

Accrual-based and Real Earnings Management and Political Connections

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Abstract

This study examines whether the trade-off between real and accrual-based management strategies differs between firms with and without political connections. We argue that politically-connected firms are more likely to substitute real earnings management for accrual-based earnings management than non-connected firms. Although real earnings management is more costly, we expect that politically connected firms prefer this strategy because of its higher secrecy and potential to mask political favors. Using a unique panel data set of 5,493 publicly traded firms in 30 countries, our results show that politically-connected firms are more likely to substitute real earnings management strategies for accrual-based earnings management strategies than non-connected firms. We also find that when public monitoring and therefore the risk of detection increases, politically connected firms are more likely to resort to less detectable real earnings management strategies. Our finding that political connections play a significant role in the choice between accrual-based and real earnings management strategies suggests that a focus only on accrual-based measurements underestimates the total earnings management activities of politically-connected firms.

Keywords: Real earnings management; Accrual earnings management; Political connection; Public monitoring

JEL Classification Numbers: M4; M41; D72; F5

Introduction

This study examines the relation between the political connections of firms and their choices for earnings management strategies in an international setting. Firms can use multiple earnings management strategies to manage their earnings, i.e., accrual-based and real earnings management (e.g. Badertscher, 2011). Accrual-based earnings management aims to obscure true economic performance by changing accounting methods or estimates within the generally accepted accounting principles (Dechow and Skinner, 2000). On the contrary, real earnings management alters the execution of real business transactions (Roychowdhury, 2006). By adapting the timing or structuring of real transactions, firms change their operating activities to meet or beat short-term earnings targets, which has direct cash flow consequences and also potential long-term consequences for their economic value. For these reasons, real earnings management strategies are considered to be relatively costly compared to accrual-based earnings management (Graham et al., 2005). The advantage of real earnings management is, however, that it is more difficult to detect than accrual-based earnings management (Graham et al., 2005; Gunny, 2010; Badertscher, 2011). Prior studies have shown evidence that firms use the two earnings management strategies as substitutes in managing earnings (Cohen et al. 2008; Cohen and Zarowin 2010; Badertscher, 2011; Zang, 2012). This study extends research on the trade-off between real and accrual-based management by examining whether the substitution of real earnings management for accrual-based earnings management strategies differs between firms with and without political connections. We argue that politically-connected firms favor the relatively more costly real earnings management strategies because of its higher secrecy and are more likely to substitute relatively more costly and less detectable real earnings management strategies for accrual-based earnings management strategies than non-connected firms.

Firms have political connections if their controlling shareholders or top managers are members of national parliaments or governments or have close connections with a top politician or party (Faccio, 2006). Literature shows that politically-connected firms have opportunities to gain a lot from their political connections (Faccio, 2010; Pastor and Veronesi, 2013).² However, they are also under higher public scrutiny and subject to more extensive controls and public monitoring than non-connected firms (Chaney, Faccio and Parsley, 2011). As a consequence, the gains from their connections may need to be hidden, particularly if they are large and of dubious legality (Fisman, 2001). The costs they face when the media and other political parties detect that a firm manages its earnings to mask private gains may wipe out the benefits from their connections (Faccio, 2006). After all, detection may damage the firm's reputation integrity, as well the connected politicians' reputations, and increase political costs and the likelihood of outside intervention (Watts and Zimmerman, 1990; Faccio, 2006; Ramanna and Roychowdhury, 2011; Kothari et al., 2012). Additionally, connected firms may lose their privileged access to benefits from their political connections. For these reasons, we expect that politically-connected firms are more likely to substitute real earnings management for accrual-based earnings management strategies than non-connected firms. In particular when public monitoring is high, they are more likely to resort to the more costly real earnings management strategies than non-connected firms. Real earnings management helps politically-

² Political connections may positively influence the allocation of capital and business opportunities to connected firms, resulting in competitive advantage over other companies which are not connected (Fisman, 2001). For example, politically-connected firms get easier access to debt financing and lower taxation (e.g. Johnson and Mitton, 2003; Khwaja and Mian, 2005; Claessens et al., 2008; Faccio, 2010; Goldman et al., 2013), have preferential access to government contracts (Goldman et al., 2009), or have benefits from regulatory protection (Kroszner and Stratmann, 1998) and bailouts (Faccio et al., 2006). Due to connected politicians' close involvement with legislative processes, managers of connected firms might also have superior information about which industries or firms are supported or harmed by intended government intervention, which helps them to overcome the political uncertainties in advance (Shleifer and Vishny, 1994; Ziobrowski et al., 2004; Pastor and Veronesi, 2013). In addition, the connections with firms also help the politicians to get benefits from supporting these firms or (as shareholder) to increase their financial wealth, for example, by exploiting insider information of the firms (Shleifer and Vishny, 1994; Goldman et al., 2009).

connected firms more effectively than accrual-based earnings management to take advantage of not being detected and to maintain their own and the firm's reputation in the short run at the cost of firm's long term performance (Ewert and Wagenhofer, 2005; Graham et al., 2005; Cohen et al., 2008; Cohen and Zarowin, 2010).

Using a unique panel data set of 5,493 publicly traded firms in 30 countries, our results show that, compared to non-connected firms, politically-connected firms are more likely to substitute relatively more costly and less detectable real earnings management strategies for accrual-based earnings management strategies, after controlling for other incentives for earnings management. Particularly when politically-connected firms are established in countries with relatively high levels of public monitoring, they use relatively more real earnings management strategies. Results from additional analysis also show that firms with political connections engage more in real activities manipulation than non-connected firms after controlling for other incentives for earnings management. The findings of additional analyses show that the results are robust to the inclusion or exclusion of countries with a very large number of observations or with only a few observations and to different measures of earnings management and public monitoring.

This paper contributes to the ongoing research related to earnings management in three ways. First, we add to the extant earnings management literature that considers both real and accrual-based earnings management as substitutes in managing earnings (Ewert and Wagenhofer, 2005; Cohen and Zarowin, 2010; Zang, 2012). Studies show that firms switch from one type of earnings management to another after new legislation, e.g., the passage of SOX (Cohen et al., 2008), or around seasoned equity offerings (Cohen and Zarowin, 2010), and evidence that firms trade-off between real activities manipulation and accrual-based earnings management based on their relative costliness (Zang, 2012). Our results add to this literature by showing that the tendency of firms to trade-off accrual-based versus real earnings

management also varies with the presence of specific firm characteristics, i.e., the existence of political connections. Second, it complements a growing body of international literature on political connections. Recent studies that examine the differences in earnings management between politically-connected and non-connected firms, report that the presence of political connections is associated with a lower accruals quality (Riahi-Belkaoui, 2004; Chaney et al., 2011; Ramanna and Roychowdhury, 2010). The current evidence is on accrual-based earnings management and therefore neglects the potentially more hazardous effects of real earnings management. This study extends the literature on the relationship between political connections of firms and earnings management by investigating whether the trade-off between real and accrual-based management differs between firms with and without political connections. We show that companies' political connections play a significant incremental role in explaining variance in the trade-off between accrual-based and real earnings management strategies. Our results also indicate that, at least for politically connected firms, if firms use accrual-based and real earnings management strategies as substitutes, studying only the former is likely to underestimate their total earnings management activities. Finally, it complements literature on the role of public monitoring and governance by showing that the politically-connected firms that are established in countries with relatively high (low) levels of public monitoring are more (less) likely to substitute real earnings management for accrual-based earnings management to hide the gains that they typically derive from their political connections.

The remainder of this paper is structured as follows: First, we present a review of the related literature and develop hypotheses on the associations between firms' political connections and their use of real and/ or accrual earnings management strategies associated with reporting earnings. This is followed by the research method, the results and robustness

tests. Third, we draw conclusions, discuss the limitations of our study and indicate directions for further research.

2. Literature review and Development of Hypotheses

Firms can use multiple earnings management strategies, i.e., accrual-based and real earnings management, to manage their earnings (e.g. Cohen and Zarowin, 2010; Dechow et al., 2010; Badertscher, 2011; Kothari et al., 2012). Accrual-based earnings management occurs when managers can choose accounting policies from a set of generally accepted policies to achieve earnings objectives. Real earnings management occurs when managers undertake actions that change the timing or structuring of operations and deviate from normal business practices, like manipulating sales, reducing discretionary expenditures and overproducing inventory to decrease the costs of goods sold, undertaken with the primary objective of meeting or beating certain earnings thresholds (Roychowdhury, 2006). Real earnings management is considered to be more expensive than accrual-based earnings management (Graham et al., 2005; Kim and Sohn, 2013). Unlike accrual-based earnings management, it has direct cash flow consequences which may also have a detrimental economic impact on a firm's long-term value (Gunny, 2010). On the other hand, real earnings management is more difficult to detect than accrual-based earnings management because the real earnings management activities directly affect cash flows. In addition, real activities manipulation is normally not under the jurisdiction of any existing auditing system and less subject to extensive controls and external monitoring by society, including scrutiny by the media and other political parties (Kim and Sohn, 2013). Real earnings management can be applied throughout the year, while accruals earnings management is generally more constraint to specific times and periods (Zang, 2012).

