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Corruption and earnings management in developed and emerging countries

Isabel Costa Lourenço, Alex Rathke, Verônica Santana, and Manuel Castelo Branco

Abstract

Purpose – *The purpose of this study is to examine whether firms from countries presenting higher levels of corruption are more likely to have higher levels of earnings management than their counterparts from countries with lower levels of corruption. It also explicitly examines how this relationship compares between emerging and developed economies.*

Design/methodology/approach – *Using multiple regression analysis, this study tests the hypothesis of positive association between the countries' level of corruption and the level of earnings management using a sample of foreign firms with American Depositary Receipts in the US market.*

Findings – *Findings indicate that higher corruption perception is related to higher incentives for firms to manipulate earnings in the case of emerging countries. Such results are not identified in developed countries where the level of minority investors' protection is higher. Findings also indicate that in developed countries earnings management is negatively related to investor protection, which is not the case for emerging countries.*

Originality value – *As far as the authors are aware, this study is the first to examine the effects of corruption on earnings management on the basis of accounting firm-level data.*

Keywords *Earnings management, Corruption, Developed countries, Emerging countries*

Paper type *Research paper*

1. Introduction

A broad definition of corruption depicts it as “the abuse of entrusted power for private gain” (Cuervo-Cazurra, 2016, p. 36). The wide-ranging negative effects of corruption are legion. They include constrained economic growth, decreased trust in government and reduced legitimacy of market economy and democracy (Branco and Delgado, 2012). Given its detrimental effects, corruption is considered by many as a cancer on society (Everett *et al.*, 2007).

A little over 10 years ago, Riahi-Belkaoui (2004) expressed his dismay regarding the lack of interest evidenced by the economic and accounting literature on the impact of corruption on accounting quality. This consequence has remained largely unexplored in that literature (Riahi-Belkaoui, 2004; Riahi-Belkaoui and AlNajjar, 2006). Motivated by this scarcity, we analyse the relationship between country-level and firm-level characteristics and the level of earnings management of foreign firms with American Depositary Receipts (ADR) in the US market, highlighting the role of corruption as a determinant of earnings management (a measure of accounting quality).

Earnings management is related to managers' judgement in financial reporting and the structuration of transactions with a view to altering financial information to either misguide some stakeholders regarding the underlying economic reality or to influence the outcomes of contracts that are dependent upon such information (Healy and Wahlen, 1999). It may occur for a variety of reasons, including influencing the perceptions of stock market participants, enhancing management compensation, reducing the likelihood of violation of

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lending agreements and avoiding intervention from regulatory agencies (Healy and Wahlen, 1999). Dichev *et al.* (2013) reported evidence suggesting that roughly 20 per cent of public firms engage in earnings management, and that the usual management borders on 10 per cent of the earnings per share.

Many consider that higher levels of earnings management are tantamount to unethical practices (Elias, 2002; Kaplan, 2001; Martin *et al.*, 2016). A moral judgement is unquestionably involved in earnings management (Martin *et al.*, 2016). Despite this and the long history of research on earnings management (Healy and Wahlen, 1999; Dechow and Skinner, 2000; Walker, 2013), accounting researchers have left almost untouched the relationship between earnings management and corruption, undoubtedly one of the most conspicuous and damaging unethical behaviours of our times; this happened even though corruption is considered a serious problem and accounting is deemed as useful in the fight against it (Everett *et al.*, 2007).

Few studies have explored the relationship between the level of corruption and accounting quality (Kimbrow, 2002; Riahi-Belkaoui, 2004; Wu, 2005; Riahi-Belkaoui and AlNajjar, 2006; Malagueño *et al.*, 2010; Houqe and Monem, 2016). Of these studies, only Riahi-Belkaoui (2004) and Riahi-Belkaoui and AlNajjar (2006) examine the impact of corruption on accounting quality, albeit based on accounting country-level data and without guaranteeing that the study is conducted in a setting of relatively stable accounting environment.

We add to this literature by analysing the effect of countries' corruption levels on earnings management. More specifically, we examine whether firms from countries presenting higher levels of corruption are more likely to have higher levels of earnings management than their counterparts from countries with lower levels of corruption. As far as we are aware, our study is the first to do this on the basis of accounting firm-level data. Similar to Riahi-Belkaoui (2004) and Riahi-Belkaoui and AlNajjar (2006), we posit that a high level of corruption creates a climate that encourages low levels of accounting quality. Hence, the premise of this study is that in low-corruption environments, firms are less likely to engage in earnings management practices.

In particular, this paper brings new insights to the topic by explicitly examining how this relationship compares between emerging and developed economies. Although corruption is a worldwide blight, it is particularly worrisome in emerging countries such as Brazil, China, India and Russia, in which the level of development of the governance mechanisms required to deal adequately with this phenomenon may not be in place (Kaymak and Bektas, 2015). Based on the argument that in emerging economies the level of institutional development may not be sufficient to effectively attenuate the diffusion and impacts of corruption, we posit that in these countries the positive impacts of corruption on the level of earnings management tend to be stronger than in their developed counterparts.

The empirical study relies on foreign firms with ADR in the US market that apply International Financial Reporting Standards (IFRS). We thus guarantee the homogeneity of the sample, which is based on firms with greater incentives to transparency that apply a set of high-quality accounting standards. Hence, contrary to Riahi-Belkaoui (2004) and Riahi-Belkaoui and AlNajjar (2006), our study is conducted in a setting of relatively stable accounting environment, with firms providing high-quality financial information somewhat comparable with that reported by US firms.

