lara et al., 2020), generally arguing on the relative costs of the two earnings management activities (Zang, 2012). In this way, when reaching their earnings targets by AEM, firms from emerging markets can reduce REM. Indeed, previous literature also demonstrates that firms domiciled in less stable countries with looser legal regimes are more likely to manage earnings through AEM than REM (Durnev and Magnan, 2017). Besides, “REM increases a firm’s cost of capital and imposes greater long-term costs on shareholders because of its negative impact on future cash flows” (Paredes and Wheatley, 2017, p. 39). Thus, managers in these markets could then take advantage of the looser enforcement to maintain their good results in periods of macroeconomic instability through AEM, avoiding negative impact on future cash flows linked to REM.

In Table 7, concerning control variables, we also find evidence that smaller, less leveraged, lower growth firms, and those under local GAAP (*IFRS*) standards, are engaged with more (less) levels of AEM (REM), whether in developed or emerging market countries. Finally, in AEM (REM) estimations, a negative and statistically significant coefficient is found for REM (AEM), but only in emerging market country samples, suggesting that managers use accrual and real operations earnings management tactics as substitute mechanisms in those markets.

1.4.3.2. Effect of Macroeconomic Instability on Earnings Management: The Role of Institutions

Table 8 reports the H3 test results using OLS regression estimates, according to Equation (7). Taking into account developed countries as the basis (i.e., *Developed* = 1), for AEM estimation, we find that the coefficient *MacroInstab* is significantly positive (0.047***, *t*-stat = 3.16), *MacroInstab* \times *Developed* is significantly negative (-0.130***, *t*-stat = -4.28), and *MacroInstab* \times *Developed* \times *Institutions* is significantly positive (0.059***, *t*-stat = 2.72). We also find that the sum of *MacroInstab* and *MacroInstab* \times *Developed* is negative (0.047 - 0.130 = -0.083) and lower than the sum of *MacroInstab*, *MacroInstab* \times *Developed* and *MacroInstab* \times *Developed* \times *Institutions* (0.047 - 0.130 + 0.059 = -0.024). These empirical findings suggest that higher levels of macroeconomic instability are negatively associated with accruals-based earnings management in developed countries,

but the association is lower in countries with stronger institutions. In other words, it seems that in developed countries with stronger institutions, the negative effect of macroeconomic instability on earnings management by accruals is dampened. Moreover, for *REM* estimation, the coefficient *MacroInstab* is significantly negative (-0.129***, *t*-stat = -2.46), and both *MacroInstab x Developed* (-0.058, *t*-stat = -0.51) and *MacroInstab x Developed x Institutions* (0.013, *t*-stat = 0.17) are not statistically significant at conventional level. These empirical findings suggest that higher levels of macroeconomic instability are negatively associated with real earnings management in developed economies, whether in countries with weaker or stronger institutions.

Furthermore, considering emerging market countries as the basis (i.e., *Emerging* = 1), our results reveal similar results. More specifically, for *AEM* estimation we find that the coefficient *MacroInstab* is significantly negative (-0.084***, *t*-stat = -3.10), *MacroInstab x Emerging* is significantly positive (0.130***, *t*-stat = 4.28), and *MacroInstab x Emerging x Institutions* is significantly negative (-0.059***, *t*-stat = -2.72). We also find that the sum of *MacroInstab* and *MacroInstab x Emerging* is positive (-0.084 + 0.130 = 0.046) and higher than the sum of *MacroInstab x Emerging* and *MacroInstab x Emerging x Institutions* (-0.084 + 0.130 - 0.059 = -0.013). These empirical findings suggest that higher levels of macroeconomic instability are positively associated with accruals-based earnings management in emerging market countries, but the association is lower in countries with stronger institutions. In other words, it seems that in emerging market countries with stronger institutions the positive effect of macroeconomic instability on earnings management by accruals is dampened. Moreover, for *REM* estimation the coefficient *MacroInstab* is significantly negative (-0.187*, *t*-stat = -1.81), and both *MacroInstab x Emerging* (0.058, *t*-stat = 0.51) and *MacroInstab x Emerging x Institutions* (-0.013, *t*-stat = -0.17) are not statistically significant at conventional level. These empirical findings suggest that higher levels of macroeconomic instability are negatively associated with real earnings management in emerging market economies, whether in countries with weaker or stronger institutions.

Considering the empirical estimations as a whole, our empirical findings support the prediction that, in fact, the instability of macroeconomic environment seems to be associated with manipulation of accounting amounts, whether in developed or emerging market countries. However, our results reveal that in periods of high macroeconomic instability, firms from developed (emerging market) economies are more likely to decrease (increase) accruals-based earning management practices. Moreover, we demonstrate that firms of both developed and emerging market countries are more likely to decrease real earnings management in periods of high macroeconomic instability. Finally, our findings also demonstrate that institutions play an important role in dampening the association between macroeconomic instability and accruals-based earnings management, whether in developed or emerging market countries. Focusing our analysis on macroeconomic instability instead of specific periods of financial crisis, we provide a more comprehensive view of the role played by the macroeconomic environment as key determinant of accounting quality.

Table 8. Effect of macroeconomic instability on earnings management: The role of institutions

	<i>Type Country (i.e. Developed = 1)</i>				<i>Type Country (i.e. Emerging = 1)</i>			
	<i>AEM</i>		<i>REM</i>		<i>AEM</i>		<i>REM</i>	
	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat
<i>const</i>	0.163***	4.48	-0.251**	-1.99	0.197***	9.94	-0.164**	-2.09
<i>MacroInstab</i>	0.047***	3.16	-0.129**	-2.46	-0.084***	-3.10	-0.187*	-1.81
<i>MacroInstab x Developed</i>	-0.130***	-4.28	-0.058	-0.51	—	—	—	—
<i>MacroInstab x Developed x Institutions</i>	0.059***	2.72	0.013	0.17	—	—	—	—
<i>MacroInstab x Emerging</i>	—	—	—	—	0.130***	4.28	0.058	0.51
<i>MacroInstab x Emerging x Institutions</i>	—	—	—	—	-0.059***	-2.72	-0.013	-0.17
Control Variables								
<i>Size</i>	-0.004***	-16.80	0.014***	7.30	-0.004***	-16.80	0.014***	7.30
<i>Return on Assets</i>	0.012	1.41	-0.871***	-27.81	0.012	1.41	-0.871***	-27.81
<i>Long-Term Debt</i>	-0.018***	-5.87	0.035*	1.95	-0.018***	-5.87	0.035*	1.95
<i>Growth</i>	0.010***	7.85	0.007**	2.03	0.010***	7.85	0.007**	2.03
<i>Loss</i>	0.007***	6.88	0.004	0.77	0.007***	6.88	0.004	0.77
<i>Cash Flows</i>	-0.019***	-2.74	-0.257***	-17.88	-0.019***	-2.74	-0.257***	-17.88
<i>Big Four</i>	-0.001	-1.26	-0.028***	-4.69	-0.001	-1.26	-0.028***	-4.69
<i>IFRS</i>	-0.006***	-4.74	0.015***	3.02	-0.006***	-4.74	0.015***	3.02
<i>Tangibility</i>	-0.017***	-15.02	0.022***	3.04	-0.017***	-15.02	0.022***	3.04
<i>Dissue</i>	0.022***	21.50	-0.013***	-4.59	0.022***	21.50	-0.013***	-4.59
<i>Eissue</i>	0.016***	11.26	-0.007*	-1.67	0.016***	11.26	-0.007*	-1.67
<i>AEM</i>	—	—	-0.003	-0.16	—	—	-0.003	-0.16
<i>REM</i>	-0.000	-0.16	—	—	-0.000	-0.16	—	—
<i>Institutions</i>	0.024**	2.55	-0.042	-1.42	-0.031***	-2.79	-0.016	-0.39
<i>Country Debt</i>	0.000***	6.93	-0.000***	-2.75	0.000***	6.93	-0.000***	-2.75
<i>Developed</i>	0.034	0.84	0.087	0.62	—	—	—	—
<i>Emerging</i>	—	—	—	—	-0.034	-0.84	-0.087	-0.62
<i>Developed x Institutions</i>	-0.056***	-3.93	0.026	0.53	—	—	—	—
<i>Emerging x Institutions</i>	—	—	—	—	0.056***	3.93	-0.026	-0.53
<i>MacroInstab x Institutions</i>	-0.024	-1.51	0.034	0.77	0.035**	2.17	0.047	0.71
<i>Country-FE</i>	YES		YES		YES		YES	
<i>Industry-FE</i>	YES		YES		YES		YES	
<i>Year-FE</i>	YES		YES		YES		YES	
Observations	51,911		51,911		51,911		51,911	
R-squared	0.1073		0.1539		0.1073		0.1539	

In AEM (REM) estimations, the dependent variable is the absolute amount of discretionary accruals (real earnings management). *MacroInstab* is the macroeconomic instability index for each year *t* and country *j*. *Size* is the natural logarithm of end of year total assets. *Return on Assets* is the net income scaled by end of year total assets. *Long-Term Debt* is the end of year total long-term debt scaled by end of year total assets. *Growth* is the percentage change in total liabilities. *Cash* is the annual net cash flow from operating activities divided by end of year total assets. *Tangibility* is the property, plant, and equipment scaled by end of year total assets. *Dissue* is the percentage change in total liabilities. *Eissue* is the percentage change in common stock. *Big Four* is a dummy variable, which equals one for firm-year observations if the firm's auditor is PwC, KPMG, EY, or DTT, and zero otherwise. *IFRS* is a dummy variable, which equals one for firm-year observations referring to financial statements prepared according to IFRS standards only in post-IFRS mandatory period, and zero otherwise. *Loss* is a dummy variable, which equals one for firm-year observations if net income is lower than 0, and zero otherwise. *Institutions* is the rule of law index for each year *t* and country *j*, according to the World Justice Project (Kaufmann et al., 2009). *Country Debt* is the total stock of loans and debt securities issued by nonfinancial corporations as a share of GDP, according to the IMF. Estimations based on ordinary least squares regression.

***, **, and * indicate significance at 1%, 5%, and 10% levels of statistical significance for two-tailed tests.

1.5. Sensitivity and Additional Analyses

Striving for more robustness in our results, we also perform several robustness checks. First, considering potential bias of OLS estimations, given that previous literature suggests that macroeconomic variables and institutions are endogenous (e.g., Acemoglu et al., 2001; Acemoglu et al., 2003; James, 2013; Assenova and Regele, 2017), we also estimate Equations (6) and (7) using the 2SLS estimation method to mitigate such potential endogenous issues. Following previous economic literature (Acemoglu et al., 2003; James, 2013), we instrument institutions using the settler mortality rates for each country (*Mortality*)¹⁵, treating macroeconomic instability as exogenous¹⁶. The results are presented in Table 9, Panels A and B. Overall, the results regarding the effect of macroeconomic instability on earnings management remain the same as those presented in our main analysis, suggesting that when facing higher macroeconomic instability, firms from developed (emerging market) countries decrease (increase) the level of accruals-based earnings management, and both types of countries decrease the level of real earnings management (Table 9, Panel A). Moreover, by considering the role of institutions, our findings also confirm the estimations of our main analysis, suggesting that the association between macroeconomic instability and accruals-based earnings management is lower in countries with stronger institutions, whether in developed or emerging market countries (Table 9, Panel B).

Second, considering the large representativeness of firm-year observations from Hong Kong (China) in developed (emerging market) countries, we also estimate Equations (6) and (7) without those observations, in order to check if the exclusion of such observations materially changes our inferences (see Table 10, Panel A). Tirth, although all of our estimations are controlled for industry fixed effects, differences in industry characteristics can also vary between countries and consequently cover what is being identified as developed or emerging market countries. In this sense, to mitigate possible differences between the industries of firms in the two groups of countries, we estimate our econometric models considering only manufacturing firms (SIC 2000-4000), from both developed and emerging market countries (see Table 10, Panel B).

¹⁵ *Mortality* is the mortality rates of soldiers, bishops, and sailors stationed in the colonies between the 17th and 19th centuries, retrieved from Acemoglu et al. (2001). For more details about settler mortality as an appropriate instrument for institutions, see, e.g., Acemoglu et al. (2001) and Acemoglu et al. (2003).

¹⁶ Our simplest strategy of instrumenting for institutions and treating macroeconomic instability as exogenous seems to be “conservative”, given that “it stacks the cards against finding a substantial role for institutions and in favor of finding an important role for macro policy variables” (Acemoglu et al., 2003, p. 70). However, we also estimate Equations (6) and (7) by including one-year lag of *MacroInstab* as an instrument for macroeconomic instability, similarly to the robustness checks of Acemoglu et al. (2003). The coefficient of our independent variables remains the same as those presented in our main estimations (untabulated).

Table 9. Macroeconomic instability, institutions, and earnings management: Endogeneity issues

Panel A – Macroeconomic instability and earnings management				
	<i>Type Country</i> <i>(i.e. Developed = 1)</i>		<i>Type Country</i> <i>(i.e. Emerging = 1)</i>	
	<i>AEM</i>	<i>REM</i>	<i>AEM</i>	<i>REM</i>
	Coeff.	Coeff.	Coeff.	Coeff.
<i>const</i>	0.141*** (19.29)	-0.196*** (-7.50)	0.139*** (9.06)	-0.114** (-2.08)
<i>MacroInstab</i>	0.033*** (3.23)	-0.110*** (-2.99)	-0.022* (-1.83)	-0.132*** (-3.02)
<i>MacroInstab x Developed</i>	-0.056*** (-3.76)	-0.022 (-0.42)	—	—
<i>MacroInstab x Emerging</i>	—	—	0.056*** (3.76)	0.022 (0.42)
<i>Control variables</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
<i>Country-, Industry-, and Year-FE</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
Observations	51,911	51,911	51,911	51,911
R-squared	0.1073	0.1539	0.1073	0.1539
Panel B – Macroeconomic instability, institutions, and earnings management				
	<i>Type Country</i> <i>(i.e. Developed = 1)</i>		<i>Type Country</i> <i>(i.e. Emerging = 1)</i>	
	<i>AEM</i>	<i>REM</i>	<i>AEM</i>	<i>REM</i>
	Coeff.	Coeff.	Coeff.	Coeff.
<i>const</i>	-0.028 (-0.85)	-0.11 (-0.60)	0.495*** (-9.73)	0.24 (-0.63)
<i>MacroInstab</i>	0.290*** (-5.30)	-0.075 (-0.25)	-0.519*** (-6.82)	-0.52 (-0.92)
<i>MacroInstab x Developed</i>	-0.364*** (-5.95)	-0.316 (-0.93)	—	—
<i>MacroInstab x Developed x Institutions</i>	0.285*** (-5.91)	0.096 (-0.36)	—	—
<i>MacroInstab x Emerging</i>	—	—	0.571*** (-7.29)	0.382 (-0.66)
<i>MacroInstab x Emerging x Institutions</i>	—	—	-0.380*** (-7.44)	-0.125 (-0.33)
<i>Control variables</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
<i>Country-, Industry-, and Year-FE</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
Observations	51,911	51,911	51,911	51,911
R-squared	0.1073	0.1539	0.1073	0.1539

In AEM (REM) estimations, the dependent variable is the absolute amount of discretionary accruals (real earnings management). *MacroInstab* is the macroeconomic instability index for each year t and country j . Control variables inserted in all estimations (see Table 3 – Variables description). Estimations based on two-stage least squares regression.

***, **, and * indicate significance at 1%, 5%, and 10% levels of statistical significance for two-tailed tests.

Fourth, considering the unbalanced number of firm-year observations from developed and emerging market countries, we also re-estimate our main model after matching the number of observations between developed and emerging market countries using the propensity score matching (PSM) methodology, with no replacement, by using the control variables analyzed in Equations (6) and (6). With this procedure, we select only observations from the two types of countries with similar firm-level incentives, and therefore, check if our empirical findings are robust based on this sub-sample (see Table 10, Panel C). Fifth, following Chen et al. (2018), in order to mitigate potential bias and incorrect inferences linked to Type I and Type II errors in AEM and REM estimations, we

additionally include among the control variables the regressors of the first-step regressions in Equations (6) and (7) (see Table 10, Panel D).

Sixth, we also test if our results are sensitive to the debt-structure of firms from the developed and emerging market countries. Previous literature provides evidence that corporate debt is an important factor in explaining earnings management (e.g., Rodríguez-Pérez and Van Hemmen, 2010; Othman and Zeghal, 2006; Zhong et al., 2007), even though that literature offers mixed results. Additionally, firms from developed countries present different corporate debt-structures from those from emerging market countries (e.g., Stephan et al., 2011). From this perspective, differences in the way firms issue debt can also vary between countries and consequently cover what is being identified as developed or emerging market countries. Therefore, to mitigate possible differences across firms from the two types of countries, we perform another PSM by considering only firms with similar equity-based structures. More specifically, we create the variable *Equity Structure*, which is the total equity over total assets for each firm-year, and selected firms from the two types of countries, by using PSM, with similar *Equity Structure*¹⁷. Then, we check if our empirical findings are robust based on this sub-sample (see Table 10, Panel E). Overall, the robustness checks in Table 10 provide fundamentally the same results as those presented in our main estimations regarding the coefficients of *MacroInstab*, *Developed (Emerging)* and *Institutions* variables.

Seventh, in order to mitigate both measurement errors and bias intrinsic to the estimations process of traditional earnings management variables (Trimble, 2018), we estimate our main model by considering alternative measures for both AEM and REM. More specifically, we take into account the Modified Jones model proposed by Dechow et al. (1995) without any additional variable (*AEM_Alternative1*), and include the one-year lag of total accruals (*AEM_Alternative2*) as suggested by Dechow et al. (2012). Furthermore, instead of considering the overall sum of *ABN_PROD*, *ABN_CFO*, and *ABN_DISX*, we follow previous literature (Cohen and Zarowin, 2010; Zang, 2012; Abad et al., 2018) and segregate REM in order to form two alternative variables for real operations earnings management – one variable by summing only the abnormal levels of productions costs and abnormal levels of discretionary expenses (*REM_Alternative1*), and the other by summing only the abnormal levels of cash flows from operations and abnormal levels of discretionary expenses (*REM_Alternative2*). Eighth, we also proceed in our AEM estimations by considering Tobit (1958) regression instead of traditional OLS approach, due to potential inconsistencies of the estimated parameters given the truncation of the dependent variable (absolute values). Untabulated findings reveal that our results remain whether considering different proxies for both AEM and REM, or considering Tobit regression estimates instead of traditional OLS ones.

¹⁷ In order to check if the sub-samples in fact are formed by firms with similar debt-structure, we compare the mean of *Equity Structure* of firms from developed (mean = 0.4546) and emerging market countries (mean = 0.4532). Traditional *t*-Student statistics reveal no differences between the two groups at conventional levels (*t*-stat = 0.6731, *p*-value = 0.5009).

Table 10. Robustness tests

Panel A – Excluding China and Hong Kong

	<i>Type Country (i.e. Developed = 1)</i>				<i>Type Country (i.e. Emerging = 1)</i>			
	<i>AEM</i>		<i>REM</i>		<i>AEM</i>		<i>REM</i>	
	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat
<i>const</i>	0.160***	4.31	-0.231***	-1.75	0.180***	6.90	0.023	0.17
<i>MacroInstab</i>	0.024	1.39	-0.147***	-2.21	-0.075**	-2.33	-0.400***	-2.67
<i>MacroInstab x Developed</i>	-0.099***	-2.69	-0.251	-1.53	—	—	—	—
<i>MacroInstab x Developed x Instituitons</i>	0.051*	1.88	0.104	0.85	—	—	—	—
<i>MacroInstab x Emerging</i>	—	—	—	—	0.099***	2.69	0.252	1.53
<i>MacroInstab x Emerging x Instituitons</i>	—	—	—	—	-0.051*	-1.88	-0.105	-0.85
<i>Control variables</i>	YES		YES		YES		YES	
<i>Country-, Industry-, and Year-FE</i>	YES		YES		YES		YES	
Observations	37,404		37,404		37,404		37,404	
R-squared	0.1057		0.1402		0.1057		0.1402	

Panel B – Only firms from SIC 2000-4000

	<i>Type Country (i.e. Developed = 1)</i>				<i>Type Country (i.e. Emerging = 1)</i>			
	<i>AEM</i>		<i>REM</i>		<i>AEM</i>		<i>REM</i>	
	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat
<i>const</i>	0.153***	2.67	-0.607**	-2.53	0.202***	8.10	-0.250**	-2.31
<i>MacroInstab</i>	0.068***	3.54	-0.106	-1.41	-0.068**	-2.01	-0.309**	-1.98
<i>MacroInstab x Developed</i>	-0.137***	-3.57	-0.203	-1.19	—	—	—	—
<i>MacroInstab x Developed x Instituitons</i>	0.044*	1.58	0.131	1.08	—	—	—	—
<i>MacroInstab x Emerging</i>	—	—	—	—	0.137***	3.57	0.203	1.19
<i>MacroInstab x Emerging x Instituitons</i>	—	—	—	—	-0.044*	-1.58	-0.131	-1.08
<i>Control variables</i>	YES		YES		YES		YES	
<i>Country-, Industry-, and Year-FE</i>	YES		YES		YES		YES	
Observations	30,445		30,445		30,445		30,445	
R-squared	0.1131		0.1980		0.1131		0.1980	

Panel C – PSM controlling for all control variables

	<i>Type Country (i.e. Developed = 1)</i>				<i>Type Country (i.e. Emerging = 1)</i>			
	<i>AEM</i>		<i>AEM</i>		<i>AEM</i>		<i>AEM</i>	
	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat
<i>const</i>	0.157***	(3.45)	-0.204	-1.53	0.141***	(6.46)	-0.225**	(-2.51)
<i>MacroInstab</i>	0.030*	(1.74)	-0.132*	-2.04	-0.066**	(-2.41)	-0.166	(-1.59)
<i>MacroInstab x Developed</i>	-0.095***	(-2.99)	-0.034	-0.28	—	—	—	—
<i>MacroInstab x Developed x Instituitons</i>	0.035	(1.55)	0.005	0.07	—	—	—	—
<i>MacroInstab x Emerging</i>	—	—	—	—	0.095***	(2.99)	0.034	(0.28)
<i>MacroInstab x Emerging x Instituitons</i>	—	—	—	—	-0.035	(-1.55)	-0.006	(-0.07)
<i>Control variables</i>	YES		YES		YES		YES	
<i>Country-, Industry-, and Year-FE</i>	YES		YES		YES		YES	
Observations	39,800		51,911		39,800		39,800	
R-squared	0.1075		0.1539		0.1075		0.1479	

Table 10. (continued)

Panel D – Chen et al.’s (2018) correction of AEM and REM estimation process

	<i>Type Country (i.e. Developed = 1)</i>				<i>Type Country (i.e. Emerging = 1)</i>			
	<i>AEM</i>		<i>AEM</i>		<i>AEM</i>		<i>AEM</i>	
	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat
<i>const</i>	0.142***	3.87	-0.330**	-2.31	0.185***	9.17	-0.138*	-1.73
<i>MacroInstab</i>	0.048***	3.26	-0.125**	-2.43	-0.082***	-3.01	-0.242**	-2.32
<i>MacroInstab x Developed</i>	-0.130***	-4.26	-0.117	-1.03	—	—	—	—
<i>MacroInstab x Developed x Instituitons</i>	0.060***	2.73	0.034	0.44	—	—	—	—
<i>MacroInstab x Emerging</i>	—	—	—	—	0.130***	4.26	0.117	1.03
<i>MacroInstab x Emerging x Instituitons</i>	—	—	—	—	-0.060***	-2.73	-0.034	-0.44
<i>Control variables</i>	YES		YES		YES		YES	
<i>Country-, Industry-, and Year-FE</i>	YES		YES		YES		YES	
Observations	51,911		51,911		51,911		51,911	
R-squared	0.1090		0.1801		0.1090		0.1801	

Panel E – PSM controlling only for Equity Structure

	<i>Type Country (i.e. Developed = 1)</i>				<i>Type Country (i.e. Emerging = 1)</i>			
	<i>AEM</i>		<i>AEM</i>		<i>AEM</i>		<i>AEM</i>	
	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat
<i>const</i>	0.152***	8.01	0.157*	1.79	0.161***	7.23	-0.024	-0.25
<i>MacroInstab</i>	0.032*	1.74	-0.181***	-2.74	-0.073***	-2.67	-0.214**	-2.02
<i>MacroInstab x Developed</i>	-0.105***	-3.22	-0.033	-0.28	—	—	—	—
<i>MacroInstab x Developed x Instituitons</i>	0.047**	2.02	0.033	0.42	—	—	—	—
<i>MacroInstab x Emerging</i>	—	—	—	—	0.105***	3.22	0.033	0.28
<i>MacroInstab x Emerging x Instituitons</i>	—	—	—	—	-0.047**	-2.02	-0.033	-0.42
<i>Control variables</i>	YES		YES		YES		YES	
<i>Country-, Industry-, and Year-FE</i>	YES		YES		YES		YES	
Observations	39,800		39,800		39,800		39,800	
R-squared	0.1037		0.1585		0.1037		0.1585	

In AEM (REM) estimations, the dependent variable is the absolute amount of discretionary accruals (real earnings management). *MacroInstab* is the macroeconomic instability index for each year *t* and country *j*. Control variables inserted in all estimations (see Table 3 – Variables description). Estimations based on ordinary least squares regression.