Darrough and Rangan (2005) and Mizik and Jacobson (2008) argue that greatest effect of accrual-based and real earnings management would be attained through a coordinated use of both tools. Managers of firms are aware of the rewards of meeting or beating earnings target which motivates them to choose among the alternatives earnings management strategies (Samuelson and Zeckhauser, 1988; Bartov et al., 2002). In situations where both earnings management methods are likely to be used, the literature provides evidence that managers trade-off between two earnings management strategies based on their relative costs and benefits, using accrual-based and real earnings management as substitutes (Ewert and Wagenhofer, 2005; Cohen et al., 2008; Cohen and Zarowin, 2010; Zang, 2012). Managers of politically-connected and non-connected firms may use both accrual-based and real earnings management to enhance corporate value as long as the marginal benefits outweigh the marginal costs. Politically-connected firms, however, are more inclined to use earnings management strategies to hide or obscure reporting the gains that they typically derive from their connections, especially those of dubious legality (Watts and Zimmerman, 1990; Faccio, 2006; Faccio et al., 2006; Chaney et al., 2011). Detection may damage the reputation of the firm and its managers, as well as the social image of a connected political party or politician. In addition, detection may result in opportunity costs when the firms lose their privileged access to benefits from their political connections (Hay and Shleifer, 1998; Burton et al., 2011). For these reasons, for firms with political connections accrual-based earnings management strategies may be more costly than real activities manipulation if managing earnings is risky. Real earnings management strategies help them to mask political favors and offer connected firms the relative advantage of high opacity with a lower likelihood of detection (Faccio, 2006; Faccio et al., 2006; Chaney et al., 2011). Substitution of real earnings management for accrual-based earnings management weakens the monitoring ability of society, maintains the reputation of politically-connected firms, and reduces their political costs and the likelihood of

outside intervention (Kothari et al., 2012; Li et al., 2013). The substitution of real earnings management for accrual-based earnings management decreases the risks that managers are taking when they manage their earnings (Graham et al., 2005; Roychowdhury, 2006; Cohen et al., 2008; Cohen and Zarowin, 2010). Moreover, for connected firms, the marginal benefits of the secrecy of real earnings management are likely to outweigh the marginal costs, compared with accrual-based earnings management strategies and including the opportunity costs related to the deterioration of the firm's future performance after applying real earnings management. For these reasons we expect that politically-connected firms are more likely to substitute relatively costly but less detectable real activities manipulation for accrual-based earnings management than similar, but non-connected firms.

H1: Other things being equal, politically-connected firms are more likely to substitute real earnings management for accrual-based earnings management than non-connected firms.

Aside from the incentives and opportunities of politically-connected firms to manage their earnings, culture and institutional determinants of a country have been shown to influence the choice of accrual-based and real earnings management strategies (Leuz and Oberholzer-Gee, 2006; Isidro and Raonic, 2012; Houque et al., 2012; Zang, 2012). An institutional factor that has a strong influence on transparency and the potential disclosure of hidden information and activities is public monitoring. Heightened public monitoring, including scrutiny by the media and other political parties (Chaney et al, 2011; Kothari et al., 2012), increases the risk of disclosure and criticism by media and opponent political parties for receiving favorable treatment from politicians for any of their firm activities (Ball and Shivkumar, 2008). The costs can be high if press detects that a firm with political connections is secretly treated favorably, for example, that politicians used their influence to preferentially

help a connected firm out of financial difficulty (Faccio et al., 2006). If public monitoring is strong and politically-connected firms prefer to hide their earnings management, it is more risky to use accrual-based earnings management strategies that are more easily detected (Matsuura, 2008). As many gains from political connections may be of dubious legality, we expect that managers of politically-connected firms substitute real earnings management strategies for accrual-based earnings management particularly in countries with high public monitoring, in order to conceal the private gains that they derive from their political connections.

H2: Other things being equal, politically-connected firms domiciled in countries that have a higher (lower) level of public monitoring are more (less) likely to substitute real earnings management for accrual-based earnings management.

3. Research method

3.1. Data

To test the above hypotheses, we used the firms included in the study of Faccio (2006) as a starting point. This database includes 20,202 publicly traded firms in 47 countries during the years 1997–2001, comprising 607 political connections of 541 firms. A firm is identified as being connected with a politician if “at least one of its large shareholders (anyone controlling at least 10 percent of voting shares) or one of its top officers (CEO, president, vice-president, chairman, or secretary) is a member of parliament, a minister, or closely related to a top politician or party” (Faccio, 2006, p. 370).³ Consistent with Chaney et al. (2011), we excluded firms that are located in countries that have not a single political connection, because these data may bias the results. For the remaining firms to be included in our sample, we required

³ We thank Mara Faccio for kindly providing us with the data set.

that all financial and non-financial information are available. This information was extracted from the Worldscope Database that contains historical financial data from annual reports of publicly traded companies around the world. After omitting missing observations, our remaining unbalanced panel dataset includes data for 5,493 sample firms in 30 countries comprising 17,664 firm-year observations.

Table 1 presents descriptive statistics for these 5,493 sample firms, consisting of 457 connected firms and 5,036 non-connected peers. Panel A shows the country distribution of the sample firms with and without political connections in total. The number of firms with political connects varies considerably. For instance, in Singapore 80% of the firms selected is politically-connected, while in the USA less than 0.4% of the firms have political connections. Panel B presents the distribution of all firms with and without political connections from 1997 to 2001. Consistent with Faccio (2006 and 2010), both Panel A and B show that the percentage of politically-connected firms varies considerably between countries. The sample consists of relatively many firms from the UK, the U.S. and Japan, while some country samples are very small, containing two to five firms.⁴ Panel C shows the distribution of sample firms across industry and size, and Panel D presents the distribution across year and industry. Among the industry groups, manufacturing is well represented with 9,767 observations (55%) and services with 5,496 observations (31%), while mining, transportation and public utilities, trade and finance, insurance & real estate represent respectively 5%, 3%, 1% and 4% of the observations.

[Insert Table 1 about here]

3.2 Measurement of variables

3.2.1 Measurement of real earnings management

⁴ In the robustness section, we investigate to what extent the cross-country variation – and the risk of self-selection bias – may affect the results. The results of the robustness tests show that the findings are robust to the inclusion or exclusion of specific countries.

Our dependent variables proxy for real earnings management. Managers can utilize one or multiple real earnings management strategies. Following prior literature (Roychowdhury, 2006; Cohen et al., 2008; Cohen and Zarowin, 2010; Gunny, 2010; Zang, 2012), we used three proxies for real earnings management. In order to capture the aggregate effects of real earnings management, we also computed variables that combine the individual real earnings management variables. Next, we describe the measurement of these variables.

Following Roychowdhury (2006), we used the following three proxies for real earnings management:

- abnormal levels of cash flow from operations (RM_CFO), which is generated as a result of acceleration of the timing of sales through increased prices discounts or more lenient credit terms;
- abnormal levels of production costs (RM_PROD), which occur through overproduction of inventory, resulting in a lower fixed cost per unit sold and a reduction of cost of goods sold;
- abnormal levels of discretionary expenses (RM_DISX), which is generated as a result of cutting discretionary expenses such as advertising, research and development and administrative (SG&A) expenses.

The Appendix provides an overview of the metrics used to proxy for abnormal levels of cash flow from operations, production costs and discretionary expenses (Roychowdhury, 2006). Subsequent studies using the same metrics provide further evidence of the construct validity of these proxies, i.e. that these measures capture real activities manipulation (Cohen et al., 2008; Cohen and Zarowin, 2010; Gunny, 2010; Zang, 2012).

Given sales levels, firms that engage in real earnings management exhibit one or more of the following characteristics: abnormally low cash flows from operations, and/or abnormally high production costs, and/or abnormally low discretionary expenses. In order to capture the aggregate effects of real earnings management, we also combined the three

individual real earnings management measures to compute three comprehensive metrics of real activities manipulation. For our first measure, consistent with Cohen and Zarowin (2010), we first multiplied the standardized variables of abnormal cash flows from operations (RM_CFO) and abnormal discretionary expenses (RM_DISX) by negative one (so that the higher the amounts, the more likely it is that the firm is engaged in sales manipulation and cutting discretionary expenses), and then aggregated them into one measure (RM_CD). For our second measure, consistent with Cohen and Zarowin (2010) and Zang (2012), we added the standardized variable of abnormal discretionary expenses multiplied by negative one to the standardized variable of abnormal production costs (RM_PROD). The higher the amount of this aggregate measure, the more likely the firm is engaged in cutting discretionary expenses and production manipulation. For our third measure, consistent with Cohen et al. (2008), we computed the sum of the standardized variables of abnormal cash flows from operations and abnormal discretionary expenses multiplied by negative one and the standardized variable of abnormal production costs (RM_CPD). The higher the amount of this aggregate measure, the more likely the firm is engaged in real activities manipulation.