Our sample comprises 1,281 firm-year observations, regarding 427 firms from 33 countries. About 68 per cent of these observations are from developed countries, and the remaining are from emerging countries. We use data from 2011 to 2013. The research design relies on a model that regresses the level of earnings management (the magnitude of absolute discretionary accruals) on a set of independent firm-level and country-level variables. The main independent variable is the Transparency International's Corruption Perceptions Index [CPI], which is a leading measure of perceptions regarding corruption that ranks countries

by perceived levels of corruption among public officials. A higher index rating indicates lower levels of perceived corruption.

The empirical findings suggest that only in the case of emerging countries there is a positive relationship between the level of perceived corruption and the level of earnings management (there is a negative relationship between the CPI and earnings management). In the case of emerging countries, there is strong evidence that firms from countries with higher levels of perceived corruption are more likely to present higher levels of earnings management. There is also evidence that in the developed countries there is a negative relationship between the level of investors' protection and the level of earnings management, which is not the case in the emerging countries.

We interpret the findings pertaining to the relationship between corruption and earnings management as meaning that there is probably a level of institutional development in terms of fight against corruption above which there is no significant relationship between a more corruption-prone environment and earnings management. Regarding the relationship between investor protection and earnings management, findings suggest that the weak institutional environment that characterizes emerging economies results in weak enforcement of rules protecting investors given that its effective application relies upon adequate enforcement and government conduct.

2. Background and hypotheses

Many studies on earnings management consider the phenomenon of corruption as a factor influencing earnings management. However, the majority of them do this in an indirect way by using a variable measuring the strength of legal environment, which is the average score of three legal variables used in [La Porta *et al.* \(1998\)](#): the efficiency of the judicial system, an assessment of the rule of law and the level of corruption ([Leuz *et al.*, 2003](#); [Shen and Chih, 2005, 2007](#); [Chih *et al.*, 2008](#); [Doupnik, 2008](#); [Van Tendeloo and Vanstraelen, 2008](#); [Li *et al.*, 2011](#)).

[González and García-Meca \(2014\)](#) used a measure of the governability level of a country that considers the following three main indicators: control of corruption, rule of law and government effectiveness. Following the literature, these authors suggest that these indicators are important factors in measuring the way in which the governability of a country affects opportunistic behaviour in firms.

Despite this, and although there is a wealth of literature on both corruption and accounting quality, studies analysing possible relationships between the two are scarce. We were able to identify only six studies in this area: [Kimbro \(2002\)](#), [Riahi-Belkaoui \(2004\)](#), [Wu \(2005\)](#), [Riahi-Belkaoui and AlNajjar \(2006\)](#), [Malagueño *et al.* \(2010\)](#) and [Houqe and Monem \(2016\)](#). Whereas [Wu \(2005\)](#), [Malagueño *et al.* \(2010\)](#) and [Houqe and Monem \(2016\)](#) examine the impact of accounting quality on corruption, [Riahi-Belkaoui \(2004\)](#) and [Riahi-Belkaoui and AlNajjar \(2006\)](#) examine the impact of corruption on accounting quality.

[Kimbro \(2002\)](#) avoids establishing causality between the economic, cultural and monitoring variables included in the model she uses, linking them to corruption. [Kimbro \(2002\)](#) performed a cross-country analysis of corruption on the basis of a model exploring the relationships of economic, cultural and monitoring/institutional variables with corruption. Regarding economic variables, her findings suggest that gross national product per capita is inversely associated with the level of corruption, whereas high levels of economic growth are associated with higher levels of corruption. In the case of cultural values, power distance and individualism were found to be positively associated with corruption. Regarding the relations between the quality of the accounting and legal systems and corruption, Kimbro found that countries with good laws enforced by more effective judiciary, good financial reporting standards and a higher concentration of accountants are likely to be less corrupt.

Wu (2005), Malagueño *et al.* (2010) and Houqe and Monem (2016) emphasize the role potentially played by accounting in curbing corruption. Wu (2005) used cross-country firm-level data from Asian countries to examine the relationship between corporate accounting practices and the level of bribery. This author found that although better accounting practices are helpful in reducing both the incidence of bribery and the amounts of bribery payments, merely conforming to high-quality accounting standards alone does not necessarily bring down the incidence of bribery.

Malagueño *et al.* (2010) performed a cross-country analysis using data from 57 countries to examine the impact of accounting quality on corruption. While controlling for several other variables considered in the literature, they found evidence of negative relationships between the perceived level of corruption and both the increased presence of Big 4 firms in countries and the perceived accounting quality (PAQ). They concluded that “countries with more transparent reporting have lower levels of perceived corruption and that the level of perceived corruption may be reduced in a country by improving accounting and auditing quality” (Malagueño *et al.*, 2010, p. 372).

Houqe and Monem (2016) used data from 104 countries, over the period 2009-2011, to investigate the role of IFRS adoption and the extent of disclosure in reducing perceived corruption, after controlling for the effects of political institutions and economic development. Their findings suggest that the length of a country’s IFRS adoption experience and the extent of disclosure are negatively related with the level of perceived corruption. In addition, their findings also suggest that IFRS experience is more beneficial in reducing perceived corruption in the case of developing countries than in the case of developed ones.

Whereas Kimbro (2002) used the number of accountants per 100,000 inhabitants and the Center for International Financial Analysis Research reporting index to measure accounting quality, Malagueño *et al.* (2010) used the increased presence of Big 4 firms and PAQ data obtained from the survey administered annually by the World Economic Forum in its Global Competitiveness Survey. Houqe and Monem (2016) used the length of IFRS experience of a country and the extent of disclosure. Being cross-country studies, these studies all suffer from some of the weaknesses Houqe and Monem (2016) acknowledge regarding their own study: data are pooled from different sources collecting and disseminating data for disparate purposes; the results obtained are likely to be sensitive to different proxies for some of the variables used.

