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The role of audit quality and culture influence on earnings management in companies with excessive free cash flow

Earnings
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Evidence from the Asia-Pacific region

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Abstract

Purpose – The purpose of this paper is to examine the effect of culture and audit quality on managers' decisions regarding accounting accruals. It focuses on companies experiencing excessive free cash flow, as these companies have been associated with an agency problem.

Design/methodology/approach – This study measures the magnitude of discretionary accruals as a proxy for earnings management using the cross-sectional modified Jones model. Excessive free cash flow is scrutinized by the method used by Chung *et al.* (2005). Listed companies in nine countries in the Asia-Pacific region are represented in this study. The statistical analyses are used to examine the influence of cultural aspect, the role of external monitoring by high-quality auditors and the earnings management practice in the companies with excessive free-cash-flow.

Findings – The empirical results presented in this paper provide support for the proposition that managers of companies with excessive free-cash-flow will make investment decisions that are not always in the best interest of the shareholders and use accounting discretion to increase reported earnings. This study provides empirical evidence that these companies have been associated with an agency problem and the role of external auditor persists in a setting, where cultural differences prevail in across countries.

Practical implications – In cross-border trade and investment, the findings provide the opportunity to exploit a setting, where cultural differences prevail, whereas other potentially influential variables, including the role of external monitoring by high-quality auditors, are relatively constant across countries.

Originality/value – Previous studies (Leuz *et al.*, 2003; and Enomoto *et al.*, 2015) examine factors influencing earnings management internationally have concentrated on legal institutions and investor protection. Han *et al.* (2010) completed a cross-country study on the effects of national culture on earnings management. This study focuses on companies across countries experiencing with excessive free cash flow and examines the cultural aspect and the effectiveness of external monitoring by high-quality auditors operating in different countries in mitigating managerial opportunism.

Keywords Culture, Earnings management, Audit quality, Asia pacific, Free cash flow

Paper type Research paper

1. Introduction

This study attempts to provide empirical evidence that a national culture dimension assists in explaining the actions of managers of companies experiencing excessive free-cash-flow in

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selecting accounting discretion on reported earnings. It also scrutinises how the role of external auditor persist in a setting, where cultural differences prevail in across countries in the Asia-Pacific region.

The aim of this paper is to examine the effect of culture and audit quality on managers' decisions regarding accounting accruals in companies with excessive free-cash-flow. Excessive free cash flow or free-cash-flow and low-growth opportunities (FCFLG) has been associated with an agency problem. First, we investigate whether managers of free-cash-flow in low growth companies practice income-increasing earnings management strategies. Second, we consider the effect of a national cultural aspect on earnings managements and on the association between free-cash-flow in low growth companies and earnings management. Third, we study the effect of audit quality on earnings management and on the association between free-cash-flow in low growth companies and earnings management. For our study, we control for the effect of a firms' financial characteristics, such as size, leverage, absolute total-accruals and relative cash flow (RCFO).

Our study provides useful information on the relationship between positive free cash and earnings management and makes a number of contributions. Accounting literature provides a theoretical basis (Gray, 1988) and limited empirical evidence (Ball *et al.*, 2000; Fan and Wong, 2002; Astami and Tower, 2006) on the argument that accounting practice and managers' choice of accounting policies are affected by national culture and social values. Previous research (Chung *et al.*, 2005) on the relationship between surplus free-cash-flow and earnings management have generally not included the cultural aspect. Guan *et al.* (2006), Han *et al.* (2010) and Gray *et al.* (2015) did find that national cultural dimensions can help explain managers' earnings discretion across countries. In this study, we analyse the effect of national culture on company managers' accounting choices for reported earnings in companies with high free-cash-flow and low growth-opportunities (which are referred as excessive free-cash-flow). We examine the role of high-quality auditors as proxied by the Big 4 across countries in deterring managers' opportunistic earnings management. This study, therefore, contributes to an emerging body of literature in earnings management and financial reporting practices in companies with excessive free-cash-flow.

Second, this study empirically documents the effect of cultural differences and audit quality on company managers' accounting choice in managing their free-cash-flow in low growth company. Nine countries in the Asia-Pacific region are represented in this study. Chung *et al.* (2005) argues that company managers with surplus free-cash-flow use income-increasing discretionary accruals (DACs) to offset the low or negative earnings and that external monitoring is effective in deterring the managers' opportunistic earnings management. Studies on earnings management have been largely conducted in the USA (Chung *et al.*, 2005) and in European countries (Ferreira and Vilela, 2004; Alali and Foote, 2012; Gotti and Mastroia, 2012; Matoussi and Jardak, 2012). Some limited work outside of the above-mentioned countries has however been undertaken. Bukit and Iskandar (2009) examine the relationship between surplus free-cash-flow and earnings management on companies listed on Bursa Malaysia. Han *et al.* (2010) completed a cross-country study on the effects of national culture on earnings management with consideration for the role of investor protection. In our study, we add the cultural aspect, the role of external monitoring by high-quality auditors and the earnings management practice in the companies with excessive free-cash-flow for the Asia-Pacific region.

Countries in the Asia-Pacific region conduct economic co-operation in the form of the Asia-Pacific Economic Cooperation (APEC) as well as Association of South East Asia Nations (ASEAN). As a result, countries in the APEC economies have a shared mission to maintain the positive, forward momentum and continue APEC's contribution to regional and global growth, prosperity and stability (Larkin, 2012). In the increasingly international

marketplace, it now requires business counterparts to better understand and predict how business counterparts with different cultural backgrounds will react to changing business practices (Curtis *et al.*, 2012). The work of high-quality accounting firms is also significant in aiding the success of the economic co-operation in the region as accounting earnings affect investment decisions and financial markets.

Third, the findings of this study provide insights into stakeholders including investors, managers and regulators on the decision-making process. In the APEC economies, attention has gradually shifted to the structural and regulatory obstacles that inhibit cross-border trade and investment by creating behind-the-border barriers to doing business. The Economic Committee of APEC (2012) suggests that one of the key issues is financial reporting practice. Therefore, scrutinising evidence from countries in the Asia-Pacific region provide us the opportunity to exploit a setting where cultural differences prevail, whereas other potentially influential variables are relatively constant across countries.