***, **, and * indicate significance at 1%, 5%, and 10% levels of statistical significance for two-tailed tests.

Table 11. Effect of macroeconomic instability on earnings management: The role of financial crisis

	<i>Type Country (i.e. Developed = 1)</i>				<i>Type Country (i.e. Emerging = 1)</i>			
	<i>AEM</i>		<i>REM</i>		<i>AEM</i>		<i>REM</i>	
	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat	Coeff.	<i>t</i> -Stat
<i>const</i>	0.172***	4.85	-0.241*	-1.95	0.165***	11.77	-0.220***	-2.67
<i>MacroInstab</i>	0.042***	3.58	-0.144***	-3.32	-0.060***	-3.26	-0.038	-0.34
<i>MacroInstab x Developed</i>	-0.102***	-4.72	0.107	0.92	—	—	—	—
<i>MacroInstab x Developed x Crisis</i>	-0.026**	-2.49	0.009	0.27	—	—	—	—
<i>MacroInstab x Emerging</i>	—	—	—	—	0.102***	4.72	-0.107	-0.92
<i>MacroInstab x Emerging x Crisis</i>	—	—	—	—	0.026**	2.49	-0.009	-0.27
Control Variables								
<i>Size</i>	-0.004***	-16.17	0.015***	8.04	-0.004***	-16.17	0.015***	8.04
<i>Return on Assets</i>	0.019**	2.09	-0.901***	-26.70	0.019**	2.09	-0.901***	-26.70
<i>Long-Term Debt</i>	-0.016***	-4.84	0.031	1.61	-0.016***	-4.84	0.031	1.61
<i>Growth</i>	0.010***	7.14	0.008**	2.33	0.010***	7.14	0.008**	2.33
<i>Loss</i>	0.008***	6.65	0.005	1.07	0.008***	6.65	0.005	1.07
<i>Cash Flows</i>	-0.027***	-3.60	-0.242***	-16.61	-0.027***	-3.60	-0.242***	-16.61
<i>Big Four</i>	-0.001	-1.34	-0.029***	-4.85	-0.001	-1.34	-0.029***	-4.85
<i>IFRS</i>	-0.004***	-3.33	0.021***	3.79	-0.004***	-3.33	0.021***	3.79
<i>Tangibility</i>	-0.015***	-12.45	0.017**	2.29	-0.015***	-12.45	0.017**	2.29
<i>Dissue</i>	0.021***	19.63	-0.013***	-4.47	0.021***	19.63	-0.013***	-4.47
<i>Eissue</i>	0.017***	10.53	-0.006	-1.30	0.017***	10.53	-0.006	-1.30
<i>AEM</i>	—	—	-0.002	-0.08	—	—	-0.002	-0.08
<i>REM</i>	-0.000	-0.08	—	—	-0.000	-0.08	—	—
<i>Institutions</i>	0.003	0.98	-0.023**	-1.97	0.003	0.98	-0.023**	-1.97
<i>Country Debt</i>	0.000***	6.19	-0.000	-1.34	0.000***	6.19	-0.000	-1.34
<i>Crisis</i>	-0.017***	-3.99	-0.025*	-1.72	-0.002	-0.44	-0.044***	-3.05
<i>Developed</i>	-0.007	-0.20	0.022	0.15	—	—	—	—
<i>Emerging</i>	—	—	—	—	0.007	0.20	-0.022	-0.15
<i>Developed x Crisis</i>	0.014**	2.40	-0.020	-1.09	—	—	—	—
<i>Emerging x Crisis</i>	—	—	—	—	-0.014**	-2.40	0.020	1.09
<i>MacroInstab x Crisis</i>	0.009	1.40	0.004	0.20	-0.017**	-2.04	0.013	0.53
<i>Country-FE</i>	YES		YES		YES		YES	
<i>Industry-FE</i>	YES		YES		YES		YES	
<i>Year-FE</i>	YES		YES		YES		YES	
Observations	44,917		44,917		44,917		44,917	
R-squared	0.1077		0.1569		0.1077		0.1569	

In AEM (REM) estimations, the dependent variable is the absolute amount of discretionary accruals (real earnings management). *MacroInstab* is the macroeconomic instability index for each year *t* and country *j*. *Size* is the natural logarithm of end of year total assets. *Return on Assets* is the net income scaled by end of year total assets. *Long-Term Debt* is the end of year total long-term debt scaled by end of year total assets. *Growth* is the percentage change in total liabilities. *Cash* is the annual net cash flow from operating activities divided by end of year total assets. *Tangibility* is the property, plant, and equipment scaled by end of year total assets. *Dissue* is the percentage change in total liabilities. *Eissue* is the percentage change in common stock. *Big Four* is a dummy variable, which equals one for firm-year observations if the firm's auditor is PwC, KPMG, EY, or DTT, and zero otherwise. *IFRS* is a dummy variable, which equals one for firm-year observations referring to financial statements prepared according to IFRS standards only in post-IFRS mandatory period, and zero otherwise. *Loss* is a dummy variable, which equals one for firm-year observations if net income is lower than 0, and zero otherwise. *Crisis* is a dummy variable, which equals one for firm-year observations in the subprime crisis period (2007-2009), and zero otherwise. *Institutions* is the rule of law index for each year *t* and country *j*, according to the World Justice Project (Kaufmann et al., 2009). *Country Debt* is the total stock of loans and debt securities issued by nonfinancial corporations as a share of GDP, according to the IMF. Estimations based on ordinary least squares regression.

***, **, and * indicate significance at 1%, 5%, and 10% levels of statistical significance for two-tailed tests.

Finally, we also investigate whether our results hold in years of economic crisis. More specifically, we focus on the subprime crisis (2007-2009) and we create a dummy variable (*Crisis*) which assume one for firm-year observation in these specific years, and zero otherwise¹⁸. Then, we interact the variables *Crisis* with *MacroInstab* and *MacroInstab x Developed* (*MacroInstab x Emerging*). The results are presented in Table 11. Taking into account developed countries as basis (i.e. *Developed* = 1), for AEM estimation, we find that the coefficient *MacroInstab* is significantly positive (0.042***, *t*-stat = 3.58), *MacroInstab x Developed* is significantly negative (-0.102***, *t*-stat = -4.72), and *MacroInstab x Developed x Crisis* is significantly negative (-0.026***, *t*-stat = -2.49). Moreover, we also find that the sum of *MacroInstab* and *MacroInstab x Developed* is negative (0.042 - 0.102 = -0.060) and higher than the sum of *MacroInstab*, *MacroInstab x Developed* and *MacroInstab x Developed x Crisis* (0.042 - 0.102 - 0.026 = -0.086). These empirical findings suggest that higher levels of macroeconomic instability are negatively associated to accruals-based earnings management in developed countries, but such association is higher in the period of subprime crisis (2007-2009). In other words, it seems that in developed countries, during financial crisis, the negative effect of macroeconomic instability on earnings management by accruals is potentialized. Furthermore, taking into account emerging market countries as basis (i.e. *Emerging* = 1), our results reveal similar results. More specifically, for AEM estimation, we find that the coefficient *MacroInstab* is significantly negative (-0.060***, *t*-stat = -3.26), *MacroInstab x Emerging* is significantly positive (0.102***, *t*-stat = 4.72), and *MacroInstab x Emerging x Crisis* is significantly positive (0.026***, *t*-stat = 2.49). Moreover, we also find that the sum of *MacroInstab* and *MacroInstab x Emerging* is positive (-0.060 + 0.102 = 0.042) and lower than the sum of *MacroInstab*, *MacroInstab x Emerging* and *MacroInstab x Emerging x Crisis* (-0.060 + 0.102 + 0.026 = 0.068). These empirical findings suggest that higher levels of macroeconomic instability are positively associated to accruals-based earnings management in emerging market countries, but such association is higher in the period of subprime crisis (2007-2009). In other words, it seems that in emerging market countries, during financial crisis, the positive effect of macroeconomic instability on earnings management by accruals is potentialized. Finally, we do not find any evidence on the moderating role of financial crisis on the association between macroeconomic instability and earnings management.

1.6. Conclusions

This study investigates the effect of macroeconomic instability on earnings management and the moderating role of country-level institutions, explicitly examining how this phenomenon compares between developed and emerging market countries. We add to the literature by documenting that firms from developed and emerging market countries react differently in their earnings management

¹⁸ In this additional analysis, we consider only firm-year observations after 2004, in order to avoid confounding effects from previous financial crisis, such as the 1997 Asian financial crisis and the 2000-2002 dot-com bubble.

strategies during periods of high macroeconomic instability. More specifically, our results suggest that, when facing greater macroeconomic instability, firms from developed (emerging market) countries decrease (increase) the level of accruals-based earnings management, and both types of countries decrease the level of real earnings management. Moreover, we demonstrate the importance of country-level institutions in dampening the effects of macroeconomic instability on accruals-based earnings management, whether in developed or emerging market countries.

Our results demonstrate the role of countries' economic development in the way that firms react to instability of macroeconomic environment adopting different strategies of earnings management, by accruals and operating activities. Our empirical findings have several implications not only for the academic literature, but also to regulatory agencies, investors, and other stakeholders by giving a more holistic view about the effect of the economic environment on earnings management in countries with different economic and institutional conditions.

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CAPÍTULO 2

Financial Distress, Earnings Management and Big 4 Auditors in Emerging Markets

2.1. Introduction

This study analyzes the association between financial distress and accruals-based earnings management in emerging markets and the role that auditors (i.e. Big 4 *versus* non-Big 4, and differences across Big 4 audit firms) play in such association. Previous literature is inconclusive concerning the effect of financial distress on accruals-based earnings management, demonstrating empirically that highly distressed firms could engage either in income-increasing (Paul and Rakshit, 2020; Rosner, 2003) or in income-decreasing earnings management strategies (Agrawal and Chatterjee, 2015; Charitou *et al.*, 2007a). These mixed findings are persistent in studies with samples formed by firms from both developed countries and emerging markets, relying on single-country analysis, and hence without any international conclusive evidence on this subject. We restrict our analysis to emerging economies and, thus, we overcome previous literature by investigating the association between financial distress and accruals-based earnings management in a comprehensive sample of 20 emerging markets, by providing an important overall cross-country empirical evidence that, to our best knowledge, has not been addressed by previous literature. We also bring new knowledge by discussing not only the role of the Big 4 audit firms but also how differences across them (i.e. according to the individual *audit style* intrinsic to each multinational auditing firm) play an important role in limiting earnings management practices by firms with high levels of financial distress in less developed markets.

There is widespread concern among governments, standards setters, and international organizations about the negative effects of high levels of financial distress on macroeconomics and countries' development (e.g. IMF, 2014; OECD, 2020; World Bank, 2015). The problem seems to be even more serious in emerging markets, which although providing ample opportunities for investors, with potentially attractive rates of returns, also carry a significant amount of risk in an insolvency or bankruptcy scenario¹⁹. Whether through links with the international financial system or macroeconomic channels, a wave of corporate defaults in emerging markets could in fact trigger broader financial stress (Asis *et al.*, 2020). Furthermore, a spate of recurring accounting scandals involving large listed firms – such as the Enron and WorldCom cases in the United States, or even more recently the collapse of Carillion and Thomas Cook Group in the United Kingdom, and the

¹⁹ Financier Worldwide Magazine (2017). Financial restructuring and insolvency challenges in emerging markets. Available at <https://www.financierworldwide.com/financial-restructuring-and-insolvency-challenges-in-emerging-markets#.YFheaNxUnIU>.

Petrobras and Odebrecht scandals originated by the Operation CarWash of the Federal Police of Brazil – seems to cause constant concern to investors and, mainly, standard setters. In emerging markets, these phenomena still seem to be more recurrent (Caliyurt and Idowu, 2012), despite having a lower economic impact on an international level. In this sense, the role of external control mechanisms, which involve the auditing process, seems to be of even greater importance in these environments of less strictly legal environments, given the greater incentives for unethical practices in these markets.

Overall, earnings management and its determinants and consequences have been studied by academics for a long time. Even though managers have a menu of choices from which they can choose to manipulate account amounts (Black *et al.*, 2017), the manipulation of earnings by accruals stands out as one of the most debated subjects in the accounting literature (Larson *et al.*, 2018). Among the large body of accruals-based earnings management literature, some scholars have found an association between firms' financial distress and earnings management practices.

Overall, the level of financial distress is viewed as the probability that firms will fail to meet their financial obligations (Campbell *et al.*, 2008). Firms facing higher levels of financial distress usually present a higher probability of decline in the firm's financial performance, risk of insolvency, as well as an increase in the cost of capital (Habib *et al.*, 2020). The literature on the association between financial distress and accruals-based earnings management provides mixed findings and it is possible to argue either the existence of a positive relationship or a negative relationship between these constructs. On the one hand, firms facing higher levels of financial distress may have the motivation to opportunistically manage earnings upward in order to avoid debt covenant violations and probable bankruptcy (Ghazali *et al.*, 2015), conceal the deteriorating financial conditions (Rosner, 2003), gain favorable borrowing terms (Saleh and Ahmed, 2005), or even to avoid management turnover during the distressing period and issues related to their management reputation (Charitou *et al.*, 2011). On the other hand, managers of firms facing higher levels of financial distress could also engage in income-decreasing accruals-based earnings management practices because of high market demand for more conservative information, more pressure imposed by auditors or even by lenders through the increased scrutiny during distressing periods, or even strategical self-interest practices by managers to reduce temporarily the market price to increase their gain from a subsequent management buyout (Charitou *et al.*, 2007a). These inconclusive results remain in single-country analysis with samples from developed and emerging markets.

In particular, by evaluating the emerging markets case as a whole, we argue that several institutional factors from less-developed economies could create a “conducive domain” for firms facing high levels of financial distress to manage earnings upwards. Indeed, less-developed economies are characterized by greater informality, and less mature government and regulatory infrastructures (Marquis and Raynard, 2015), more frequent internal and external financial shocks (Andjelic *et al.*, 2010), severe corporate governance problems (Ahn *et al.*, 2018), and higher levels of macroeconomic instability, worse levels of monitoring by shareholders, and protection of minority investors (Viana *et*

al., 2021). We argue that such characteristics could create a more conducive environment for upward earnings management practices as a response to uncertainty pressure by the market on financially distressed firms. Moreover, a high level of ownership concentration intrinsic to firm from emerging markets (Fan and Wong, 2005), in general, create a reputation basis for a single block of shareholders, what could make these group more likely to engage in income-increasing accruals-based earnings management practices in order to avoid the negative signal by periods of financial distress. Therefore, we expect to find a positive association between financial distress and income-increasing accruals-based earnings management in an emerging market setting.

Furthermore, given the poor institutional environment, coupled with the higher levels of uncertainty and economic instability of emerging markets (Viana *et al.*, 2021), Big 4 audit firms seem to play an important role regarding how firms engage in earnings manipulation practices. Indeed, with some exceptions, the literature recurrently perceives Big 4 audit firms as capable of providing better audit quality when compared to non-Big 4 auditors (Behn *et al.*, 2008; DeFond *et al.*, 2017; Iatridis, 2012; Lennox and Pittman, 2010), given their stronger incentives, arising primarily from litigation concerns and reputation issues (DeFond *et al.*, 2017). Based on this discussion, we also hypothesize that the presence of Big 4 audit firms could change the way firms facing higher levels of financial distress engage in income-increasing earnings management by accruals, in order to constrain such potential opportunistic behavior by managers.

Moreover, we investigate the role of Big 4 audit firms and contribute to the current earnings management literature by additionally discuss potential differences across Big 4 audit firms in their role of constraining income-increasing earnings management tactics by accruals in firms with higher levels of financial distress. The audit literature suggests that individual auditors exhibit unique *audit styles* that they consistently apply to different engagements (Bianchi *et al.*, 2019; Chen *et al.*, 2020; Chung *et al.*, 2020; Francis and Wang, 2008). Thus, an individual auditor often has substantial autonomy and flexibility to interpret and implement the “in-house” working rules established by the audit firm. Based on such discussion, we hypothesize that there are significant differences among Big 4 auditors in their role of constraining income-increasing accruals-based earnings management in firms facings high levels of financial distress. In other words, we expect that different types of audit styles have different implications on the mitigation of income-increasing accruals-based earnings management in firms with higher levels of financial distress.

We test our hypotheses based on a sample of 32,196 firm-year observations from 20 emerging markets over the period 2002–2018. Overall, we find that firms facing higher levels of financial distress manage earnings upward by accruals, and that such potential opportunistic strategy is lower in firms audited by Big 4 compared to those audited by non-Big 4 auditors. Our results also point out significant differences across Big 4 audit firms in their role of constraining income-increasing earnings management strategies in firms with higher levels of financial distress, suggesting that the overall effect of Big 4 audit firms appears to be due to only two auditing firms. Our empirical analyses are

robust to several robustness checks, such as alternative accruals-based earnings management measures, different sample compositions, mitigating effects of economic crisis, as well as alternative estimations methods.

Our contribution to the existing accounting and finance literature is at least twofold. First, we provide important cross-country empirical evidence by shedding light on the association between financial distress and earnings management in the international setting of firms from 20 emerging markets. While previous literature regarding this issue seems to have focused on single-country analyses, leaving inconclusive findings of this phenomenon, we add to such literature by examining firms from a cross-section of countries from the same institutional background economic environment, as indicated by emerging markets – controlling for confounding effects instead of considering firms from different institutional and economic contexts –, offering to the international accounting literature a broader view of this issue. Second, we advance beyond the difference between Big 4 and non-Big 4 audit firms and discuss important issues related to individual audit style across Big 4 audit firms. Thus, we also add to auditing literature by raising important questions on significant differences between the Big 4 audit firms and their role in containing opportunistic practices by managers in firms with higher levels of financial distress.

The remainder of this paper is organized as follows. Section 2 provides background on financial distress, earnings management, and Big 4 auditors, as well as our hypotheses. Section 3 presents the research design. Section 4 and 5 report the empirical results and robustness tests, and Section 6 presents the conclusions.

2.2. Literature Review and Hypotheses

2.2.1. Financial Distress and Accruals-Based Earnings Management

The literature on earnings management and its determinants and consequences is massive. Although earnings management can be captured through several ways (e.g., classification shifting, changes in real operations, beating threshold targets, etc.), previous studies have been dedicating more attention to manager opportunistic behavior by accruals. According to Larson *et al.* (2018), there are well over 100 articles in the leading accounting journals with variants of the word “accrual” in their title until the beginning of the 2010s. Despite some noisy issues on the estimation of accruals process, research on earnings management has largely continued using accrual models (McNichols and Stubben, 2018). The popularity of accrual-based research as a proxy to earnings management is not surprising, given that accruals are the primary mechanism through which accountants seek to make the financial statements useful (McNichols and Stubben, 2018). Overall, some of the determinants of accruals-based earnings management pointed out by such empirical literature include, among others, firm performance (Kothari *et al.*, 2005), information asymmetry (Chowdhury *et al.*, 2018), corporate governance (Demirkan and Platt, 2009; Sáenz González and García-Meca, 2014), debt financing

(Alzoubi, 2018), growth opportunities (Li and Kuo, 2017), and changes in accounting standards (Callao and Jarne, 2010; Doukakis, 2014; Van Tendeloo and Vanstraelen, 2005; Vichitsarawong and Eng, 2020).

There are also some studies analyzing specifically the effect of firm financial distress on accruals-based earnings management. The primary range of such studies is concentrated in firms from developed countries (Campa, 2019; Campa and Camacho-Miñano, 2015; Charitou *et al.*, 2007a, 2007b, 2011; García Lara *et al.*, 2009; Habib *et al.*, 2013; Rosner, 2003). By analyzing US firms, Rosner (2003) demonstrates empirically that failing firms are more likely to overstate earnings by accruals in pre-bankruptcy periods (year -5 to year 0 relative to bankruptcy) than nonfailing firms when the former did not receive a going-concern audit opinion. According to the author, “managers of failing firms, optimistically expecting their firms’ troubles to be temporary, are motivated to engage in income-increasing earnings management to conceal the deteriorating financial conditions until they improve” (Rosner, 2003, p. 368). Contrary, taking into account 859 U.S. bankruptcy-filing firms (Chapter 11, United States Bankruptcy Code) over the period 1986–2004, Charitou *et al.* (2007a) show that managers of highly US distressed firms engage in income-decreasing earnings manipulations by accruals prior to the bankruptcy filing. The authors suggest several reasons for such income-decreasing earnings manipulation actions, such as more pressure imposed by auditors or even by lenders (resulted in increased scrutiny as the degree of financial distress increases), strategic self-interest practices by managers to reduce temporarily the market price to increase their gain from a subsequent management buyout or even more conservative accounting practices in order to reduce exposure to litigation. Moreover, based on a dataset of 455 US firms that filed for bankruptcy during the period 1986–2001, Charitou *et al.* (2007b) find that managers of distressed firms manage earnings downwards by accruals 1 year prior to the bankruptcy filing, and that firms receiving unqualified audit opinions in all 5 years prior to the bankruptcy-filing event seem to manage earnings upwards in those same years.

Beyond evidence from the US market, Habib *et al.* (2013) demonstrate that managers of distressed firms in New Zealand, over the period 1991–2011, engage in income-reducing earnings management activities by accruals compared to their healthy firm counterparts. In the European Union zone, García Lara *et al.* (2009) also show that failed firms over the period 1995–2004 in the United Kingdom manage earnings upwards by accruals in the four years before failure. Considering a sample of French firms from 2009 to 2016, Campa (2019) also demonstrate that in the presence of severe financial problems, both listed and unlisted firms engage in downward manipulations through discretionary accruals, but such engagement seems to be lower by listed firms possibly due to a more pressure of such entities to conceal true performance from external parties (investors, analysts, competitors, among others) or missed financial targets, and also to avoid declines in stock price.

Overall, the first range of the literature on financial distress and earnings management in developed is concentrated in the US market, by analyzing the level of earnings management adopted

by listed firms surrounding a distress event (i.e. filing a Chapter 11 bankruptcy petition). Moreover, this literature in developed countries relies only on single-country analyses, without any evidence based on cross-country settings. Those studies in fact provide convincing arguments on highly distressed firms engage in both income-increasing and even income-decreasing earnings management strategies, without definite empirical results among them about such association.

Overall, the literature on financial distress and earnings management in developed countries pays special attention to the US market. Besides, such studies are concentrated on analyzing the level of earnings management adopted by listed firms surrounding a distress event (i.e. filing a Chapter 11 bankruptcy petition). However, this type of design is limited given that it is likely that *ex-ante* periods of bankruptcy firms have unusual events, which potentially causes selection bias issues that can affect the interpretation of results (Charitou *et al.*, 2011). Besides, this literature in developed countries relies only on single-country analyses, without any evidence based on cross-country setting. The literature in fact provides convincing arguments on highly distressed firms engage in both income-increasing and even income-decreasing earnings management strategies, without definite empirical results among the studies about such association.

Some studies have also been dedicating attention to investigate the association between financial distress and accruals-based earnings manipulation in emerging markets (Agrawal and Chatterjee, 2015; Chen *et al.*, 2010; Du and Lai, 2018; Ghazali *et al.*, 2015; Li *et al.*, 2020; Muljono and Suk, 2018; Paul and Rakshit, 2020; Saleh and Ahmed, 2005). Given the increasing importance and strategic role of emerging economies for many worldwide regions (Bank, 2010), researchers have been dedicating attention to investigate such a phenomenon in less developed economies. Analyzing this group of countries separately from the literature on developed economies is important given that they “might exhibit different capital market environments, internal control standards, and management behaviors compared with the US because of variations in history, politics, judiciary, culture, and social norms” (Li *et al.*, 2020, p. 2).

Relying on Chinese firms over the years 2002–2006, Chen *et al.* (2010) find that firms present lower levels of earnings management by accruals (unsigned) prior to and during financial distress periods (i.e. status as special treatment firms, according to China’s Company Law and Securities Law), whereas in the year after the “status as special treatment firms” they increase the level of earnings management possibly to avoiding being de-listed. Contradictorily, by analyzing financial distress and investment opportunity in Chinese market over the period 2007–2012, Du and Lai (2018) demonstrate that high levels of financial distress are positively associated to earnings management by accruals in unsigned way. Moreover, Li *et al.* (2020) show evidence that financially distressed firms in China tend to undertake more unsigned accrual earnings management, based on data between 2007 and 2015.

Beyond evidence from China, some empirical findings are also presented. By analyzing 259 listed firms from Indonesia between 2005–2014, Muljono and Suk (2018) show that the level of financial

distress is associated with a significant increase in the level of accruals earnings management in unsigned terms. Considering a set of firms from Malaysia between 1994 and 2000, Saleh and Ahmed (2005) find evidence that financially distressed firms (i.e. default of debt payments) manipulate earnings upward by accruals three and two years preceding the distressed event. However, the sample firms seem to manipulate earnings downturn one year leading up to the distressed event. Moreover, based on samples of Indian listed firms, on the one hand, Agrawal and Chatterjee (2015) empirically demonstrate that lower (high) levels of financial distress are associated with income-increasing (income-decreasing) earnings management by accruals during the post-recession period from 2009 to 2014. On the other hand, Paul and Rakshit (2020) points out that lower (high) levels of financial distress are associated with income-decreasing (income-increasing) earnings management practices through accruals during the period 2010–2019. However, the latter results are limited to only one industry, i.e. the textile sector.

Taking these findings together, in general, the literature on financial distress and accruals-based earnings management in emerging markets pays special attention to China. Moreover, similar to the literature on developed countries, these studies are based only on single-country analyses. This literature also present mixed findings, by suggesting both a positive (e.g. Li *et al.*, 2020; Muljono and Suk, 2018) and a negative (e.g. Chen *et al.*, 2010) association between financial distress and earnings management levels by accruals (in absolute terms) in less developed economies, or even income-increasing (Agrawal and Chatterjee, 2015) or income-decreasing (Saleh and Ahmed, 2005) tactics during high levels of financial distress. Such differences seem to exist both between- and within-countries.

We restrict our analyzes to emerging economies and, hence, we add to previous literature by investigating the association between financial distress and accruals-based earnings management in a comprehensive sample of 20 emerging markets, by providing an important overall cross-country empirical evidence that, to our best knowledge, has not been addressed by previous literature.