In addition, we computed two dummy variables to assess a firm's use of real earnings management in combination with of accrual-based earnings management strategies. These variables will help us to identify which type of earnings management strategy is preferred by firm with (and without) political connections. The dummy variable RM_DUMMY_{it} captures the type of real earnings management in aggregate: we coded a dummy if the abnormal levels of production costs (RM_PROD) and the reversed scores for the abnormal level of cash flow from operation (RM_CFO) and the abnormal level of discretionary expenses (RM_DISX). RM_DUMMY_{it} of firm i in year t were above the industry-year median, and 0 otherwise. A value of 1 indicates that a firm is more likely to be engaged in any kind of real earnings management activities than the lower half of the sample. The dummy variable AM_DUMMY_{it}

captures the effects of accrual-based earnings management through two measures of discretionary accruals that will be described in the next section. The variable AM_DUMMY_{it} is equal to 1 if both proxies for accrual-based earnings management of firm i in year t are both above the industry-year median, and 0 otherwise. Consistent with prior literature we used the median as discriminating threshold (Cohen et al., 2008; Cohen and Zarowin, 2010). A practical justification for the use of this cut-off point is that it splits the sample in two groups of equal size. This eliminates potential small sample and selection biases which may occur when, for example, the average is used as a cut-off point.⁵ Next, we developed two composite measures to assess a firm's use of diametrically opposing combinations of accrual-based and real earnings management strategies, which may be an indication for a substitution of real earnings management for accrual-based earnings management. $RM_{High}\&AM_{Low}$ is a dummy coded as 1 if RM_DUMMY_{it} is 1 and ACC_DUMMY_{it} is zero for firm i in year t , and zero otherwise, indicating firms that choose for a combination of relatively high levels of real earnings management (RM_{High}) combined with low levels of accrual-based earnings management (AM_{Low}). $RM_{Low}\&AM_{High}$ is a dummy that indicates firms with the opposite combination of earnings management strategies, i.e., high levels of accrual-based earnings management (AM_DUMMY_{it} is 1) and low levels of real earnings management (RM_DUMMY_{it} is zero).

3.2.2 Independent variables

⁵ In the robustness section, we also use alternative cut-off points to check if the cut-off at median may have driven our results, i.e., we repeat our analyses using the top 25% and 10% of the sample. The results of the additional tests show that segmentation of firms with and without earnings management at different levels do not change our results qualitatively, suggesting that the results are robust to different cut-off levels.

We used accrual-based earnings management, political connectedness and a country's level of public monitoring as independent variables. Following prior literature, we used two estimations of discretionary accruals to proxy accrual-based earnings management:

- a measure of discretionary accruals estimated by using the cross-sectional Jones model (DA) (Dechow et al., 1995; Cohen et al., 2008; Cohen and Zarowin, 2010);
- the performance-adjusted measure of discretionary current accruals (REDCA) (Chaney et al., 2011), which is based on the method used in Ashbaugh et al. (2003) and controls for firm performance (Kothari et al., 2005).

The Appendix provides an overview of the metrics used by to proxy for accrual-based earnings management. In addition, we computed a composite metric of accrual-based earnings management (AM) as the sum of the standardized variables of the two individual measures of accrual-based earnings management and divided them by two.

The measure of political connectedness is taken from Faccio (2006). We created a dummy variable CONNECT taking the value of 1 if a firm is politically-connected and a value of 0 if a firm is not connected at some point between 1997 and 2001. A company is defined as politically-connected if “at least one of its large shareholders (anyone controlling at least 10 percent of the voting shares) or one of its top officers (CEO, president, vice-president, chairman, or secretary) is a member of parliament, a minister or the head of state, or is closely related to a top politician or party” (Faccio, 2006, p. 370 and 2010, p. 907).

To assess a country's level of public monitoring, we used the variable PRESS_FREEDOM which is based on press freedom index used by Faccio (2006). The press freedom index measures the extent of freedom that journalists and the media have in each country and the efforts made by government to ensure this freedom (Faccio, 2006, p. 379). In countries with more press freedom, journalists are better protected and media independence is better guaranteed. Increased freedom of press and related freedom of information positively

affects writing about and revelation of companies' suspected use of earnings management strategies. We therefore argue that freedom of press is a good proxy for the degree of scrutiny by the media and for transparency, which strengthen the public monitoring ability and the likelihood of earnings management detection. To determine to what extent the effects of having (or not having) political connections differs between countries that have higher or lower levels of public monitoring, we included interactions between the variables CONNECT and PRESS_FREEDOM in the analyses.

3.2.3 Control variables

In the multilevel data analyses, we included several control variables and random effects at the firm level. In addition, we included industry and year dummies to control for time and sector specific effects. Finally, we added several specific control variables at the country level, together with country random or fixed effects (Dong and Stettler, 2012). Consistent with prior literature, we included as firm control variables Leverage (LEVERAGE), Market-to-book ratio (MARKET-TO-BOOK) and the natural log of Return on assets (LNROA) (Cohen et al., 2008; Chaney et al., 2011; Zang, 2012). Leverage was defined as total debt as percentage of total assets, and Market-to-book as the ratio of market capitalization divided by the book value of common equity. At industry level we controlled for industry differences. Based on a categorization of industries on the basis of two digit SIC codes (Campbell, 1996; Cohen et al., 2008), our sample is composed of publicly traded firms operating in 27 different industries. However, because we had less than 30 observations in 4 industries, we reclassified our sample in six main industry groups: mining (10-17), manufacturing (20-39), transportation and public utilities (40-49), trade (50-59), finance, insurance & real estate (60-67), and services (70-89).

At the country level, we included three control variables that have been found to be associated with earnings management. Consistent with Faccio (2006 and 2010), we computed

measures for corruption, gross domestic product per capita and inflation. The variable corruption (CORRUPTION) was included because countries that have higher levels of corruption may have weaker legal enforcement and investor protection rights, which increases a firm's opportunities to manage earnings and decreases the likelihood of detection and the likelihood that outsiders will take disciplinary actions against the firm (La Porta et al., 1998 and 2000; Leuz et al., 2003).⁶ As a proxy of corruption, we used the average of three indexes used by Faccio (2010) as measures of perceived corruption: the Kaufmann, Kraay and Zoido-Lobaton index (Kaufmann et al., 1999a and b); the International Country Risk index (Faccio, 2006 and 2010); and the German corruption index (Neumann, 1994). The corruption indexes were (re)scaled from 0 to 10, so that higher scores represent higher levels of corruption, i.e., "the abuse of public office for private gains" (Faccio, 2010).

Cross domestic product per capita (GDP/CAP) is an indicator of a country's economic development. A country's wealth potentially influences the level of legal enforcement (La Porta et al., 2000; Leuz et al., 2003). Consistent with Chaney et al. (2011), GDP/CAP was measured as the natural log of the changes in Gross Domestic Product (GDP) per Capita (CAP) (International Monetary Fund's World Economic Outlook Database (2009)). The variable inflation (INFLATION) was measured by the logarithm of a country's average percentage of change in consumer prices (Leuz et al., 2003). INFLATION is included because cross-country variation in inflation may affect the earnings management measures, and thus the variability in earnings management. In addition, INFLATION is a proxy for the business cycle that indicates the fluctuation in economic activity and obviously affects a firm's activity (Chaney et al., 2011).

⁶ In the robustness section, we also use corruption as a proxy for public monitoring since a country's higher (lower) level of institutional quality may result in a higher (lower) level of public monitoring. The results of the additional sensitivity tests show that the different measures of public monitoring have qualitatively similar effects to the choices for earnings management strategies of firms with and without political connections.

Finally, consistent with Zang (2012), we winsorized all continuous control variables at the 1% and 99% percentile of their distribution to prevent that our results were driven by extreme outliers. Moreover, in all regressions, we adjusted the standard errors for possible heteroskedasticity (Wooldridge, 2002).

Table 2 summarizes the definitions of the dependent, independent and control variables employed in our analyses. Table 3 reports summary statistics for these variables. The mean values of our proxies for discretionary accruals and real earnings management are consistent with previous studies (Cohen et al., 2008).

[Insert Table 2 about here]

[Insert Table 3 about here]

Panel B of Table 3 reports the Pearson pairwise correlations between all variables in the main tests. As expected, the correlations between the proxies of real earnings management and accrual-based earnings management were significantly negative. Consistent with prior studies (Cohen, 2008; Cohen and Zarowin, 2010; Zang, 2012), these findings indicate that firms appear to use real and accrual-based earnings management as substitutes in managing earnings. Further, the significant correlations among the proxies for real earnings management suggest that firms can choose between several methods of real earnings management. The correlations between the proxies for real earnings management and our comprehensive real earnings management proxy indicate that they overall are based on the same underlying construct. Political connectedness is significantly and positively correlated with real earnings management, but negatively correlated with accrual-based earnings management, indicating that connected firms use more real and less accrual-based earnings management than non-connected firms.

3.3 Method

Because we have repeated measurements at firm level that are nested within countries, we used multilevel (panel) data regression analyses to test our hypotheses. Multilevel analysis is an appropriate method to include explanatory variables at different levels simultaneously, i.e., at country and firm level, and to study interactions among these levels (Hox, 2002; Dong and Stettler, 2012). Moreover, for nested data, as in our present study, the traditional assumptions of (single-level) regressions, like independence of explanatory variables and uncorrelated error terms, may not always hold. That is, since companies in the same country share similar national environments and institutions, the “firm-level determinants are likely to be correlated with country-level variables” (Dong and Stettler, 2012: 272).

To test our hypotheses, we used the following general multilevel regression model:

$$\begin{aligned}
 \text{REM} = & \beta_0 + \beta_1 \text{AEM} + \beta_2 \text{CONNECT} + \beta_3 \text{PRESS FREEDOM} + \beta_4 \text{CONNECT} \times \text{AEM} \\
 & + \beta_5 \text{PRESS FREEDOM} \times \text{AEM} + \beta_6 \text{CONNECT} \times \text{PRESS FREEDOM} \\
 & + \beta_7 \text{CONNECT} \times \text{PRESS FREEDOM} \times \text{AEM} + \beta_8 \text{INDUSTRY}_{\text{CONTROL}} \\
 & + \beta_9 \text{FIRM}_{\text{CONTROL}} + \beta_{10} \text{COUNTRY}_{\text{CONTROL}} + \beta_{11} \text{YEAR}_{\text{CONTROL}} + \varepsilon \quad (1)
 \end{aligned}$$

Where, the response variable REM is a proxy for real earnings management. The dependent and independent variables of Equation (1) were explained in the previous section and in Table 2.