Previous studies that examine factors influencing earnings management internationally have concentrated on legal institutions and investor protection (Leuz *et al.*, 2003; and Economoto *et al.*, 2015). This study examines the effectiveness of external monitoring by high-quality auditors operating in different countries in mitigating managerial opportunism in “free-cash-flow, low growth” (FCFLG) companies. ASEAN economic reformers and regulators are actively engaged in improving corporate governance and transparency in the region. A better understanding of the role of audit quality and culture can only enhance policy development and practice. Previous studies suggest that accounting regulation does matter (Wang *et al.*, 2010; Nurunnabi, 2014) and some countries has taken a number of steps and made changes in accounting regulations to enhance accounting quality and governance standards (Liu and O’Farrell, 2013; Ahmed and Ali, 2015; Song, 2016).

The remainder of the paper is organised as follows. Section 2 gives a brief overview of the literature on free-cash-flow, earnings management and auditor quality, and this section also articulates the hypotheses development. In Section 3, the research design is discussed. Section 4 examines the data and the empirical findings, and the paper concludes in Section 5.

2. Review of the literature and hypotheses development

2.1 Excessive free-cash-flow and earnings management

The majority studies on free-cash-flow hypothesise that excessive free-cash-flow leads to over investment (Richardson, 2006; Wei and Zhang, 2008). The agency cost perspective suggests that high free-cash-flow is associated with low-growth opportunities and results in non-value maximising activities (Jensen, 1986; Gul and Tsui, 1998; and Armstrong *et al.*, 2015). The agency cost of free-cash-flow arises when excess cash flows are invested in projects with negative net present value (Jensen, 1986). The agency cost perspective argues that firms with low-growth opportunities tend to invest free-cash-flow in less or unprofitable projects. Slack resources theory posits that along the continuum of managerial discretion (Sharfman *et al.*, 1988), cash represents the high discretionary dimension of financial resources (George, 2005). Therefore, in an environment, where there is no effective monitoring or disciplinary action by regulators, outside stakeholders or agents, some company managers may pursue their personal advantage. Chung *et al.* (2005) examines managers’ use of accounting techniques and earnings management practices when faced with surplus free cash. Managers do not have any obligation to disclose to their investors the rationale behind investment decisions or the investment’s feasibility. Likewise, an investment’s cash flow projections and underlying assumptions are not in the public domain, which increases the opportunity for managers to divert corporate resources to gain personal advantage. This kind of practice is myopic because the future reported profits of the

company would reflect poor investment decisions. Habib (2011) suggests that non-value-maximising investments eventually reduce earnings and will result in lower stock prices. Such scenarios may elicit shareholder actions to remove directors and senior executives (Habib, 2011). Nevertheless, preparers of financial statements may use accounting techniques that increase (decrease) reported income. Company managers may practice earnings management through creative accounting by managing DACs. Chalak *et al.* (2012) in a study of listed companies in Iran found a direct relationship between DACs and Iranian firms with excessive free-cash-flow. This behaviour may however be mitigated through the use of effective governance structures, such as the existence of an effective audit committee or well-constituted independent board which will act to moderate the use of earnings management Bukit and Iskandar (2009) and Karimi *et al.* (2014)). In line with Chung *et al.* (2005) using the current literature based in agency theory the first hypothesis is:

H1. *Ceteris paribus*, managers of high free-cash-flow companies with low growth opportunities are more likely to choose income-increasing earnings management.

2.2 Cultural values

Accounting theorists such as Gray (1988) link cultural values to accounting values and practices, whereas others (Hofstede, 1983) quantify cultural dimensions among countries. Fearnley and Gray (2015) suggest that a nation's culture has a continuing significant impact on firms' accounting measurement choices. In this study, we adopt the Hofstede's dimension. Hofstede's (1983) classifies four factors underlying differences in nations' cultural values, namely, individualism, power distance, uncertainty avoidance and masculinity. In particular, Hofstede defines individualism (*vs collectivism*) as the extent to which an individual expects personal freedom versus the acceptance of responsibility to family, tribal or national groups (i.e. collectivism). *Power Distance* is the degree of tolerance for inequality of wealth and power indicated by the extent to which centralisation and autocratic power are permitted. People in large power distance societies accept a hierarchical order in which everybody has a place, which needs no further justification. People in small power distance societies strive for power equalisation and demand justification for power inequalities. *Uncertainty Avoidance* (UA) refers to the extent to which society avoids risk and creates security by emphasising technology and buildings, laws and rules and religion. Weak UA societies maintain a more relaxed atmosphere in which practice counts more than principles and deviance is more easily tolerated. *Masculinity (vs Femininity)* differentiates the roles between the sexes and places, highlighting masculine values of performance and accomplishment. Femininity is characterised by a preference for relationships, modesty, caring for the weak and the quality of life. Hofstede (1991) added a fifth dimension of culture, that is, long-term versus short-term orientation in life. There are a number of difficulties in testing the effect of accounting values on earnings management and link to cultural values. It is possible, however, to infer indirectly that accounting values affect earnings management and whether a relationship between Hofstede's cultural values and earnings management exists.

In this study, we propose that accounting values affect the degree of earnings management because differing accounting practices will result in different choices of accounting accruals. Guan *et al.* (2006) and Han *et al.* (2010) argue that the UA cultural dimension has negatively influenced the magnitude of earnings management. Douppnik (2008) and Gray *et al.* (2015) argue that cultural factors are important in explaining variations in earnings management practices across countries and dimensions of cultural uncertainty are strongly linked to earnings management practice. We argue that the association between UA cultural dimension and earnings management will also be influenced by the magnitude of the company's free-cash-flows. Of the four factors of Hofstede's (1983) classification of the nation's cultural values only the UA dimension has a clear relationship with earnings

management. By definition, when a nation avoids risk and creates security by emphasising technology and other infrastructures, such as buildings, laws and rules and religion, it is considered high in UA. On the other hand, a weak UA society will maintain a more relaxed atmosphere in which practice counts more than principles, and, therefore, deviance is more easily tolerated. In line with the [Guan and Pourjalali \(2010\)](#), we expect that company managers in high UA nations will practice earnings management through selecting income-decreasing accounting accruals to impact reported earnings and to alleviate future risks.