By looking at emerging markets overall, in a more international context, we conjecture that firms from such markets with high levels of financial distress engage in income-increasing accruals-based earnings management given many country-factors characteristics of less developed economies which potentially encourages this type of practice. In general terms, emerging countries are characterized by higher levels of volatility (Lesmond, 2005), greater informality, and less mature government and regulatory infrastructures (Marquis and Raynard, 2015), when compared to developed economies. Moreover, emerging markets present also higher level of country risk, and more frequent internal and external financial shocks (Andjelic *et al.*, 2010), more concentrated ownership, severe corporate governance problems (Ahn *et al.*, 2018), lower liquidity, high levels of asymmetric information, and high non-normality of returns (Snoussi and El-Aroui, 2012). Emerging economies seem also to present higher levels of macroeconomic instability, worse levels of monitoring by shareholders, and protection of minority investors (Viana *et al.*, 2021).

Thus, we suspect that these characteristics of emerging markets could create a conducive environment for managers in firms from these economies to engage in income-increasing earnings management practices in periods of high levels of financial distress. Previous literature suggests that managers in emerging markets take advantage of more flexible enforcement of law to act in a favorable way when facing unstable external environments, such as times of high macroeconomic instability (Viana *et al.*, 2021), or even in periods of high policy uncertainty (Cui *et al.*, 2020). Therefore, in order to compensate lower earnings associated to the decrease of operational performance caused by financial distress periods, it is likely that managers in emerging markets could feel highly motivated to manage earnings upwards and thus avoid damaging market sanctions.

Besides, the agency conflicts between controlling owners and minority shareholders, typically found in emerging markets, creates an entrenchment problem that allows controlling owners' self-dealings to go unchallenged internally by conventional corporate control mechanisms (i.e. boards of directors and takeover) (Fan and Wong, 2005). These weaker internal corporate controls could facilitate income-increasing earnings management by managers in emerging markets in order to present the firm in the best possible economic scenario and, thus, to avoid huge declines in the firms' stock price that would negatively impact their compensation (Filip and Raffournier, 2014).

Finally, there is also some empirical evidence among previous literature that lower levels of countries' economic development are positively associated to national unethical attitudes (Franke and Nadler, 2008), which makes ethical problems an even more serious issue for emerging markets. Thus, given the ethical discussions related to accounting choices, especially on the opportunistic use of discretionary accruals, we suppose that managers resort to the use of accruals to inflate corporate earnings in periods of financial distress given the lack of pressure for an appropriate social influence. Besides, emerging market firms seem to perform ethics management considerably worse than companies from developed countries (Ortas *et al.*, 2012). Thus, managers could benefit from this position to engage in income-increasing earnings management to portrait the firm in the best position possible because they could feel less exposed to market pressure in case of been detected. Therefore, taking all those arguments together, we propose as our first hypothesis that:

H1: The level of financial distress is positively associated with income-increasing accruals-based earnings management.

2.2.2. Financial Distress and Accruals-Based Earnings Management: The Role of Big 4 Audit Firms

Previous literature already suggests some moderating factors on the association between financial distress and earnings management, such as institutional ownership levels (Chen *et al.*, 2010), government regulation of industry (Habib *et al.*, 2013), financial crisis periods (Jacoby *et al.*, 2019), political affiliation (Li *et al.*, 2020), going-concern audit opinion (Charitou *et al.*, 2007a), and internal control mechanisms (Li *et al.*, 2020). We add to the literature and explore the role of Big 4 audit firms

on the association between financial distress and income-increasing accruals-based earnings management in emerging markets.

Given the lower levels of enforcement typically associated to less developed economies, Big 4 audit firms seems to play an important role regarding how firms engage in earnings manipulation practices (Iatridis, 2012) – which could change the way firms facing high levels of financial distress engage in income-increasing earnings management by accruals.

The literature provides convinced empirical findings that Big 4 are associated to a higher audit quality than non-Big 4 auditors (Behn *et al.*, 2008; DeFond *et al.*, 2017; Iatridis, 2012; Lennox and Pittman, 2010). From this point of view, Big 4 audit firms could limit accruals-based earnings management levels, given their stronger incentives, arising primarily from reputation and litigation concerns (DeFond *et al.*, 2017). Thus, “Big 4 auditors are more sensitive to the cost of client misreporting and its effect on auditor reputation and are more likely to enforce higher earnings quality” (Francis and Wang, 2008, p. 158). Compared to non-Big 4 audit firms, hence, it’s likely that Big 4 audit firms provide greater scrutiny of financial reports, in order to avoid any future litigation by external stakeholders, given the severe reputational damage which litigation would lead to (Hogan, 1997)

Based on such arguments, Iatridis (2012) empirically demonstrates that emerging markets firms, from Brazil and South Africa, that are audited by Big 4 auditors are likely to exhibit lower levels of accruals-based earnings management. Similar studies in emerging markets also find that the auditing of financial statements by a Big 4 audit firm restricts earnings manipulation strategies of firms by accruals (Almeida and Almeida, 2009; Khurana and Raman, 2004; Pelucio-Grecco *et al.*, 2014). Therefore, considering that Big 4 audit firms seem to constraining opportunistic earnings management tactics by accruals, we expect that the association between financial distress and income-increasing accruals-based earnings management to be lower when firms from emerging markets are audited by Big 4. Those arguments allow us to propose as our second hypothesis that:

H2: The positive association between the level of financial distress and income-increasing accruals-based earnings management is lower for firms audited by a Big 4 audit firm, when compared to firms audited by a non-Big 4 audit firm.

Besides the role of Big 4 compared to non-Big 4 auditors, we extend previous studies and additionally discuss potential differences across Big 4 audit firms in their role of constrain income-increasing earnings management tactics by accruals in firms with higher levels of financial distress.

The audit literature provides both theoretical discussion and empirical findings suggesting that individual auditors exhibit unique audit styles that they consistently apply to different engagements (Bianchi *et al.*, 2019; Chen *et al.*, 2020; Chung *et al.*, 2020; Francis and Wang, 2008). From such perspective, an individual auditor often has substantial autonomy and flexibility to interpret and implement the “in-house” working rules established by the audit firm. Therefore, “given their personal

attributes, individual auditors develop their own unique set of judgments and working rules that standardize the application of accounting and auditing standards among their clients” (Chen *et al.*, 2020, p. 115).

Aligned with such arguments, Chung *et al.* (2020) find that there is considerable variation for clients among Big 4 audit firms and in applying change in accounting estimate materiality thresholds in the US market. Moreover, taking into account Chinese firms, Chen *et al.* (2020) find that client firms report more comparable earnings when they are audited by the same individual auditor than when they are audited by different audit firms. Similarly, Francis and Wang (2008) find evidence consistent with audit style increasing the comparability of reported earnings within a Big 4 auditor’s clientele. Bianchi *et al.* (2019) also show that clients engaging better-connected individual auditors have comparatively lower effective tax rates in Italy, suggesting that in a joint audit environment, individual auditor professional networks have consequences for tax outcomes.

Taking those arguments together, we suppose that there are significant differences among Big 4 audit firms in their role of constraining income-increasing accruals-based earnings management in firms facing high levels of financial distress. In other words, we expect that different types of audit styles have different implications on the mitigation of income-increasing accruals-based earnings management in firms with high levels of financial distress. Consequently, those differences could originate significant variations in the moderating effect across the Big 4 audit firms on the association between financial distress and earnings management by accruals in emerging markets. Based on those arguments, we propose as our third hypothesis that:

H3: There is a significant difference across Big 4 audit firms in their role of dampening the positive association between financial distress and income-increasing earnings management.

2.3. Research Design

2.3.1. The Models

In order to test H1 – whether the level of financial distress is positively associated with income-increasing accruals-based earnings management – we first estimate Equation (1) considering the earnings management by accruals (*EM*) as dependent variable, and financial distress (*Distress*) as our main independent variable.

$$EM_{it} = \alpha_0 + \beta_1 Distress_{it-1} + \gamma \sum Controls_{it} + \varepsilon \quad (1)$$

where, for each firm i at year t , EM represents the level of accruals-based earnings management in signed way. $Distress$ is the level of financial distress at the beginning²⁰ of the year t . $Controls$ is a vector of control variables at firm-level.

Taking into account H1, we expect the coefficient β_1 to be significantly positive, suggesting that firms with high levels of financial distress engage in income-increasing accruals-based earnings management. We expect to control changes in firms' incentives noises considering a bunch of control variables that have been used extensively by previous earnings management literature (e.g., Charitou *et al.*, 2011; Du and Lai, 2018; García Lara *et al.*, 2020; Kothari *et al.*, 2005; Larson *et al.*, 2018; Li *et al.*, 2020; McNichols and Stubben, 2018). All control variables definitions are found in Table 1.

Table 1. Variables description

<i>EM</i>	is the accruals-based earnings management, based on the modified version of the model proposed by Jones (1991) to measure discretionary accruals, proposed by Dechow <i>et al.</i> (1995), by additionally considering return on assets (Kothari <i>et al.</i> , 2005).
<i>Distress</i>	is the level of financial distress proxied by Altman (2005) Z-Score for emerging markets multiplied by -1.
<i>Big 4</i>	is a dummy variable, which equals one for firm-year observations if the firm's auditor is Deloitte, EY, KPMG, and PwC, and zero otherwise.
<i>Big 4A, Big 4B, Big 4C, and Big 4D</i>	are dummy variables which assume 1 for firms audited by each one of the Big 4 auditors individually, and zero otherwise.
<i>Size</i>	is the natural logarithm of end of year total assets.
<i>Return on Assets</i>	is the net income scaled by end of year total assets.
<i>Growth</i>	is the percentage change in sales from the year $t-1$ to t .
<i>Dissue</i>	is the percentage change in total liabilities.
<i>Eissue</i>	is the percentage change in common stock.
<i>Leverage</i>	is the end of year total liabilities scaled by end of year total assets.
<i>Tangibility</i>	is the property, plant, and equipment scaled by end of year total assets.
<i>Loss</i>	is a dummy variable, which equals one for firm-year observations if net income is lower than 0, and zero otherwise.
<i>IFRS</i>	is a dummy variable, which equals one for firm-year observations referring to financial statements prepared according to IFRS standards only in post-IFRS mandatory period, and zero otherwise.
<i>Litigation</i>	is a dummy variable, which equals one for firm-year observations operating in a high litigation industries (SIC codes of 2833–2836, 3570–3577, 3600–3674, 5200–5961 and 7370), and zero otherwise.
<i>EM_Alternative1</i>	is the accruals-based earnings management, based on the modified version of the model proposed by Jones (1991) to measure discretionary accruals, proposed by Dechow <i>et al.</i> (1995), without any additional control.
<i>EM_Alternative2</i>	is the accruals-based earnings management, based on the modified version of the model proposed by Jones (1991) to measure discretionary accruals, proposed by Dechow <i>et al.</i> (1995), by additionally including lagged accruals (Dechow <i>et al.</i> , 2012).

Moreover, in order to test H2 – whether the positive association between the level of financial distress and income-increasing accruals-based earnings management is lower for firms audited by a

²⁰ Following previous literature (e.g. Badertscher, 2011; Black *et al.*, 2017; Nagar and Sen, 2017; Zang, 2012), we ensure to consider *Distress* at the beginning of the year t for at least two main important reasons. The first and foremost one is that firms engaging in earnings management practices in year t are likely to have written-down and/or sold assets in the same year, which impact asset values and in turn *Distress* of year t . Thus, in order to avoid clearly endogeneity, we lag *Distress* by one year. Second, it is more likely that managers take into account overall financial and operational levels of firms, regarding financial distress position, in year $t-1$ to then formulate strategic decisions to year t , included those regarding to manipulation of account amounts.

Big 4, when compared to firms audited by a non-Big 4 audit firm – we estimate the Equation (2) considering the accruals-based earnings management as dependent variable, and the interaction term considering the financial distress (*Distress*) and Big 4 auditors (*Big 4*) as our main independent variable.

$$EM_{it} = \alpha_0 + \delta_1 Distress_{it-1} + \delta_2 Distress_{it-1} \times Big\ 4_{it} + \gamma \sum Controls_{it} + \varepsilon \quad (2)$$

where, *Big 4* is a dummy variable which assumes 1 if the financial statement is audited by a Big 4 audit firm (Deloitte, EY, KPMG, and PwC), and zero otherwise. All other variables as previous defined.

Thus, in Equation (2), we expect the coefficient δ_1 to be significantly positive, and δ_2 to be significantly negative, suggesting that Big 4 audit firms dampen the income-increasing accruals-based earnings management levels in firms with high levels of financial distress.

Finally, in order to test H3 – whether there is a significant difference across Big 4 audit firms in their role of dampening the positive association between financial distress and income-increasing earnings management – we estimate the Equation (3) considering the accruals-based earnings management as dependent variable, and the interaction terms among financial distress (*Distress*) and each of Big 4 audit firms individually (*Big 4A*, *Big 4B*, *Big 4C*, and *Big 4D*) as our main independent variables.

$$EM_{it} = \alpha_0 + \theta_1 Distress_{it-1} + \theta_2 Distress_{it-1} \times Big\ 4A_{it} + \theta_3 Distress_{it-1} \times Big\ 4B_{it} \\ + \theta_4 Distress_{it-1} \times Big\ 4C_{it} + \theta_5 Distress_{it-1} \times Big\ 4D_{it} \\ + \gamma \sum Controls_{it} + \varepsilon \quad (3)$$

where, *Big 4A*, *Big 4B*, *Big 4C*, and *Big 4D* are dummy variables which assume 1 for firms audited by each one of the Big 4 audit firms individually, and zero otherwise. All other variables as previous defined.

Given that we insert four interaction terms of *Distress* with dummy variables for each of the Big 4 auditors individually, we consider the firms not audited by a Big 4 audit firms as our benchmark. Therefore, in Equation (3), we expect the coefficient θ_1 to be significantly positive, and θ_2 , θ_3 , θ_4 , and θ_5 be significantly negative and different across them, suggesting that different types of audit styles among the Big 4 audit firms have different implications on the mitigation of income-increasing accruals-based earnings management in firms with high levels of financial distress.

Equations (1), (2), and (3) are estimated using Ordinary Least Squares (OLS) method, controlled for industry-, year- and country-fixed effects. To adjust for possible cross-sectional and serial correlations, standard errors were corrected for firm-clustering effects (see Petersen, 2009). All continuous firm variables are winsorized at 1% and 99% tail in order to avoid effects of outliers. Considering eventual inconsistencies of the estimated parameters due to the truncation of the dependent variable (absolute values), we also re-run the main model considering Tobit regression models as robustness tests (see Section 5 – Robustness Analyzes).

2.3.2. Variables

2.3.2.1. Earnings Management

We consider the signed amount of discretionary accruals as proxy for accruals-based earnings management, as predominantly used in prior studies in international accounting research (e.g. Charitou *et al.*, 2011; Dechow *et al.*, 1995; Du and Lai, 2018; García Lara *et al.*, 2020; Kothari *et al.*, 2005; Larson *et al.*, 2018; Li *et al.*, 2020; McNichols and Stubben, 2018). We specifically obtain the discretionary accruals by estimating the Modified Jones model (Dechow *et al.*, 1995), and additionally include a measure of firm performance as a control variable (Kothari *et al.*, 2005), according to Equation (4).

$$TA_{it} = \alpha_0 + \beta_1 \frac{1}{Ats_{it-1}} + \beta_2 \frac{(\Delta Sales - \Delta Rec)_{it}}{Ats_{it-1}} + \beta_3 \frac{GPPE_{it}}{Ats_{it-1}} + \beta_4 \frac{Income_{it}}{Ats_{it}} + \varepsilon_{it} \quad (4)$$

where,

$$TA_{it} = \frac{(\Delta CA_{it} - \Delta CL_{it} - \Delta CASH_{it} + \Delta STDEBT_{it} - DEP_{it})}{Ats_{it-1}} \quad (5)$$

where, *TA* are the total accruals for each firm *i* and year *t*. ΔCA is the change in current assets for each firm *i* from year *t-1* to year *t*. ΔCL is the change in current liabilities. $\Delta CASH$ is the change in total cash reserve. $\Delta STDEBT$ is change in the short-term debt. ΔDEP as depreciation expense. *Ats* is the total assets. $\Delta Sales$ and ΔRec is the change in revenues and accounts receivables, respectively. *Income* is the net income. *GPPE* is the gross property, plant, and equipment.

The residuals from Equation (4) are the discretionary accruals (*EM*), our accruals-based earnings management proxy. We estimate Equation (4) for each year, industry, and country cluster with at least eight observations. Using this approach, we expect to partially control the industry- and country-wide changes in economic conditions that could affect the dependent variables and allow the coefficients to vary across time.

2.3.2.2. Financial Distress

The original Altman (1968) Z-score and its post-adjustment measures (i.e. Altman, 1983, 2005, 2014) comes up as one of the main models used by financial distress literature, remaining widespread in finance, accounting, and macroeconomics research (Alfaro *et al.*, 2019). Among other adjustments, Altman (2005) also propose a version of the original Z-Score to consider for different structural factors of emerging market firms²¹ – been extensive replicated by many studies on emerging market context (e.g., Alfaro *et al.*, 2019; Bravo and Ruiz, 2015; Jacoby *et al.*, 2019; Jia *et al.*, 2019; Liu *et al.*, 2021; Zhang *et al.*, 2016). Following such literature, we proxy financial distress based on the Altman (2005) Z-Score for emerging markets (*Distress*).

Besides considering factors intrinsically linked to emerging economies, the Altman Z-Score for emerging markets has also the advantage of been well adjusted to non-manufacturing, industrial firms and to private and public entities (Altman, 2005), unlike previous versions focused only on firms from the manufacturing industry. Technically, *Distress* is estimated by each firm-year observation according to Equation (6), weighing four ratios constructed using the firms' financial statements, as follow:

$$Distress = 6.56(X1) + 3.26(X2) + 6.72(X3) + 1.05(X4) + 3.25 \quad (6)$$

where, *X1* is the working capital over total assets. *X2* is the retained earnings over total assets. *X3* is the operating income over total assets. *X4* is the book value of equity over total liabilities.

Higher values of *Distress* indicate a healthier financial condition. In order to facilitate the discussion of the empirical findings, we proceed in a simple adjustment, by multiplying *Distress* by -1 to proxy for financial distress (Jacoby *et al.*, 2019; Li *et al.*, 2020). Thus, higher values of *Distress* after our adjustment mean higher values of financial distress.

2.3.3. Sample

The sample selection process initiates with all firm-year observations from Thomson Reuters Datastream universe, considering only those from emerging markets. We follow the comprehensive countries development classification by Trimble (2018), which is established from cross-referencing the United Nations' UNCTAD survey and the World Trade Organization classification. Our analyzes cover the period between 2000-2018.

²¹ Among other main adjustments, Altman (2005) replaces the market value of assets to the book value to adjust for the relative trading illiquidity in emerging markets compared to advanced economies.

Table 2. Sample

Panel A – Country breakdown			
Country	Freq.	Percent	Cum.
Argentina	125	0.39	0.39
Brazil	1,415	4.39	4.78
Chile	785	2.44	7.22
China	9,371	29.11	36.33
Egypt	227	0.71	37.03
Korea	9,411	29.23	66.26
Macedonia	13	0.04	66.30
Malaysia	3,419	10.62	76.92
Mexico	652	2.03	78.95
Morocco	88	0.27	79.22
Nigeria	123	0.38	79.60
Pakistan	123	0.38	79.99
Peru	431	1.34	81.32
Philippines	643	2.00	83.32
Poland	1,095	3.40	86.72
Russian Federation	841	2.61	89.33
Singapore	2,343	7.28	96.61
South Africa	303	0.94	97.55
Sri Lanka	78	0.24	97.79
Turkey	710	2.21	100.00
Total	32,196	100.00	-
Panel B – Industry breakdown			
Industry (SIC 1-digit)	Freq.	Percent	Cum.
Agriculture, Forestry and Fishing	454	1.41	1.41
Mining	1,327	4.12	5.53
Construction	2,645	8.22	13.75
Manufacturing	21,210	65.88	79.62
Transportation	332	1.03	80.66
Wholesale Trade	1,410	4.38	85.04
Retail Trade	1,181	3.67	88.70
Services	3,637	11.30	100.00
Total	32,196	100.00	-

Moreover, considering that our period of analysis covers the IFRS mandatory adoption by many jurisdictions, we also include only firms from countries that mandatorily adopted IFRS standards throughout our period of analysis²². More specifically, we rely on Trimble (2018) country classification style concerning IFRS mandatory adoption, and hence classify our sample countries in “Required” and “Convergence” ones. Overall, countries with IFRS convergence projects show staggered adoptions at the firm level. In order to preserve some crucial markets (e.g., China, Malaysia, Philippines), we base our main findings considering both, Required and Convergence countries. However, the results remain if we omit firm-year observations from such countries (see Section 5 – Robustness Analyzes). Finally, we also drop observations without enough information to calculate our dependent and independent variables (see Table 1 for variable descriptions details).

²² To avoid potential confounding effects, we exclude the adoption year from each country (Dhaliwal *et al.*, 2019).

Thus, considering the whole sample selection process, our main empirical analysis is based on 32,196 firm-year observations from 20 countries. Table 2 shows the final sample, and a breakdown by country and industry, respectively. Brazil, Chile and Poland are the most representative countries in the sample, with around 23%, 17%, and 15% of the sample. From the same perspective, firm-year observations from Manufacturing industry (SIC 2000-3999) represent 48% of the sample, followed by Transportation, Communications, Electric, Gas and Sanitary service industry (SIC 4000-4999), around 25%.

2.4. Results

Table 3 shows the descriptive statistics of the variables used in our estimations. Overall, we find the mean value of *EM* is -0.0055, similar to previous studies in emerging markets that relies on signed discretionary accruals measures (e.g., Dimitropoulos *et al.*, 2013; Hsieh and Wu, 2012; Lizinska and Czapiewski, 2018). Furthermore, we also find that the mean value of the Altman Z-Score for emerging markets (*Distress*) is -7.4573, similarly to previous literature in emerging markets on financial distress (Li *et al.*, 2020). Finally, we point out that around 70% of our firm-year observation are audited by Big 4 audit firms (*Big 4*), and that the percentual of firms audited by them individually range from 13% (*Big 4A*) to 22% (*Big 4B*), approximately.

Table 4 presents the pairwise correlations of the independent and dependent variables. We find a positive and significant correlation between *EM* and *Distress* (0.0263), which is aligned with H1, and hence suggests that firms with higher levels of financial distress engage in higher levels of income-increasing accruals-based earnings management. We also find a negative and significant correlation between *EM* and *Big 4* (-0.0204), indicating lower levels of income-increasing accrual-based earnings management strategies by firms audited by Big 4, when compared to non-Big 4 auditors. Moreover, even though *EM* is negatively correlated with all dummy variables of individual Big 4 audit firms, such correlation is significant only for *Big 4D* (-0.0163). Besides, we also observe that *EM* is positive (negative) and significantly correlated with *Growth*, *Dissue*, *Eissue*, *Leverage*, and *IFRS (Return on Assets, Tangibility and Litigation)*, indicating the importance of controlling for these variables in the multivariate analyses. Finally, we point out that, overall, the pairwise correlations between independent variables are modest, suggesting that multicollinearity does not represent a serious problem in our estimation analysis²³.

²³ An exception is the correlation between *Distress* and *Leverage*, where the correlation coefficient is 0.7599. However, robustness analysis demonstrates that our main results remains by omitting *Leverage* of our estimations (see Section 5 – Robustness Analysis).

Table 3. Descriptive statistics

Variables	Mean	SD	p25	Median	p75
<i>EM</i>	-0.0055	-0.0611	-0.0077	0.0441	0.0942
<i>Distress</i>	-7.4573	-9.2360	-6.8434	-5.0442	3.4550
<i>Size</i>	19.8950	18.7162	19.8155	21.0188	1.5630
<i>Leverage</i>	0.4537	0.2983	0.4541	0.6012	0.1944
<i>Return on Equity</i>	0.0382	0.0086	0.0363	0.0753	0.0659
<i>Growth</i>	0.1209	-0.0321	0.0864	0.2366	0.2540
<i>Dissue</i>	0.1500	-0.0669	0.0719	0.2748	0.3467
<i>Eissue</i>	0.1182	0.0013	0.0697	0.1750	0.2385
<i>Tangibility</i>	0.5397	0.2680	0.5092	0.7815	0.3297
<i>Big 4</i>	0.7029	-	-	-	-
<i>Big 4A</i>	0.1287	-	-	-	-
<i>Big 4B</i>	0.2244	-	-	-	-
<i>Big 4C</i>	0.1669	-	-	-	-
<i>Big 4D</i>	0.1827	-	-	-	-
<i>Loss</i>	0.1756	-	-	-	-
<i>IFRS</i>	0.5783	-	-	-	-
<i>Litigation</i>	0.1479	-	-	-	-

Continuous variables. *EM* is the accruals-based earnings management. *Distress* is the level of financial distress proxied by Altman (2005) Z-Score for emerging markets multiplied by -1. *Size* is the natural logarithm of end of year total assets. *Return on Assets* is the net income scaled by end of year total assets. *Growth* is the percentage change in sales from the year t-1 to t. *Dissue* is the percentage change in total liabilities. *Eissue* is the percentage change in common stock. *Leverage* is the end of year total liabilities scaled by end of year total assets. *Tangibility* is the property, plant, and equipment scaled by end of year total assets. **Dummy variables.** *Big 4* is a dummy variable, which equals one for firm-year observations if the firm's auditor is Deloitte, EY, KPMG, and PwC, and zero otherwise. *Big 4A*, *Big 4B*, *Big 4C*, and *Big 4D* are dummy variables which assume 1 for firms audited by each one of the Big 4 auditors individually, and zero otherwise. *Loss* is a dummy variable, which equals one for firm-year observations if net income is lower than 0, and zero otherwise. *IFRS* is a dummy variable, which equals one for firm-year observations referring to financial statements prepared according to IFRS standards only in post-IFRS mandatory period, and zero otherwise. *Litigation* is a dummy variable, which equals one for firm-year observations operating in a high litigation industry, and zero otherwise. No. obs. = 32,783.