To address the fact that the relationship between real and accrual-based earnings (AM) management may differ depending on the existence of political connections and a country’s level of public monitoring, we included the interactions between the variable AM and the variables CONNECT and PRESS FREEDOM. To compute the interaction terms, for our measures of accrual-based earnings we used centered versions of the variables involved. The main effect can be interpreted as the average effect. In addition, we controlled for firm and country random effects, and include fixed effects at industry and year level.

Equation (1) is able to test whether substitution of real earnings management for accruals-based earning management generally takes place, but it is difficult to infer at which level the substitution takes place. Therefore, as a robustness check, we also analyzed whether politically-connected firms (i) are more likely to use combinations of high levels of real and low levels of accrual-based earnings management strategies and (ii) are less likely to use combinations of low levels of real and high levels of accrual-based earnings management strategies than non-connected firms. For this, we define another econometric specification which estimates a firm's likelihood for using one of the two diametrically opposing combinations of high and low levels of real and accrual-based and real earnings management strategies (with $RM_{High}\&AM_{Low}$ or $RM_{Low}\&AM_{High}$ as dependent variable):

$$\begin{aligned}
&RM_{High}\&AM_{Low}\text{or } RM_{Low}\&AM_{High} \\
&= \beta_0 + \beta_1CONNECT + \beta_2PRESS\ FREEDOM + \beta_3CONNECT \\
&\quad \times PRESS\ FREEDOM + \beta_4INDUSTRY_{CONTROL} + \beta_5FIRM_{CONTROL} \\
&\quad + \beta_6COUNTRY_{CONTROL} + \beta_7YEAR_{CONTROL} + \varepsilon \quad (2)
\end{aligned}$$

With the exception of the dependent variable(s) and the corresponding exclusion of AM as explanatory variable (now part of the dependent variable), Equation (2) is identical to Equation (1). As estimation method we used a multilevel logistic or logistic regression for Equation (2) (Dong and Stettler, 2012).

4. Results

Table 4 reports the results of the regression analyses for the hypothesized relationships between accrual-based earnings management, political connections, the level of public monitoring and the combinations of accrual-based earnings management, political connections and public monitoring, and real earnings management.

[Insert Table 4 about here]

Panel A of Table 4 reports negative and significant associations between accrual-based earnings management and real earnings management when real earnings management was measured using the three comprehensive metrics of real activities manipulation, after having controlled for variations in companies' real earnings management related to the other factors specified in the model. Panel B shows significantly negative association between accrual-based earnings management and real earnings management when real earnings management was measured using the individual proxies for real earnings management. Consistent with prior literature (Cohen et al., 2008; Cohen and Zarowin, 2010; Zang, 2012), these findings indicate that companies are likely to substitute real earnings management for accrual-based earnings management.

Table 4 also shows interaction effects of accrual-based earnings management with CONNECT and PRESS FREEDOM. The results in Panel A show statistically significant and negative relationships between the interactions of accrual-based earnings management and political connectedness using the aggregate real earnings management measures RM_CD and RM_CPD. The magnitude of the coefficients is also economically significant: compared with non-connected firms, one standard deviation increase in accrual-based earnings management is associated, on average, with a decrease in connected firms' RM_CD and RM_CPD of 0.17 and 0.28 standard deviations, respectively. The interaction with RM_PD was negative but not significant. Panel B shows a significant and negative association for the interactions between accrual-based earnings management and political connectedness when real earnings management was measured using RM_CFO and RM_DISX, while the relationship with RM_PROD was negative but not significant. The magnitude of the coefficients also indicates economic significance. Consistent with our expectation, these findings suggest that firms with political connections are more inclined to substitute the relatively costly real earnings

management strategies for accrual-based earnings management strategies than non-connected firms. Overall, we find that the results in Table 4 provide support for H1.

Table 5 reports the results of the multilevel logistic and logistic regressions using the combinations of high and low real and accrual-based earnings management strategies as dependent variables (see Equation 2).

[Insert Table 5 about here]

The findings in the Models 1-2 of Table 5 show statistically significantly positive coefficients for CONNECT. These coefficients reflect the log of the odds ratio between having or not having political connections, controlling for the other factors specified in the models. The odds ratio indicates the change in odds that connected firms use combinations of relatively high levels of real and low levels of accrual-based earnings management strategies than non-connected firms, everything else held constant. The magnitude of the coefficients indicates economic significance. In model 1, for instance, the ratio of the odds for connected firms to the odds for non-connected firms of using the combination is $\exp(0.387) = 1.47$ indicating that the probability that firms use a combination of high levels of real and low levels of accrual-based earnings management strategies divided by the probability that the firm does not use this combination is about 1.5 times higher for connected firms than for non-connected firms. The statistically and economically significant results in the Models 1-2 of Table 5 indicate that politically-connected firms are more likely to use combinations of relatively high levels of real earnings management and low levels of accrual-based earnings management than non-connected firms, everything else held constant. Moreover, the Models 3-4 show that politically-connected firms are significantly less likely to use combinations of relatively low real earnings management and high accrual-based earnings management strategies, after controlling for other differences in earnings management incentives. Together, these results provide additional support for H1. They indicate that firms with political connection have

more incentives to manage their earnings secretly than non-connected firms. These results are in line with previous studies related to political connections (Faccio, 2010). Collectively, our findings in Table 4 and 5 provide strong support H1. They indicate that, compared to non-connected firms, politically-connected firms are more likely to substitute relatively more costly and less detectable real earnings management strategies for accrual-based earnings management strategies.

Tables 4 also reports interaction effects of CONNECT with PRESS FREEDOM to test H2 which states that public monitoring has an additional effect on politically-connected firms' choices to substitute real earnings management for accrual-based earnings management. Models 2 and 4 in Panel A and Models 2 and 4 in Panel B show that the interactions between press freedom and accrual-based earnings management were statistically significantly and negatively associated with the use of real earnings management strategies. These findings indicate that when public monitoring increases, companies are more likely to substitute real earnings management strategies for accrual-based earnings management strategies. Panels A and B of Table 4 also reveal negative associations between real earnings management and the tree-way interaction between political connectedness, press freedom and accrual-based earnings management. The associations with the scores on the measures RM_CPD and RM_CFO were also partially significant. The results of the three-way interaction indicate that politically-connected firms in countries with higher levels of press freedom have a higher substitution rate of real earnings management for accrual-based earnings than politically-connected firms that are domiciled in countries with lower levels of public scrutiny. Further evidence that press freedom is positively related to higher rates of real earnings management and, simultaneously, to lower rates of accrual-based management by politically-connected firms is shown in Model 2 in Table 5, which reports a positive interaction effect between CONNECT and PRESS FREEDOM on $RM_{High} \& AM_{Low}$. The respective interaction effect in

the more constrained Model 1 in Table 5 is also positive but not significant. Moreover, as expected in H2, we also find that press freedom is negatively related to lower rates of real earnings management and, simultaneously, to higher rates of accrual-based management by politically-connected firms although the coefficients are not statistically significant. Overall, a number of models in Table 4 and 5 show that companies with political connections are more likely to substitute real earnings management strategies for accrual-based earnings management strategies when public monitoring increases. Although some of the effects are not statistically significant, all coefficients are as expected and none of the estimated models shows a statistically significant opposite effect. Hence, we can conclude that our results provide strong partial support for H2.

5. Robustness⁷

Panel A of Table 1 shows that the United States, Japan and the United Kingdom are relatively well represented in our data set with respectively 2786 (51%), 1074 (20%) and 710 (13%) observations. To check that our results may not be influenced by the inclusion (or exclusion) of one of these countries, we recursively repeated our main analyses after eliminating these three countries, one at a time, from the analysis. In addition, we repeated our main analyses after eliminating the countries with five or less than five firm-year observations. The findings of these additional analyses (unreported) are consistent with the main results in the Tables 4-5, indicating that the results are robust to the inclusion or exclusion of countries. Given the skewed distribution by country, we also repeated our main regression analyses including sampling weights. That is, we checked our regressions with inverted probability weights as in, e.g., Weitzel and Berns (2006). For example, each observation from the US was weighted with $1/0.5072$, where 0.5072 is the proportion of US observations in the total sample (Panel A of Table 1). This means that each country and all country-specific characteristics enter the

⁷ All results from the robustness checks are available from the authors on request.

estimation with the same weight, effectively eliminating concerns that our results are driven by some large outlier countries. The findings of these additional analyses (unreported) show that our results are robust with regard to the different frequencies of country observations.

To assess firm-level use of real and accrual-based earnings management, we constructed dummy variables using the industry-year median as cut-off point (Cohen et al., 2008; Cohen and Zarowin, 2010). To check whether our results are robust to alternative cut-off points, we repeated our analyses using the top 25% and 10% of the sample. Our results show that segmentation of firms with and without earnings management at different levels do not change our results qualitatively suggesting that the results are robust to different cut-off levels. To check whether our results are sensitive to alternative measures of earnings management, we considered alternative measures of accrual-based earnings management. For this reason, we repeated our analysis by using the modified Jones model (Dechow et al., 1995; Dechow et al, 2010). In addition, since discretionary accrual models, like the modified Jones' model, have been criticized to estimate discretionary accruals with error (e.g. McNichols, 2000; Collins and Hribar, 2002), we also used total accruals instead of discretionary accruals. Our results using these alternative measures are consistent with those reported in the paper.