Based on the above and applying the cultural values as suggested by [Hofstede \(1983\)](#), the following hypotheses are proposed:

- H2.* Ceteris-paribus, the higher the degrees of Uncertainty Avoidance in a nation, the more likely companies will use the income-decreasing earnings management.
- H3.* Ceteris-paribus, each country's score on the uncertainty-avoidance index moderates the relationship between free-cash-flow in low-growth companies and earnings management.

2.3 Auditor quality

Agency problems between managers and investors can be mitigated through contracting that can be impacted by accounting numbers. High-quality audit services add credibility to the quality of the contracting process ([Watts and Zimmerman, 1986](#)). As part of this research, we examine the effect of audit quality on earnings management. There has been in recent history increasing pressure amongst investors, policy makers and corporate governance reformists to improve mechanisms to restrain excessive opportunistic behaviour amongst corporate management. Auditor quality is the epicentre of external monitoring, and this factor is considered to be one of key determinants of earnings management. [Watts and Zimmerman \(1986\)](#) and [DeAngelo \(1981\)](#) remark that auditor quality is influenced by the relevance of the auditor's report in examining contractual relationships and reporting on contract breaches. [Becker et al. \(1998\)](#) and [Lin and Hwang \(2010\)](#), for example, argue that high-quality auditors are more likely to detect the practice of earnings management. [Rusmin \(2010\)](#) also finds evidence that the magnitude of earnings management is significantly lower amongst companies engaging a Big 4 audit firm relative to companies using the audit services of a Non-Big 4. In addition, [Lai \(2009\)](#) and [Bliss et al. \(2011\)](#) and [Chi and Weng \(2015\)](#) suggest that higher quality auditors prefer to report errors and irregularities and are less willing to accept questionable accounting practices. From this work, the following hypotheses are proposed:

- H4.* Ceteris-paribus, high-quality auditors mitigate earnings management practices.
- H5.* Ceteris-paribus, high-quality auditors moderate the relationship between free-cash-flow in low-growth companies and earnings management.

3. Research design

3.1 Sample

This study focuses on large capitalised companies in the Asia-Pacific region that are traded publicly and listed on the Bursa Malaysia, Stock Exchange of Hong Kong, Stock Exchange of Singapore, New Zealand Stock Exchange, Australian Stock Exchange, Taiwan Stock Exchange, Indonesia Stock Exchange, Shenzhen Stock Exchange and Stock Exchange of Thailand. To test the proposed hypotheses, the data are collected from the ORBIS database. The period of the study is for the years 2005-2010. [Gray et al. \(2015\)](#) found that during this post IFRS adoption period the tendencies to engage in earnings management remain.

Consistent with prior research, all firms from the finance sector, including banks, insurance companies, unit trusts and finance firms, are eliminated from the study as firms in this sector are subject to different regulatory requirements. The final sample consists of 6,554 listed firms. Table I presents an overview of the sample together with data on DAC as the dependent variable and independent variables (FCFLG), audit quality and UA score for each of the nine countries represented in the study.

As shown in Table I, 1,546 or 23.59 per cent of sample firms are characterised as high free-cash-flow relative to their total assets. This study hypothesises that managers of high free-cash-flow companies in low-growth opportunities are more likely to choose income-increasing earnings management. The degree to which managers of firms with excessive free-cash-flow practice earnings management and the role that external monitoring system and culture play in explaining the managers' behaviour is tested by using the model described in equation (4).

A total of 45.62 per cent of sample firms are audited by Big 4 audit firms. New Zealand firms are the greatest users of Big 4 audit services (84.40 per cent), whereas only 8.44 per cent of Chinese firms avail themselves of Big 4 services. This study hypothesises that high-quality auditors mitigate earnings management practices and high-quality auditors moderate the relationship between free-cash-flow in low-growth and in earnings management. Using the methodology of Hofstede and Bond (1988) countries vary in their country's culture for UA. Taiwan is shown to have high UA score (69) compared to countries such as Singapore who have a low culture UA score (8). A reasonable interpretation is the Taiwanese managers would manage by taking risks at the lowest level to avoid the uncertainty and then adjusting their strategies carefully, whereas Singaporean managers are more optimistic and would manage by taking risk of uncertainty at much higher level. Table I indicates that, on average, firms in only three countries – New Zealand, Australia and Taiwan – are more likely to report earnings conservatively, i.e. practice income-decreasing earnings management. This study hypothesises that the higher the degrees of UA in a nation, the more likely companies will use the income-decreasing earnings management and each country's score on the

Sample	DAC	FCFLG per Country				Audit quality				UnAvoid	
		Low (0)		High (1)		Non-Big 4		Big 4			
Country	N	Mean	n	(%)	n	(%)	n	(%)	n	(%)	
Malaysia	879	0.0112	593	67.46	286	32.54	438	49.83	441	50.17	36
Hong Kong	186	0.0221	146	78.49	40	21.51	45	24.19	141	75.81	29
Singapore	574	0.0072	366	63.76	208	36.24	212	36.93	362	63.07	8
New Zealand	103	-0.0242	85	82.52	18	17.48	16	15.53	87	84.40	49
Australia	961	-0.0545	784	81.58	177	18.42	489	50.88	472	49.12	51
Taiwan	1,232	-0.0041	1,059	85.96	173	14.04	237	19.24	995	80.76	69
Indonesia	319	0.0144	256	80.25	63	19.75	201	63.01	118	36.99	48
China	1,861	0.0082	1,443	77.54	418	22.46	1,704	91.56	157	8.44	30
Thailand	439	0.0070	276	62.87	163	37.13	222	50.57	217	49.43	64
Total	6,554	-0.0028	5,008	76.41	1,546	23.59	3,564	54.38	2,990	45.62	

Table I.

Per country sample, DAC, FCFLG, audit quality and per country's cultural score for uncertainty avoidance

Notes: Legend: DAC – Discretionary accruals of firm *j* for year *t* measured by Modified Jones (1991) model; FCFLG – Free-cash-flow in low growth is an indicator variable with firm *j* scored one (1) if their relative cash flow is considered as excessive if it is above the sample median and their price to book (PB) ratio is below the sample median in fiscal year *t* otherwise is scored zero (0); Audit Quality – Audit quality is an indicator variable with firm *j* scored one (1) if their incumbent auditor in fiscal year *t* is a Big-4 firm otherwise scored zero (0); UnAvoid – A country's cultural value for uncertainty avoidance obtained from Hofstede and Bond (1988)

uncertainty-avoidance index moderates the relationship between free-cash-flow in low-growth companies and earnings management. The findings on how external monitoring and the UA cultural dimension influences managerial behaviour on earnings management are fully described in the results section.