Table 5 reports the H1 test results using OLS regression estimates of Equation (1). We consistently find a positive and significant coefficient for *Distress*, at conventional levels, across all model specifications – without country-, industry- and year-fixed effects (0.129, *t*-stat = 3.94); considering only country-fixed effects (0.128, *t*-stat = 3.92); considering both country- and year-fixed effects (0.129, *t*-stat = 3.87); and taking into account country-, year- and industry-fixed effects (0.153, *t*-stat = 4.57). These findings confirm H1, suggesting a positive association between financial distress and income-increasing accruals-based earnings management tactics. In other words, we find cross-country evidence that firms from emerging markets with higher levels of financial distress are associated to a higher level of income-increasing earnings management by accruals. These results are in line with part of previous literature on accrual-based earnings management and financial distress based on single-country analysis, such as in India (Paul and Rakshit, 2020), and Malaysia (Saleh and Ahmed, 2005), as well as been contrary to another stream of this studies which find contrary evidence (Agrawal and Chatterjee, 2015).

Table 4. Correlation matrix

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.
1. <i>EM</i>	1.0000																
2. <i>Distress</i>	0.0263	1.0000															
3. <i>Big 4</i>	-0.0204	-0.0297	1.0000														
4. <i>Big 4A</i>	-0.0002	-0.0048	0.2499	1.0000													
5. <i>Big 4B</i>	-0.0059	-0.0013	0.3498	-0.2068	1.0000												
6. <i>Big 4C</i>	-0.0012	0.0169	0.2910	-0.1721	-0.2408	1.0000											
7. <i>Big 4D</i>	-0.0163	-0.0460	0.3073	-0.1817	-0.2543	-0.2116	1.0000										
8. <i>Size</i>	-0.0036	0.1755	0.1691	0.0903	0.0294	-0.0014	0.0918	1.0000									
9. <i>Return on Assets</i>	-0.0266	-0.4122	0.1261	0.0376	0.0283	0.0112	0.0753	0.0499	1.0000								
10. <i>Growth</i>	0.0501	-0.0180	0.0204	0.0080	0.0053	-0.0138	0.0248	0.0861	0.2913	1.0000							
11. <i>Dissue</i>	0.1266	-0.1599	0.0061	0.0098	-0.0033	-0.0131	0.0150	0.1011	0.0832	0.3821	1.0000						
12. <i>Eissue</i>	0.1424	-0.0339	0.0320	0.0026	0.0076	-0.0180	0.0449	0.1000	0.5466	0.3910	0.1802	1.0000					
13. <i>Leverage</i>	0.0275	0.7599	0.0290	0.0123	-0.0005	0.0404	-0.0148	0.2909	-0.3526	0.0465	0.1485	-0.0676	1.0000				
14. <i>Tangibility</i>	-0.0607	0.1859	0.1061	0.0649	0.0305	0.0692	-0.0309	0.0277	-0.0495	-0.0691	-0.1228	-0.1329	-0.0029	1.0000			
15. <i>Loss</i>	-0.0034	0.2313	-0.0454	-0.0170	-0.0244	0.0232	-0.0354	-0.1673	-0.6591	-0.2476	-0.0914	-0.4570	0.1748	0.0742	1.0000		
16. <i>IFRS</i>	0.0101	-0.0268	-0.0771	-0.0111	0.0139	-0.0637	-0.0349	0.2423	-0.0728	-0.1023	-0.0215	-0.0799	0.0204	-0.1475	-0.0062	1.0000	
17. <i>Litigation</i>	-0.013	-0.0295	-0.0008	0.0258	0.0069	-0.0087	-0.0222	-0.0229	0.0023	0.0174	0.0197	0.0155	-0.0322	-0.1057	0.0163	0.0354	1.0000

This table presents Spearman correlation between all variables regarding the main empirical model estimations. *EM* is the accruals-based earnings management, based on the modified version of the model proposed by Jones (1991) to measure discretionary accruals, proposed by Dechow *et al.* (1995), by additionally considering return on assets (Kothari *et al.*, 2005). *Distress* is the level of financial distress proxied by Altman (2005) Z-Score for emerging markets multiplied by -1. *Big 4* is a dummy variable, which equals one for firm-year observations if the firm's auditor is Deloitte, EY, KPMG, and PwC, and zero otherwise. *Big 4A*, *Big 4B*, *Big 4C*, and *Big 4D* are dummy variables which assume 1 for firms audited by each one of the Big 4 auditors individually, and zero otherwise. *Size* is the natural logarithm of end of year total assets. *Return on Assets* is the net income scaled by end of year total assets. *Growth* is the percentage change in sales from the year t-1 to t. *Dissue* is the percentage change in total liabilities. *Eissue* is the percentage change in common stock. *Leverage* is the end of year total liabilities scaled by end of year total assets. *Tangibility* is the property, plant, and equipment scaled by end of year total assets. *Loss* is a dummy variable, which equals one for firm-year observations if net income is lower than 0, and zero otherwise. *IFRS* is a dummy variable, which equals one for firm-year observations referring to financial statements prepared according to IFRS standards only in post-IFRS mandatory period, and zero otherwise. *Litigation* is a dummy variable, which equals one for firm-year observations operating in a high litigation industry (SIC codes of 2833–2836, 3570–3577, 3600–3674, 5200–5961 and 7370), and zero otherwise. Correlations that are statistically significant at the 0.10 level are reported in bold.

Table 5. The association between financial distress and earnings management

	Dependent variable: <i>EM</i>			
	Column 1	Column 2	Column 3	Column 4
<i>constant</i>	2.995*** (3.49)	3.574*** (3.79)	4.508*** (4.47)	2.141** (1.99)
<i>Distress</i>	0.129*** (3.94)	0.128*** (3.92)	0.129*** (3.87)	0.153*** (4.57)
<i>Big 4</i>	-0.049 (-0.40)	-0.066 (-0.53)	-0.038 (-0.31)	-0.477*** (-3.68)
<i>Size</i>	-0.093** (-2.38)	-0.097** (-2.45)	-0.122*** (-3.02)	0.040 (0.92)
<i>Return on Equity</i>	-16.570*** (-11.47)	-16.406*** (-11.35)	-17.106*** (-11.79)	-18.724*** (-12.64)
<i>Growth</i>	-1.176*** (-4.10)	-1.245*** (-4.26)	-1.224*** (-4.19)	-1.052*** (-3.60)
<i>Dissue</i>	3.194*** (12.50)	3.235*** (12.61)	3.207*** (12.49)	3.325*** (12.88)
<i>Eissue</i>	9.446*** (26.53)	9.647*** (26.98)	9.659*** (26.97)	9.873*** (27.41)
<i>Leverage</i>	-2.051*** (-3.84)	-2.034*** (-3.80)	-1.959*** (-3.60)	-2.453*** (-4.41)
<i>Tangibility</i>	-1.279*** (-6.76)	-1.304*** (-6.87)	-1.844*** (-8.82)	-2.503*** (-11.54)
<i>Loss</i>	-0.225 (-1.13)	-0.210 (-1.05)	-0.249 (-1.25)	-0.336* (-1.68)
<i>IFRS</i>	0.386*** (3.64)	0.153 (0.81)	0.154 (0.82)	0.640*** (3.07)
<i>Litigation</i>	-0.550*** (-3.53)	-0.549*** (-3.52)	-0.937*** (-5.40)	-0.608*** (-3.56)
<i>Country fixed-effects</i>	<i>NO</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
<i>Industry fixed-effects</i>	<i>NO</i>	<i>NO</i>	<i>YES</i>	<i>YES</i>
<i>Year fixed-effects</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>YES</i>
No. Obs.	32,783	32,783	32,783	32,783
R ²	0.0701	0.0721	0.0737	0.0805

This table presents the estimation results of a selection model that analyzes the association between financial distress and earnings management. The dependent variable is *EM*, which represents the accruals-based earnings management, based on the modified version of the model proposed by Jones (1991) to measure discretionary accruals, proposed by Dechow *et al.* (1995), by additionally considering return on assets (Kothari *et al.*, 2005). *Distress* is the level of financial distress proxied by Altman (2005) Z-Score for emerging markets multiplied by -1. *Big 4* is a dummy variable, which equals one for firm-year observations if the firm's auditor is Deloitte, EY, KPMG, and PwC, and zero otherwise. *Size* is the natural logarithm of end of year total assets. *Return on Assets* is the net income scaled by end of year total assets. *Growth* is the percentage change in sales from the year t-1 to t. *Dissue* is the percentage change in total liabilities. *Eissue* is the percentage change in common stock. *Leverage* is the end of year total liabilities scaled by end of year total assets. *Tangibility* is the property, plant, and equipment scaled by end of year total assets. *Loss* is a dummy variable, which equals one for firm-year observations if net income is lower than 0, and zero otherwise. *IFRS* is a dummy variable, which equals one for firm-year observations referring to financial statements prepared according to IFRS standards only in post-IFRS mandatory period, and zero otherwise. *Litigation* is a dummy variable, which equals one for firm-year observations operating in a high litigation industry (SIC codes of 2833–2836, 3570–3577, 3600–3674, 5200–5961 and 7370), and zero otherwise. Parameter estimates are reported first, followed by robust *t*-statistics corrected for firm-level clustering in parentheses (Petersen, 2009).

*, **, and *** indicate significant coefficients at the 10%, 5%, and 1% levels, respectively (two-tailed).

Table 6 reports the H2 test results using OLS regression estimates of Equation (2). Column 1 shows that the coefficient of *Distress* is positive and significant (0.211, t -stat = 5.39), while the coefficient of the interaction term *Distress x Big 4* is negative and significant (-0.095, t -stat = 2.79) at conventional levels. These findings confirm H2, suggesting cross-country empirical evidence that the positive association between financial distress and income-increasing accruals-based earnings management is lower for firms from emerging markets audited by a Big 4 audit firm, when compared to firms audited by a non-Big 4 audit firm. Big 4 audit firms seem to play an important role in emerging markets in order to reduce accruals-based earnings management practices by firms with high levels of financial distress. Thus, we emphasize the key role played by these large auditing firms (i.e. Big 4) in poor institutional environments (i.e. emerging markets), in order to guarantee the quality of financial reporting by firms with great incentives to engage in earnings manipulations (i.e. firms with higher levels of financial distress).

In order to confirm the empirical findings presented in Table 6, Column 1, we also estimate Equation (2) by splitting the sample into two groups (i.e. Big 4 and non-Big 4 auditors). The results are reported in Table 6, Columns 2 and 3. We find the coefficient of *Distress* is positive and significant in both groups, but it is lower for the group of firms audited by a non-Big 4 audit firm (0.074, t -stat = 1.78) compared to the group of firms audited by a Big 4 audit firm (0.307, t -stat = 5.35). Moreover, the difference between the two coefficients are significant (see Column 3) at conventional levels, which confirm our hypothesis (H2) that Big 4 audit firms constraints income-increasing accruals-based earnings management strategies in firms with higher levels of financial distress in emerging markets.

Table 7 shows the H3 test results using OLS regression estimates of Equation (3). Specifically, we estimate Equation (3) by taking into account each one of the four interaction terms of *Distress* with one of the four dummy variables concerning Big 4 audit firms individually (see Column 1 to 4), as well as considering all the four interaction terms simultaneously (see Column 5). Consistent with our previous analysis, we find a significant and positive coefficient for *Distress* among all estimations. Moreover, the coefficient of the interaction terms *Distress x Big 4C* (-0.064, t -stat = -1.53), and *Distress x Big 4D* (-0.132, t -stat = -2.84) are significant and negative at conventional levels, according to Columns 3 and 4, respectively, suggesting that both Big 4C and Big 4D auditors moderate the association between financial distress and income-increasing accruals-based earnings management. Besides, we also find that the both interaction terms *Distress x Big 4A* (0.015, t -stat = 0.30), and *Distress x Big 4B* (0.027, t -stat = 0.70) are not significant, according to Columns 1 and 2, respectively. Results of Column 5 confirm those estimations.

Table 6. The moderating role of Big 4 audit firms on the association between financial distress and earnings management

	Dependent variable: <i>EM</i>			
	Overall Sample	Separate Sample		
	Column 1	Column 2 (I) <i>Big 4</i> = 1	Column 3 (II) <i>Big 4</i> = 0	Column 4 <i>Diff.</i> (II) – (I)
<i>constant</i>	2.463** (2.29)	3.252** (2.55)	-3.350 (-1.49)	
(β₁) <i>Distress</i>	0.211*** (5.39)	0.074* (1.78)	0.307*** (5.35)	0.233### [10.81]
(β₂) <i>Distress x Big 4</i>	-0.095*** (-2.79)			
<i>Big 4</i>	-1.189*** (-4.13)			
<i>Size</i>	0.044 (1.00)	-0.033 (-0.68)	0.327*** (3.29)	0.360### [10.65]
<i>Return on Equity</i>	-18.960*** (-12.83)	-18.305*** (-10.61)	-21.281*** (-7.38)	-2.976 [0.79]
<i>Growth</i>	-1.034*** (-3.54)	-0.734** (-2.12)	-1.493*** (-2.84)	-0.759 [1.46]
<i>Dissue</i>	3.308*** (12.81)	2.764*** (8.89)	4.485*** (9.67)	1.721### [9.55]
<i>Eissue</i>	9.899*** (27.43)	9.552*** (21.36)	10.713*** (17.54)	1.161 [2.36]
<i>Leverage</i>	-2.387*** (-4.28)	-1.659** (-2.50)	-4.433*** (-4.25)	-2.774## [5.06]
<i>Tangibility</i>	-2.500*** (-11.55)	-2.092*** (-8.24)	-3.517*** (-8.68)	-1.425### [8.93]
<i>Loss</i>	-0.348* (-1.74)	-0.193 (-0.83)	-0.584 (-1.51)	-0.391 [0.75]
<i>IFRS</i>	0.640*** (3.07)	0.735*** (3.04)	0.559 (1.32)	-0.176 [0.13]
<i>Litigation</i>	-0.616*** (-3.61)	-0.669*** (-3.29)	-0.574* (-1.88)	0.095 [0.07]
<i>Country fixed-effects</i>	YES	YES	YES	
<i>Industry fixed-effects</i>	YES	YES	YES	
<i>Year fixed-effects</i>	YES	YES	YES	
No. Obs.	32,783	23,043	9,740	
R ²	0.0808	0.0740	0.1034	

This table presents the estimation results of a selection model that analyzes the moderating role of Big 4 auditors on the association between financial distress and earnings management. The dependent variable is *EM*, which represents the accruals-based earnings management, based on the modified version of the model proposed by Jones (1991) to measure discretionary accruals, proposed by Dechow *et al.* (1995), by additionally considering return on assets (Kothari *et al.*, 2005). *Distress* is the level of financial distress proxied by Altman (2005) Z-Score for emerging markets multiplied by -1. *Big 4* is a dummy variable, which equals one for firm-year observations if the firm's auditor is Deloitte, EY, KPMG, and PwC, and zero otherwise. *Size* is the natural logarithm of end of year total assets. *Return on Assets* is the net income scaled by end of year total assets. *Growth* is the percentage change in sales from the year t-1 to t. *Dissue* is the percentage change in total liabilities. *Eissue* is the percentage change in common stock. *Leverage* is the end of year total liabilities scaled by end of year total assets. *Tangibility* is the property, plant, and equipment scaled by end of year total assets. *Loss* is a dummy variable, which equals one for firm-year observations if net income is lower than 0, and zero otherwise. *IFRS* is a dummy variable, which equals one for firm-year observations referring to financial statements prepared according to IFRS standards only in post-IFRS mandatory period, and zero otherwise. *Litigation* is a dummy variable, which equals one for firm-year observations operating in a high litigation industry, and zero otherwise. Parameter estimates are reported first, followed by robust *t*-statistics corrected for firm-level clustering in parentheses (Petersen, 2009).

*, **, and *** indicate significant coefficients at the 10%, 5%, and 1% levels, respectively (two-tailed).

#, ##, and ### indicate significant coefficients difference at the 10%, 5%, and 1% levels, respectively (chi-square statistics in brackets).

Table 7. Financial distress and earnings management: The moderating role of Big 4 audit style

	Dependent variable: <i>EM</i>				
	Column 1	Column 2	Column 3	Column 4	Column 5
<i>constant</i>	2.652** (2.47)	2.628** (2.46)	2.664** (2.50)	2.594** (2.42)	2.435** (2.26)
<i>Distress</i>	0.157*** (4.63)	0.153*** (4.42)	0.166*** (4.86)	0.180*** (5.36)	0.212*** (5.40)
<i>Distress x Big 4A</i>	0.015 (0.31)				-0.049 (-0.95)
<i>Distress x Big 4B</i>		0.027 (0.70)			-0.040 (-0.93)
<i>Distress x Big 4C</i>			-0.064* (-1.53)		-0.119** (-2.52)
<i>Distress x Big 4D</i>				-0.132*** (-2.84)	-0.172*** (-3.35)
<i>Big 4A</i>	0.188 (0.49)				-0.660 (-1.54)
<i>Big 4B</i>		-0.053 (-0.17)			-0.833** (-2.36)
<i>Big 4C</i>			-0.504 (-1.46)		-1.269*** (-3.20)
<i>Big 4D</i>				-1.317*** (-3.41)	-1.915*** (-4.43)
<i>Size</i>	0.001 (0.00)	0.006 (0.15)	0.003 (0.07)	0.013 (0.31)	0.048 (1.09)
<i>Return on Equity</i>	-19.156*** (-12.93)	-19.105*** (-12.90)	-19.182*** (-12.97)	-19.087*** (-12.94)	-18.939*** (-12.81)
<i>Growth</i>	-1.056*** (-3.61)	-1.054*** (-3.60)	-1.051*** (-3.59)	-1.045*** (-3.57)	-1.026*** (-3.51)
<i>Dissue</i>	3.333*** (12.90)	3.333*** (12.91)	3.327*** (12.88)	3.329*** (12.88)	3.307*** (12.81)
<i>Eissue</i>	9.884*** (27.41)	9.881*** (27.41)	9.894*** (27.46)	9.883*** (27.43)	9.897*** (27.47)
<i>Leverage</i>	-2.535*** (-4.55)	-2.529*** (-4.54)	-2.504*** (-4.50)	-2.515*** (-4.53)	-2.402*** (-4.32)
<i>Tangibility</i>	-2.539*** (-11.73)	-2.531*** (-11.71)	-2.531*** (-11.71)	-2.532*** (-11.78)	-2.510*** (-11.68)
<i>Loss</i>	-0.369* (-1.84)	-0.370* (-1.84)	-0.363* (-1.81)	-0.366* (-1.83)	-0.347* (-1.74)
<i>IFRS</i>	0.596*** (2.87)	0.597*** (2.87)	0.594*** (2.85)	0.606*** (2.91)	0.630*** (3.02)
<i>Litigation</i>	-0.634*** (-3.71)	-0.617*** (-3.61)	-0.628*** (-3.66)	-0.634*** (-3.71)	-0.607*** (-3.56)
<i>Country fixed-effects</i>	YES	YES	YES	YES	YES
<i>Industry fixed-effects</i>	YES	YES	YES	YES	YES
<i>Year fixed-effects</i>	YES	YES	YES	YES	YES
No. Obs.	32,783	32,783	32,783	32,783	32,783
R ²	0.0801	0.0802	0.0801	0.0806	0.0811

This table presents the estimation results of a selection model that analyzes the moderating role across Big 4 auditors on the association between financial distress and earnings management. The dependent variable is *EM*, which represents the accruals-based earnings management, based on the modified version of the model proposed by Jones (1991) to measure discretionary accruals, proposed by Dechow *et al.* (1995), by additionally considering return on assets (Kothari *et al.*, 2005). *Distress* is the level of financial distress proxied by Altman (2005) Z-Score for emerging markets multiplied by -1. *Big 4A*, *Big 4B*, *Big 4C*, and *Big 4D* are dummy variables which assume 1 for firms audited by each one of the Big 4 auditors individually, and zero otherwise. *Size* is the natural logarithm of end of year total assets. *Return on Assets* is the net income scaled by end of year total assets. *Growth* is the percentage change in sales from the year t-1 to t. *Dissue* is the percentage change in total liabilities. *Eissue* is the percentage change in common stock. *Leverage* is the end of year total liabilities scaled by end of year total assets. *Tangibility* is the property, plant, and equipment scaled by end of year total assets. *Loss* is a dummy variable, which equals one for firm-year observations if net income is lower than 0, and zero otherwise. *IFRS* is a dummy variable, which equals one for firm-year observations referring to financial statements prepared according to IFRS standards only in post-IFRS mandatory period, and zero otherwise. *Litigation* is a dummy variable, which equals one for firm-year observations operating in a high litigation industry, and zero otherwise. Parameter estimates are reported first, followed by robust *t*-statistics corrected for firm-level clustering in parentheses (Petersen, 2009).

*, **, and *** indicate significant coefficients at the 10%, 5%, and 1% levels, respectively (two-tailed).

Overall, these findings partially confirm H3, indicating cross-country empirical evidence that there are differences among Big 4 audit firms in their role of dampening the positive association between financial distress and income-increasing earnings management in emerging markets. In words others, our findings demonstrate that the overall effect of Big 4 auditors in the sense of limiting income-increasing earnings management by firms with higher levels of financial distress (see Table 6) seems, in fact, to depend on only two auditing companies (i.e. Big 4C and Big 4D). The other two firms (i.e. Big 4A and Big 4B) are not correlated with limiting income-increasing earnings management. Therefore, our empirical estimations confirm our theoretical argument that the *audit style* of each individual auditing firms seems to matter on the association between the financial distress and the accruals-based earnings management in emerging markets.

Taking these findings together, our results reiterate potential opportunistic behaviors concerning earnings manipulation by managers of firms in emerging markets which face high levels of financial distress. More precisely, we point out empirical evidence that firms with higher levels of financial distress upward their profits by using accounting choices related to discretionary accruals. We interpret these findings as a consequence of a poor institutional environment intrinsic to emerging countries (i.e. immature government and regulatory infrastructures, severe corporate governance problems, and worse levels of monitoring by shareholders and protection of minority investors), which consequently create an conducive environment for managers to upwards profits and thus avoid negative damage to their reputations, or even negative implications to their remunerations. Furthermore, we point out that Big 4 audit firms seem to mitigate such opportunistic practices, given the greater scrutiny that these firms have on the financial information of their clients. However, the intrinsic audit style individually for each auditor seems to cause significant differences across Big 4 audit firms in terms of their role in mitigating accruals-based earnings management strategies in companies with higher levels of financial distress in emerging markets.

2.5. Robustness Tests

Beyond our main empirical analysis, we also rely on a bunch of robustness checks in order to confirm our main results. First, due to potential measurement errors problems in accruals estimation process, we consider alternative measures of accruals-based earnings management. In particular, we take into account the modified Jones (1991) model according to Dechow *et al.* (1995) without any additional control (*EM_Alternative1*), as well as including lagged accruals (*EM_Alternative2*), following the recommendations of Dechow *et al.* (2012). The results are presented in Table 8. Across all estimations, we constantly find a positive a significant coefficient for *Distress*. We also find a negative and significant coefficient of the interaction term *Distress x Big 4* when considering the *EM_Alternative1* as our dependent variable. Finally, by taking into account the four interaction terms of *Distress* with each one of the four dummy variables concerning Big 4 auditors (i.e. *Big 4A*, *Big 4B*,

Big 4C, and *Big 4D*), we find that all of them are negative, even though just some are significant. Overall, these findings are aligned with our main results, and hence confirm H1, H2, and H3.

Table 8. Robustness analysis

	Dependent variable: <i>EM_Alternative1</i>			Dependent variable: <i>EM_Alternative2</i>		
	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
<i>constant</i>	2.470** (2.22)	2.710** (2.43)	2.696** (2.41)	2.916*** (2.66)	3.063*** (2.78)	3.044*** (2.76)
<i>Distress</i>	0.191*** (5.56)	0.234*** (5.81)	0.235*** (5.83)	0.168*** (5.10)	0.195*** (5.01)	0.195*** (5.03)
<i>Distress x Big 4</i>		-0.071** (-2.07)			-0.044 (-1.29)	
<i>Distress x Big 4A</i>			-0.650 (-1.54)			-0.516 (-1.26)
<i>Distress x Big 4B</i>			-0.767** (-2.12)			-0.613 (-1.70)
<i>Distress x Big 4C</i>			-1.086*** (-2.72)			-0.925** (-2.29)
<i>Distress x Big 4D</i>			-1.664*** (-3.77)			-1.408*** (-3.30)
<i>Control variables</i>	YES	YES	YES	YES	YES	YES
<i>Country fixed-effects</i>	YES	YES	YES	YES	YES	YES
<i>Industry fixed-effects</i>	YES	YES	YES	YES	YES	YES
<i>Year fixed-effects</i>	YES	YES	YES	YES	YES	YES
No. Obs.	32,783	32,783	32,783	32,410	32,410	32,410
R ²	0.1131	0.1132	0.1135	0.1092	0.1093	0.1095

This table presents robustness checks on the association between financial distress and earnings management, as well as the role of Big 4 auditors on such association. The dependent variables are alternative measures of accruals-based earnings management (see Table 1). *Distress* is the level of financial distress proxied by Altman (2005) Z-Score for emerging markets multiplied by -1. *Big 4* is a dummy variable, which equals one for firm-year observations if the firm's auditor is Deloitte, EY, KPMG, and PwC, and zero otherwise. *Big 4A*, *Big 4B*, *Big 4C*, and *Big 4D* are dummy variables which assume 1 for firms audited by each one of the Big 4 auditors individually, and zero otherwise. Control variables inserted in all estimations (see Table 1). Parameter estimates are reported first, followed by robust *t*-statistics corrected for firm-level clustering in parentheses (Petersen, 2009).

*, **, and *** indicate significant coefficients at the 10%, 5%, and 1% levels, respectively (two-tailed).