Our results show that, compared to non-connected firms, politically-connected firms are more likely to substitute real earnings management for accrual-based earnings management strategies. Additionally, we also examined whether politically-connected firms are more likely to use real earnings management strategies than non-connected firms. For this reason, we used our aggregate and individual measures of real earnings management as dependent variables. The findings of the additional analyses (unreported) indicate that politically-connected firms are more engaged in the relatively costly but less detectable real activities manipulation than non-connected firms. Hence, politically-connected firms do not only favor real earnings

management as a substitute for accrual based strategies, but also generally use the former more than non-connected firms.

We also checked whether our results are robust to alternative measures of public monitoring. For this reason, we used corruption as a proxy for public monitoring since a country's higher (lower) level of institutional quality may result in a higher (lower) level of public monitoring. The findings of the additional analyses (unreported) show that results are qualitatively robust to the different measures of public monitoring. We also used individual corruption measures instead of the composite average corruption measure to test our hypotheses. The findings of these additional analyses (unreported) show that results are robust to different measures of corruption. Overall, as none of the robustness tests change our general results, we are confident that our findings are qualitatively robust.

6. Conclusion and discussion

This study examined whether politically-connected firms are more likely to substitute real earnings management for accrual-based earnings management than non-connected firms. We argue that politically-connected firms favor the relatively more costly real earnings management strategies because of its higher secrecy. Particularly when public monitoring and the risk of detection increase, they have more incentives to substitute real earnings management for accrual-based earnings management strategies to manage and mask the gains that they typically derive from their connections, especially those of dubious legality (Watts and Zimmerman, 1990; Faccio, 2006; Faccio et al., 2006; Chaney et al., 2011). Consistent with our expectations, the results of several multilevel regression analyses show that political connections play a significant role in explaining variance in firm's choices of earnings management strategies. Compared to non-connected firms, politically-connected firms are more likely to substitute relatively more costly and less detectable real earnings management

strategies for accrual-based earnings management strategies. Moreover, politically-connected firms domiciled in countries that have a higher (lower) level of public monitoring are more (less) likely to substitute real earnings management for accrual-based earnings management. Additional results also indicate that politically-connected firms generally engage more in real activities manipulation than non-connected firms.

These results have several important implications for accounting practices and research related to earnings management. First, the findings are likely to be helpful for external capital providers and other stakeholders in assessing the pervasiveness of earnings management and the overall integrity of financial reporting of the connected firms. Second, the finding that politically-connected firms treat real and accrual-based management strategies as substitutes has important implications for research. In research settings where both accrual-based and real earnings management strategies are likely to be used to achieve earnings targets, variation in earnings management cannot be fully captured by studying accrual-based earnings management only (Kothari et al., 2012; Zang, 2012). If firms use both earnings management strategies as substitutes, studying only the former would underestimate the earnings management activities of politically-connected firms. Third, our findings have political implications. Standard setters can consider ways to refine existing governance systems and accounting standards and expand disclosure requirements to enhance quality of financial reporting, in particular for real earnings management and for firms in which earnings management is common. Consistent with Zang (2012), our findings imply that for connected firms enhancing scrutiny and/or increasing constraints over accounting discretion do not eliminate earnings management activities altogether, but only change managers' preference for different earnings management strategies. They indicate that stronger monitoring and legal enforcement might reduce firms' opportunities for accrual-based earnings management, but at the same time are likely to increase the levels of real activities manipulation engaged by

connected firms. In the end this might be even more costly for investors. This raises the question to what extent institutional changes in governance and accounting, i.e., higher levels of public monitoring and governance and increasing constraints over accounting discretion regarding the different forms of earnings management, positively or negatively affect the efficient allocation of resources. This may be an interesting avenue for further research.

Of course, this study has its limitations. Two of these limitations are related to the use of our measures of political connectedness and earnings management. Regarding the former, we examine variation in earnings management strategies given the existence of political connections. The underlying assumption in the empirical part is that political connections are uniformly associated with choices for accrual-based and real earnings management strategies. However, the benefits from political connections should be expected to differ for a member of parliament of the opposition party to a member of parliament of the governing party to a minister in government. Consequently, different types of political connections may have different effects on firms' choices of earnings management strategies. Additionally, we only consider one aspect of earnings manipulation, i.e. the level of accrual-based and real earnings management. However, we do not examine the relationship between political connectedness and other aspects of earnings management, such as timeliness, value relevance and earnings conservatism (Dechow et al., 2010). In addition, the earnings management literature indicates disagreements concerning the validity of these models, i.e., the models might be mis-specified due to correlated omitted variables and lack to isolate discretionary accruals and real activities manipulation (Dechow et al., 1995; Dechow et al., 2012). These limitations limit the generalizability of our findings. Another limitation was the use of a sample with firms from 30 countries for the period 1997–2001. The data showed that the percentage of politically-connected firms varied considerable between the countries suggesting a risk of sample bias, which limit the generalizability of our findings. In addition, changes in governance and

accounting from 2002, like the Sarbanes-Oxley Act of 2002 in the United States (Cohen et al., 2008) may moderate firms' choices for earnings management strategies. Despite these institutional changes, politically-connected firms are still more likely to substitute less detectable real earnings management strategies for accrual-based earnings management strategies since they have more incentives to manage their earnings secretly and mask their political favors.

Further research could make a distinction between different types of political connections to examine the associations between types of political connections and applications of different earnings management strategies, and use more current data. Finally, we acknowledge that the interaction between political connectedness and press freedom is only one of several methods to test the additional effect of public monitoring on firms' choices for earnings management strategies. Future research could advance this approach with other moderator effects that potentially influence and condition the choices for different earnings management strategies. Overall, more research is needed for an improved understanding of the connections between firms and politicians in different national and international contexts as this would help to identify critical factors that affect the choices of firms and their managers for different earnings management strategies.

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Table 1 Descriptive statistics for sample firms (1997-2001)**Panel A.** Country distribution of firms with and without political connections and (mean) country characteristics (1997-2001)

Country	No. of firms with available data			CORRUPTION ²	GDP/CAP ²	INFLATION ²	
	Political connections ¹		Total				(%)
	No	Yes			Mean	Mean	Mean
AUSTRALIA	34	1	35	(0.64)	1.798	2,6816.43	3.008
BELGIUM	2	5	7	(0.13)	3.657	25,338.51	1.920
CANADA	75	7	82	(1.49)	0.889	26,730.81	1.735
CHILE	6	1	7	(0.13)	2.942	9,010.52	4.823
DENMARK	2	7	9	(0.16)	0.742	26,481.83	2.285
FINLAND	4	2	6	(0.11)	0.831	22,218.28	1.797
FRANCE	16	19	35	(0.64)	2.435	24,261.58	1.295
GERMANY	19	12	31	(0.56)	1.759	25,040.50	1.344
HONGKONG	24	7	31	(0.56)	2.373	25,492.48	-1.177
HUNGARY	1	1	2	(0.04)	3.772	11,443.40	11.150
INDIA	5	8	13	(0.24)	5.612	1,346.24	6.087
INDONESIA	33	29	62	(1.13)	6.598	2,414.16	19.627
ISRAEL	2	2	4	(0.07)	2.447	19,418.98	4.635
ITALY	9	20	29	(0.53)	3.395	22,861.19	2.501
JAPAN	1,041	33	1,074	(19.55)	3.553	25,179.41	-0.494
MALAYSIA	149	5	154	(2.80)	3.733	8,684.34	2.496
MEXICO	58	67	125	(2.28)	5.554	9,955.65	12.983
NETHERLANDS	12	6	18	(0.33)	0.947	27,114.91	2.527
PHILIPPINES	1	1	2	(0.04)	5.456	2,220.63	90.901
RUSSIA	7	4	11	(0.20)	6.233	7,018.97	31.374
SINGAPORE	1	4	5	(0.09)	1.105	30,527.43	0.723
SOUTHKOREA	38	14	52	(0.95)	4.682	15,301.34	3.535
SPAIN	1	3	4	(0.07)	2.571	20,525.54	2.634
SWEDEN	11	3	14	(0.25)	0.829	24,500.51	1.566
SWITZERLAND	26	6	32	(0.58)	0.857	29,551.53	0.815
TAIWAN	60	8	68	(1.24)	3.749	18,540.47	0.410
THAILAND	47	36	83	(1.51)	5.330	4,865.35	3.778
TURKEY	1	1	2	(0.04)	5.698	7,757.52	71.090
UNITED KINGDOM	575	135	710	(12.93)	1.587	23,968.61	1.451
UNITED STATES	2,776	10	2,786	(50.72)	2.186	32,793.61	2.389
Total	5,036	457	5,493	(100.00)			

¹ A company is defined as politically connected if “at least one of its large shareholders (anyone controlling at least 10% of the voting shares) or one of its top officers (CEO, president, vice-president, chairman, or secretary) is a member of parliament, a minister or the head of state, or is closely related to a top politician or party” (Faccio, 2006: 370 and 2010:907).

² See Table 2 for variable definitions.