Of the three studies linking accounting quality to corruption reviewed above, only Wu (2005) uses firm-level data. The other four use country-level data. To assess firm-level accounting quality, Wu (2005) uses three measures:

1. firms’ adoption of international accounting standards (IAS);
2. firms’ financial statements having been audited by external auditors; and
3. the percentage of sales not reported.

However, as noted by Houqe and Monem (2016), the sample used in Wu’s study pre-dates the period in which IAS/IFRS became mandatory in most countries, and it is therefore likely to have been affected by self-selection bias. For example, firms that adopted IAS voluntarily may have been better governed.

Although also exploring the relationships between accounting quality and corruption, both Riahi-Belkaoui (2004) and Riahi-Belkaoui and AlNajjar (2006) examined the determinants of earnings opacity internationally using data from 34 countries. These studies posit that a particular country’s level of corruption is a “major determinant” of the level of accounting quality “as the illegal rents created by corruption need to be at most ‘camouflaged’, and that is most feasible with earnings management” (Riahi-Belkaoui, 2004, pp. 73-74).

Riahi-Belkaoui's (2004) results suggest the existence of a negative relationship between earnings opacity and the lack of corruption after controlling for economic development, human development, size of government and economic freedom. Based on an explanation resting on the impact of corruption as it uses the lack of accounting quality to "camouflage" the ill-gained results, Riahi-Belkaoui (2004, p. 82) concludes that "corruption creates a climate conducive to a low quality accounting".

The findings of Riahi-Belkaoui and AlNajjar (2006) indicate that earnings opacity is negatively related to the level of economic freedom and the level of quality of life and positively related to the rule of law, economic growth and the level of corruption. In addition, earnings opacity was surprisingly found to be not related to various measures of accounting order, namely, the level of disclosure, the number of auditors per 100,000 inhabitants and the adoption of IAS. These authors conclude that "it is the social and economic climate rather than the technical accounting climate that is at the core of the lack of accounting quality in general and earnings opacity in particular" (Riahi-Belkaoui and AlNajjar, 2006, p. 189).

Following Riahi-Belkaoui (2004) and Riahi-Belkaoui and AlNajjar (2006), the study reported in this paper is premised on the idea that lower levels of corruption will be associated with lower levels of earning management, used as a measure of accounting quality. Contrary to these two studies, we use accounting firm-level data to empirically test the link of corruption with accounting quality.

Riahi-Belkaoui (2004) suggests two arguments that may be used to justify the thesis of a negative impact of countries' level of corruption and firms' earnings management practices. First, the rent-seeking behaviour that constitutes corruption needs to be as concealed as possible from the eyes of the citizens and all those affected by it. Hence, a system of accountability flexible enough to veil the actions and consequences of corruption is needed. As Riahi-Belkaoui (2004, p. 74) puts it, there is "the need for a lower quality accounting for manufacturing a higher level of corruption". Second, high levels of corruption create an unethical atmosphere that leads individuals to have high levels of acceptance regarding such rent-seeking behaviour. These attitudes extend easily to other activities, including those pertaining to the collection and dissemination of accounting information. Riahi-Belkaoui (2004, p. 75) thus suggests that "one would expect a low quality of accounting from a country that tolerates or fails to reduce corruption". Therefore, the first hypothesis to be tested is as follows:

H1. Corruption positively affects the level of earnings management.

The idea that institutions of poor quality are the origin of emerging countries' development problems has become prevalent, and explains why institutions such as the International Monetary Fund and the World Bank impose on countries in need of funding "governance-related conditionalities", requiring such countries to adopt "better" institutions that supposedly improve "governance" (Chang, 2011). In most emerging countries, institutional arrangements created in colonial times and inherited by postcolonial states are the root of development problems (Amendola *et al.*, 2013).

The liberalization of markets and economic policies that occurred in emerging markets has not been accompanied by a corresponding degree of institutional development, and this has led to feeble oversight of government actions and to a climate in which corruption can proliferate (Kaymak and Bektas, 2015). Emerging markets' rapid growth in combination with unresolved political problems and weak institutional environments has encouraged rent-seeking behaviours and corruption (Kaymak and Bektas, 2015).

A priori, there may be valid reasons why the relationship between corruption and earnings management in emerging countries is different when compared to developed countries. Emerging countries might be lacking the institutional development required to mitigate the diffusion and effects of corruption. In these countries, high levels of corruption tend to go

together with insufficient political accountability and lack of respect for property rights (Aidt, 2009).

In developed countries, institutional features such as strong minority investor protection and reliable contract enforcement are in place, and the similarity between them is likely to result in insignificant differences in the impact of corruption on earnings management. On the contrary, in emerging countries, differences in similar institutional features are likely to result in substantial differences in terms of the effects of corruption on earnings management. Therefore, the second hypothesis to be tested is as follows:

- H2.* The positive impacts of corruption on the level of earnings management tend to be stronger in emerging countries than in developed countries.

3. Research design

3.1 Sample and data

Our sample comprises firms from 33 countries with ADR in the US market that report their financial statements under IFRS. The empirical study is thus conducted in a setting of relatively stable accounting environment, without the need of controlling for the use of more developed accounting standards.

We use data from 2011 to 2013 to include the largest possible number of countries applying IFRS. The data used to compute the earnings management measure and the firm-level variables are collected from the Worldscope Database. The data used to compute the country-level variables are collected from the World Bank database.

After excluding extreme values (top and bottom 1 per cent), the final sample consists of 1,281 firm-year observations, regarding 427 firms. Table I presents the distribution of these firm-year observations by country and by industry. We also segregate the observations according to the type of country, emerging or developed, based on the classification provided by the World Bank Database.

Table I, Panel A, shows that the observations from Brazil and South Africa account for 54 per cent of the emerging countries data (17 per cent of all observations). In Table I, Panel B, we see that Australia and the UK account for 42 per cent of developed countries data (29 per cent of all observations). Table I, Panel C, shows that most of the observations are from manufacturing and utilities industries.