Second, we drop *Leverage* from our estimations due to their high correlation with *Distress*. Third, we drop firm-year observations from countries with a large representativeness in our sample (i.e. China, Korea, and Malaysia). Fourth, we also estimate our regressions considering only the period after the subprime crisis (year > 2009), in order to isolate concerns related to consequences of the economic environment. Fifth, given some potential bias on OLS estimations due to our truncated dependent variable (i.e. the absolute amount of discretionary accruals), we also proceed our analysis relying on Tobit regression estimates. Sixth, we also estimate our main regression in a pooled fashion by correcting standard errors in two-dimensional cluster at the firm- and year-level, instead of firm-level clusters only. Seventh, we employ Chen *et al.* (2018) correction concerning potential problems of biased coefficients and standard errors that can lead to incorrect inferences, with both Type I and Type II errors, in traditional accruals estimation process. Our results (untabulated) remain qualitatively the same as those presented in Section 4 considering all of those alternative scenarios.

2.6. Conclusion

We analyze the association between financial distress and accruals-based earnings management in emerging markets, and the role that auditors (i.e. Big 4 *versus* non-Big 4, and differences across Big 4 audit firms) play in such association. Relying on a cross-country design, covering a large data sample of firms from 20 emerging markets, our results indicate that firms facing higher levels of financial distress manipulate earnings upward by accruals in such markets, and that such opportunistic strategy is lower in firms audited by Big 4 compared to those audited by non-Big 4 auditors. Additionally, we demonstrate significant differences across Big 4 audit firms in their role of constraining income-increasing earnings management strategies in firms with higher levels of financial distress.

Our results contribute to the accounting quality literature by bringing an overall cross-country empirical evidence on the association between earnings management and financial distress. Besides, we also contribute to the auditing literature by theoretically arguing and empirically testing the role of Big 4 audit firms in the association between earnings management and financial distress, as well as potential differences across them due to the intrinsic audit style of each auditing firm. Besides, we provide an interesting discussion to investors, which could be more attempted to earnings management strategies by firms with higher levels of financial distress, and the role played by external auditing in this context. The accounting profession, as well as regulators, could also be interested in our findings to the development of policies involving earnings management themes and audit quality.

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CAPÍTULO 3

Does National Ethical Judgment Matter for Earnings Management?

3.1. Introduction

This study analyses the association between country-level ethical judgment and earnings management, and the role played by firm-level enforcement and the quality of accounting standards in this association. In general terms, earnings management occurs when “managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers” (Healy and Wahlen 1999, p. 368). Despite the existence of a huge literature on earnings management, its motivation and practices related specifically to national ethical judgment issues seem to remain little explored.

The debate on accounting practice and ethical issues has been gaining considerable notoriety among regulators, standards setters, and investors, being recognized globally as important factors for survival in the market in recent years (Im and Nam, 2019). Recently, the International Ethics Standards Board for Accountants (IESBA), through the support of the International Federation of Accountants (IFAC), released an updated version of the Code of Ethics for Professional Accountants (2020)²⁴, in order to emphasize that the accountancy profession is entrusted with public confidence in the wide-ranging roles it plays in society and that such confidence is based on the skills and values it brings to its professional activities. Similarly, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) released a new publication on compliance risk management, by stating that “compliance risk generally involves the risk of violations of laws and regulations, but it may also address contract provisions, professional standards, organizational policy, and ethics matters” (COSO, 2020, p. 5)²⁵.

Moreover, the increasing globalization process of markets and the higher levels of cross-listing activities in foreign countries seem to put the discussions related to business ethics at a level of international concern, shedding light on how the construction of ethical behaviours at a more institutional level of societies can also interfere with accounting practices. Aligned with that, global foreign direct investment (FDI) worldwide, overall, have increased in the last two decades among many economies until 2019 (UNCTAD, 2020). Given that FDI is one of the key ways that economies integrate into the global economy, providing means to create stable and long-lasting relationships

²⁴ International Code of Ethics for Professional Accountants (2020). Changes of substance from 2018 edition. 18 February, available at: <https://www.ethicsboard.org/publications/2020-handbook-international-code-ethics-professional-accountants>.

²⁵ COSO. (2020). Compliance risk management: applying the COSO erm framework. 11 November, available at: <https://www.coso.org/news/Pages/compliance-risk-management-applying-the-coso-erm-framework.aspx>.

between economies (OECD, 2020), it became more urgent to analyse how the how the ethical aspects intrinsic to the culture of nations can somehow interfere in the global economy through their impact on the quality of financial reporting. From this perspective, when it is known that the countries' ethically-related judgments decrease the level of earnings management, actions can be taken to build stronger and fairer societies, given that the quality of the financial reporting is inextricably linked to how well the economy works and how income and wealth are distributed. Besides, even more recent, the Covid-19 outbreak also seems to raise even more discussion on the importance of ethical behaviour to accounting practice, considering that in this environment of the pandemic, as in any crisis, the opportunities and incentives for corruption, illicit, unethical practices are heightened²⁶.

In this study, we define ethical judgment as the personal attitude towards the acceptability of certain ethical situations (Weeks *et al.*, 1999 p. 302). Based on the theoretical framework proposed by Fritzsche (1991), we consider ethics as one key dimension in the business decision-making process, with several implications to firms. Ethical judgment is, therefore, related to justice sense and perception about what could be accepted or not. This concept can be discussed at a personal level (Aquino and Reed, 2002), at a corporate level (Schminke *et al.*, 2015; Trevino *et al.*, 2014), or even at a societal/country level (Schwartz, 2007). Thus, individuals, organizations, and societies with higher levels of ethical judgment present clearer perceptions and behaviours aligned with what is considered fair, good, and acceptable, generally presenting a more individualistic profile from the perspective that could cause harm to others, an outcome they tend to avoid (Forsyth and Berger, 1982).

Despite not all accounting choices involve earnings management, and the term “earnings management” extends beyond accounting choice, the implications of accounting choice to achieve managers' private goals are consistent with the idea of earnings management (Fields *et al.*, 2001, p. 260). From this view, the issue-contingent nature of earnings management highlights the importance of moral and ethical intensity of managers in understanding the underlying morality of earnings manipulation activity (Johnson *et al.*, 2012). Therefore, considering this potential implication of ethical issues on the way in which managers engage in earnings manipulation practices, previous literature documents the role of ethically-related judgments at both individual- (Cohen *et al.*, 2007; Greenfield *et al.*, 2008; Johnson *et al.*, 2012; Septiari and Maruli, 2017) and organizational-level (Shafer, 2015; Walker and Fleischman, 2013; Lord and DeZoort, 2001) and their consequences to unethical accounting practices. Broadly, these studies suggest, usually through qualitative research designs that rely on interviews and experiments with small groups of participants, that ethical judgment of both individuals and organizations matter as key determinants of the way managers are involved with unethical accounting practices (including earnings management). We advance in this discussion and investigate this phenomenon, through a quantitative research design that relies on an

²⁶ Thomadakis, S. (2021). Conference on Corruption – International Ethics Standards Board for Accountants, hosted by IFAC, available at: <https://www.ethicsboard.org/news-events/2021-03/conference-corruption-keynote-remarks-dr-stavros-thomadakis>.

international large set of firms, by examining the association between country-level ethical judgment and earnings management practices.

Considering that the context in which a firm operates may influence the moral behaviour of market players (Zhang *et al.*, 2013), national ethical judgment can be viewed as a determinant of how managers could be engaged or not in earnings management. From this view, not only individual judgments seem to be relevant in the moment of making decisions, but also all macro-elements that frame and draw the “picture as a whole”. Johnson *et al.* (2012, p. 913) suggest that agents and individuals are influenced not only by unique issue-contingent factors of one specific situation, but also by how the behaviours “would be viewed in terms of social norms of morality”. Therefore, constructs linked to macro-environment where individuals and organization are situated – such as the “social consensus”, the “magnitude of consequences”, the “temporal immediacy”, among others (see Jones, 1991) – would play an important role in how individuals plan and execute their market strategies. Social identity theory (Tajfel and Turner, 1986) provides an important theoretical basis in this understanding, discussing how individuals form their own identities based on the feedback they receive from their communities, within which one associates, leading them, therefore, to an internalization of the group’s norms, duties, and commitments into the individual’s self-definition or identity (Kekes, 1983). Thus, considering the relevance of the environment where organizations are situated in determining the moral behaviour of market agents, we hypothesize that the level of the ethical judgment of the countries where companies are located also influence the manager’s behaviour about what be considered “wrong” and “right” and, therefore, having an impact on firm-level earnings management practices.

Besides the association between countries’ ethical judgement and earnings management levels of firms, we additionally explore the role played by two important features to earnings quality in this association, namely the firm-level enforcement and the quality of accounting standards. Previous literature empirically suggests that in firms where mandatory accounting standards are enforced (e.g., Lang *et al.*, 2003; DeFond *et al.*, 2017) and that adopt high-quality accounting standards (e.g., Barth *et al.*, 2008; Armstrong *et al.*, 2010), overall, earnings management tactics are constrained. Taking those evidence into account, given the likelihood of either firm-level enforcement or accounting standards quality to constrains earnings management, we suppose that either of those two factors could play a substitution role with the countries’ ethical judgement in determining the level of earnings management of firms. More specifically, we also hypothesize that in firms with high (low) enforcement and accounting standards quality, the negative effect of countries’ ethical judgement may be not so relevant when compared to those firms with lower levels of enforcement (accounting standards quality). From this perspective, as the country’s ethical judgment becomes lower (i.e. morally suspect behaviour is more acceptable among citizens), firm-level enforcement (accounting standards quality) may also compensate for a the potential increase in earnings management in such societies.

We test our hypotheses based on a worldwide sample encompassing 45,889 firm-year observations from 34 countries between 1998 and 2018. Based on an international questionnaire prepared by the World Values Survey, we construct a comprehensive index that aims to capture the level of ethical judgment for each country. Our empirical findings consistently demonstrate that the level of national ethical judgment is negatively associated with earnings management, suggesting that the manipulation of accounting amounts is lower in countries where ethically suspect behaviours are less acceptable. Besides, we provide empirical evidence that in firms with high levels of enforcement (i.e. audited by Big 4 auditors) and that adopt accounting standards of high-quality [i.e. International Financial Reporting Standards (IFRS)] the negative effect of national ethical judgment on earnings management is lower. In other words, both firm-level enforcement and accounting standards quality seem to play a substitution role with the national ethical judgement in determining firms' earnings management. This imply that in firms with higher levels of enforcement (accounting standards quality), the role of countries' ethical judgement in determining earnings management seems to be not so relevant when compared to those firms with lower levels of enforcement (accounting standards quality). From this perspective, firm-level enforcement and accounting standards quality may also compensate for lower levels of national ethical judgement in constrains earnings management. Our findings are robust considering a bunch of earnings management measures, as well as considering alternatives estimation scenarios and regression methods in order to mitigate potential confounding effects and estimations bias.

Our study contributes to the literature in the following ways. First, we provide novel evidence to the ethical business literature by providing empirical evidence on the importance of national ethical judgment as a determinant of firm-level earnings management strategies. While previous literature documents that ethical issues at both individual- (Cohen *et al.*, 2007; Greenfield *et al.*, 2008; Johnson *et al.*, 2012; Septiari and Maruli, 2017) and organizational-level (Shafer, 2015; Walker and Fleischman, 2013; Lord and DeZoort, 2001) are important in determining the way managers are involved with unethical accounting practices, we investigate the role of ethical judgment at country-level in explaining earnings management practices. Therefore, more specifically, in addition to issues related to the ethical characteristics of individuals and organizations, we foster an important debate on how countries' ethically-related judgments can also interfere in the behaviour of managers linked to profit manipulation practices. Understanding the role played by national ethical judgment as a key determinant of earnings management contributes to a broader understanding of firms' financial reporting behaviour.

Second, we also contribute to the international accounting literature by demonstrating the importance of a factor at the country level that in our best understanding has not yet been explored empirically by the previous literature (i.e. national ethical judgment). In fact, research on international accounting seems to be one of the most important topics in the current accounting research agenda (Gordon *et al.*, 2019). Thus, a consistent stream of empirical studies seems to increasingly pay

attention to the relevance of factors at the country level as determinants of the financial reporting quality, such as economic (e.g., Chen *et al.*, 2020), political (e.g., Yung and Root, 2019), legal (Leuz *et al.*, 2003), and international standards (e.g., Callao and Jarne, 2010) factors. We complement this literature by discussing the role of countries' ethically-related judgments, as well as firm characteristics that may attenuate the effect of national ethical judgment on earnings management.

Furthermore, in a more practical way, our results contribute to the debate about ethical issues on the accounting profession in an international context, aligned with an important and recent debate by international organizations such as the IESBA and COSO. Therefore, even though relying on small groups interviews might lead to more refined results concerning the investigated phenomenon that our study eventually does not capture, based on our cross-country empirical evidence, we raise an important discussion to the market by suggesting that, on average, the ethical judgment intrinsic to the culture of the countries seems to also play an important role in the quality of the information reported by firms. In this sense, sophisticated investors and international regulatory agencies may be interested in such evidence, for instance, in decisions related to the international allocation of investments and in the development of policies related to the quality of information reported by firms.

The remainder of this paper is organized as follows. Section 2 discusses the previous literature and outlines the hypothesis. Section 3 describes the research design and Section 4 presents both the main empirical findings and robustness/additional analysis, respectively. Finally, Section 5 presents concluding remarks.

3.2. Background

3.2.1. National Ethical Judgement and Earnings Management

Earnings management is defined as “a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain (as opposed to, say, merely facilitating the neutral operation of the process)” (Schipper, 1989, p. 92). Unlike fraud – related to the use of artificial accounting transactions or those that occur outside of the regulatory framework – earnings management involves using the flexibility within accounting standards to deliver a predetermined profit (Jones, 2011), been “probably the most important ethical issue facing the accounting profession” (Merchant and Rockness, 1994, p. 1994).

Most financial accounting issues deal with matters of human behaviour, namely the judgments and decisions of managers (Koonce and Mercer, 2008). The ethical issues involved in the financial reporting process have long been a concern of the accounting profession (Grasso *et al.*, 2009), involving both mandatory (Satava *et al.*, 2006) and voluntary disclosure (e.g., Jauernig and Valentinov, 2019; Roth *et al.*, 2019). Despite accounting choices flexibility by managers is inherent to the practice (Fields *et al.*, 2001), many consider that higher levels of earnings management are tantamount to unethical practices (Grasso *et al.*, 2009). Major corporate scandals like Waste

Management, Enron, WorldCom, Tyco and Arthur Andersen's demise have all been linked directly or indirectly to deception, misleading, and untruthful accounting (Bayou *et al.*, 2011). Similarly, the former global crisis of the financial system was associated with false accounting. Based on this evidence, "the accounting profession continues to struggle with the problem of veracity of its reports" (Vladu *et al.*, 2017, p. 633). Such discussion, therefore, puts the ethics in accounting as a highly important discussion for reducing unethical and fraudulent activities with consequences not only for the public interest, but also for the development of countries and capital markets (Kiradoo, 2020).

More specifically about the association between ethical issues and earnings management, previous literature documents the relevance of ethical issues at the individual- (Cohen *et al.*, 2007; Greenfield *et al.*, 2008; Johnson *et al.*, 2012; Septiari and Maruli, 2017) and organizational-level (Shafer, 2015; Walker and Fleischman, 2013; Lord and DeZoort, 2001) as a key determinant of unethical accounting practices. At the individual-level, using a sample of 375 undergraduate business majors, Greenfield *et al.* (2008) demonstrate that individuals with a more idealistic (relativistic) ethical orientation are less (more) likely to engage in earnings management behavior. Based on 102 respondents, Septiari and Maruli (2017) also demonstrate a significant relationship between individual ethical orientation and earnings management behaviour, and that individuals with a higher level of professional commitment are less likely to engage in earnings management. The empirical findings of Johnson *et al.* (2012), relying on 264 respondents, suggest that that the perceived ethicality of the earnings management decision is a key issue influencing earnings management behaviour. Based on 261 management accountants, Cohen' *et al.* (2007) empirical findings also suggest that the greater the perceived unfairness of an action (important in promoting the ethical behavior), the less likely individuals are to state an intention of taking the opportunistic action (i.e. likelihood of allocating the cost to future projects and thereby violating company policy).

Beyond the relevance of individual's ethically-related judgments, previous literature has also suggested the role of ethical judgment at the organizational-level in influence managerial responses to an employee's earnings management and morally questionable behaviours, given that ethical issues are an integral part of the corporate culture of the firms that contribute to the improvement and enhancement of its strategic advantages (Filipovic and Drobnjak, 2017). Relying on a sample of 206 responses among accountants working in over 20 companies, Shafer (2015) find that perceptions of ethical climate, usually presumed to reflect the "tone at the top" in the organization, lead accounting professionals to rationalize earnings management decisions by adjusting their attitudes toward the importance of corporate ethics and social responsibility. Based on 276 responses among professionals and MBA accounting students, Walker and Fleischman (2013) show that enhancing a firm's ethical culture may reduce incentives to engage in undesirable budget-gaming and earnings management practices. Lord and DeZoort (2001) demonstrate, based on a sample of 171 auditors from one international firm, that obedience pressure in the organizational environment significantly increased

auditors' willingness to sign-off on an account balance that was materially misstated, although conformity pressure did not.

Considering these studies, we evaluate two important points to the accounting literature. First, as noted, previous accounting literature documents the role of ethically-related judgments only at the individual- and organizational-level as key determinants of the way managers are involved with unethical behavior and misconduct (including earnings management practices). Second, previous literature is predominantly based on qualitative designs that rely on small groups of interviews and experiments framed in specific cases, and some of these studies analyze ethical perceptions of earnings management, instead of earnings management practices. Consequently, scarce evidence was generated empirically about the role of ethical macro-environments and their implications to earnings management practices. Chen *et al.* (2018b) highlight the importance of empirical research on ethical and moral issues, based on a larger cross-country sample, in an effort to demonstrate the external validity of the documented relation. Therefore, considering that moral behaviour is the results not only of personal trajectories but also of cultural experiences that vary across individuals due to differences in such experiences (Hobson *et al.*, 2011), we add to previous literature and focus our analyses considering the role of ethical judgment at a country-level in determining managers actions related to earnings management.

The approach of the political and economic sciences presupposes that the strategic actions devised by the policymakers result from a "strategic calculation" to foster exchange gains. Thus, based on this approach, rules associated with economic and institutional environment create (des)incentives for economic agents, as managers or even investors, given their cognitive preferences and abilities and how they shape the organization's results (North, 1990).

More specifically in accounting literature, country characteristics and their implications to different constructs of accounting quality – including earnings management – are extensively documented in previous research. In this perspective, the characteristics at the country-level empirically investigated in the literature are diverse. For instance, Nabar and Boonlert-U-Thai (2007) demonstrate empirically that earnings management is relatively high in countries with high uncertainty avoidance scores and relatively low in countries where the primary language is English. Lourenço *et al.* (2018) demonstrate empirical evidence that higher corruption perception is related to higher incentives for firms to manipulate earnings, but only in the case of emerging countries. McGuire *et al.* (2011) also demonstrate empirical findings suggesting that firms headquartered in areas with strong religious social norms generally experience lower incidences of accrual-based earnings management.

Especially about ethical judgment and the importance of a more macro-view and the interference of environment in this phenomenon, Hobson *et al.* (2011) comment ethical issues reflect the long-term potential for an individual to form a sufficient moral judgment under a given moral setting or moral frame. Social identity theory (Tajfel and Turner, 1986) provides an important theoretical basis in this understanding, discussing how the community in which individuals are associated can lead to an

internalization of the group's duties, commitments and norms into the individual's self-identity (Kekes, 1983). "The basic idea of social identity theory is that a person forms a unique personal identity as an individual and develops a social identity based on the groups to which he or she belongs", bridging the gap between the psychology perspective of individual values and the sociology perspective of group behaviour (Pearce, 2013, p. 499). Thus, a fundamental reason why people engage themselves in groups is because they use the feedback they receive from those groups to create and keep their individual identities. Thus, for employees to perform proactive and discretionary activities such as ethical decision-making or organizational citizenship behaviours, individual identities must be tied to social referents that represent positive norms of behaviour (Westerman *et al.*, 2007).

Social identity theory suggests, hence, that as individuals begin to identify with a particular group, they are able to answer the question, 'who am I?' with the explicit response, 'I am part of this group' – been this process of identification primarily motivated by the need of individuals defining themselves and creating meaning in their lives (Gundlach *et al.*, 2006). From this perspective, individuals' values concerning ethical judgment is therefore formed in part by the groups to which the individuals perceive themselves as belonging (Pearce, 2013). Such values that individuals take into account to form their ethical judgment encompass both organizational-level factors and broader elements such as nationality, age, and race (Horak and Arya, 2020).

Taking these arguments together, we predict that firms from countries where ethically suspect behaviours are less acceptable – and, therefore, that could be considered societies with higher levels of national ethical judgment – present lower levels of earnings management, given that the moral character of society will play a role in constraining potential opportunistic behaviour. In other words, we suspect that managers from those societies where individuals' perceptions and behaviours are aligned with what is considered fair, honest, good, and acceptable, directly and indirectly would also form similar values. In this context, therefore, when pressed to report better results, or even results that meet market expectations, it would be likely that managers from higher levels of ethical judgement societies would feel less motivated to get involved in the manipulation of accounting amounts (i.e. practice morally not accepted) since the values of the societies where these firms are in would not accept this type of behaviour.

This discussion hence leads us to follow the hypothesis that:

H1: Ethical judgments' level of countries where firms are headquartered is negatively associated with firm-level of earnings management.

3.2.2. National Ethical Judgement, Earnings Management and The Role of Firm-level Enforcement and Mandatory IFRS Adoption

Beyond our main discussion on the association between national ethical judgement and earnings management, we additionally explore the moderating role played by two important factors for the financial reporting quality pointed out by previous literature, namely the firm-level enforcement and

the quality of accounting standards. Indeed, firm-level enforcement and the accounting standards quality seem to be one of the most important features in financial reporting quality research, given their consequences not only to the quality of information reported by firms, but also to investors and the overall market (e.g., Lang *et al.*, 2003; Meeks and Swann, 2009).

Concerning the role of firm-level enforcement, many studies have suggested that enforcement of accounting practice appear to play an important role in how managers are encouraged or not to manipulate accounting information. “Enforcement is an important element of the institutional framework that assures the quality of financial reporting by listed companies”, been crucial for efficient capital markets and perhaps even more important than the quality of the accounting standards themselves (Ewert and Wagenhofer, 2019, p. 122). Overall, accounting enforcement is generally carried out by government authorized or appointed enforcement regulators which have been delegated the task of supervising and enforcing listed companies’ compliance with mandatory accounting standards (Brown *et al.*, 2014). From this perspective, a large body of previous empirical studies show that firms from countries with strong legal enforcement engage in less earnings management (e.g., Bocking *et al.*, 2015; Christensen *et al.*, 2013; Leuz *et al.*, 2003).

Beyond traditional constructs at country-level, enforcement of accounting practices at firm-level also appear to interfere in earnings manipulation levels. Lang *et al.* (2003) find that non-U.S. firms cross-listed in the U.S. – which, therefore, experience an increase in enforcement due to the high scrutiny of Securities and Exchange Commission (SEC) – are less aggressive in terms of earnings management, report accounting data that are more conservative, take account of bad news in a more timely manner, and are more strongly associated with share price than do non-U.S. firms not cross-listed in the U.S. Silva *et al.* (2015) find very similar results, by also suggesting lower levels of earnings management by firms cross-listed in US. Similarly, given that outside directors can make in helping to ensure that managers act in the interests of outside stockholders, including contributing towards the integrity of financial statements (i.e. high levels of enforcement), Peasnell *et al.* (2005) find that the likelihood of managers making income-increasing abnormal accruals to avoid reporting losses and earnings reductions is negatively related to the proportion of outsiders on the board. Likewise, considering that Big 4 audit firms are more sensitive to the cost of client misreporting and are more likely to enforce accounting standards (Francis and Wang, 2008), Chung *et al.* (2003) find that US firms audited by Big 4 auditors overall present lower levels of earnings management. Ajona *et al.* (2008) present similar results in Spain, and Iatridis (2012) in emerging markets firms, from Brazil and South Africa.

Concerning the role of accounting standards quality, previous literature points out that financial reporting quality depends not only on incentives of managers but also on the quality of accounting standards *per se* (Ball *et al.*, 2000). In this discussion, at the aggregate level, improving the quality of accounting standards in an exchange economy increases welfare as represented by the expected utility of the representative investor, at the same time that the total market value of the real economy

increases and, consequently, the aggregate cost of capital for the whole market decreases (Zhang, 2013). From this perspective, “high-quality accounting standards should increase the richness of the reported firm-specific information and affect total return volatility as well, both of which are explicitly accounted for by our country-level weighted average measure of stock price informativeness” (Wang and Yu, 2015, p. 474). Moreover, the adoption of accounting standards of high quality should also bring more international trade, innovation, competition in open markets, cooperation to exploit network effects, and trust between trading partners (Meeks and Swann, 2009), given its reflects on the quality of corporate reporting – a key determinant of the efficiency of resource-allocation decisions and growth to the economies worldwide (Bushman *et al.*, 2004).