Table 1 Panel B. Country distribution of firms with and without political connections per year (1997-2001)

Country	Year														
	1997			1998			1999			2000			2001		
	No. of firms with available data			No. of firms with available data			No. of firms with available data			No. of firms with available data			No. of firms with available data		
	Political connections		Tot.	Political connections		Tot.	Political connections		Tot.	Political connections		Tot.	Political connections		Tot.
No	Yes		No	Yes		No	Yes		No	Yes		No	Yes		
AUSTRALIA	2	1	3	2	1	3	3	1	4	5	1	6	30	1	31
BELGIUM	0	3	3	0	3	3	1	3	4	2	3	5	2	4	6
CANADA	26	5	31	26	5	31	30	3	33	32	3	35	41	2	43
CHILE	2	1	3	2	1	3	1	1	2	4	1	5	0	1	1
DENMARK	0	7	7	0	7	7	0	6	6	0	5	5	2	5	7
FINLAND	2	2	4	2	2	4	1	2	3	1	2	3	1	2	3
FRANCE	6	18	24	6	18	24	8	16	24	10	15	25	11	15	26
GERMANY	2	11	13	2	11	13	1	11	12	9	9	18	11	7	18
HONGKONG	0	7	7	0	7	7	1	6	7	12	6	18	20	5	25
HUNGARY	0	1	1	0	1	1	0	1	1	1	1	2	0	1	1
INDIA	0	8	8	0	8	8	2	8	10	4	8	12	1	8	9
INDONESIA	15	29	44	15	29	44	10	27	37	22	27	49	16	26	42
ISRAEL	1	2	3	1	2	3	0	2	2	1	2	3	0	2	2
ITALY	5	19	24	5	19	24	5	15	20	6	11	17	5	11	16
JAPAN	141	33	174	141	33	174	74	32	106	919	31	950	999	31	103
MALAYSIA	0	65	65	0	65	65	1	65	66	33	66	99	36	64	100
MEXICO	1	6	7	1	6	7	2	6	8	8	5	13	6	6	12
NETHERLANDS	0	1	1	0	1	1	0	1	1	0	1	1	1	0	1
PHILIPPINES	3	4	7	3	4	7	2	4	6	2	4	6	3	4	7
RUSSIA	0	3	3	0	3	3	0	3	3	0	3	3	1	3	4
SINGAPORE	0	14	14	0	14	14	2	14	16	24	13	37	31	13	44
SOUTH KOREA	57	5	62	57	5	62	94	5	99	104	5	109	94	5	99
SPAIN	0	3	3	0	3	3	1	2	3	1	2	3	1	2	3
SWEDEN	7	3	10	7	3	10	10	3	13	9	2	11	9	2	11
SWITZERLAND	13	5	18	13	5	18	20	5	25	20	5	25	20	5	25
TAIWAN	21	7	28	21	7	28	21	8	29	21	8	29	53	7	60
THAILAND	31	33	64	31	33	64	17	28	45	11	27	38	11	27	38
TURKEY	0	1	1	0	1	1	1	0	1	1	0	1	1	0	1
UNITED KINGDOM	285	130	415	285	130	415	290	121	411	342	108	450	367	101	468
UNITEDSTATES	1,264	9	1,273	1,264	9	1,273	1,762	10	1772	1,801	10	1811	177	8	1,778
Total	1,884	436	2,320	2,239	427	2,666	2,360	409	2769	3,405	384	3789	3,543	368	3,911

Table 1 Panel C. Firm characteristics

Industry (U.S. SIC codes) ¹	No. of firms		No. of firms with political connections		Total assets		Market-to Book	
	n	(%)	n	(%)	Mean	Median.	Mean	Median
	Mining and construction (10-17)	932	(5.28)	133	(5.42)	7,122,590	4,158,561	5.770
Manufacturing (20-39)	9,767	(55.29)	873	(35.55)	1,842,494	2,111,772	3.117	0.965
Transportation & pub. utilities (40-49)	578	(3.27)	304	(12.38)	2,988,840	1,500,568	1.208	0.593
Trade (50-59)	186	(1.05)	110	(4.48)	2,019,406	916,121	1.246	0.628
Finance, insurance, & real estate (60-67)	705	(3.99)	612	(24.92)	3.14e+07	1,436,680	0.740	0.522
Services (70-89)	5,496	(31.11)	424	(17.26)	1,317,008	988,828	9.875	1.424
Total	17,664	(100.00)	2,456	(100.00)	3,167,834	1,604,421	4.184	0.916

¹ Our sample is composed of publicly traded firms operating in 27 different industries. Because we had less than 30 observations in 4 industries and for presentation purposes, we present our sample in six main industry groups.

Table 1 Panel D. Firms across year and industry

Year	Industry						
	Mining and construction	Manufacturing	Transportation & Pub. utilities	Trade	Finance, insurance & real estate	Services	Total
1996	111	1,211	89	25	121	652	2,209
1997	118	1,253	86	27	121	715	2,320
1998	148	1,409	88	25	121	875	2,666
1999	124	1,434	88	20	110	993	2,769
2000	196	2,178	112	43	112	1,148	3,789
2001	235	2,282	115	46	120	1,113	3,911
Total	932	9,767	578	186	705	5,496	17,664

Table 2. Variable Definitions

Variable name	Definition
$RM_CFO (R) =$	The reversed level of abnormal cash flows from operations (Roychowdhury, 2006).
$RM_PROD=$	The level of abnormal production costs, where production costs are defined as the sum of the cost of goods sold and the change in inventories (Roychowdhury, 2006).
$RM_DISX (R) =$	The reversed level of abnormal discretionary expenses, where discretionary expenses are the sum of R&D expenses and SG&A expenses (Roychowdhury, 2006).
RM_CD	Comprehensive metrics of real activities manipulation, computed as the sum of the standardized variables of RM_CFO and RM_DISX multiplied by negative one (Cohen and Zarowin, 2010).
RM_PD	Comprehensive metrics of real activities manipulation, computed as the sum of the standardized variable of RM_PROD and the standardized variable of RM_DISX multiplied by negative one (Cohen and Zarowin, 2010; Zang, 2012).
RM_CPD	Comprehensive metrics of real activities manipulation, computed as the sum of the standardized variable of RM_PROD and the standardized variables of RM_CFO and RM_DISX multiplied by negative one (Cohen et al., 2008).
$DA =$	Discretionary accruals computed using the Modified Jones Model (Dechow et al., 1995; Cohen et al., 2008; Cohen and Zarowin, 2010).
$REDCA =$	Performance-adjusted measure of discretionary current accruals, computed as the absolute difference between the total current accruals and the expected performance (i.e., ROA) adjusted total current accruals (Chaney et al., 2011; Ashbaugh et al. (2003).
AM	Composite metric of accrual-based earnings management, computed as the sum of the standardized variables of DA and $REDCA$, divided by two.
$RM_DUMMY =$	An aggregated dummy variable of real earnings management that is equal to one if one of the individual real earnings management measures is above the industry-year median, and 0 otherwise (Cohen and Zarowin, 2010).
$AM_DUMMY =$	A dummy variable that is equal to one if firm's accrual-based earnings management measures, i.e., DA or $REDCA$, were above industry-year median, and zero otherwise (Cohen and Zarowin, 2010).
$RM_{High}\&AM_{Low}=$	A dummy variable that is equal to one if RM_DUMMY is one and ACC_DUMMY is zero, and zero otherwise.
$RM_{Low}\&AM_{High}=$	A dummy variable that is equal to one if ACC_DUMMY is one and RM_DUMMY is zero, and zero otherwise.

<i>CONNECT</i> =	A dummy variable that takes the value of 1 if a firm is politically connected and a value of zero otherwise (Faccio, 2006 and 2010).
<i>PRESS_FREEDOM</i> =	A proxy for a country's level of public monitoring based on the press freedom index used by Faccio (2006). This transparency variable assesses the extent of freedom that journalists and the media have in each country and the efforts made by government to ensure this freedom (Faccio, 2006, p. 379).
<i>LEVERAGE</i>	Long-term debt divided by total assets (Chaney et al., 2011).
<i>MARKET_TO_BOOK</i>	The market capitalization to common equity, where common equity represents common shareholders' investment in a company (Cohen And Zarowin, 2010; Chaney et al., 2011).
<i>LNROA</i>	Logarith of Return on Assests (ROA) (Cohen and Zarowin, 2010; Zang, 2012)
<i>CORRUPTION</i> =	Average of three corruption indexes (Faccio, 2006): the Kaufmann, Kraay and Zoido-Lobaton index (Kaufmann et al., 1999a and 1999b); the International Country Risk index (Faccio, 2006 and 2010); and the German corruption index (Neumann, 1994).
<i>GDP/CAP</i> =	The logarithm of the changes in gross domestic product per capita (International Monetary Fund's World Economic Outlook Database, April 2009: www.imf.org/external/pubs/ft/weo/2009/01/weodata/index.aspx .) (Chaney et al., 2011).
<i>INFLATION</i> =	The logarithm of a country's average percentage change in consumer prices (Leuz et al., 2003).

(R): Indicates reversed score.