3.2 Measure of earnings management

We use the magnitude of absolute discretionary accruals as a proxy for earnings management. According to Leuz *et al.* (2003), managers sometimes use discretion to misstate their firm's economic performance, for example, overstating reported earnings to reach a target or report extraordinary performance in specific situations. The magnitude of discretionary accruals measures the extent to which managers exercise discretions in reporting earnings. Greater magnitude of discretionary accruals reflects difficulties in accounting numbers in effectively measuring economic performance (Warfield *et al.*, 1995). As income-increasing accruals and income-decreasing accruals can be used in earnings management, it is common to use the magnitude of absolute discretionary accruals. Greater magnitudes indicate greater level of earnings managements and lower accounting quality (Chen *et al.*, 2010).

Discretionary (abnormal) accruals can be measured as the total accruals minus estimated non-discretionary (normal) accruals. Several models can estimate normal accruals. This study uses a modified version of the model proposed by Jones (1991). Dechow *et al.* (1995) analysed some alternative accrual-based models for detecting earnings management and found that the most powerful model is the modified version of the model developed by Jones (1991). The original model uses a regression approach to identify non-discretionary

Table I Distribution of firm-year observations

<i>Panel A. Emerging countries</i>	
Argentina	18
Brazil	141
Chile	36
Mexico	57
Peru	9
Philippines	9
Poland	3
Russia	45
Singapore	3
South Africa	78
Turkey	6
Total	405
<i>Panel B. Developed countries</i>	
Austria	30
Australia	168
Belgium	15
Denmark	15
Finland	15
France	75
Germany	93
Greece	3
Holland	36
Hong Kong	21
Hungary	9
Ireland	21
Israel	18
Italy	30
New Zealand	6
Korea	27
Norway	24
Portugal	3
Spain	18
Sweden	27
Switzerland	18
United Kingdom	204
Total	876
Total number	1,281
<i>Panel C. Industries</i>	
Agriculture, Forestry and Fishing (SIC 0)	12
Mining and Construction (SIC 1)	195
Manufacturing I (SIC 2)	258
Manufacturing II (SIC 3)	267
Utilities (SIC 4)	276
Wholesale Trade (SIC 5)	96
Finance, Insurance and Real Estate (SIC 6)	27
Services I (SIC 7)	93
Services II (SIC 8)	57
Total number	1,281

factors by a linear relationship between total accruals and change in sales and in property, plant and equipment (McNichols, 2000).

The model proposed by Jones (1991) starts with an expectation model for total accruals to control for changes in the economic circumstances, specifically the variation in revenues and the level of property, plant and equipment. However, this model assumes that revenues are non-discretionary, while it is possible that managers accrue revenues at year-end, when

the cash has not yet been received and it is questionable whether the revenues have been earned, resulting in an increase in revenues and total accruals through an increase in receivables (Dechow *et al.*, 1995).

Therefore, Dechow *et al.* (1995) proposed a modified version of the Jones (1991) model, eliminating its tendency to measure discretionary accruals with errors when revenues are opportunistically modified. In this model, the discretionary accruals are estimated as the residuals of equation (1):

$$\frac{TA_{i,t}}{A_{i,t-1}} = \alpha_1 \left(\frac{1}{A_{i,t-1}} \right) + \alpha_2 \left(\frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}} \right) + \alpha_3 \left(\frac{PPE_{i,t}}{A_{i,t-1}} \right) + \varepsilon_{i,t}, \quad (1)$$

where $TA_{i,t}$ is the total accruals for each firm at each period; $A_{i,t-1}$ is the lagged total assets; $\Delta REV_{i,t}$ is the annual variation in revenues; $PPE_{i,t}$ is the gross property, plant and equipment and $\Delta REC_{i,t}$ is the annual variation in the net receivables. Also, following Dechow *et al.* (1995), we calculate total accruals as the difference between the variation of current assets and the variation of current liabilities, minus variation on cash flow from operations and depreciation, plus the variation on debt in current liabilities. We calculate the absolute discretionary accruals separately for each industry, to isolate the effects of industry patterns.

3.3 Measure of corruption

As a measure of corruption, we use the Transparency International's CPI, which is a leading measure of perceptions regarding corruption that ranks countries by perceived levels of corruption among public officials. A higher index indicates lower levels of perceived corruption. Hereinafter, the word "corruption" will be used to refer to perceptions of corruption.

3.4. Empirical model

To analyse the association between the level of earnings management of foreign firms with ADR in the US market and the level of perceived corruption in their respective countries, we built the model in equation (2):

$$\begin{aligned} ADA_{ict} = & \alpha + \beta_1 CPI_{ct} + \beta_2 PMI_{ct} + \beta_3 EC_{ct} + \beta_4 NonBig_{ict} \\ & + \beta_5 Lev_{ict} + \beta_6 ROA_{ict} + \beta_7 Loss_{ict} + \beta_8 Size_{ict} \\ & + \sum \gamma_j Industry_{jic} + \varepsilon_{ict}, \end{aligned} \quad (2)$$

where the dependent variable, ADA, is the absolute discretionary accruals computed based on equation (1). The main independent variable, CPI, is the Corruption Perceptions Index computed by the Transparency International Organization and the indexes i , j , c and t indicate firms, industries, countries and years, respectively.