3.2 Proxy for earnings management, high free-cash-flow, the uncertainty-avoidance cultural value and audit quality

Earnings management is proxied by unexpected or DACs. Prior to estimating DACs, total accruals (TAC) are calculated as:

$$TAC_{jt} = (\Delta CA_{jt} - \Delta Cash_{jt}) - (\Delta CL_{jt} - \Delta LTD_{jt} - \Delta ITP_{jt}) - DPA_{jt} \quad (1)$$

where:

- TAC_{jt} = total accruals for firm j in time period t ;
- ΔCA_{jt} = change current assets for firm j from time period $t-1$ to t ;
- $\Delta Cash_{jt}$ = change cash balance for firm j from time period $t-1$ to t ;
- ΔCL_{jt} = change current liabilities for firm j from time period $t-1$ to t ;
- ΔLTD_{jt} = change long-term debt included in current liabilities for firm k from time period $t-1$ to t ;
- ΔITP_{jt} = change income tax payable for firm j from time period $t-1$ to t ; and
- DPA_{jt} = depreciation and amortisation expense for firm j from time period to t .

TAC then is decomposed into normal accruals (NAC) and DAC using the cross-sectional modified Jones (1991) model. The model is defined formally as:

$$\begin{aligned} TAC_{j,t}/TA_{j,t-1} = & \alpha_j [1/TA_{j,t-1}] \\ & + \beta_{j,t} [(\Delta REV_{j,t} - \Delta REC_{j,t})/TA_{j,t-1}] \\ & + \gamma_{j,t} [PPE_{j,t}/TA_{j,t-1}] + \varepsilon_{j,t} \end{aligned} \quad (2)$$

Where:

- $TAC_{j,t}$ = total accruals for firm j in year t ;
- $TA_{j,t-1}$ = are total assets for firm j in at the end of year $t-1$;
- $\Delta REV_{j,t}$ = change net sales for firm j between years $t-1$ and t ;
- $\Delta REC_{j,t}$ = change in receivables for firm j between years $t-1$ and t ;
- $PPE_{j,t}$ = gross property, plant and equipment for firm j in the year t ; and
- ε_j = error term.

NAC is defined as the fitted values from equation (2), whereas DAC is the residual (TAC minus NAC).

Consistent with the methodology used by Chung *et al.* (2005), we determine the existence of an excessive free-cash-flow agency problem by estimating the retained cash flow (RCFO) and growth prospects of a company. Within the agency theory framework firms that retain substantial cash flows and have low-growth prospects are more likely to invest those cash flows in marginal or negative net present value projects. RCFO for each company is computed as:

$$RCFO_{jt} = (NIBD_{jt} - TAX_{jt} - INT_{jt} - PSDIV_{jt} - CSDIV_{jt}/TA_{jt-1}) \quad (3)$$

Where:

- RCFO_{*j,t*} = the retained cash flow for firm *j* in year *t*;
 NIBD_{*jt*} = the net operating income before depreciation expense for firm *j* in year *t*;
 TAX_{*jt*} = the total taxes for firm *j* in year *t*;
 INT_{*jt*} = the interest expense for firm *j* in year *t*;
 PSDIV_{*jt*} = the preferred stock dividends for firm *j* in year *t*;
 CSDIV_{*jt*} = the common stock dividends for firm *j* in year *t*; and
 TA_{*jt-1*} = the total assets for firm *j* at the end of year *t-1*.

Growth is estimated by the price to book (PB) ratio for firm *j* in year *t*. FCFLG is an indicator variable with firm *j* being scored 1 if their RCFO is above the sample median, and their PB ratio is below the sample median in fiscal year *t*; otherwise firm *j* is scored 0.

Cultural aspects are analysed to further explore the possible country effect in earnings management practices. Cultural scores for each country are obtained from Hofstede and Bond (1988). Following from earlier research (Jaggi and Low, 2000), country cultural scores are used as the measure of a firm's cultural attributes within the country specified with cultural forces measured as continuous variables (Zarzeski, 1996). Zarzeski (1996) argues that environmental changes within and outside a company are continually impacting on corporate culture and such changes are at a pace more rapid than country culture changes.

Audit quality is also considered as the quality of the auditor is likely to affect the magnitude of earnings management (Frankel *et al.*, 2002; Gul *et al.*, 2003). Prior research distinguishes between non-Big-4 and Big-4 audit firms arguing the latter to be of a higher quality than the former (Heninger, 2001; Mayhew and Wilkins, 2003). Iatridis (2015) found that the use of a Big 4 auditor reduces earnings manipulation, and, similarly, Casey *et al.* (2015) found that for clients using well-reputed auditors the use of earnings management to beat benchmarks was lessened. This study therefore includes *Big-4* as one of the predictors for earnings management behaviour.

3.3 Control variable proxies

To control for the compounding influences of cross-sectional factors a number of control variables are included in the regression analysis. This study includes firm size (*FSize*) as a number of previous studies show that litigation risk is greater for larger firms than for smaller firms (Lys and Watts, 1994; Heninger, 2001), and Nobes and Perramon (2013) find that company size is associated with accounting policy choice. *FSize* is computed as the natural logarithm of market value of equity of firm *j* for their fiscal year *t*. We also include the absolute value of total accruals (*AbsTAC*) to control for a firm's "accrual-generating potential" (Becker *et al.*, 1998). *AbsTAC* is the absolute value of TAC for firm *j* divided by total assets for firm *i* for year *t-1*. This variable is added as firms with higher absolute values of TAC are likely to have greater DACs (Krishnan, 2003). This finding contradicted the earlier work of Becker *et al.* (1998) who documented a negative relationship between *AbsTAC* and *DAC*. *Leverage* is included as prior studies show that firms with a higher likelihood of violating debt agreements are more likely to have an incentive to engage in earnings management to increase reported earnings (Mather and Ramsay, 2006). *Leverage* is measured as the ratio of total debt of firm *j* for year *t* to total assets of firm *j* for year *t*. Reynolds and Francis (2001) found that cash flow from operations directly impacts management decision-making in managing earnings and firms with surplus cash flow are more likely to adopt income-decreasing earnings management. In line with Chung *et al.* (2005), a control variable of RCFO is included in the study to control for DACs dependence on

cash flow from operations. *RCFO* is shown as the difference between cash flow from operations for firm *j* during the year *t* and *t*−1 deflated by total assets as at end of year *t*−1.