Overall, regulators expect the improving the quality of accounting standards enhances corporate transparency, and increase the quality of financial reporting, with consequences not only to firm-level accounting quality, as well as improving overall information environment (Horton *et al.*, 2013), comparability, and thus leading to capital market benefits by reducing insiders’ ability to exploit private information (Brochet *et al.*, 2013). In fact, there is a large stream of previous literature about the effect of high-quality accounting standards on both financial reporting quality, and institutional and economic environmental (e.g., Barth *et al.*, 2008; Akisik and Pfeiffer, 2009; Armstrong *et al.*, 2010; Zhang, 2013; Navarro-García and Madrid-Guijarro, 2014). Barth *et al.* (2008) find empirical evidence firms applying high-quality accounting standards (i.e. International Accounting Standards) have higher accounting quality (i.e. less earnings smoothing, less managing of earnings towards a target, more timely recognition of losses, and a higher association of accounting amounts with share prices and returns) than firms that do not and that accounting quality improves after firms adopt those accounting standards. Akisik and Pfeiffer (2009) find that the proportion of direct investment to US total investment abroad is strongly and negatively related to high-quality accounting standards, even after controlling for a number of variables found in previous research to be important (i.e. inflation, stock market capitalization, per capita gross domestic product, tax rates, etc.). Armstrong *et al.* (2010) find an incrementally positive reaction to events associated with the adoption of high-quality global accounting standards (i.e. International Financial Reporting Standards) for firms with lower quality pre-adoption information, and with higher pre-adoption information asymmetry, consistent with investors expecting net information quality benefits from the adoption of high-quality global accounting standards. Zhang (2013) find that improving accounting standards causes both an expansion of the real economy and a shift in capital allocation across firms. Navarro-García and Madrid-Guijarro (2014) empirically show that the improvement of accounting standards quality significantly reduces the level of reported negative discretionary accruals of the German listed firms.

Taking those findings together, concerning the effect of both firm-level and accounting standards quality on earnings management, overall, it is supposed to argue that firms with high (low) enforcement and quality of accounting standards present lower (higher) levels of earnings management. Thus, given the likelihood of either firm-level enforcement or accounting standards

quality to constrain earnings management, we suppose that those factors could play a substitution role with the national ethical judgement in determining firms' earnings management. More specifically, we argue that in firms with high (low) enforcement and accounting standards quality, the negative effect of countries' ethical judgement may be not so relevant when compared to those firms with lower levels of enforcement (accounting standards quality). In other words, as firms increase their enforcement (accounting standards quality) levels and, consequently, reduce the propensity of managers to get involved in earnings manipulation, we expect it to be likely that the explanatory power of the country's ethical judgment to constrain such opportunistic practices may be no longer more so important. Differently, firms that have a low enforcement (accounting standards quality) could be more dependent on the influence of the ethical judgement of the countries to contain such opportunistic behaviour, given that enforcement (accounting standards quality) would not be enough to mitigate such practices.

From this perspective, as the country's ethical judgment becomes lower (i.e. morally suspect behaviour is more acceptable among citizens), firm-level enforcement (accounting standards quality) may also compensate for a the potential increase in earnings management in such societies. Thus, it would also be expected that as the national ethical judgment decreases, and therefore, incentives for morally unacceptable behaviour (i.e. involvement in earnings management) increase, it would be likely that corporate enforcement and accounting standards quality would compensate for these incentives, in order to decrease earnings management.

These arguments, on a substitution role of both firm-level enforcement and accounting standards quality with the national ethical judgement in determining firms' earnings management, lead us to propose the following hypotheses:

H2: The negative association between national ethical judgment and earnings management is lower for firms with high levels of enforcement.

H3: The negative association between national ethical judgment and earnings management is lower for firms with accounting standards of high quality.

3.3. Research Design

3.3.1. Sample and Data

The empirical analysis is based on a sample composed of firms from 34 countries, which were selected based on the availability of financial-economic information from the Thomson Reuters Datastream universe. Consistent with previous earnings management literature, to eliminate firms subject to more complex earnings management incentives and differences in disclosure practices associated with their regulatory environment, we exclude both financial (SIC 6000-6999) and utility (SIC 4400-5000) firms from our analysis. Finally, following Trimble (2018), we also drop from our empirical analysis firm-year observations that filed their financial statements in IFRS (local generally accepted accounting principles – GAAP) before (after) the mandatory IFRS year from their countries.

We use data from the years 1998 to 2018, based on the availability of information to construct our national ethical judgment measure (see Section 3.2.2. – National Ethical Judgment). Considering that our period of analysis covers the IFRS mandatory adoption by many jurisdictions, we also include only firms from countries that mandatorily adopted IFRS standards throughout our period of analysis (1998 to 2018)²⁷. Therefore, the final sample is composed of 45,889 firm-year observations. Table I presents the sample distribution by country. Korea, United Kingdom and France are the most representative countries, respectively, with 26%, 12%, and 8% of the overall firm-year observations. Although firms from Korea have a high weight in the composition of our sample, in additional analyses without those companies the main results are consistently the same compared to those ran with the total sample (see Section 4 – Empirical Findings).

Table 1. Sample

Country	N	Perc.	Cum.
Argentina	264	0.58	0.58
Australia	892	1.94	2.52
Brazil	1,597	3.48	6.00
Canada	2,634	5.74	11.74
Chile	1,130	2.46	14.20
Czech Republic	16	0.03	14.24
Finland	1,206	2.63	16.86
France	3,522	7.68	24.54
Germany	2,942	6.41	30.95
Ghana	19	0.04	30.99
Greece	1,175	2.56	33.55
Hong Kong	1,378	3.00	36.56
Hungary	110	0.24	36.80
Italy	1,258	2.74	39.54
Korea (South)	11,997	26.14	65.68
Macedonia	48	0.10	65.78
Mexico	658	1.43	67.22
Morocco	74	0.16	67.38
Netherlands	1,074	2.34	69.72
New Zealand	63	0.14	69.86
Nigeria	122	0.27	70.12
Norway	1,015	2.21	72.34
Peru	276	0.60	72.94
Poland	1,181	2.57	75.51
Portugal	372	0.81	76.32
Russian Federation	577	1.26	77.58
Slovakia	27	0.06	77.64
Slovenia	100	0.22	77.86
South Africa	353	0.77	78.62
Spain	1,160	2.53	81.15
Sweden	1,950	4.25	85.40
Turkey	1,248	2.72	88.12
Ukraine	33	0.07	88.19
United Kingdom	5,418	11.81	100
TOTAL	45,889	100.00	

²⁷ More specifically, we rely on Trimble (2018) country classification style concerning IFRS mandatory adoption, and hence consider in our sample only “IFRS Required” countries.

3.3.2. Main Variables

3.3.2.1. Earnings Management

Based on a large and consistent stream of the accounting literature (e.g., Dechow *et al.*, 1995; Kothari *et al.*, 2005; Chaney *et al.*, 2011; Black *et al.*, 2017; Collins *et al.*, 2017; Chen *et al.*, 2018b; Damak, 2018; Trimble, 2018; Osma, 2020), we use the absolute amount of discretionary accruals as our main measure of earnings management. Specifically, we rely on the modified Jones (1991) model proposed by Dechow *et al.* (1995). We include as additional regressors firm's performance (*ROA*) and the growth in sales (*GROWTH*), as proposed by Kothari *et al.* (2005) and Collins *et al.* (2017), respectively. Thus, we calculate abnormal accruals by estimating Equation (1) in cross-section for industry-year with a minimum of 8 observations. Considering our cross-country design, we also control for country-level variation by including lagged gross domestic product (GDP) growth (e.g., Trimble, 2018; Chaney *et al.*, 2011). The absolute values of the estimated residuals from Equation (1) are our discretionary accruals measure, which represents the level of earnings management by each firm-year observation.

$$TA_{it} = \beta_0 \frac{1}{Ats_{it-1}} + \beta_1 \frac{(\Delta Sales - \Delta Rec)_{it}}{Ats_{it-1}} + \beta_2 \frac{GPPE_{it}}{Ats_{it-1}} + \beta_3 ROA_{it} + \beta_4 GROWTH_{it} + \varepsilon_{it} \quad (1)$$

where,

$$TA_{it} = \frac{(\Delta CA_{it} - \Delta CL_{it} - \Delta CASH_{it} + \Delta STDEBT_{it} - DEP_{it})}{Ats_{it-1}} \quad (2)$$

where, for each firm *i* in year *t*, *TA* are the total accruals. ΔCA is the change in current assets for each firm *i* from year *t-1* to year *t*. ΔCL is the change in current liabilities. $\Delta CASH$ is the change in total cash reserve. $\Delta STDEBT$ is the change in the short-term debt. *DEP* is the amount of depreciation expenses. *Ats* is the total assets. $\Delta Sales$ is the change in the revenues. ΔRec is the change in the accounts receivable. *GPPE* is the gross amount of property, plant, and equipment. *ROA* is the net income before extraordinary items scaled to total assets. *GROWTH* is the change in the annual revenues scaled by previous year's revenues.

Furthermore, considering the several empirical models proposed by earnings management literature to capture the total amount of discretionary accruals, in robustness analysis, we also consider different models in addition to the one used in the main analysis. Using alternative discretionary accruals estimation models, the empirical findings remain the same as those presented in the main analysis.

3.3.2.2. National Ethical Judgment

The World Values Survey (WVS) is a worldwide network of social scientists studying changing values and their impact on social and political life, led by a team of international scholars. Its surveys seek to use the most rigorous, high-quality research designs for each country, helping scientists and policy makers understand changes in the beliefs, values and motivations of people throughout the world. “Thousands of political scientists, sociologists, social psychologists, anthropologists and economists have used these data to analyze such topics as economic development, democratization, religion, gender equality, social capital, and subjective well-being. The WVS findings have proved to be valuable for policy makers seeking to build civil society and stable political institutions in developing countries” (World Values Survey, 2021). Technically, WVS consists of nationally representative surveys conducted in almost 100 countries which contain almost 90 percent of the world’s population, using a common questionnaire²⁸, already validated by other independent researchers (Johnson and Mislin, 2012; Boahen *et al.*, 2021).

In fact, “the WVS is the largest cross-country study on human beliefs and values” (Bhagwat and Liu, 2020, p. 64), and it has been vastly used by researchers in different area of knowledge, such as philosophy (Freese, 2004), management (De Clercq and Dakhli, 2009), finance (Ahern *et al.*, 2015; Chen *et al.*, 2016), and economics (Bruni and Stanca, 2006; Franke and Nadler, 2008; James, 2015; James *et al.*, 2016). More recently, many studies in accounting literature also rely on WVS measures (Nanda and Wysocki, 2012; Guan *et al.*, 2020; Bhagwat and Liu, 2020), including those specifically on earnings management topic (Kanagaretnam *et al.*, 2015; Boahen and Mamatzakis, 2021; Sánchez-Ballesta and Yague, 2021). Thus, by keeping our analysis based on the WVS, we also intend to maintain the comparability of our results with the previous literature.

Among the several issues presented in the WSV questionnaire, we focus on the part where the respondents choose if certain actions related to ethically suspect behaviors “can always be justified, never be justified, or something in between”. More specifically, we use four items in WVS that capture how justifiable are the following behaviors: (1) someone accepting a bribe in the course of their duties; (2) claiming government benefits to which you are not entitled; (3) avoiding a fare on public transport; and (4) cheating on taxes if you have a chance. We consider in our analyses survey data between 1998-2018²⁹. We thus compute the following variables: *Benefits*, *Bribe*, *Fare*, and *Taxes*, which represent the number of respondents who answered “Never” for the questions (1), (2), (3), and (4), respectively, divided by the total number of respondents. Thus, a high level of *Benefits*, *Bribe*, *Fare*, and *Taxes* means that people are more intolerant to morally questionable behaviors related to

²⁸ Beyond that, “the WVS is the largest non-commercial, cross-national, time series investigation of human beliefs and values ever executed, currently including interviews with almost 400,000 respondents. Moreover, the WVS is the only academic study covering the full range of global variations, from very poor to very rich countries, in all of the world’s major cultural zones”.

For more details, see <<http://www.worldvaluessurvey.org/WVSContents.jsp>>.

²⁹ For more details about WVS surveys, see Inglehart *et al.* (2014a) and Inglehart *et al.* (2014b).

“claiming benefits to which you are not entitled”, “accepting a bribe”, “avoiding a fare on public transport”, and “cheating on taxes”, respectively.

Table 2. Ethical Judgment Index

Countries	Development Level	N° Respondents	<i>Ethical Judgment</i>
Argentina	Developing	5,205	0.2266
Australia	Developed	6,704	0.9670
Brazil	Developing	5,799	-0.7397
Canada	Developed	4,058	0.8442
Chile	Developing	5,024	-0.4100
Czech Republic	Developed	1,102	-0.6929
Finland	Developed	1,986	0.5857
France	Developed	996	-0.5632
Germany	Developed	7,587	0.5835
Ghana	Developing	3,048	0.7351
Greece	Developed	1,193	1.0648
Hong Kong	Developed	4,306	-0.1482
Hungary	Developing	1,617	-0.3518
Italy	Developed	999	0.9850
Korea (South)	Developed	3,635	0.2283
Macedonia	Developing	1,829	0.2967
Mexico	Developing	7,921	-1.3373
Morocco	Developing	3,366	1.2188
Netherlands	Developed	2,883	1.1133
New Zealand	Developed	3,884	0.8739
Nigeria	Developing	6,999	0.5307
Norway	Developed	2,141	0.7126
Peru	Developing	5,093	-0.1491
Poland	Developing	3,002	0.4998
Portugal	Developed	1,190	1.0356
Russian Federation	Developing	7,790	-1.0907
Slovakia	Developing	1,075	-1.3124
Slovenia	Developed	3,005	-0.0134
South Africa	Developing	12,229	-0.7774
Spain	Developed	4,626	0.7181
Sweden	Developed	4,133	0.1939
Turkey	Developing	5,337	1.2279
Ukraine	Developing	5,979	-1.0987
United Kingdom	Developed	1,008	0.4638
TOTAL	-	136,749	-

Ethical Judgment is the aggregation of the *Benefits*, *Bribe*, *Fare* and *Taxes* scores in a comprehensive measure defined by the principal component of them based on the WVS questionnaire. *Benefits* is the weighted average of respondents that answered “Never” [considering one scale that range from “Never” to 10] to the phrase: “Claiming government benefits to which you are not entitled”. *Bribe* is the weighted average of respondents that answered “Never” [considering one scale that range from “Never” to 10] to the phrase: “Someone accepting a bribe in the course of their duties”. *Fare* is the weighted average of respondents that answered “Never” [considering one scale that range from “Never” to 10] to the phrase: “Someone avoiding a fare on public transport”. Finally, *Taxes* is the weighted average of respondents that answered “Never” [considering one scale that range from “Never” to 10] to the phrase: “Cheating on taxes if you have a chance”. Countries development classification of countries is based on IMF methodology.

Thus, we perform a Principal Component Analysis (PCA) to extract the first principal component of these four elements to develop a comprehensive ethical judgment index for each country. Both the Kaiser-Meyer-Olkin measure (KMO = 0.651) and Bartlett’s test of sphericity ($\chi^2 = 34.225, p = 0.000$)

suggest that our PCA procedure is adequate. Only one factor was generated based on eigenvalue higher than one, which explains around 80% of the total variance observed. Table II shows the extracted common factor (*Ethical Judgment*) for each country.

Overall, the composition of our variable of *Ethical Judgment* is quite similar to the one used by previous literature that developed the same index but in different contexts (James *et al.*, 2016; James, 2015; Franke and Nadler, 2008; De Clercq and Dakhli, 2009). We highlight Turkey as the country with the highest value of *Ethical Judgment*, characterized as a fast-growing emerging market (Coskun and Akdere, 2017) as well as a country where the “modernity does not necessarily mean a shift away from spirituality and religion” (Gunay, 2014). This stronger characteristic of religion maybe justifies Turkey in the first position. Other countries well positioned according to our raking of *Ethical Judgment* are, for instance, The Netherlands (*Ethical Judgment* = 1.1133), and Australia (0.9670).

Moreover, developed countries present, on average, higher ethical judgment levels (mean = 0.4973, untabulated), compared to developing ones (mean = -0.1582, untabulated). Untabulated findings also demonstrate that this mean difference among the two types of countries is statistically significant (t -test = 2.5997, p -value = 0.0154), corroborating with the general idea that societies from developed economies present less propensity to unethical behavior actions compared to their counterparts (see, e.g., Beschorner and Müller, 2007).

Its expressive and recurrent use in different areas of knowledge in studies published in reputable journals suggests the relevance of the WVS as a consolidated and important metric in cross-country studies. Despite its expressive relevance, honestly, this measure of national ethical judgement may not be unbiased, given that it does not reveal actual ethical behaviours of people and considers only a restricted number of potential ethical dilemmas that people in general have to deal with in life – such fact, including, could explain why the index produces some odd results, such as the high value for countries ranked as high corrupted by others international institutions specialized in in developing ethical policies (James, 2015).

However, there are some reasons that justify our measure as an appropriate proxy for ethical judgement of countries. The first reasonable reason why this measure could be appropriate, according to James (2015), is that WVS captures the ethical judgement of a broad spectrum of citizens of countries, about situations of daily life, differently of other rankings by other international institutions, specialized, for instance, in the behaviour of public sector officials (e.g., Transparency International). Second, even though the limited number of potential ethical dilemmas analysed, our national ethical judgement combine different situations in which people stands under two (or more) conflicting moral requirements. Thus, through principal component analysis, we provide a broader view of different ethical paradoxes, minimizing redundancy and the influence of outliers, capturing the interconnection of different potential ethical dilemmas, and allowing the computation of the systemic importance of each variable. Third, the use of the WVS questionnaire in previous studies in a large variety of different areas of knowledge suggests its relevance in terms of accreditation, in addition to its proven

reliability and high levels of construct validity by previous literature that used this questionnaire (e.g., Choi and Krus, 2020; Jang et al., 2010).

3.3.2.3. Firm-level Enforcement

We take into account two different firm-level enforcement measures, namely Big 4 auditors and cross-listing in the US. Concerning Big 4 auditors, previous literature demonstrate that firms audited by a Big 4 usually present high accounting quality given the stronger incentives of such auditors in dampen earnings manipulation, arising primarily from reputation and litigation concerns (DeFond et al., 2017). From this perspective, “Big 4 auditors are more sensitive to the cost of client misreporting and its effect on auditor reputation and are more likely to enforce higher earnings quality” (Francis and Wang, 2008, p. 158). Thus, in order to empirically analyse the role of Big 4 auditors, we include in our estimations a dummy variable (*Big Four*) coded one if a firm is audited by PwC, KPMG, Ernst & Young, or Deloitte, and zero otherwise.

Moreover, concerning cross-listing in US, previous literature also provide empirical evidence that cross-listed firms in US are highly scrutinized by SEC and hence present better overall accounting quality (Lang et al., 2003; Silva et al., 2015). “Cross listing in the US has been suggested as a mechanism by which firms from countries with weak legal institutions can subject themselves to stricter US investor protection and thereby reassure outside investors” (Leuz, 2006, p. 286). Hence, we include in our estimations a dummy variable (*ADR*) coded one if the firm is cross-listed in the US, and zero otherwise

3.3.2.4. Accounting Standards Quality

Following an extant stream of previous literature (Barth et al., 2008; Chen et al., 2010; Iatridis et al., 2010; Zeghal et al., 2011; Boumediene et al., 2014; Navarro-García and Madrid-Guijarro, 2014; Christensen et al., 2015; Trimble, 2018), we consider the adoption of IFRS worldwide as an overall improvement of accounting standards quality. With the aim of increasing the efficiency of global capital markets and fostering globalization (Song and Trimble, 2020), the worldwide IFRS adoption across more than 140 jurisdictions comes up as an important transition of many countries to a single set of accounting standards, viewed, on average, as having high quality than the local-GAAP of many countries (Barth et al., 2008).

The literature provides consistent evidence that IFRS adoption can increase transparency, and hence to reduce the amount of reporting discretion relative to many local GAAP and push firms to improve their financial reporting (Jeanjean and Stolowy, 2008). Empirical evidence by previous literature also reveal that IFRS adoption are also associated to lower the cost of capital (Ramanna and Sletten, 2014), attracting foreign investors (Houque et al., 2012), improvement in forecast accuracy (Glaum et al., 2013), high-quality of annual report disclosure (Lang and Stice-Lawrence, 2015), and higher cross-listing propensity and intensity (Chen et al., 2015). Taking those findings together,

coupled with the growing interest of several economies in adopting IFRS, we generally consider the transition from countries' Local-GAAP to IFRS as an improvement in the quality of accounting standards. Thus, in order to explore such improvement, we consider in our estimations a dummy variable (*IFRS*) coded one for firm-year observations in post-IFRS mandatory period (i.e. firms applying high-quality accounting standards), and zero otherwise

3.3.3. Empirical Model

To test our first research hypothesis (H1), whether the level of national ethical judgment is negatively associated with the level of earnings management, we estimate the following regression model:

$$EM_{itj} = \beta_0 + \delta_1 Ethical\ Judgment_j + \gamma \sum Controls_{ijt} + \varepsilon \quad (3)$$

where, EM_{itj} is the level of earnings management for each firm i , in the year t , from the country j , measured by the absolute amount of discretionary accruals calculated using the modified Jones model (Dechow *et al.*, 1995), by additionally including firm performance (net income scaled by total assets) and current growth in sales. $Ethical\ Judgment_t$ is the index of national ethical judgment for each country j .

We rely on extensive previous accounting quality literature (e.g., Dechow *et al.*, 1995; Kothari *et al.*, 2005; Barth *et al.*, 2008; Chaney *et al.*, 2011; Black *et al.*, 2017; Collins *et al.*, 2017; Chen *et al.*, 2018b; Trimble, 2018; Osma, 2020) and beyond our main independent variable (*Ethical Judgment*) we also include in Equation (3) a bunch of control variables concerning both firm- and country-level factors. All variables definitions are found in Table 3. Our main expectation is the coefficient δ_1 to be significantly negative, suggesting that the level of national ethical judgment is negatively associated with the level of earnings management.

In order to test H2 (H3), whether the negative association between national ethical judgment and earnings management is lower for firms with high levels of enforcement (during post-IFRS mandatory period, when compared to local-GAAP period), we estimate the following regression model:

$$EM_{itj} = \beta_0 + \varphi_1 Ethical\ Judgment_j + \varphi_2 Ethical\ Judgment_j \times Moderating\ Factor_{itj} + \gamma \sum Controls_{ijt} + \varepsilon \quad (4)$$

where, $Moderating\ Factors_{itj}$ are both the firm-level enforcement (*Firm Enforcement*) and the mandatory IFRS period (*IFRS*) for each firm i , in the year t , from the country j . *Firm Enforcement* represents *Big Four (ADR)*, measured by a dummy variable coded one if a firm is audited by PwC,

KPMG, Ernst & Young, or Deloitte (cross-listed in the US), and zero otherwise. *IFRS* is measured by a dummy variable coded one for firm-year observations in post-IFRS mandatory period, and zero otherwise. All other variables as are previous defined.

Table 3. Variables definition

<i>EM</i>	Absolute amount of discretionary accruals calculated using the modified Jones model (Dechow <i>et al.</i> , 1995), by additionally including firm performance (net income scaled by total assets) and current growth in sales, following the recommendations of Kothari <i>et al.</i> (2005) and Collins <i>et al.</i> (2017), respectively.
<i>Ethical Judgment</i>	Index of national ethical judgment based on the World Values Survey (WVS) questionnaire.
<i>Big Four</i>	Dummy variable coded one if a firm is audited by PwC, KPMG, Ernst & Young, or Deloitte, and zero otherwise.
<i>ADR</i>	Dummy variable coded one if the firm is cross-listed in the US, and zero otherwise.
<i>IFRS</i>	Dummy variable coded one if the firm prepared its financial statements based on IFRS, and zero otherwise.
<i>Size</i>	Natural logarithm of total assets.
<i>Leverage</i>	Long-term debt scaled by total assets.
<i>Return on Equity</i>	Net income scaled by total assets minus total liabilities.
<i>Market-to-Book</i>	Market capitalization scaled by total assets minus total liabilities.
<i>Growth</i>	Change in annual sales scaled by previous year's sales.
<i>Dissue</i>	Change in annual total liabilities scaled by previous year's total liabilities.
<i>Eissue</i>	Change in annual common stock scaled by previous year's common stock.
<i>Loss</i>	Dummy variable coded one if a firm reported negative net income for the year, and zero otherwise.
<i>Litigation</i>	Dummy variable coded one if the firm is from high litigation industry (SIC codes of 2833–2836, 3570–3577, 3600–3674, 5200–5961 and 7370), and zero otherwise.
<i>GDP Growth</i>	Change in annual country's GDP scaled by previous year's GDP.
<i>Enforcement</i>	Index of regulatory quality for each country-year, according to World Bank.
<i>EM_Alternative1</i>	Absolute amount of discretionary accruals calculated using the modified Jones model (Dechow <i>et al.</i> , 1995), without any additional control variable.
<i>EM_Alternative2</i>	Absolute amount of discretionary accruals calculated using the modified Jones model (Dechow <i>et al.</i> , 1995), by additionally including only firm performance (net income scaled by total assets), following the recommendations of Kothari <i>et al.</i> (2005).
<i>EM_Alternative3</i>	Absolute amount of discretionary accruals calculated using the modified Jones model (Dechow <i>et al.</i> , 1995), by additionally including lagged accruals, following the recommendations of Dechow <i>et al.</i> (2012).

Our main expectation is the coefficient φ_1 to be significantly negative, and that the coefficient φ_2 to be significantly positive, suggesting the negative association between national ethical judgment and earnings management is lower for firms with high levels of enforcement (during post-IFRS mandatory period, when compared to local-GAAP period).

Equations (3) and (4) are estimated using Ordinary Least Squares (OLS) approach, controlling for industry-, and year-fixed effects³⁰. Moreover, following previous financial reporting quality literature (e.g., Biddle *et al.*, 2009; Lara *et al.*, 2020), we report *t*-statistics based on standard errors adjusted for heteroskedasticity, serial-, and cross-sectional correlation with a two-dimensional cluster at the firm

³⁰ Following previous international accounting literature (e.g., Chen *et al.*, 2018b; Ugrin *et al.*, 2017), given that our *Ethical Judgment* variable is at country-level and do not vary over time, in our main empirical estimations we do not insert country-fixed effects for potential confounding effects.

and year level. All continuous firm variables are winsorized at 1% and 99% tail in order to avoid outliers.