Table 3. Summary statistics for the variables in the analysis**Table 3 Panel A .** Summary statistics

Variables	Obs.	Mean	Median	Std. Dev.	Min	Max
<i>Dependent variables</i>						
RM_CD	10,044	-0.007	0.158	1.623	-3.621	2.473
RM_PD	4,940	-0.024	-0.112	1.589	-2.151	1.019
RM_CPD	4,923	-0.006	-0.068	1.609	-1.545	0.950
RM_CFO (R)	11,530	0.058	0.073	0.152	-0.223	0.281
RM_PROD	5,861	-0.008	-0.052	0.358	-8.438	3.915
RM_DISX (R)	10,071	0.015	-0.115	0.355	-2.944	3.327
RM_DUMMY	17,664	0.698	1	0.459	0	1
RM _{High} & AM _{Low}	11,076	0.518	1	0.499	0	1
RM _{Low} & AM _{High}	11,076	0.082	0	0.275	0	1
<i>Independent variables</i>						
AM	11,076	0.026	0	1.441	-3.538	0.903
DA	11,525	0.217	0.096	2.114	0.000	0.340
REDCA	11,629	0.065	0	0.165	0.000	1.022
DA_DUMMY	11,076	0.000	0	0.454	0	1
CONNECT	17,664	0.139	0	0.196	0	1
PRESS_FREEDOM	17,664	5.792	4.757	3.288	0.500	37.832
<i>Firm control variables</i>						
LEVERAGE	17,621	0.381	0.159	10.296	0	1,267.00
MARKET-TO-BOOK	17,539	5.184	0.916	103.822	0	10,771.00
LNROA	17,391	1.839	2.015	1.0521	-8.842	5.779
<i>Country control variables</i>						
CORRUPTION	17,645	0.387	-0.317	0.892	-1.81	4.565
GDP/CAP	17,645	0.238	0.303	0.911	-5.907	2.851
INFLATION	17,664	0.639	0.622	0.575	-2.302	4.649

See Table 2 for variable definitions.

Table 3 Panel B. Pearson correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. <i>RM_CD</i>	1.00																
2. <i>RM_PD</i>	0.44*	1.00															
3. <i>RM_CPD</i>	0.65*	0.96*	1.00														
4. <i>RM_CFO</i> (R)	0.13*	-0.39*	0.62*	1.00													
5. <i>RM_PROD</i>	0.16*	0.86*	0.75*	-0.39*	1.00												
6. <i>RM_DISX</i> (R)	0.77*	0.45*	0.64*	-0.09*	-0.07*	1.00											
7. <i>AM</i>	-0.33*	-0.15*	-0.04*	-0.06*	-0.01*	-0.06*	1.00										
8. <i>DA</i>	-0.54*	-0.26	-0.25	-0.05*	-0.03*	-0.29	0.82*	1.00									
9. <i>REDCA</i>	-0.13	-0.03	-0.05	-0.13*	-0.02	-0.06*	0.71*	0.63*	1.00								
10. <i>CONNECT</i>	0.04*	0.03*	0.03*	0.05*	0.03*	0.01	0.00	-0.00	-0.03	1.00							
11. <i>PRESS_FREEDOM</i>	0.03	0.07	0.05	0.05	0.02	0.01	-0.02	-0.00	-0.03	0.23	1.00						
12. <i>LEVERAGE</i>	0.04	0.02	0.04	0.02	0.01	0.01	0.03	-0.03	0.01	0.05	-0.00	1.00					
13. <i>MARKET-TO-BOOK</i>	-0.06*	-0.02*	0.02*	-0.03	-0.01*	-0.01	0.02	0.01	0.04	0.01	-0.01	0.17*	1.00				
14. <i>LNROA</i>	0.05*	0.01	0.00	0.11*	0.02	0.02	0.06*	0.01	0.06*	0.17*	0.01	0.19*	0.14*	1.00			
15. <i>CORRUPTION</i>	0.05*	0.02	0.03*	0.09*	-0.04*	0.01	0.01	0.01	0.02	0.28*	-0.08*	0.02	-0.01	-0.17	1.00		
16. <i>GDP/CAP</i>	-0.05*	-0.04	-0.05*	-0.01	-0.02	0.02	0.01	0.01	0.00	-0.04	0.09	0.00	0.02	0.03	-0.03	1.00	
17. <i>INFLATION</i>	-0.06*	-0.07*	-0.08*	-0.01	-0.05*	0.01	0.01	0.00	-0.00	0.08	0.13	-0.03	-0.00	0.03	0.29*	0.07*	1.00

* indicate statistical significance at the 1 percent level.

(R): Indicates reversed score.

See Table 2 for variable definitions.

Table 4 Panel A. Multilevel linear regression results with RM_CD, RM_PD and RM_CDP as dependent variables

Dependent variable:	RM_CD		RM_PD		RM_CDP	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
AM	-0.197** (-2.81)	-0.178** (-2.27)	-0.248* (-1.91)	-0.188** (-2.09)	-0.041*** (-2.98)	-0.082*** (-2.71)
CONNECT	0.190** (2.26)	0.175 (1.38)	0.135 (0.69)	-0.271 (-0.91)	0.178 (0.94)	0.121 (0.42)
PRESS FREEDOM	-0.007 (-1.01)	-0.008 (-0.99)	0.006 (0.29)	-0.028 (-1.05)	0.002 (0.14)	-0.021 (-0.84)
CONNECT x AM		-0.174** (-2.14)		-0.072 (-0.52)		-0.276** (-2.39)
PRESS FREEDOM x AM		-0.003* (-1.67)		-0.108* (-1.87)		-0.006 (-1.35)
CONNECT x PRESS FREEDOM		0.012 (0.20)		0.476* (1.87)		0.034 (1.42)
CONNECT x PRESS FREEDOM x AM		-0.003 (-0.36)		-0.036 (-1.07)		-0.028* (-1.88)
LEVERAGE	0.382*** (3.66)	0.381*** (3.65)	0.400*** (3.26)	0.395*** (3.22)	0.037*** (3.88)	0.396*** (3.80)
MARKET-TO-BOOK	-0.003* (-1.77)	-0.003* (-1.79)	-0.041** (-2.16)	-0.040** (-2.13)	-0.037*** (-2.81)	-0.036*** (-2.80)
LNROA	0.040*** (4.59)	0.041*** (4.73)	0.112*** (5.80)	0.108*** (5.63)	0.080*** (5.08)	0.0811*** (5.10)
CORRUPTION	0.080** (2.15)	0.083** (2.17)	-0.087 (-1.07)	-0.001 (0.01)	0.003 (0.05)	0.065 (0.72)
GDP/CAP	0.012 (0.44)	0.010 (0.37)	0.114** (2.19)	0.086* (1.58)	0.076* (1.51)	0.055 (1.06)
INFLATION	-0.031* (-2.14)	-0.031* (-2.07)	-0.141*** (-4.82)	-0.145* (-4.96)	-0.128** (-2.34)	-0.130* (-2.43)
Industry dummies ^{1,2}	Y	Y	Y	Y	Y	Y
Year dummies ^{1,2}	Y	Y	Y	Y	Y	Y
Random country effects ¹	Y	Y	Y	Y	Y	Y
Random firm effects ¹	Y	Y	Y	Y	Y	Y
Intercept	0.599*** (6.80)	0.602*** (6.60)	0.277 (1.31)	0.468** (1.98)	0.492** (2.46)	0.622*** (2.79)
N	5370	5370	3057	3057	3057	3057
Wald- χ^2	1026.31***	1052.73***	474.487***	490.62***	154.25***	162.96***

***, ** and * indicate statistical significance at the 1 percent, 5 percent, and 10 percent levels respectively (two-tailed; t-values below the regression coefficients in parentheses).

See Table 2 for variable definitions; (R): Indicates reversed score.

¹ Individual coefficients of the industry dummies, year dummies and random country and fixed firm effects are not reported for parsimony.

Table 4 Panel B. Multilevel linear regression results with RM_CFO (R), RM_PROD and RM_DISX (R) as dependent variables

Dependent variable:	RM_CFO (R)		RM_PROD		RM_DISX (R)	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
AM	-0.024** (2.11)	-0.040** (-2.40)	-0.080** (2.17)	-0.0730** (-2.85)	-0.024** (-3.80)	-0.024*** (-2.75)
CONNECT	0.002** (2.24)	0.002* (1.69)	0.088* (1.83)	0.053 (1.29)	0.003 (0.81)	0.004 (0.84)
PRESS FREEDOM	-0.003 (-0.36)	-0.003 (-0.21)	-0.005** (-2.20)	-0.001 (-0.27)	-0.070 (-1.48)	-0.070 (-0.97)
CONNECT x AM		-0.038** (-2.11)		-0.067 (-1.38)		-0.231** (-3.21)
PRESS FREEDOM x AM		-0.002** (2.46)		-0.004** (-2.28)		-0.001 (-0.47)
CONNECT x PRESS FREEDOM		0.001 (0.09)		0.005 (1.23)		-0.001 (-0.09)
CONNECT x PRESS FREEDOM x AM		-0.002** (-2.78)		-0.004 (-1.42)		-0.001 (-0.13)
LEVERAGE	-0.029*** (-3.48)	-0.030*** (-3.56)	0.086*** (2.71)	-0.093*** (-2.95)	0.229*** (2.43)	0.230*** (3.46)
MARKET-TO-BOOK	-0.001*** (-4.31)	-0.001*** (-4.31)	-0.010*** (-5.27)	-0.009** (-2.18)	-0.045*** (-3.05)	-0.004*** (-3.06)
LNROA	0.009*** (3.21)	0.001*** (3.31)	0.175*** (3.35)	0.014*** (2.90)	0.009 (1.31)	0.010 (1.41)
CORRUPTION	0.007 (1.40)	0.007 (1.32)	-0.014 (1.18)	-0.004 (-0.33)	-0.007** (-2.21)	-0.005** (-2.26)
GDP/CAP	0.059 (1.41)	0.006 (1.44)	0.004 (0.45)	0.035 (0.33)	0.001 (0.05)	0.002 (0.18)
INFLATION	0.001 (0.36)	0.001 (0.71)	-0.028 (-0.24)	-0.023 (-0.57)	0.029** (2.22)	0.029** (2.19)
Industry dummies ¹	Y	Y	Y	Y	Y	Y
Year dummies ¹	Y	Y	Y	Y	Y	Y
Random country effects ¹	Y	Y	Y	Y	Y	Y
Random firm effects ¹	Y	Y	Y	Y	Y	Y
Intercept	0.071*** (4.85)	0.069*** (4.39)	0.033*** (0.73)	0.073 (1.14)	-0.363*** (-6.89)	-0.367*** (-6.76)
N	6120	6120	3609	3609	5370	5370
Wald- χ^2	925.08***	987.61***	562.16***	708.79***	1577.98***	1621.31***

***, ** and * indicate statistical significance at the 1 percent, 5 percent, and 10 percent levels respectively (two-tailed; t-values below the regression coefficients in parentheses).