3.4 Empirical model equation

An ordinary least squares multiple regression is applied to test the hypotheses. The main regression model is defined in the following equation:

$$\begin{aligned}
 DAC_{jt} = & \alpha_0 + \alpha_1 FCFLG_{jt} + \alpha_2 UnAvoid_{jt} + \alpha_3 AuditQuality_{jt} \\
 & + \alpha_4 FCFLG * UnAvoid_{jt} + \alpha_5 FCFLG * AuditQuality_{jt} + \alpha_6 FSize_{jt} \\
 & + \alpha_7 AbsTAC_{jt} + \alpha_8 Leverage_{jt} + \alpha_9 RCFO_{jt} + \varepsilon_i
 \end{aligned} \quad (4)$$

Where:

- DAC* : Discretionary accruals of firm *j* for year *t* measured by the Modified Jones (1991) model;
- FCFLG* : Free-cash-flow in low growth companies (FCFLG) and is an indicator variable with firm *j* scored one (1) if their RCFO is considered as excessive if it is above the sample median and their PB ratio is below the sample median in fiscal year *t* otherwise is scored zero (0);
- UnAvoid* : A country's cultural scores for UA obtained from Hofstede and Bond (1988);
- Audit Quality* : Audit quality is an indicator variable with firm *j* scored one (1) if their incumbent auditor in fiscal year *t* is a Big-4 firm otherwise scored zero (0);
- FSize* : Natural logarithm of market value of equity of firm *j* for their fiscal year *t*;
- AbsTAC* : Absolute value of total accruals for firm *j* divided by total assets for firm *i* for year *t*−1;
- Leverage* : Ratio of total debt of firm *j* for year *t* to total assets of firm *j* for year *t*; and
- RCFO* : Relative cash flow measured by the difference between cash flow from operations for firm *j* during the year *t* and *t*−1 deflated by total assets as at end of year *t*−1.

4. Results

4.1 Descriptive statistics

Table II presents the descriptive statistics for the study's dependent, independent and control variables.

Table II indicates that average DACs are −0.28 per cent of the opening balance of total assets. The data show that the number of firms that have positive and negative DACs is 3,719 (56.74 per cent) and 2,835 (43.26 per cent) firms, respectively. This implies that more companies engage in income-increasing compared to income-decreasing earnings management strategies. Based on this data, we examine the degree to which the external monitoring system and national cultural value explains the managers' choice of their earnings management strategy. Approximately, 24 per cent of the sample firms are classified as having potential FCFLG agency problems. With reference to the UA cultural dimension, on average, the index score is 45.55 and as previously discussed ranges from 8 (Singapore) to 69 (Taiwan). A total of 45.62 per cent of the sample firms use the services of Big 4 audit firms and 54.38 per cent use the services of non-Big 4 audit firms. The average firm market capitalisation is US\$523.40m, and the average absolute value of total accruals (*AbsTAC*) is

Description	Mean	Median	SD	Minimum	Maximum
Panel A – Continuous variables					
<i>Dependent Variables:</i>					
DAC	-0.0028	0.0079	0.1049	-0.9607	0.8832
<i>Independent variables:</i>					
UnAvoid	45.55	40.00	16.83	8.00	69.00
<i>Control variables:</i>					
Leverage	0.5434	0.4812	1.0469	0.0064	49.6048
RCFO	-0.0101	0.0068	0.9717	-67.3238	13.9744
FSize (in million usd)	523.40	106.05	2,257.07	0.32	86,581.79
AbsTAC	0.0672	0.0390	0.1013	0.0000	0.9805
Panel B – Categorical variables				Frequency	Percentage
<i>Audit Quality</i>					
Non-Big-4				3,564	54.38
Big-4				2,990	45.62
<i>Free-cash-flow in Low Growth (FCFLG)</i>					
Low				5,008	76.41
High				1,546	23.59

Notes: Legend: *DAC* – Discretionary accruals of firm *j* for year *t* measured by Modified Jones (1991) model; *FCFLG* – Free-cash-flow in low growth is an indicator variable with firm *j* scored one (1) if their relative cash flow is considered as excessive if it is above the sample median and their price to book (PB) ratio is below the sample median in fiscal year *t* otherwise is scored zero (0); *UnAvoid* – A country’s cultural value for uncertainty avoidance obtained from Hofstede and Bond (1988); *Audit Quality* – Audit quality is an indicator variable with firm *j* scored one (1) if their incumbent auditor in fiscal year *t* is a Big-4 firm; otherwise scored zero (0); *FSize* – Natural logarithm of market value of equity of firm *j* for their fiscal year *t*; *AbsTAC* – Absolute value of total accruals for firm *j* divided by total assets for firm *i* for year *t-1*; *Leverage* – Ratio of total debt of firm *j* for year *t* to total assets of firm *j* for year *t*; *RCFO* – Relative cash flow measured by the difference between cash flow from operations for firm *j* during the year *t* and *t-1* deflated by total assets as at end of year *t-1*

Table II.
Descriptive statistics
(*N* = 6,554)

6.72 per cent of total assets as at the beginning of the year. Total debt to total assets ratio (*Leverage*) averages 0.54 per cent and ranges from 0.64 to 49.61 per cent.

4.2 Univariate analysis

Tables IV and V present the test results for differences in DACs across sub-samples formed on the basis of FCFLG and audit quality.

As shown in Table III, sample firms with high free-cash-flow have higher DACs than those of low-level FCFLG firms. The differences are highly significant at $p < 0.01$. This finding implies that firms with larger FCFLG are more likely to manage reported earnings upwards, and the findings support our first hypotheses. Table IV illustrates DACs across both non-Big 4 and Big 4 audited firms. The finding shows that sample firms audited by Big 4 auditors have marginally lower DACs. However, the difference is statistically not significant.