3.4. Empirical Findings

3.4.1. Descriptive Statistics and Correlations

Table 4 presents the descriptive statistics of the variables used in our empirical estimations. The mean of our earnings management variable (*EM*) is around 0.07, similarly to previous studies on earnings management with cross-country design (e.g. Lourenço *et al.*, 2018; Gray *et al.*, 2015; Doukakis, 2014). We also highlight that considering the total firm-year observations, approximately 70% are audited by a Big 4 audit firm (*Big Four*), 16% are cross-listed in the US (*ADR*), 64% present their financial statements according to international accounting standards (*IFRS*), 25% reported negative net income (*LOSS*), and 15% are from highly litigation industries.

Table 4. Descriptive statistics of variables at firm-level

Variables	N	Mean	SD	p25	Median	p75
<i>EM</i>	45,889	0.0711	0.0779	0.0206	0.0464	0.0911
<i>Size</i>	45,889	19.8809	1.9928	18.4713	19.6664	21.1323
<i>Levarage</i>	45,889	0.1224	0.1266	0.0076	0.0876	0.1981
<i>ROE</i>	45,889	-0.0119	0.4416	-0.0008	0.0702	0.1403
<i>Market-to-Book</i>	45,889	2.0010	2.4863	0.7200	1.2946	2.3030
<i>Growth</i>	45,889	0.1167	0.4159	-0.0392	0.0598	0.1824
<i>Dissue</i>	45,889	0.1603	0.5963	-0.0785	0.0410	0.2134
<i>Eissue</i>	45,889	0.1298	0.4815	-0.0280	0.0595	0.1644
<i>Big Four</i>	45,889	0.6985	0.4589	–	–	–
<i>ADR</i>	45,889	0.0254	0.1574	–	–	–
<i>IFRS</i>	45,889	0.6389	0.4803	–	–	–
<i>Loss</i>	45,889	0.2508	0.4335	–	–	–
<i>Litigation</i>	45,889	0.1462	0.3533	–	–	–

Continuous variables. *EM* is the earnings management measured by the absolute amount of discretionary accruals according to Dechow *et al.* (1995), Kothari *et al.* (2005), and Collins *et al.* (2017). *Ethical Judgment* is the index of national ethical judgment based on the World Values Survey (WVS) questionnaire. *Size* is the natural logarithm of total assets. *Leverage* is the long-term debt scaled by total assets. *Return on Equity* is the net income scaled by total assets minus total liabilities. *Market-to-Book* is the market capitalization scaled by total assets minus total liabilities. *Growth* is the change in annual sales scaled by previous year's sales. *Dissue* is the change in annual total liabilities scaled by previous year's total liabilities. *Eissue* is the change in annual common stock scaled by previous year's common stock. **Dummy variables.** *Big Four* is a dummy variable coded one if a firm is audited by PwC, KPMG, Ernst & Young, or Deloitte, and zero otherwise. *ADR* is a dummy variable coded one if the firm is cross-listed in the US, and zero otherwise. *IFRS* is a dummy variable coded one if the firm prepared its financial statements based on IFRS, and zero otherwise. *Loss* is a dummy variable coded one if a firm reported negative net income for the year, and zero otherwise. *Litigation* is a dummy variable coded one if the firm is from high litigation industry (SIC codes of 2833–2836, 3570–3577, 3600–3674, 5200–5961 and 7370), and zero otherwise. The mean of dummy variables represents only the percentage of firm-year observations that assumed value 1.

Table 5. Correlation matrix

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. <i>EM</i>	1.0000															
2. <i>Ethical Judgment</i>	-0.0002	1.0000														
3. <i>Size</i>	-0.2182	-0.0470	1.0000													
4. <i>Leverage</i>	-0.1616	0.0122	0.4692	1.0000												
5. <i>Return on Equity</i>	-0.0297	-0.0354	0.2372	0.0025	1.0000											
6. <i>Market-to-Book</i>	0.0940	0.0838	0.0078	-0.0076	0.3616	1.0000										
7. <i>Growth</i>	0.0756	-0.0090	0.0308	0.0221	0.2866	0.1840	1.0000									
8. <i>Dissue</i>	0.0901	-0.0011	0.0474	0.0786	0.1076	0.1315	0.3893	1.0000								
9. <i>Eissue</i>	0.0821	-0.0218	0.0539	-0.0386	0.5255	0.1859	0.3757	0.1591	1.0000							
10. <i>Big Four</i>	-0.0857	-0.0274	0.4080	0.1870	0.1356	0.1013	0.0246	0.0045	0.0173	1.0000						
11. <i>Loss</i>	0.0920	0.0699	-0.2499	-0.0176	-0.7508	-0.1240	-0.2361	-0.0900	-0.4440	-0.1066	1.0000					
12. <i>Litigation</i>	0.0446	-0.0606	-0.0540	-0.0680	-0.0160	0.0730	0.0101	0.0085	0.0058	-0.0187	0.0199	1.0000				
13. <i>ADR</i>	-0.0299	0.0156	0.1795	0.0734	0.0556	0.0721	-0.0048	0.0074	0.0041	0.0735	-0.0305	0.0100	1.0000			
14. <i>IFRS</i>	-0.0863	0.1199	0.1588	0.0531	-0.0098	0.0767	-0.0910	-0.0551	-0.0784	0.0435	0.0137	0.0055	0.1050	1.0000		
15. <i>GDP Growth</i>	0.0294	-0.0322	-0.0335	-0.0513	0.0769	0.0506	0.1104	0.0524	0.0521	-0.0095	-0.0626	0.0093	-0.0488	-0.2229	1.0000	
16. <i>Enforcement</i>	-0.0242	0.2352	0.0002	0.0215	0.0076	0.1781	-0.0429	-0.0344	-0.0295	0.1479	0.0476	-0.0168	0.0277	0.2203	-0.0078	1.0000

This table presents Spearman correlation between all variables regarding to the main empirical model estimations. *EM* is the earnings management measured by the absolute amount of discretionary accruals according to Dechow *et al.* (1995), Kothari *et al.* (2005), and Collins *et al.* (2017). *Ethical Judgment* is the index of national ethical judgment based on the World Values Survey (WVS) questionnaire. *Size* is the natural logarithm of total assets. *Leverage* is the long-term debt scaled by total assets. *Return on Equity* is the net income scaled by total assets minus total liabilities. *Market-to-Book* is the market capitalization scaled by total assets minus total liabilities. *Growth* is the change in annual sales scaled by previous year's sales. *Dissue* is the change in annual total liabilities scaled by previous year's total liabilities. *Eissue* is the change in annual common stock scaled by previous year's common stock. *Big Four* is a dummy variable coded one if a firm is audited by PwC, KPMG, Ernst & Young, or Deloitte, and zero otherwise. *Loss* is a dummy variable coded one if a firm reported negative net income for the year, and zero otherwise. *Litigation* is a dummy variable coded one if the firm is from high litigation industry, and zero otherwise. *ADR* is a dummy variable coded one if the firm is cross-listed in the US, and zero otherwise. *IFRS* is a dummy variable coded one if the firm prepared its financial statements based on IFRS, and zero otherwise. *GDP Growth* is the change in annual country's GDP scaled by previous year's GDP. *Enforcement* is the index of regulatory quality for each country-year, according to World Bank. Correlations that are statistically significant at the 0.10 level are reported in bold.

Table 5 presents the correlation matrix of the variables used in our empirical analysis. Regarding ethical judgment index (*Ethical Judgment*) and earnings management (*EM*), we identify a small negative correlation (-0.0002), in line with the hypothesis that higher levels of national ethical judgment constrain earnings management practices (H1). However, this negative correlation is not statistically significant at conventional levels. Moreover, *EM* is negative and significantly associated with both firm-level enforcement measures [*Big Four* (-0.0857) and *ADR* (-0.0299)] and *IFRS* (-0.0863), aligned with the arguments proposed in H2 and H3. Furthermore, our earnings management measure is also positively (negatively) correlated with *Market-to-Book*, *Growth*, *Dissue*, *Eissue*, *Loss*, *Litigation*, and *GDP Growth* (*Size*, *Leverage*, *Return on Equity*, and *Enforcement*), suggesting the importance of controlling for these variables in multivariate analyses³¹.

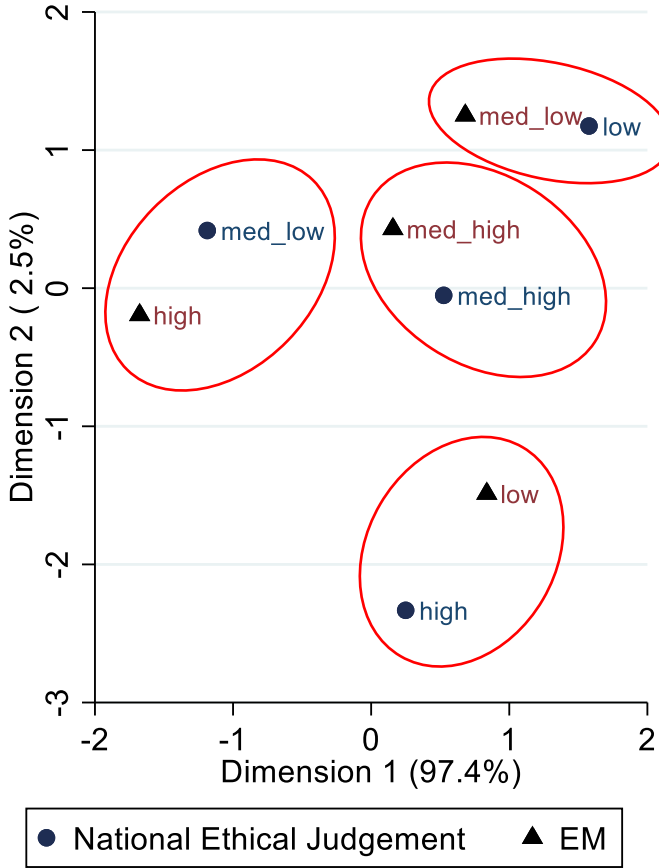


Figure 1. Correspondence Analysis: National Ethical Judgement and Earnings Management

In order to deeply analyse the association between national ethical judgement and firm-level earnings management levels, we perform a correspondence analysis among the two variables. In this sense, *Ethical Judgment* and *EM* are transformed into categorical variables using quartiles in four

³¹ Despite the high correlation between *Return on Equity* and *Loss* – around 0.75, suggesting, therefore, multicollinearity problems in our estimates –, our main empirical findings concerning the effect of *Ethical Judgment* remain the same if we remove any of these variables.

ranges. More specifically, both *Ethical Judgement* and *EM* are classified as either *high*, *medium-low*, *medium-high*, and *low*, which represent the fourth, third, second and first quintiles of the two variables, respectively. Chi-squared test (102.56, p -value = 0.000) confirm the dependency between the categorical variables. The correspondence analysis plot between the two variables is presented in Figure 1. Overall, we find evidence that high levels of *Ethical Judgement* is associated with low levels of *EM*. Moreover, medium-low (medium-high) levels of Ethical Judgement seem to be associated with high (medium-high) levels of *EM*. Finally, we also observe an association between low levels of *Ethical Judgement* and medium-low levels of *EM*. Broadly, these results are aligned with H1 and suggest that firms from countries with high levels of national ethical judgement are likely to be less involved with earnings management tactics.

3.4.2. Regressions Results

Table 6 introduces the estimation results of Equations (3) and (4) concerning the association between national ethical judgment and earnings management, and the moderating role of both firm-level enforcement and accounting standards quality. After controlling for all of the firm- and country-level control variables, consistent with our main prediction, we consistently find a negative and significant coefficient for *Ethical Judgement* when taking into account different estimation scenarios, namely: (Column 1) non considering neither year- nor industry fixed-effects (-0.001, t -stat = -2.38); (Column 2) considering only year fixed-effects (-0.001, t -stat = -1.63); and (Column 3) taking into account both types of controls (-0.001, t -stat = -2.15). Thus, we confirm H1 that firms from countries with higher levels of ethical judgments present lower levels of earnings management. In other words, these empirical findings suggest that the manipulation of accounting amounts is lower in countries where ethically suspect behaviours are less acceptable.

These findings confirm our main prediction on the role of countries' ethically-related judgments in containing opportunistic behaviours of managers in manipulating accounting information to achieve personal goals. Our findings are also aligned with previous literature which documents that ethical issues at both individual- (Cohen *et al.*, 2007; Greenfield *et al.*, 2008; Johnson *et al.*, 2012; Septiari and Maruli, 2017) and organizational-level (Shafer, 2015; Walker and Fleischman, 2013; Lord and DeZoort, 2001) matter as key determinants of the way managers are involved with unethical accounting practices. Therefore, taking the ethics involved in the financial reporting, principally those related to accounting choices as an inherent practice by managers (Fields *et al.*, 2001), we reinforce the idea that ethical judgment at country-level seems to shape individual behaviours and interfere in opportunistic actions by managers.

Table 6. The effect of national ethical judgment on earnings management and the role firm-level enforcement and mandatory IFRS adoption

	Test H1						Test H2				Test H3	
	Column 1		Column 2		Column 3		Column 4		Column 5		Column 6	
	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat
<i>constant</i>	0.172***	(44.53)	0.161***	(37.61)	0.150***	(27.49)	0.152***	(27.66)	0.150***	(27.43)	0.151***	(27.57)
<i>Ethical Judgment</i>	-0.001**	(-2.38)	-0.001*	(-1.64)	-0.001**	(-2.15)	-0.005***	(-3.82)	-0.001**	(-2.12)	-0.003***	(-2.89)
<i>Ethical Judgment x Big Four</i>							0.005***	(3.47)				
<i>Ethical Judgment x ADR</i>									0.001	(0.12)		
<i>Ethical Judgment x IFRS</i>											0.003**	(2.23)
<i>Big Four</i>	-0.001	(-0.63)	-0.000	(-0.02)	-0.000	(-0.16)	-0.002*	(-1.70)	-0.000	(-0.15)	-0.000	(-0.14)
<i>ADR</i>	0.004**	(1.97)	0.004**	(2.37)	0.004**	(2.21)	0.004**	(2.33)	0.004*	(1.95)	0.004**	(2.19)
<i>IFRS</i>	-0.004***	(-5.34)	-0.006***	(-4.61)	-0.007***	(-4.87)	-0.006***	(-4.60)	-0.007***	(-4.86)	-0.007***	(-5.26)
<i>Size</i>	-0.005***	(-26.81)	-0.005***	(-26.33)	-0.005***	(-24.95)	-0.005***	(-25.03)	-0.005***	(-24.94)	-0.005***	(-24.96)
<i>Leverage</i>	-0.051***	(-17.35)	-0.049***	(-16.76)	-0.048***	(-16.29)	-0.048***	(-16.26)	-0.048***	(-16.29)	-0.048***	(-16.33)
<i>Return on Equity</i>	-0.012***	(-9.31)	-0.011***	(-9.13)	-0.011***	(-8.93)	-0.011***	(-8.97)	-0.011***	(-8.93)	-0.011***	(-8.95)
<i>Market-to-Book</i>	0.002***	(13.38)	0.003***	(13.83)	0.003***	(13.46)	0.003***	(13.46)	0.003***	(13.46)	0.003***	(13.47)
<i>Growth</i>	0.010***	(6.78)	0.010***	(6.75)	0.009***	(6.52)	0.009***	(6.53)	0.009***	(6.52)	0.009***	(6.54)
<i>Dissue</i>	0.021***	(19.28)	0.020***	(18.68)	0.020***	(18.50)	0.020***	(18.53)	0.020***	(18.50)	0.020***	(18.50)
<i>Eissue</i>	0.035***	(23.32)	0.035***	(23.26)	0.035***	(23.11)	0.035***	(23.14)	0.035***	(23.11)	0.035***	(23.13)
<i>LOSS</i>	0.014***	(13.74)	0.014***	(13.67)	0.013***	(12.95)	0.013***	(12.98)	0.013***	(12.95)	0.013***	(12.94)
<i>Litigation</i>	0.006***	(5.44)	0.005***	(5.03)	0.013***	(10.67)	0.013***	(10.65)	0.013***	(10.67)	0.013***	(10.74)
<i>GDP Growth</i>	0.004	(1.21)	0.007	(1.43)	0.008	(1.64)	0.008	(1.57)	0.008	(1.64)	0.008*	(1.69)
<i>Enforcement</i>	-0.003***	(-4.60)	-0.003***	(-4.38)	-0.004***	(-6.11)	-0.005***	(-6.61)	-0.004***	(-6.12)	-0.004***	(-6.12)
<i>Industry fixed-effects</i>	NO		NO		YES		YES		YES		YES	
<i>Year fixed-effects</i>	NO		YES		YES		YES		YES		YES	
No. Obs.	45,889		45,889		45,889		45,889		45,889		45,889	
R ²	0.1696		0.1750		0.1809		0.1811		0.1809		0.1810	

This table presents the estimation results of a selection model that analyses the effect of ethical judgment on earnings management. The dependent variable is *EM*, which represents the earnings management measured by the absolute amount of discretionary accruals according to Dechow *et al.* (1995), Kothari *et al.* (2005), and Collins *et al.* (2017). *Ethical Judgment* is the index of national ethical judgment based on the World Values Survey (WVS) questionnaire. *Big Four* is a dummy variable coded one if a firm is audited by PwC, KPMG, Ernst & Young, or Deloitte, and zero otherwise. *ADR* is a dummy variable coded one if the firm is cross-listed in the US, and zero otherwise. *IFRS* is a dummy variable coded one if the firm prepared its financial statements based on IFRS, and zero otherwise. *Size* is the natural logarithm of total assets. *Leverage* is the long-term debt scaled by total assets. *Return on Equity* is the net income scaled by total assets minus total liabilities. *Market-to-Book* is the market capitalization scaled by total assets minus total liabilities. *Growth* is the change in annual sales scaled by previous year's sales. *Dissue* is the change in annual total liabilities scaled by previous year's total liabilities. *Eissue* is the change in annual common stock scaled by previous year's common stock. *Loss* is a dummy variable coded one if a firm reported negative net income for the year, and zero otherwise. *Litigation* is a dummy variable coded one if the firm is from high litigation industry (SIC codes of 2833–2836, 3570–3577, 3600–3674, 5200–5961 and 7370), and zero otherwise. *IFRS* is a dummy variable coded one if the firm prepared its financial statements based on IFRS, and zero otherwise. *GDP Growth* is the change in annual country's GDP scaled by previous year's GDP. *Enforcement* is the index of regulatory quality for each country-year, according to World Bank. Parameter estimates are reported first, followed by robust *t*-statistics corrected for cluster at the firm and year level in parentheses (Petersen, 2009).

*, **, and *** indicate significant coefficients at the 10%, 5%, and 1% levels, respectively (two-tailed).

From a perspective of social identity theory (Tajfel and Turner, 1986), it seems that managers take into consideration feedbacks coming from the institutional environment (Westerman *et al.*, 2007) to act in order (or not) to manipulate account amounts. From the same theoretical construct viewpoint, given that individual identities must be tied to social referents that represent positive norms of behaviour (Westerman *et al.*, 2007), societies more intolerant to suspicious behaviour could exert more pressure on managers' reporting accounting information with less accruals, once that in general accruals amount could signalling more manipulation of earnings.

Concerning the moderating role of firm-level enforcement, the results in Table 6, Columns 4 and 5, reveals a negative and significant coefficient for *Ethical Judgement* (-0.001, *t*-stat = -2.15; and -0.005, *t*-stat = -3.82, respectively). Moreover, the interaction term *Ethical Judgement x Big Four* (0.005, *t*-stat = 3.47) is positive and significant, while *Ethical Judgement x ADR* (0.001, *t*-stat = 0.12) is statistically insignificant at conventional levels. Overall, those findings suggest that the negative effect of national ethical judgement is dampened in firms audited by Big 4 auditors. In other words, it seems that when firms have high levels of enforcement (i.e. audited by Big 4 auditors), country-level ethical judgement became less important to explain earnings management levels. However, cross-listing activities in US is not a moderator of the effect of national ethical judgement on earnings management. Those findings partially confirm H2.

We therefore find evidence of a substitution role of firm-level enforcement (i.e. audited by Big 4 auditors) with national ethical judgement in determining earnings management levels. Indeed, previous literature suggest that Big 4 auditors are more able to enforce mandatory accounting standards, and overall constrains earnings management compared to non-Big 4 auditors (DeFond *et al.*, 2017; Francis and Wang, 2008). Thus, given that the firms audited by Big 4 auditors already have high enforcement levels, it is likely that they are less dependent on the country's ethics to reduce their earnings management levels (*Ethical Judgement x Big Four*). In parallel, in countries where ethical judgement is lower and, therefore, morally questionable behaviours become more accepted (i.e. earnings management), firm-level enforcement are likely to be more relevant in dampening earnings management practices by managers. Our results are aligned with these arguments. However, contrary to our expectations, we find no evidence of a moderating effect of enforcement on the association between national ethical judgement and earnings management, considering cross-listed firms in the US (*Ethical Judgement x ADR*). We suspect this happen due to the fact that, despite complementary SEC enforcement on these firms, they continue to face different reporting incentives. Thus, those firms are still "subject to different institutional arrangements and market forces in their home countries, which in turn provides managers and owners with differential incentives to use discretion when applying accounting standards" (Leuz, 2006, p. 286).

Finally, concerning the moderating role of mandatory IFRS adoption, the results in Table 6, Column 6, reveals a negative and significant coefficient for *Ethical Judgement* (-0.003, *t*-stat = -2.89). Moreover, the interaction term *Ethical Judgement x IFRS* (0.003, *t*-stat = 2.33) is positive and

significant at conventional levels. Overall, those findings suggest that the negative effect of national ethical judgement is dampened in firms during post-IFRS mandatory periods, when compared to those in pre-IFRS periods. In other words, it seems that when firms file their financial statements according to accounting standards of high quality (i.e. based on IFRS), the effect of country-level ethical judgement on earnings management levels is attenuated. Those findings confirm H3. We therefore find evidence of a substitution role of high-quality accountings standards (i.e. IFRS) with national ethical judgement in determining earnings management levels. Thus, given that the firms adopting accounting standards already have lower incentives to manipulate accounting amounts (e.g., Barth *et al.*, 2008; Navarro-García and Madrid-Guijarro, 2014; Christensen *et al.*, 2015), we suspect to be likely that they are less dependent on the country's ethics to reduce their earnings management levels (*Ethical Judgement x IFRS*). Similarly, in countries where ethical judgement is lower and, therefore, morally questionable behaviours become more accepted (i.e. earnings management), high-quality accounting standards are likely to be more relevant in curbing earnings management practices by managers. In fact, our results are aligned with these arguments.

Regarding the control variables, in a broad, the results in Table 6 suggest that larger (*Size*) and more profitable firms (*Return on Equity*) are associated with lower levels of earnings management, which confirms the empirical findings presented by previous earnings management literature (e.g., Chen *et al.* 2018b; Cohen and Zarowin, 2010; Doukakis, 2014). By contrast, firms with higher growth levels (*Growth*) are associated with a higher degree of earnings management, which also confirms the empirical findings of previous studies (Doukakis, 2014). Moreover, we also find empirical evidence that firm-year observations from industries with high levels of litigation risk (*Litigation*) seem also to be involved with high levels of earnings management, and that country-level enforcement (*Enforcement*) mitigates earnings manipulation.

3.4.3. Robustness and Additional Analysis

Beyond our main empirical findings presented in Table 6, we also take into account a bunch of robustness tests to confirm our results. First, we consider different estimation scenarios which potentially would have some implications for the estimation of our main model, according to Table 7. In particular, first, we estimate our main model dropping firm-year observations in the subprime financial crisis period. A large stream of previous studies points out that earnings management tactics are sensitive to the macroeconomic economic environment, especially downturn periods (e.g., Filip and Raffournier, 2014; Trombetta and Imperatore, 2014). Even though we control to GDP in our main estimations, some could argue on the chance whether part of our results was biased due to the subprime crisis that are in our time window analysis. Therefore, we estimate our main models excluding this downturn period (i.e. between 2007 and 2009). The results, presented in Table 7, Panel A, reveal that the signal and significance of the coefficients of our variables of interest remain the

same as those presented in our main analysis, suggesting that our findings are not sensitive to the subprime crisis period.

Second, taking into account that Korea is the largest country in our sample (with around 26% of the total firm-year observations) and hence considering that our main findings could be potentially driven by observation from this country, we re-estimate Equations (3) and (4) by dropping firm-year observation from Korea (see Table 7, Panel B). Third, previous literature also demonstrates concerns on international accounting research about the potential confounding effects among country-level variables (Isidro *et al.*, 2020), what technically could interfere on the main findings presented regarding the effect of national ethical judgement on earnings management. To alleviate such concerns, we also estimate our main models without any country-level control variable (see Table 7, Panel C). In both alternative scenarios, we consistently find the same signal and significance of the coefficients of our variables of interest of those presented in our main analysis.

Fourth, we also rely on alternative regression estimation methods to alleviate concerns arising from OLS regressions. More specifically, we re-estimate Equations (3) and (4) based on panel random effects (see Table 7, Panel D) and Tobit regressions (see Table 7, Panel E). Random effects regressions have the advantage, compared to OLS regression, for simultaneously considering variations over time for each firm (i.e. *within* effect) as well as between firms for each cross-section (i.e. *between* effect) (Favero and Belfiore, 2019). Moreover, considering the truncation of our dependent variable (i.e. the absolute amount of discretionary accruals), some also could argue that the OLS method could generate biased parameters, making the Tobit regression (Tobin, 1958) a better method in such cases (e.g., Huang and Sun, 2017; Cassell *et al.*, 2015; Chaney *et al.*, 2011). However, our results presented in Table 7, Panels D and E, reveal that our results are robust considering both alternative estimations methods.