Besides the corruption index, we add in our model the following country-level variables: the level of protection of minority investors (*PMI*) and the level of contracts enforcement (*EC*), and the following firm-level variables: a dummy variable indicating firms audited by a non-Big 4 audit firm (*NonBig*), a variable indicating the debt structure of each firm at each period (*Lev*), a dummy variable indicating firms reporting negative earnings (*Loss*), the firms' profitability (return on assets, *ROA*) and the firms' size (*Size*). The choice of such variables is intended to increase the estimates' efficiency and avoid omitted-variables bias. However, we acknowledge that our controls are not sufficient to fully eliminate this bias. The problem is how likely it is that earnings management and corruption come from the same data generating process, that is, both variables are

outcomes of a deeper factor that makes managers and public officials manipulate the resources at their hand for their own interest and benefits.

Nonetheless, we argue that a corrupt environment is an external factor influencing the preparers of the financial statements, and we base our view on two reasons. First, studies indicate that the corruption climate is mostly established by social and political factors (Mo, 2001), in which an erosive culture and the impact of political instability are the main influences. Second, we base our construction on the outcomes from Riahi-Belkaoui (2004) and Riahi-Belkaoui and AlNajjar (2006), in particular on evidence that opportunistic adjustments to accounting numbers are more likely to occur under an institutional environment that is propitious to unethical and corrupt behaviours. In this sense, we expect that the perceived corruption is determined before earnings management, partly alleviating the bias.

Notwithstanding the endogeneity problems, we believe that our model can still bring important insights for business and public policy. Although it is not possible to identify the causal effect of corruption on earnings management, due to the absence of a fit instrument or observable exogenous shocks, we emphasize that the analysis of foreign firms cross-listed in the US market allows us to identify the association between corruption, that comes from the culture and other unobservable factors of the firms' origin country, and earnings management, which is strictly related to the business environment.

Furthermore, to analyse whether the effect of corruption in the level of earnings management is greater in the emerging countries, when compared to developed countries, we add in model (2) interactions of each of the country-level variables (*CPI*, *PMI* and *EC*) with a dummy that indicates the type of country (emerging versus developed), so we can evaluate how the association varies according to the level of the firms' origin country development.

4. Empirical findings

4.1. Descriptive statistics

Table II presents descriptive statistics for the regression variables, which includes both country-level and firm-level variables. Table II also shows descriptive statistics separately for emerging and developed countries. The mean values of all country-level variables are statistically different between emerging and developed countries. The *CPI*, for which higher

Table II Descriptive statistics for the country-level and firm-level variables

Variables	All countries		Emerging countries		Developed countries		t-statistics ^a
	Mean	SD	Mean	SD	Mean	SD	
<i>Country-level variables</i>							
CPI	6.5240	2.0032	4.1060	1.2026	7.6410	1.1169	51.388*
PMI	61.9701	13.3694	59.4067	11.5960	63.1553	13.9621	4.704*
EC	69.3411	9.5842	61.4353	8.1314	72.9961	7.8594	24.242*
<i>Firm-level variables</i>							
Lev	0.5238	0.2380	0.5222	0.2408	0.5245	0.2368	0.163
ROA	0.0135	0.1844	0.0486	0.0870	-0.0027	0.2131	-4.667*
Size	15.2950	2.2719	15.3239	1.5564	15.2816	2.5361	-0.310
ADA	0.0391	0.0433	0.0408	0.0421	0.0383	0.0438	-0.960

Notes: *CPI*: corruption perceptions index; *PMI*: index of minority investors protection; *EC*: index of contract enforcement; *Lev*: ratio between total liabilities and total assets; *ROA*: return on assets; *Size*: natural logarithm of total assets; *ADA*: absolute value of discretionary accruals; ^aMean tests between emerging countries and developed countries; *Indicate differences between emerging countries and developed countries at 0.01

values indicate lower levels of perceived corruption, the minority investors protection index (*PMI*) and the enforcing contracts index (*EC*) are significantly higher in developed countries. However, the difference in the level of earnings management (*ADA*) of firms from emerging and from developed countries is not statistically significant.

Table III presents the mean values of the country-level variables separately for each country. In the group of emerging countries, Singapore and Chile have the highest index of corruption perception, even above some developed countries, such as Greece, Hungary, Israel and Italy. At the lower position among the emerging countries are the Philippines, Mexico and Argentina, contrasting with some of the developed countries, such as Denmark, Finland, New Zealand and Sweden.

Table IV presents correlations between each pair of variables for the whole sample as well as for each group of countries, already indicating some interesting associations, and also giving some insights for the differences between emerging and developed countries. Consistent with established results in the accounting literature, the absolute value of discretionary accruals is negatively and significantly associated with the firms' profitability and size for the full sample. Considering only the emerging countries, firms more leveraged present a higher level of absolute discretionary accruals while larger firms present lower

Table III Distribution of the country-level variables			
<i>Country</i>	<i>Corruption perceptions index</i>	<i>Protecting minority investors</i>	<i>Enforcing contracts</i>
<i>Emerging countries</i>			
Argentina	3.30	50.00	65.13
Brazil	4.00	53.33	52.51
Chile	7.17	63.33	63.85
Mexico	3.27	56.67	62.74
Peru	3.67	64.44	57.40
Philippines	3.20	43.33	53.90
Poland	5.77	60.00	59.56
Russia	2.67	46.67	76.13
Singapore	8.83	93.33	89.54
South Africa	4.17	80.00	66.14
Turkey	4.70	60.00	66.13
<i>Developed countries</i>			
Australia	8.47	56.67	77.20
Austria	7.20	50.00	81.55
Belgium	7.50	70.00	77.67
Denmark	9.17	63.33	68.79
Finland	9.10	56.67	75.58
France	7.07	56.67	77.80
Germany	7.90	50.00	76.74
Greece	3.67	37.78	49.38
Hong Kong	7.87	90.00	80.01
Hungary	5.17	43.33	73.36
Ireland	7.20	83.33	76.70
Israel	5.97	83.33	54.93
Italy	4.13	60.00	42.61
Korea	5.50	62.22	81.02
The Netherlands	8.53	44.44	75.04
New Zealand	9.20	96.67	79.04
Norway	8.70	66.67	78.41
Portugal	6.20	60.00	69.95
Spain	6.20	50.00	63.05
Sweden	9.00	63.33	72.62
Switzerland	8.63	30.00	71.96
United Kingdom	7.60	80.00	68.70