4.2.1 *Correlation matrix.* In Table V a correlation matrix between the dependent, experimental and control variables is depicted. The upper half of each panel reports the Pearson pairwise correlation coefficients (cr_p), whereas in the lower half, the Spearman correlation coefficients (cr_s) is shown. The correlation results do not provide overarching support for the study’s hypotheses. As expected, the *DAC* is positively and significantly

Free-cash-flow in low growth (FCFLG)	N	Mean	SD	DAC	
				t-value	Significance
Low	5,008	-0.0069	0.1097	-6.498	0.000
High	1,546	0.0105	0.0864		
	6,554				

Notes: Legend: *DAC* – Discretionary accruals of firm *j* for year *t* measured by Modified Jones (1991) model; *FCFLG* – Free-cash-flow in low growth is an indicator variable with firm *j* scored one (1) if their relative cash flow is considered as excessive if it is above the sample median and their price to book (PB) ratio is below the sample median in fiscal year *t*; otherwise is scored zero (0)

Table III.
FCFLG sub-samples

Audit quality	N	Mean	SD	DAC	
				t-value	Significance
Non-Big 4	3,564	-0.0029	0.1159	-0.017	0.986
Big 4	2,990	-0.0028	0.0900		
	6,554				

Notes: Legend: *DAC* – Discretionary accruals of firm *j* for year *t* measured by Modified Jones (1991) model; *FCFLG* – Free-cash-flow in low growth is an indicator variable with firm *j* scored one (1) if their relative cash flow is considered as excessive if it is above the sample median and their price to book (PB) ratio is below the sample median in fiscal year *t* otherwise is scored zero (0); *UnAvoid* – A country's cultural value for uncertainty avoidance obtained from Hofstede and Bond (1988); *Audit Quality* – Audit quality is an indicator variable with firm *j* scored one (1) if their incumbent auditor in fiscal year *t* is a Big-4 firm otherwise scored zero (0)

Table IV.
Audit quality sub-samples

Variables	DAC	FCFLG	UnAvoid	Audit Quality	Leverage	RCFO	FSize	AbsTAC
DAC		0.071*	-0.065*	0.001	-0.128*	0.051*	0.124*	-0.600*
FCFLG	0.087*		-0.113*	0.042*	-0.033*	0.013	-0.082*	-0.067*
UnAvoid	-0.155*	-0.121*		0.173*	-0.011	-0.011	-0.026**	0.007
Audit Quality	-0.037*	0.042*	0.197*		-0.060*	0.016	0.144*	-0.072*
Leverage	-0.097*	-0.092*	-0.037*	-0.089*		0.058*	-0.052*	0.231*
RCFO	-0.107*	0.060*	-0.030**	0.042*	-0.013		0.042*	-0.066*
FSize	0.068*	-0.099*	-0.021	0.105*	0.087*	0.174*		-0.241*
AbsTAC	-0.454*	-0.042*	0.061*	-0.047*	0.098*	-0.039*	-0.187*	

Notes: Legend: * and ** indicate significance at $p < 0.01$ and $p < 0.05$ (based on two-tailed tests); *DAC* – Discretionary accruals of firm *j* for year *t* measured by Modified Jones (1991) model; *FCFLG* – Free-cash-flow in low growth is an indicator variable with firm *j* scored one (1) if their relative cash flow is considered as excessive if it is above the sample median and their price to book (PB) ratio is below the sample median in fiscal year *t* otherwise is scored zero (0); *UnAvoid* - A country's cultural value for uncertainty avoidance obtained from Hofstede and Bond (1988); *Audit Quality* – Audit quality is an indicator variable with firm *j* scored one (1) if their incumbent auditor in fiscal year *t* is a Big-4 firm otherwise scored zero (0); *FSize* – Natural logarithm of market value of equity of firm *j* for their fiscal year *t*; *AbsTAC* – Absolute value of total accruals for firm *j* divided by total assets for firm *i* for year $t-1$; *Leverage* - Ratio of total debt of firm *j* for year *t* to total assets of firm *j* for year *t*; *RCFO* – Relative cash flow measured by the difference between cash flow from operations for firm *j* during the year *t* and $t-1$ deflated by total assets as at end of year $t-1$

Table V.
Pearson and spearman correlation matrix

($p < 0.01$) correlated with *FCFLG* both for the Pearson and Spearman correlations. On the other hand, *UnAvoid* and *DAC* are negatively correlated with cr_p and cr_s . This finding infers that countries with higher UA scores are more likely to adapt conservative accounting methods and income-decreasing earnings management practices. In addition, Table V shows a significant negative correlation for the Spearman correlation between *Audit Quality* and *DAC*. This result is consistent with our hypothesis, as well as a number of previous studies, which have shown that Big 4 auditors appear to constrain manager's discretions in adopting income-increasing earnings management practices.

The findings also show a significantly low correlation (both cr_p and cr_s) among the independent variables. The highest correlation with a coefficient of 0.197 is between *Audit Quality* and *UnAvoid*. For correlations between the control variables and between the independent and control variables the highest correlations are between *FSize* and *AbsTAC* (0.241). This value is well below the critical limit of 0.80. Therefore, for all independent and control variables multicollinearity is not a problem in the model estimations.

4.3 Results of multivariate analysis

The results of the multivariate analysis are reported in Table VI. In Panels A to C, the regression results using one independent variable are given. For Panels D to F of Table VI, the results with two independent variables are shown. In Panels G to I, the results with all independent variables included in one multiple regression model are exhibited. The main panel least squares results are reported in Panel G. The influence of the culture value dimensions (UA) and Big 4 auditors on the relationship between *FCFLG* and earnings management behaviour are reported in both Panels H and I.

The regression model estimates are reported in Table VI – Panels A to I. The results of the model are all statistically significant at p values < 0.01 , and the model explains 36.00 per cent variance in the dependent variable. Table VI shows a consistent regression result that *FCFLG* is positively and significantly associated with *DAC*. Panels A, D and E present the results when we include only *FCFLG*; *FCFLG* and *UnAvoid*; and *UnAvoid* and *Audit Quality*; consecutively. The statistical result is also still consistent when we include all the independent and control variables in the regressions (Panels G, H and I). This consistent finding across all regressions supports our *H1*, namely, there is a significant and positive association between high free-cash-flow in low growth firms and income-increasing earnings management strategies.