Fifth, given concerns presented by previous literature on bias related to accruals estimation models, we also re-estimate our main models by considering alternative measures of earnings management. More specifically, we calculate three alternative accruals model estimations, by using the modified Jones model (Dechow *et al.*, 1995), without any additional control variable (*EM_Alternative1*); taking into account the modified Jones model (Dechow *et al.*, 1995), by additionally including only firm performance (net income scaled by total assets), following the recommendations of Kothari *et al.* (2005) (*EM_Alternative2*); and considering the modified Jones model (Dechow *et al.*, 1995), by additionally including lagged accruals, following the recommendations of Dechow *et al.* (2012) (*EM_Alternative3*). The estimation results are presented in Table 8, where we fundamentally find the same signal and significance of the coefficients of our variables of interest of those presented in our main analysis.

Table 7. Robustness analysis: Alternative estimations scenarios and regression methods

Panel A – Excluding subprime financial crisis period								
	Test H1		Test H2				Test H3	
	Column 1		Column 2		Column 3		Column 4	
	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat
<i>constant</i>	0.151***	(25.60)	0.153***	(25.72)	0.151***	(25.58)	0.152***	(25.65)
<i>Ethical Judgment</i>	-0.001**	(-2.19)	-0.005***	(-3.25)	-0.002**	(-2.26)	-0.003**	(-2.48)
<i>Ethical Judgment x Big Four</i>			0.004***	(2.76)				
<i>Ethical Judgment x ADR</i>					0.002	(0.73)		
<i>Ethical Judgement x IFRS</i>							0.002*	(1.66)
<i>Control variables</i>	YES		YES		YES		YES	
<i>Industry fixed-effects</i>	YES		YES		YES		YES	
<i>Year fixed-effects</i>	YES		YES		YES		YES	
No. Obs.	37,338		37,338		37,338		37,338	
R ²	0.1675		0.1677		0.1675		0.1676	
Panel B – Without the largest country in the sample (i.e. Korea)								
	Test H1		Test H2				Test H3	
	Column 1		Column 2		Column 3		Column 4	
	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat
<i>constant</i>	0.148***	(25.56)	0.150***	(25.69)	0.148***	(25.49)	0.149***	(25.65)
<i>Ethical Judgment</i>	-0.001*	(-1.95)	-0.004***	(-3.29)	-0.001*	(-1.90)	-0.003**	(-2.60)
<i>Ethical Judgment x Big Four</i>			0.004***	(2.92)				
<i>Ethical Judgment x ADR</i>					-0.000	(-0.05)		
<i>Ethical Judgement x IFRS</i>							0.003**	(2.02)
<i>Control variables</i>	YES		YES		YES		YES	
<i>Industry fixed-effects</i>	YES		YES		YES		YES	
<i>Year fixed-effects</i>	YES		YES		YES		YES	
No. Obs.	33,892		33,892		33,892		33,892	
R ²	0.1695		0.1698		0.1695		0.1696	
Panel C – Without country-level variables								
	Test H1		Test H2				Test H3	
	Column 1		Column 2		Column 3		Column 4	
	Coeff.	<i>z</i> -stat	Coeff.	<i>z</i> -stat	Coeff.	<i>z</i> -stat	Coeff.	<i>z</i> -stat
<i>constant</i>	0.145***	(26.69)	0.146***	(26.76)	0.145***	(26.62)	0.146***	(26.78)
<i>Ethical Judgment</i>	-0.002***	(-4.21)	-0.005***	(-4.02)	-0.002***	(-4.09)	-0.004**	(-3.92)
<i>Ethical Judgment x Big Four</i>			0.004**	(2.52)				
<i>Ethical Judgment x ADR</i>					-0.000	(-0.08)		
<i>Ethical Judgement x IFRS</i>							0.003**	(2.18)
<i>Control variables</i>	YES		YES		YES		YES	
<i>Industry fixed-effects</i>	YES		YES		YES		YES	
<i>Year fixed-effects</i>	YES		YES		YES		YES	
No. Obs.	45,889		45,889		45,889		45,889	
R ²	0.1801		0.1803		0.1801		0.1802	

Table 7. (continued)

Panel D – Random fixed-effects regression									
	Test H1		Test H2		Test H3				
	Column 1		Column 2		Column 3		Column 4		
	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat	
<i>constant</i>	0.166***	(21.63)	0.168***	(21.47)	0.166***	(21.34)	0.166***	(21.42)	
<i>Ethical Judgment</i>	-0.002**	(-2.43)	-0.007***	(-3.91)	-0.002**	(-2.46)	-0.004**	(-2.77)	
<i>Ethical Judgment x Big Four</i>			0.007***	(3.53)					
<i>Ethical Judgment x ADR</i>					0.002	(0.58)			
<i>Ethical Judgment x IFRS</i>							0.002*	(1.63)	
<i>Control variables</i>	YES		YES		YES		YES		
<i>Industry fixed-effects</i>	YES		YES		YES		YES		
<i>Year fixed-effects</i>	YES		YES		YES		YES		
No. Obs.	30,482		30,482		30,482		30,482		
R ² overall	0.1795		0.1797		0.1795		0.1796		

Panel E – Tobit regression									
	Test H1		Test H2		Test H3				
	Column 1		Column 2		Column 3		Column 4		
	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	
<i>constant</i>	0.150***	(25.30)	0.152***	(25.54)	0.150***	(25.26)	0.151***	(25.39)	
<i>Ethical Judgment</i>	-0.001**	(-2.08)	-0.005***	(-4.19)	-0.001**	(-2.07)	-0.003**	(-3.07)	
<i>Ethical Judgment x Big Four</i>			0.005***	(3.66)					
<i>Ethical Judgment x ADR</i>					0.000	(0.11)			
<i>Ethical Judgment x IFRS</i>							0.003**	(2.27)	
<i>Control variables</i>	YES		YES		YES		YES		
<i>Industry fixed-effects</i>	YES		YES		YES		YES		
<i>Year fixed-effects</i>	YES		YES		YES		YES		
No. Obs.	45,889		45,889		45,889		45,889		
Pseudo R ²	0.0880		0.0881		0.0880		0.0880		

This table presents robustness analysis on the effect of ethical judgment on earnings management, by taking into account alternative estimations scenarios and regression methods. The dependent variable is *EM*, which represents the earnings management measured by the absolute amount of discretionary accruals according to Dechow *et al.* (1995), Kothari *et al.* (2005), and Collins *et al.* (2017). *Ethical Judgment* is the index of national ethical judgment based on the World Values Survey (WVS) questionnaire. *Big Four* is a dummy variable coded one if a firm is audited by PwC, KPMG, Ernst & Young, or Deloitte, and zero otherwise. *ADR* is a dummy variable coded one if the firm is cross-listed in the US, and zero otherwise. *IFRS* is a dummy variable coded one if the firm prepared its financial statements based on IFRS, and zero otherwise. Control variables inserted in all estimations (see Appendix A). Parameter estimates are reported first, followed by robust *t*-statistics (*z*-statistics) corrected for cluster at the firm and year level in parentheses (Petersen, 2009).

*, **, and *** indicate significant coefficients at the 10%, 5%, and 1% levels, respectively (two-tailed).

Table 8. Robustness analysis: Alternative earnings management measures

Panel A – Alternative earnings management I (<i>EM_Alternative1</i>)								
	Test H1		Test H2		Test H3		Test H3	
	Column 1		Column 2		Column 3		Column 4	
	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat
<i>constant</i>	0.165***	(28.29)	0.167***	(28.38)	0.165***	(28.22)	0.166***	(28.35)
<i>Ethical Judgment</i>	-0.001*	(-1.76)	-0.004***	(-2.93)	-0.001*	(-1.70)	-0.003**	(-2.33)
<i>Ethical Judgment x Big Four</i>			0.004***	(2.62)				
<i>Ethical Judgment x ADR</i>					-0.000	(-0.14)		
<i>Ethical Judgement x IFRS</i>							0.002*	(1.79)
<i>Control variables</i>	YES		YES		YES		YES	
<i>Industry fixed-effects</i>	YES		YES		YES		YES	
<i>Year fixed-effects</i>	YES		YES		YES		YES	
No. Obs.	45,889		45,889		45,889		45,889	
R ²	0.1954		0.1956		0.1954		0.1955	
Panel B – Alternative earnings management II (<i>EM_Alternative2</i>)								
	Test H1		Test H2		Test H3		Test H3	
	Column 1		Column 2		Column 3		Column 4	
	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat
<i>constant</i>	0.156***	(27.50)	0.158***	(27.59)	0.156***	(27.41)	0.157***	(27.55)
<i>Ethical Judgment</i>	-0.001*	(-1.69)	-0.004***	(-2.93)	-0.001	(-1.57)	-0.003**	(-2.20)
<i>Ethical Judgment x Big Four</i>			0.004***	(2.66)				
<i>Ethical Judgment x ADR</i>					-0.001	(-0.52)		
<i>Ethical Judgement x IFRS</i>							0.002*	(1.67)
<i>Control variables</i>	YES		YES		YES		YES	
<i>Industry fixed-effects</i>	YES		YES		YES		YES	
<i>Year fixed-effects</i>	YES		YES		YES		YES	
No. Obs.	45,889		45,889		45,889		45,889	
R ²	0.1876		0.1878		0.1876		0.1877	
Panel C – Alternative earnings management III (<i>EM_Alternative3</i>)								
	Test H1		Test H2		Test H3		Test H3	
	Column 1		Column 2		Column 3		Column 4	
	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat
<i>constant</i>	0.158***	(27.74)	0.160***	(27.80)	0.158***	(27.67)	0.159***	(27.81)
<i>Ethical Judgment</i>	-0.001	(-1.47)	-0.003***	(-2.60)	-0.001	(-1.42)	-0.003**	(-2.28)
<i>Ethical Judgment x Big Four</i>			0.004**	(2.37)				
<i>Ethical Judgment x ADR</i>					-0.000	(-0.16)		
<i>Ethical Judgement x IFRS</i>							0.003*	(1.95)
<i>Control variables</i>	YES		YES		YES		YES	
<i>Industry fixed-effects</i>	YES		YES		YES		YES	
<i>Year fixed-effects</i>	YES		YES		YES		YES	
No. Obs.	45,889		45,889		45,889		45,889	
R ²	0.1924		0.1925		0.1924		0.1925	

This table presents robustness analysis on the effect of ethical judgment on earnings management, by taking into account alternative earnings management measures. In Panel A, B, and C the dependent variables are *EM_Alternative1*, *EM_Alternative2*, and *EM_Alternative3*, which represents the earnings management measured by the absolute amount of discretionary accruals according to Dechow *et al.* (1995) without any additional variable, considering only firm's performance (Kothari *et al.*, 2005), and by additionally considering lagged accruals (Dechow *et al.*, 2012), respectively. *Ethical Judgment* is the index of national ethical judgment based on the WVS questionnaire. *Big Four* is a dummy variable coded one if a firm is audited by PwC, KPMG, Ernst & Young, or Deloitte, and zero otherwise. *ADR* is a dummy variable coded one if the firm is cross-listed in the US, and zero otherwise. *IFRS* is a dummy variable coded one if the firm prepared its financial statements based on IFRS, and zero otherwise. Control variables inserted in all estimations (see Appendix A). Parameter estimates are reported first, followed by robust *t*-statistics corrected for cluster at the firm and year level in parentheses (Petersen, 2009). *, **, and *** indicate significant coefficients at the 10%, 5%, and 1% levels, respectively (two-tailed).

Sixth, we also take into account potential bias on two main aspects related to econometric estimations issues, namely “accruals two-steps” approach and truncation of the dependent variable. Thus, we follow the Chen *et al.* (2018a) recommendations regarding the high probability existence of biased coefficients and standard errors that can lead to incorrect inferences, with both Type I and Type II errors in the typical “two steps” procedure on accruals estimation. In particular, we include among the control variables the regressors of the first-step regression (see Equation 1) in our main model. Considering this approach, we fundamentally find the same results as those presented in our main analysis concerning the signal and significance of the coefficients of our variables of interest (untabulated).

Finally, we additionally explore the effect of national ethical judgement on earnings management and the moderating role of firm-level enforcement and accounting standards quality specifically taking into the manipulation of accounting amounts by real earnings management. Besides the firm-level incentives linked to accruals-based earnings management, previous literature points out convincing empirical results that managers also have incentives to manipulate real activities to meet certain earnings targets, such as overproduction to report lower cost of goods sold, price discounts to temporarily increase sales, and reduction of discretionary expenditures to improve reported margins (Roychowdhury, 2006). Earnings management literature, indeed, provide evidence that accruals-based earnings management and real earnings management happens simultaneously (e.g., Zang, 2012; Baker et al., 2019). In this sense, although ethical issues are more linked to earnings manipulation by accruals than by operational decisions, we additionally test our hypothesis taking into account real earnings management. Thus, we measure real earnings management (*Real*) based on the abnormal levels of production costs (*Abn_Prod*) and abnormal levels of discretionary expenses (*Abn_Aexp*)³², according to Roychowdhury (2006) models. *Real* is sum of *Abn_Prod* and *Abn_Aexp*³³. The results are presented in Table 9.

Overall, without taking into account any interaction, the results in Table 9, Column 1, reveal a positive and significant coefficient for *Ethical Judgement* (0.008, *t*-stat = 2.70). Moreover, concerning the moderating role of firm-level enforcement, the results in Columns 2 and 3 show a negative and significant coefficient for the interaction term *Ethical Judgement x Big Four* (-0.036, *t*-stat = -6.35), while an insignificant coefficient for the interaction term *Ethical Judgement x ADR* (-0.003, *t*-stat = -0.26) at conventional levels, respectively. Finally, regarding the moderating role of accounting standards quality, the results in Column 4 reveal a negative and significant coefficient for the interaction term *Ethical Judgement x IFRS* (-0.045, *t*-stat = -8.81).

³² Following Lara et al. (2020, p. 7), we do not analyse abnormal cash flows from operations “because real activities manipulation impacts this variable in different directions and the net effect is ambiguous”.

³³ *Abn_Aexp* is multiplied by minus one, given that higher the amount of abnormal levels of discretionary expenses, the more likely the firm is to be engaging in cutting discretionary expenses.

Table 9. Additional Analysis: Real Earnings Management

	Test H1		Test H2		Test H3			
	Column 1		Column 2		Column 3		Column 4	
	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat	Coeff.	<i>t</i> -stat
<i>constant</i>	0.069*** (-3.32)		0.053** (-2.53)		0.069*** (-3.28)		0.056*** (-2.69)	
<i>Ethical Judgment</i>	0.008*** (-2.70)		0.033*** (-7.07)		0.008*** (-2.69)		0.037*** (-8.93)	
<i>Ethical Judgment x Big Four</i>			-0.036*** (-6.35)					
<i>Ethical Judgment x ADR</i>					-0.003 (-0.26)			
<i>Ethical Judgement x IFRS</i>							-0.045***	
<i>Big Four</i>	-0.055*** (-15.28)		-0.042*** (-10.79)		-0.055*** (-15.28)		-0.055*** (-15.42)	
<i>ADR</i>	0.005 (-0.56)		0.003 (-0.36)		0.005 (-0.62)		0.005 (-0.59)	
<i>IFRS</i>	-0.066*** (-12.29)		-0.070*** (-12.85)		-0.066*** (-12.29)		-0.056*** (-9.94)	
<i>Size</i>	0.002** (-2.08)		0.002** (-2.17)		0.002** (-2.08)		0.002** (-2.20)	
<i>Leverage</i>	0.009 (-0.74)		0.007 (-0.59)		0.009 (-0.74)		0.011 (-0.90)	
<i>Return on Equity</i>	-0.052*** (-11.49)		-0.052*** (-11.44)		-0.052*** (-11.49)		-0.052*** (-11.37)	
<i>Market-to-Book</i>	-0.024*** (-28.48)		-0.024*** (-28.47)		-0.024*** (-28.47)		-0.024*** (-28.51)	
<i>Growth</i>	-0.012*** (-2.85)		-0.012*** (-2.89)		-0.012*** (-2.85)		-0.012*** (-2.98)	
<i>Dissue</i>	0.001 (-0.47)		0.001 (-0.43)		0.001 (-0.47)		0.001 (-0.41)	
<i>Eissue</i>	-0.019*** (-4.49)		-0.019*** (-4.58)		-0.019*** (-4.49)		-0.020*** (-4.70)	
<i>LOSS</i>	0.035*** (-9.00)		0.035*** (-9.04)		0.035*** (-9.00)		0.035*** (-8.97)	
<i>Litigation</i>	-0.040*** (-9.08)		-0.039*** (-9.03)		-0.040*** (-9.07)		-0.041*** (-9.42)	
<i>GDP Growth</i>	-0.015 (-0.85)		-0.011 (-0.65)		-0.015 (-0.85)		-0.019 (-1.06)	
<i>Enforcement</i>	-0.025*** (-9.44)		-0.023*** (-8.24)		-0.025*** (-9.43)		-0.025*** (-9.42)	
<i>EM</i>	0.091*** (-4.14)		0.093*** (-4.23)		0.091*** (-4.14)		0.092*** (-4.16)	
<i>Industry fixed-effects</i>	YES		YES		YES		YES	
<i>Year fixed-effects</i>	YES		YES		YES		YES	
No. Obs.	37,682		37,682		37,682		37,682	
R ²	0.0854		0.0863		0.0854		0.0870	

This table presents the estimation results of a selection model that analyses the effect of ethical judgment on real earnings management. The dependent variable is *Real*, which represents the real earnings management measured by the sum of abnormal levels of production costs and abnormal levels of discretionary expenses multiplied by minus one, according to Roychowdhury (2006). *Ethical Judgment* is the index of national ethical judgment based on the World Values Survey (WVS) questionnaire. *Big Four* is a dummy variable coded one if a firm is audited by PwC, KPMG, Ernst & Young, or Deloitte, and zero otherwise. *ADR* is a dummy variable coded one if the firm is cross-listed in the US, and zero otherwise. *IFRS* is a dummy variable coded one if the firm prepared its financial statements based on IFRS, and zero otherwise. *Size* is the natural logarithm of total assets. *Leverage* is the long-term debt scaled by total assets. *Return on Equity* is the net income scaled by total assets minus total liabilities. *Market-to-Book* is the market capitalization scaled by total assets minus total liabilities. *Growth* is the change in annual sales scaled by previous year's sales. *Dissue* is the change in annual total liabilities scaled by previous year's total liabilities. *Eissue* is the change in annual common stock scaled by previous year's common stock. *Loss* is a dummy variable coded one if a firm reported negative net income for the year, and zero otherwise. *Litigation* is a dummy variable coded one if the firm is from high litigation industry (SIC codes of 2833–2836, 3570–3577, 3600–3674, 5200–5961 and 7370), and zero otherwise. *IFRS* is a dummy variable coded one if the firm prepared its financial statements based on IFRS, and zero otherwise. *GDP Growth* is the change in annual country's GDP scaled by previous year's GDP. *Enforcement* is the index of regulatory quality for each country-year, according to World Bank. Parameter estimates are reported first, followed by robust *t*-statistics corrected for cluster at the firm and year level in parentheses (Petersen, 2009).

*, **, and *** indicate significant coefficients at the 10%, 5%, and 1% levels, respectively (two-tailed).

In broad terms, these results based on real earnings management suggest opposite results from those considering accruals-based earnings management. More specifically, they suggest that national ethical judgement is positively associated with real earnings management, and that such association is lower in firms with high enforcement (i.e. audited by Big 4) and high quality of accounting standards (i.e. post-IFRS periods).

Those findings corroborate previous earnings management literature concerning the trade-off between accruals-based earnings management and real earnings management (e.g., Cohen *et al.*, 2008; Ipino and Parbonetti, 2017; Mnif and Hamouda, 2020). Overall, this stream of previous literature suggests that, depending on the relative costs of each method, firms trade-off the two earnings management tactics depending on a specific period, or even a significant corporate event. For example, Cohen *et al.* (2008) document that, after the passage of Sarbanes-Oxley (SOX), the level of accrual-based (real) earnings management declines (increases), in line with the idea that firms switching from the former to the latter as a result of the SOX heightened scrutiny of accounting practice. Similarly, Ipino and Parbonetti (2017) show that IFRS adoption came with the unintended consequence of certain firms substituting real earnings management for accrual-based earnings management, especially among firms in countries with strict enforcement regimes. Even more recently, Mnif and Hamouda (2020) empirically demonstrate that firms tend to shift from AEM to REM when audited by an industry expert.

Thus, by demonstrating a negative (positive) association between national ethics judgement and accruals-based (real) earnings management, our results corroborate previous literature. This suggest that in countries where ethically suspect behaviours are less acceptable, managers seem to be less involved with earnings management by accruals, however they seem to feel free to engage in real earnings management, even though the economic consequences of this practice – such as the increase of cost of capital and greater long-term costs on shareholders because of its negative impact on future cash flows (Paredes and Wheatley, 2017).

3.5. Conclusions

This study analyses the effect of national ethical judgment on earnings management in a large sample database encompassing 45,889 firm-year observations from 34 countries. Our results suggest a negative and statistically significant association between national ethical judgment and accruals-based earnings management practices, suggesting that the manipulation of accounting amounts is lower in countries where ethically suspect behaviours are less acceptable. Additionally, we provide empirical evidence that firm-level enforcement and the quality of accounting standards play an important moderating role in the effect of national ethical judgment on earnings management, in order to dampen it. Our empirical findings are robust to different accruals-based models' estimations,

regression estimation methods, and a bunch of sensitivity tests concerning eventual sample process bias and potential confounding effects.

Our study has several theoretical and practical implications. First, we contribute to accounting literature by empirically demonstrating the role of ethical issues in earnings management practices, specifically concerning the manipulation of accounting amounts through accruals. This suggests a greater intolerance or even more criticism of accounting information with high levels of accruals in societies regarded as more “honest” judgments – corroborating the underlying idea that managers use accrual accounting to manipulate more intensely the information in countries where people culturally are more compliant with anti-ethical attitudes. In this sense, sophisticated investors and international regulatory agencies may be interested in such evidence, in decisions related to the international allocation of investments and in the development of policies related to the quality of information reported by companies, for example.

Second, demonstrating the role of ethics on earnings management, we raise a relevant discussion for governing bodies and regulators about the importance of strategic planning that also considers aspects related to culture, moral and ethical issues, besides economic and political issues. Finally, in the same line, given the demonstrated negative association between earnings management and national ethical judgment, we also highlight a higher level of criticism that should possibly be adopted by investors and analysts in the analysis of accounting information of companies located in countries with low levels of ethical judgment.

Although the methodological rigor and the robustness of our empirical findings in the face of a variety of sensibility tests, there are some limitations in our analyses that should be addressed. First, despite the extensive use and validation of the WVS questionnaire by the previous literature, admittedly, this measure of national ethical judgement is not free of bias, as discussed in Section 3. Second, even though our best efforts in order to provide a quantitative evidence of the effects of ethical judgement at country-level on earnings management tactics across 34 countries, we recognize the primary nature of their data of WVS is also qualitative and based on questionnaire, and that relying on small groups interviews might lead to more refine measures of the construct.

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Conclusion

This thesis analyzes cross-country differences in earnings management practices, discussing about the role of country- and firm-specific economic and institutional factors. Considering the extension of this broad objective, three studies were developed. In a broad, in the first study, we find that when facing greater macroeconomic instability, firms from developed (emerging market) countries decrease (increase) the level of accruals-based earnings management, and in both types of countries decrease the level of real earnings management. We also find empirical evidence that the association between macroeconomic instability and accruals-based earnings management is lower in countries with stronger institutions, in both developed and emerging market countries. In the second study, our empirical results suggests that firms from emerging markets facing higher levels of financial distress engage in income-increasing accruals-based earnings management, and that such engagement is lower in firms audited by Big 4 compared to those audited by non-Big 4 auditors. Furthermore, the results also demonstrate a significant difference across Big 4 audit firms in their role of constraining income-increasing earnings management strategies in firms with high levels of financial distress. Finally, in the third study, the empirical results suggest that firms from countries where ethically suspect behaviors are less acceptable (i.e. higher ethical judgment) are associated with lower levels of accruals-based earnings management. Moreover, the results also provide evidence that firm-level enforcement and the quality of accounting standards play an important moderating role in the effect of national ethical judgment on earnings management, in order to dampen it.

Taken together, those empirical findings contribute to the debate concerning the effect of economic and institutional factors on the accounting quality in an international context. Investors and regulators may be interested in such evidence, given that our results provide a more holistic view about the effect of the economic environment on earnings management in countries with different economic and institutional conditions. Besides, by demonstrating how the effect of macroeconomic instability on the quality of the financial reports (i.e. earnings management) differs between developed and emerging countries, for instance, we provide an important discussion for regulators and standard setters who must take into account simultaneously the role of institutional and economic characteristics in the monitoring firms strategies and development of accounting standards. Moreover, when it is known that economic and institutional factors are associated to firm-level earnings management, actions can be taken to build stronger and fairer societies, given that the quality of the financial reporting is inextricably linked to how well the economy works and how income and wealth are distributed.

Despite the methodological rigor and the robustness of our results in the face of several additional tests, there are some limitations and caveats in our analyzes that should be addressed. First,

considering the large international data set on which we base our inferences, our results do not control for several factors associated with individual characteristics of corporate executives (i.e. CEOs, CFOs, etc.), such as personal traits, nationality and education. Previous literature demonstrate that such factors are key determinants of earnings management practices, and so that the omission of these variables could potentially decrease the predictive power of our estimates. Second, even though our best efforts in order to mitigate confounding effects arising from the nature of country-level variables, our results must be interpreted with caution, considering the association of some of the analyzed country-level variables with other institutional and economic factors that we do not analyze in this thesis. Future researchers, therefore, may be interested in considering factors intrinsic to the personality of executives (e.g., age, education, nationality, personal traits), and potentially verifying whether such managers' characteristics mediate the effects of the country's economic and institutional conditions on earnings management. This research can also be expanded by considering alternative measures of accounting quality (i.e. earnings persistence, accounting conservatism, earnings predictability, etc.), or even by exploring specific groups of countries or jurisdictions with similar economic and institutional characteristics, which may possibly have different results from the general empirical findings presented.