Table IV Correlation matrix

Variables	ADA	CPI	PMI	EC	Lev	ROA	Size
<i>All countries</i>							
ADA	1	–	–	–	–	–	–
CPI	–0.0066	1	–	–	–	–	–
PMI	–0.0230	0.1437***	1	–	–	–	–
EC	0.0111	0.6292***	–0.0039	1	–	–	–
Lev	–0.0560	–0.0678	0.0367	–0.1843***	1	–	–
ROA	–0.3302***	–0.1341***	0.0482*	–0.0967***	0.0248	1	–
Size	–0.2965***	–0.0877***	–0.0540*	–0.1078***	0.3075***	0.4125***	1
<i>Emerging countries</i>							
ADA	1	–	–	–	–	–	–
CPI	–0.0523	1	–	–	–	–	–
PMI	0.0794	0.4053***	1	–	–	–	–
EC	0.0002	–0.0674	0.2655***	1	–	–	–
Lev	0.1151**	0.0486	–0.1543***	–0.2535***	1	–	–
ROA	0.0432	–0.0257	0.0998**	0.1678***	–0.4453***	1	–
Size	–0.0856*	–0.0625	–0.2372***	–0.0534	–0.1682***	0.1310***	1
<i>Developed countries</i>							
ADA	1	–	–	–	–	–	–
CPI	0.0649*	1	–	–	–	–	–
PMI	–0.0562	–0.0753**	1	–	–	–	–
EC	0.0459	0.5742***	–0.2366***	1	–	–	–
Lev	–0.1330***	–0.2133***	0.1109***	–0.2123***	1	–	–
ROA	–0.4249***	–0.0580*	0.0633**	–0.0699**	0.1177***	1	–
Size	–0.3606***	–0.1703***	–0.0106	–0.1489***	0.4534***	0.4514***	1

Notes: ADA: absolute value of discretionary accruals; CPI: corruption perceptions index; PMI: index of minority investors protection; EC: index of contract enforcement; Lev: ratio between total liabilities and total assets; ROA: return on assets; Size: natural logarithm of total assets; ***, ** and * represent significance at 0.01, 0.05 and 0.1 respectively

values of discretionary accruals. When considering the sample of developed countries, one sees that bigger, more leveraged and more profitable firms tend to present lower absolute discretionary accruals. The results for the full sample show that the main independent variable used in this study (*CPI*) has a significant and positive univariate relationship with the variables *PMI* and *EC*, at the country level, and a negative relationship with the variables *ROA* and *Size*.

Interestingly, the correlation between *CPI* and *PMI* is 0.1437 for the full sample, but is much stronger for the sample of the emerging countries (0.4053), and it is negative (–0.0753) for the sample of developed countries. This suggests a different relationship between corruption and minority investors' protection in these two groups of countries. Furthermore, corruption is correlated only with *PMI* in the emerging countries, but it is significantly associated with *EC*, *Lev*, *ROA* and *Size* in the developed countries. The correlation between *PMI* and the other variables also varies between the two groups of countries, also presenting opposite signs regarding *EC* and *Lev*. Regarding the firm-level variables, leverage is also different between the two groups. While larger and more profitable firms tend to be more leveraged in emerging countries, firms in developed countries with these characteristics tend to be less leveraged. Furthermore, the correlation between *Size* and *ROA* is much larger for the developed countries than for the emerging group.

4.2 Regression results

Table V presents the results of the regression models performed to analyse the association between the level of earnings management of foreign firms with ADR in the US market and the level of perceived corruption in their respective countries. The dependent variable used

Table V Regression results for the entire sample

Variables	I	II	III
<i>CPI</i>	0.0046 (0.555)	0.0011 (0.460)	-0.0030 (0.052)*
<i>CPI</i> × <i>E</i>	–	-0.0041 (0.045)**	–
<i>CPI</i> × <i>D</i>	–	–	0.0040 (0.045)**
<i>PMI</i>	-0.0001 (0.263)	-0.0002 (0.029)**	0.0003 (0.147)
<i>PMI</i> × <i>E</i>	–	0.0005 (0.031)**	–
<i>PMI</i> × <i>D</i>	–	–	-0.0005 (0.031)**
<i>EC</i>	-0.0001 (0.711)	-0.0001 (0.433)	-0.0003 (0.233)
<i>EC</i> × <i>E</i>	–	-0.0001 (0.563)	–
<i>EC</i> × <i>D</i>	–	–	0.0001 (0.563)
<i>NonBig</i>	-0.0025 (0.621)	-0.0017 (0.736)	-0.0017 (0.736)
<i>Lev</i>	0.0097 (0.154)	0.0107 (0.121)	0.0107 (0.121)
<i>ROA</i>	-0.0506 (0.001)***	-0.0512 (0.001)***	-0.0512 (0.001)***
<i>Loss</i>	0.0074 (0.045)**	0.0073 (0.049)**	0.0073 (0.049)**
<i>Size</i>	-0.0041 (0.000)***	-0.0041 (0.000)***	-0.0041 (0.000)***
<i>Intercept</i>	0.1064 (0.000)***	0.1019 (0.000)***	0.1019 (0.000)***
Adjusted <i>R</i> -squared	0.2129	0.2167	0.2167
<i>F</i> -statistics	12.7367	18.7287	18.7287
<i>p</i> -value <i>F</i> -statistics	0.000	0.000	0.000