As shown in Table VI, Panels B, D, F, G, H, I, *UnAvoid* is negatively and significantly associated with *DAC*. This finding supports our *H2*. The negative and significant association between *UnAvoid* and *DAC* suggests that firms in countries with higher scores of UA tend to choose more conservative accounting techniques and have lower reported earnings than those companies with a low score of the UA cultural dimension.

Further investigation on the interaction term, $FCFLG \times UnAvoid$, finds a negative and moderately significant coefficient, which supports *H3*. One interpretation of this finding is that a national culture dimension, especially UA, influences and acts to deter income-increasing earnings management practices. Agency problems related to excessive free-cash-flows may result in managers of these companies adopting income-increasing earnings management practices. The magnitude of the adoption of these income-increasing management strategies in *FCFLG* firms is influenced by UA of the national cultural dimensions. As such, firms in countries having higher scores of UA would adopt a lower level of income-increasing earnings management practices than those of in lower scores of UA. This evidence is in line with past studies, for example, Gray (1988), who suggests that UA dimension can be linked to a more conservative measure of profits.

Description	Panel A		Panel B		Panel C		Panel D		Panel E		Panel F	
	Beta	t-statistic										
(Constant)	12.359*	2.927*	14.383*	14.223*	13.174*	12.907*	14.469*					
<i>F</i> <i>C</i> <i>F</i> <i>L</i> <i>G</i>	0.007		-0.001	-6.174*	0.006	2.235**	0.008	3.141*	0.008	3.141*	-0.001	-5.545*
<i>Un</i> <i>A</i> <i>v</i> <i>o</i> <i>i</i> <i>d</i>					-0.001	-5.875*	-0.009	-4.199*	-0.009	-4.199*	-0.006	-3.000*
<i>A</i> <i>u</i> <i>d</i> <i>i</i> <i>t</i> <i>Q</i> <i>u</i> <i>a</i> <i>l</i> <i>i</i> <i>t</i> <i>y</i>					0.001	0.771	0.001	0.931	0.001	0.823	0.001	0.752
<i>L</i> <i>e</i> <i>v</i> <i>e</i> <i>r</i> <i>a</i> <i>g</i> <i>e</i>	0.001	1.012	0.001	0.886	0.001	0.771	0.001	0.931	0.001	0.823	0.001	0.752
<i>R</i> <i>C</i> <i>F</i> <i>O</i>	0.001	1.144	0.001	1.132	0.001	1.128	0.001	1.105	0.001	1.189	0.001	1.171
<i>F</i> <i>S</i> <i>i</i> <i>z</i> <i>e</i>	-0.001	-1.805***	-0.001	-2.268**	0.000	-1.563	-0.001	-2.022**	-0.001	-1.220	-0.001	-1.834***
<i>A</i> <i>b</i> <i>c</i> <i>T</i> <i>A</i> <i>C</i>	-0.624	-57.382*	-0.627	-57.928*	-0.628	-57.936*	-0.625	-57.569*	-0.625	-57.537*	-0.628	-58.025*
<i>Model summary</i>												
<i>R</i> -squared	0.361		0.363		0.361		0.364		0.362		0.364	
Adjusted <i>R</i> ²	0.360		0.363		0.361		0.363		0.362		0.364	
<i>F</i> -statistic	738.104*		747.332*		740.529*		623.989*		619.587*		625.038*	
Sample size	6,554		6,554		6,554		6,554		6,554		6,554	

(continued)

Table VI.
Multiple regressions
for testing the
hypotheses and
control variables

Table VI.

Description	Panel G		Panel H		Panel I	
	Beta	t-statistic	Beta	t-statistic	Beta	t-statistic
(Constant)		13.202*		11.353*		13.028*
<i>FCFLG</i>	0.006	2.462*	0.021	3.147*	0.010	3.043*
<i>UnAvoid</i>	-0.001	-5.190*	-0.001	-3.207*	-0.001	-5.294*
<i>Audit quality</i>	-0.007	-3.173*	-0.007	-3.342*	-0.005	-1.882***
<i>Leverage</i>	0.001	0.794	0.001	0.798	0.001	0.813
<i>RCFO</i>	0.001	1.144	0.001	1.139	0.001	1.127
<i>FSize</i>	-0.001	-1.543	-0.001	-1.446	-0.001	-1.558
<i>AbcTAC</i>	-0.626	-57.665*	-0.625	-57.652*	-0.625	-57.633
<i>FCFLG*UnAvoid</i>			-0.001	-2.398**		
<i>FCFLG*Big 4</i>					-0.009	-1.824***
<i>Model summary</i>						
R-squared		0.365		0.365		0.365
Adjusted R ²		0.364		0.365		0.364
F-statistic		537.027*		470.959*		470.482*
Sample size		6,554		6,554		6,554

Notes: Legend: *, **, and *** indicate significance at $p < 0.01$, $p < 0.05$ and $p < 0.10$, respectively (based on two-tailed tests); *DAC* – Discretionary accruals of firm j for year t measured by Modified Jones (1991) model; *FCFLG*: Free-cash-flow in low growth is an indicator variable with firm j scored one (1) if their relative cash flow is considered as excessive if it is above the sample median and their price to book (PB) ratio is below the sample median in fiscal year t otherwise is scored zero (0); *UnAvoid* – A country's cultural value for uncertainty avoidance obtained from Hofstede and Bond (1988); *Audit Quality* – Audit quality is an indicator variable with firm j scored one (1) if their incumbent auditor in fiscal year t is a Big-4 firm otherwise scored zero (0); *FSize*: Natural logarithm of market value of equity of firm j for their fiscal year t ; *AbcsTAC*: Absolute value of total accruals for firm j divided by total assets for firm t for year $t-1$; *Leverage* – Ratio of total debt of firm j for year t to total assets of firm j for year t ; *RCFO* – Relative cash flow measured by the difference between cash flow from operations for firm j during the year t and $t-1$ deflated by total assets as at end of year $t-1$

As shown in Table VI, Panels C, E, F, G, H, I, the statistical analyses present a consistent result that *Audit Quality* is negatively and significantly associated with *DAC*. This finding supports our *H4*. This finding would suggest that Big-4 audit firms provide a higher quality audit and thus are more able to constrain earnings management practices. Our finding is consistent with previous studies such as the study of Bliss *et al.* (2011), which finds a statistically significant a negative coefficient sign on the association between *Audit Quality* and *DAC*.