See Table 2 for variable definitions; (R): Indicates reversed score.

¹ Individual coefficients of the industry dummies, year dummies and random country and fixed firm effects are not reported for parsimony.

Table 5 Multilevel logistic and logistic regression results of combinations of high and low levels of real and accrual-based and real earnings management strategies

	RM _{High} & AM _{Low}		RM _{Low} & AM _{High}	
	Multilevel	Logistic regression	Multilevel	Logistic regression
	logistic regression		logistic regression	
	Model 1	Model 2	Model 3	Model 4
CONNECT	0.387* (2.33)	0.702** (5.86)	-1.132** (-2.17)	-1.367*** (-2.82)
PRESS FREEDOM		-0.006 (-0.87)		0.138 (0.34)
CONNECT x PRESS FREEDOM	0.129 (1.35)	0.145** (2.44)	-0.039 (-1.12)	-0.002 (-0.01)
LEVERAGE	-0.123** (-2.23)	-0.054 (-1.47)	0.010 (0.51)	0.002 (0.14)
MARKET-TO-BOOK	-0.038** (-2.10)	-0.052*** (3.54)	0.001 (0.02)	0.001 (1.06)
LNROA	-0.001 (-2.32)	-0.002* (-1.84)	0.000 (0.52)	0.000 (0.15)
CORRUPTION		0.149*** (2.89)		0.462* (2.42)
GDP/CAP		-0.102** (-2.45)		0.404*** (3.05)
INFLATION		0.220*** (4.64)		-0.046*** (-4.73)
Industry dummies ^{1,2}	Y (275.25***)	Y (148.30***)	Y (149.99***)	Y (151.42***)
Fixed country effects ^{1,2}	Y (187.71***)	N	Y (167.71***)	N
Year dummies ^{1,2}	Y (195.31***)	Y (230.00***)	Y (55.15***)	Y (99.33***)
Random firm effects ¹	Y	Y	Y	Y
Intercept	-1.290* (-181)	-0.029 (-0.05)	-0.717 (-0.80)	-2.028*** (-4.13)
N	11028	9830	10526	10665
Wald- χ^2	844.29***	436.72***	322.35***	639.94***
Pseudo R ²		0.054		0.054

***, ** and * indicate statistical significance at the 1 percent, 5 percent, and 10 percent levels respectively (two-tailed; t-values below the regression coefficients in parentheses).

See Table 2 for variable definitions.

¹ Individual coefficients of the industry dummies, country dummies, year dummies and random fixed firm effects are not reported for parsimony.

² Chi-square and statistical significance of joint variables tests in parentheses.

APPENDIX MEASUREMENT OF REAL AND ACCRUAL-BASED EARNINGS MANAGEMENT

Measurement of real earnings management

Following Roychowdhury (2006), we used three proxies for real earnings management: abnormal levels of cash flow from operations (RM_CFO), abnormal levels of production costs (RM_PROD) and abnormal levels of discretionary expenses (RM_DISX). To calculate the proxies for real earnings management, consistent with prior research (Roychowdhury, 2006; Cohen and Zarowin, 2010; e.g. Dechow et al., 1995; Dechow et al., 1998), for each metric, first, using regression analysis, parameters were estimated which allow calculating the normal levels of cash flows from operations, production costs, and discretionary expenses respectively. Second and consistent with Roychowdhury (2006), the differences between the actual levels and the estimated normal levels, i.e. the residuals, were considered as the abnormal levels of cash flows from operations, production costs, and discretionary expenses (Roychowdhury, 2006).

Normal levels of cash flow from operations are expressed as a linear function of sales and the change in sales. Following Roychowdhury (2006), we estimated the following cross-sectional regression:

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

where: CFO_{it} = the net cash receipts and disbursements resulting from the operations of firm i in year t ; $ASSETS_{it-1}$ = the total assets at the end of year $t-1$ of the i th firm; $SALES_{it}$ = the net sales in year t of the i th firm; $\Delta SALES_{it}$ = the change in net sales from year $t-1$ to t of the i th firm.

Abnormal CFO (RM_CFO) was measured as the estimated residual from Equation (1). Since price discounts and more lenient credit terms will result in lower cash inflows in the current period, lower negative residuals imply unusual low levels of cash flows from operations suggesting more sales manipulation to manage reported earnings upward.

Also following Roychowdhury (2006), the normal level of production costs was estimated using the following equation:

$$\frac{PROD_{it}}{Assets_{it-1}} = \beta_0 + \beta_1 \frac{1}{Assets_{it-1}} + \beta_2 \frac{Sales_{it}}{Assets_{it-1}} + \beta_3 \frac{\Delta Sales_{it}}{Assets_{it-1}} + \beta_4 \frac{\Delta Sales_{it-1}}{Assets_{it-1}} + \varepsilon_{it} \quad (2)$$

where: $PROD_{it}$ = the costs of goods sold of firm i in year t .

The abnormal production cost (RM_PROD) is the difference between actual and the normal level of production costs and was calculated using the estimated coefficients from Equation (2). Overproduction will result in positive residuals in equation (2), i.e. high values of RM_PROD. High positive values of RM_PROD indicate real activity manipulation through overproduction, resulting in a reduction of cost of goods sold.

The normal level of discretionary expenses was estimated using the equation (3) (Roychowdhury, 2006):

$$\frac{DISX_{it}}{Assets_{it-1}} = \beta_1 \frac{1}{Assets_{it-1}} + \beta_2 \frac{\Delta Sales_{it}}{Assets_{it-1}} + \beta_3 \frac{Sales_{it}}{Assets_{it-1}} + \varepsilon_{it} \quad (3)$$

where: $DISX_{it}$ = discretionary expenses, computed as the sum of SG&A (selling, general and administrative expenses) and R&D (research and development) expenses. S&GA represents expenses not directly attributable to the production process but relates to selling, general and

administrative functions and it includes advertising expenses. R&D expenses consist of all direct and indirect costs related to the creation and development of new processes, techniques, applications and products with commercial possibilities.

The abnormal level of discretionary expenses is (RM_DISX) was measured as the estimated residual from Equation (3). Low negative residuals indicate that firms cut amounts of discretionary expenses to increase reported earnings. Finally, for interpretation purposes we report the reversed scores for the variables RM_CFO and RM_DISX, so that for all three proxies, higher residuals correspond with high levels of real activities manipulation.

Measurement of accrual-based earnings management

Following prior literature, we used two estimations of discretionary accruals to proxy accrual-based earnings management. First, we estimated discretionary accruals by using the cross-sectional Jones model (DA) (Dechow et al., 1995; Cohen et al., 2008; Cohen and Zarowin, 2010), as follows:

$$\frac{TA_{it}}{Assets_{it-1}} = K_1 \frac{1}{Assets_{it-1}} + K_2 \frac{\Delta SALES_{it}}{Assets_{it-1}} + K_3 \frac{PPE_{it}}{Assets_{it-1}} + \varepsilon_{it} \quad (4)$$

where: TA_{it} = the total accruals in year t of the i th firm, measured by the difference between income before extraordinary items and discontinued operations and cash flows from operations (Collins and Hribar, 2002); PPE_{it} = the net value of property, plant, and equipment at the end of year $t-1$ of the i th firm.

Equation (4) was estimated by using all data from all firms matched with year $t-1$ and two-digit SIC industry groupings. The parameter estimates from this regression were then used to

estimate the residuals from Equation (4) in year t . To remove the problem of extreme outliers in some continuous variables, we used Cook's (1977) distance criterion. We removed influential observations from the sample if Cook's distance statistics exceed 3 and re-estimated (Wilson and Wu, 2011). Consistent with Cohen et al. (2008), the absolute values of the residuals, capturing discretionary accruals in year t , serve as the proxy for accrual-based earnings management (DA). We use the absolute value because it also captures accruals reversals following earnings management.

Second, following Chaney et al. (2011) we used a measure of current discretionary accruals that focuses on discretionary earnings management through working capital accruals (and not on long-term accruals such as depreciation). For this reason, we used the performance-adjusted measure of discretionary current accruals (REDCA) (Chaney et al., 2011), which is based on the method used in Ashbaugh et al. (2003) and controls for firm performance (Kothari et al., 2005). We estimated the current discretionary accruals using Equation (5):

$$REDCA_{it} = TCA_{it} - EPTCA_{it} \quad (5)$$

where TCA = total current accruals (TCA) of firm i in year t , and $EPTCA$ = the expected performance-adjusted total current accruals in the year t of the i th firm, where ROA controls for the effect of performance on the measured discretionary accruals (Chaney et al., 2011: 61-62). We used the absolute difference between the total current accruals and the expected performance-adjusted total current accruals as our second proxy for accrual-based earnings management (REDCA).