Notes: OLS regressions with industry fixed effect; *p*-values are written between parentheses according to robust standard errors. ***, ** and * represent significance at 0.01, 0.05 and 0.1, respectively; *CPI*: corruption perceptions index; *PMI*: index of minority investors protection; *EC*: index of contract enforcement; *NonBig*: dummy indicating 1 for firms audited by a non-Big 4 auditing firm; *Lev*: ratio between total liabilities and total assets; *ROA*: return on assets; *Loss*: dummy indicating 1 for firms with negative results; *Size*: natural logarithm of total assets. *E* is a dummy indicating 1 for emerging countries and 0 otherwise. *D* is a dummy indicating 1 for developed countries and 0 otherwise

in the analysis is the absolute value of discretionary accruals of each firm and the main independent variable is the *CPI* computed by the Transparency International Organization. To control for alternative explanations for the level of earnings management, the model also includes a set of country-level (*PMI* and *EC*) and firm-level (*NonBig*, *Lev*, *ROA*, *Loss* and *Size*) variables. The regression is estimated simply via ordinary least squares with industry fixed effects and with robust standard errors.

Table V, Column I, shows the results of the analysis of the entire sample without taking into account any differences between emerging and developed countries. The results provide empirical evidence that all of the country-level variable coefficients, including *CPI*, are statistically significant. Regarding the firm-level variables, the coefficients of *ROA* and *Size* are negative and statistically significant, while the coefficient of the variable *Loss* is positive and also statistically significant. It seems that larger and profitable firms are less likely to engage in earnings management practices. These findings are consistent with earlier studies, such as those of [Chen et al. \(2010\)](#) and [Barth et al. \(2008\)](#).

Columns II and III in Table V show the analysis of the entire sample but capturing any differences between emerging and developed countries. Column II shows that the coefficient of *CPI* is negative and statistically significant only for firms from emerging countries (*CPI* × *E*), indicating that lower levels of perceived corruption (higher *CPI* values) are associated with lower levels of earnings management.

However, this is not the case for developed countries. Column III shows that the coefficient of *CPI* is negative and statistically significant but, in contrast, the coefficient of the interaction term *CPI* × *D* is positive and statistically significant, indicating that lower levels of perceived corruption are associated with lower levels of earnings management, unless the firms are from a developed country. Therefore, while earlier studies ([Riahi-Belkaoui, 2004](#); [Riahi-Belkaoui and AlNajjar, 2006](#)) show that countries with higher levels of corruption have

more opaque financial statements, when we use firm-level accounting data and select a sample in a relatively homogeneous market environment, but with different origins, i.e. foreign ADR issuers, we can see that this relationship is different for emerging and developed countries.

Similar conclusions, but in the opposite direction, can be made regarding the variable *PMI*. These conclusions are consistent with the difference in the correlations between *CPI* and *PMI* for emerging and developed countries, discussed in the previous sections, shown in [Table IV](#).

Column III shows that the coefficient of *PMI* is negative and statistically significant only for firms from developed countries ($PMI \times D$), indicating that a higher level of minority investors' protection is associated with a lower level of earnings management. However, this is not the case for the emerging countries. Column II shows that the coefficient of *PMI* is negative and statistically significant but, in contrast, the coefficient of the interaction term $PMI \times E$ is positive and statistically significant, indicating that lower levels of minority investors' protection are associated with lower levels of earnings management, unless the firms are from an emerging country. This result is consistent with the argument that favourable institutional factors create a supportive financial environment that reduces managerial incentives to manipulate earnings, but only in a set characterized by a good organizational environment (developed countries).

This result regarding developed countries is consistent with [Leuz et al. \(2003\)](#) and [Nabar and Boonlert-U-Thai \(2007\)](#) and [Reverte \(2008\)](#), whose findings suggest that in countries with strong investor protection, there are lower levels of earnings management. The findings regarding the lack of relationship between earnings management and investor protection in emerging countries are in line with the results reported by [Shen and Chih \(2007\)](#) for the banking industry, according to which strong investor protection can encourage earnings management, but this is the case in low-income countries only, and not in high-income countries. The sample used in this latter study also included companies from Brazil, Chile and Mexico, and, as in our study, emerging countries have a greater representation in the sample.

Furthermore, countries might determine particular laws to guarantee specific rights to minor shareholders. However, its effective application relies upon enforcement and Government conduct. Thus, for firms located in countries with higher corruption perception, rules protecting minor shareholders appear to not relate to the reduction of earnings management. This is likely to be related to the weak institutional environment that characterizes emerging countries ([Kaymak and Bektas, 2015](#)).

[Table VI](#) shows the analysis separately for the groups of firms from emerging and from developed countries, which is just a different way to present the results reported in [Table VI](#). Overall, we observe that firms' characteristics are relevant in determining the level of earnings management for ADR issuing firms, regardless of firms' location. The role of country-level variables otherwise appears to be influenced by the firms' country being emerging or developed. The results indicate that higher levels of perceived corruption are associated with higher incentives of ADR issuing firms to manipulate earnings when they come from emerging countries, but not when they come from developed countries. Furthermore, higher levels of minority investors' protection are associated with less incentive to manipulate earnings for firms cross-listed in the USA that come from other developed countries, but not from emerging countries. This is partly in line with the hypotheses developed above.

While *H2* predicts that the relationship between corruption and earnings management is stronger in emerging countries than in developed countries, the results indicate that it exists only for emerging countries. However, one must interpret such results taking into account the measure of corruption perception that we use. People may have a more general view in

Table VI Regression results for the two groups of countries

Variables	Emerging countries	Developed countries
<i>CPI</i>	-0.0029(0.071)*	0.0009(0.487)
<i>PMI</i>	0.0004(0.101)	-0.0002(0.025)**
<i>EC</i>	-0.0001(0.618)	-0.0002(0.321)
<i>NonBig</i>	0.0111(0.134)	-0.0086(0.171)
<i>Lev</i>	0.0352(0.121)	0.0060(0.435)
<i>ROA</i>	-0.0512(0.001)***	-0.0586(0.001)***
<i>Loss</i>	0.0143(0.066)*	0.0105(0.016)*
<i>Size</i>	-0.0024(0.083)*	-0.0042(0.000)*
<i>Intercept</i>	0.0405(0.228)	0.1088(0.000)***
Adjusted <i>R</i> -squared	0.1105	0.2916
<i>F</i> -Statistics	3.1606	22.7212
<i>p</i> -value <i>F</i> -statistics	0.000	0.000

Notes: OLS regressions with industry fixed effect; *p*-values are written between parentheses according to robust standard errors. ***, ** and * represent significance at 0.01, 0.05 and 0.1, respectively; *CPI*: corruption perceptions index; *PMI*: index of minority investors protection; *EC*: index of contract enforcement; *NonBig*: dummy indicating 1 for firms audited by a non-Big 4 auditing firm; *Lev*: ratio between total liabilities and total assets; *ROA*: return on assets; *Loss*: dummy indicating 1 for firms with negative results; *Size*: natural logarithm of total assets. *E* is a dummy indicating 1 for emerging countries and 0 otherwise. *D* is a dummy indicating 1 for developed countries and 0 otherwise

their country about what they classify as corruption, and this view may be intrinsically related to deeper factors. Such factors may be different in emerging and developed countries. For instance, corruption is a more prominent issue in emerging countries than in developed countries, and can be seen to be more strictly related to economic development in the former than in the latter. If corruption is less discussed in developed countries, because it is a less worrying issue, its relationship with business activities can be less important. Therefore, the different patterns in our results between the two groups must be seen with that consideration in mind.

5. Conclusion

This study analyses the relationship between earnings management and countries' corruption levels by examining whether foreign firms with ADR in the US market from countries presenting higher levels of corruption are more likely to have higher levels of earnings management than their counterparts from countries with lower levels of corruption. It also explicitly sorted out the relationship between corruption and earnings management in emerging versus developed economies. Control variables pertaining to important factors that earlier literature reports as being linked with earnings management were considered.

The findings confirm results of earlier studies pertaining to the impact of corruption on accounting quality using country-level accounting data (Riahi-Belkaoui, 2004; Riahi-Belkaoui and AlNajjar, 2006). In addition, the analyses presented in this paper highlight the relevance of recognizing different relationships between corruption and earnings management in two socio-economic contexts – emerging and developed. The empirical findings suggest that corruption perception is related to higher incentives for firms to manipulate earnings for firms located in emerging countries, while such results are not identified in developed countries.

Although Houqe and Monem (2016) examined the impact of accounting quality on corruption rather than the impact of corruption on accounting quality, as we have done, we consider that our findings are consistent with the findings they have obtained, which reveal that developing countries benefit more from IFRS experience than their developed

counterparts in terms of its effect in curbing corruption. We do not negate the existence of the role potentially played by accounting in curbing corruption proposed in studies such as Wu (2005), Malagueño *et al.* (2010) and Houqe and Monem (2016).

Earlier literature shows a positive effect of IFRS adoption on foreign firms cross-listed in the USA, namely, in their accounting quality (Sun *et al.*, 2011), in their credit ratings (Ling-Ching *et al.*, 2013), and in the comparability of their financial information with generally accepted accounting principles in the US (US-GAAP) amounts (Barth *et al.*, 2012). We acknowledge the likelihood of a positive effect of adopting higher quality accounting standards in curbing corruption. After all, amongst the many ways to fight against corruption, transparency, which implies that timely and reliable information is accessible to all stakeholders (Vishwanath and Kaufmann, 1999), is considered one of the most important (Klitgaard, 1998; Halter *et al.*, 2009). Notwithstanding this effect, we are also convinced that a high level of corruption creates a climate that encourages low levels of firm-level accounting quality. Our findings revealed that this is the case in the emerging countries' context but not in the developed countries' context. This is consistent with the notion and the evidence that the adoption of higher-quality accounting standards is more effective in curbing corruption in emerging markets.

This study suggests the existence of a threshold level of corruption, below which the effects on earnings management are no longer significant. This indicates that there may be a level of institutional development in terms of fight against corruption above which there is no significant impact of lack of tolerance regarding corruption on earnings management. Results also indicate that in emerging countries, stronger investor protection does not equate to less earnings management. This is likely to be explained by the weak enforcement of investor protection laws in these countries. Further studies are required to validate these possibilities.

Among the implications of this study, we would like to highlight the awareness it raises concerning the importance of the context in which the phenomenon of corruption occurs in terms of the impacts it has. This has important implications for research. Although many contend that single-country or single-region analyses are less relevant, we believe that in-depth analyses of individual countries' realities and comparative analyses of countries within delimited geographical regions should be encouraged. This type of analysis should be part of a collective effort that, although consisting of individual or regional studies, would surely offer an accurate depiction of the phenomenon at hand, its determinants and its impacts. Our study also has practical implications for policymaking. Regulatory bodies would be well advised to conceive differentiated strategies and standards to be applied in the different contexts instead of applying "one size fits all" strategies and standards.

One of the main limitations of this study pertains to the CPI, which is based on perceptions of corruption rather than on the real phenomenon. Further studies may combine this type of measure of corruption with more robust indicators. Another important limitation is that although our findings suggest the existence of a link from corruption to earnings management, we do not specify the channels through which corruption impacts earnings management. Future research, focusing on how managers make financial reporting-related decisions, may endeavour to identify such channels. This could be done by way of case studies or behavioural research, which would unveil such channels and offer important insights to the construction of archival research such as the one we report in this paper.

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