Additionally, the coefficients for the interaction of Big 4 auditors with the high free-cash-flow (*FCFLG***Audit Quality*) are negative and significant (Panel I) and give support for *H5*. This result is consistent with the argument that Big 4 auditors act to constrain income-increasing earnings management and exert influence when clients have surplus free-cash-flow (Chung *et al.*, 2005). The extent of the adoption of income-increasing management strategies in FCFLG firms is influenced by an auditor's reputation. Big 4 audit firms moderate the income-increasing earnings management strategies.

The results of the analysis of the control variables including firm size, absolute value of TAC, leverage and RCFO are shown in Table VI. From the table, it can be seen that *FSize* is negatively associated with *DAC* and an association between *FSize* and *DAC* is apparent when we include variables *UnAvoid* and (or) *FCFLG* (Table VI, Panels A, B, D) or *Audit Quality* and *UnAvoidance* (Table VI, Panel F). *FSize* is not significantly associated with *DAC* when all independent variables are included in the regression (Table VI, Panel I). Our results indicate that firm size will influence managers' opportunistic behaviour; however, this association is affected by auditor quality and national culture. Consistent with previous studies on earnings management (Becker *et al.*, 1998; and Krishnan, 2003), the absolute total accrual variable is significantly associated with managers' opportunistic behaviour in earnings management. Although Leverage and RCFO are positively association with *DAC*, this association is not statistically significant.

4.4 Additional sensitivity and robustness checks

We perform a number of additional sensitivity and robustness checks to ensure the inferences drawn are valid. First, we use working capital accruals (WCA) to measure earnings management, and, second, we disaggregate the results on the basis of a firm's performance.

WCA to measure DACs has been extensively applied in the literature. Young (1999) claims that WCA is better measurement for estimating DACs than TAC because of the latter driving long-term accruals which are considered to be not an effective means of managing earnings. WAC is defined as the change in non-cash current assets less the change in current liabilities (excluding the current portion of long-term debt). Hence, WAC uses a balance sheet approach and is computed as follows:

$$WAC_{it} = (\Delta CA_{it} - \Delta Cash_{it}) - (\Delta CL_{it} - \Delta LTD_{it} - \Delta ITP_{it})$$

Where:

- WAC_{it} = working capital accruals for company *i* in year *t*;
- ΔCA_{it} = change current assets for company *i* between year *t* - 1 and *t*;
- $\Delta Cash_{it}$ = change cash balance for company *i* between year *t* - 1 and *t*;
- ΔCL_{it} = change current liabilities for company *i* between year *t* - 1 and *t*;
- ΔLTD_{it} = change long-term debt included in current liabilities for company *i* between year *t* - 1 and *t*; and
- ΔITP_{it} = change income tax payable for company *i* between year *t* - 1 and *t*.

Table VII depicts the results of multivariate regressions using WCA to measure earnings management practices.

As shown in Table VII, the main variables of interest, FCFLG, UnAvoid and Audit Quality, are statistically significant with signs as expected. These results are in line with the initial findings reported in Table VII. In addition, to enable the employment of the *modified Jones (1991)* model as our main model for measuring earnings management, we estimated DACs using alternative techniques including:

- the original specified *Jones (1991)* model; and
- inclusion (in separate estimations) to the *modified Jones (1991)* model of cash flow operating activities (*Kim et al., 2003*) and return on assets (*Kothari et al., 2005*).

The findings from the use of alternative DAC model estimates do not result in any significant qualitative change in our initial findings as reported in Table VI.

Table VIII gives the regression results of firms that experienced financial difficulties. The main panel least squares results are reported in Panel A. The influence of the culture value dimensions (UA) and Audit Quality (Big 4 auditors) on the relationship between high free-cash-flow and earnings management behaviour are shown in Panels B and C, respectively.

Description	Panel A		Panel B		Panel C	
	Beta	<i>t</i> -statistic	Beta	<i>t</i> -statistic	Beta	<i>t</i> -statistic
(Constant)		8.933*		7.524*		8.767*
<i>FCFLG</i>	0.072	2.850*	0.222	3.323*	0.115	3.332*
<i>UnAvoid</i>	-0.003	-4.629*	-0.002	-2.711*	-0.003	-4.734*
<i>Audit Quality</i>	-0.064	-2.957*	-0.068	-3.127*	-0.042	-1.689***
<i>Leverage</i>	0.130	2.887*	0.132	2.919*	0.132	2.923*
<i>RCFO</i>	-0.405	-4.168*	-0.407	4.185*	-0.408	-4.193*
<i>FSize</i>	-0.005	-0.769	-0.004	-0.672	-0.005	-0.784
<i>AbsTAC</i>	-0.369	-48.587*	-0.367	-48.580*	-0.366	-48.562*
<i>FCFLG*UnAvoid</i>			-0.003	-2.431**		
<i>FCFLG*Big 4</i>					-0.091	-1.835***
<i>Model summary</i>						
<i>R</i> ²		0.289		0.290		0.289
Adjusted <i>R</i> ²		0.288		0.289		0.288
<i>F</i> -statistic		379.647*		333.179*		332.732*
Sample size		6,554		6,554		6,554

Notes: Legend: *, **, and *** indicate significance at $p < 0.01$, $p < 0.05$ and $p < 0.10$, respectively (based on two-tailed tests); *DAC* – Discretionary accruals of firm *j* for year *t* measured by Modified *Jones (1991)* model; *FCFLG* – Free-cash-flow in low growth is an indicator variable with firm *j* scored one (1) if their relative cash flow is considered as excessive if it is above the sample median and their price to book (PB) ratio is below the sample median in fiscal year *t* otherwise is scored zero (0); *UnAvoid* – A country’s cultural value for uncertainty avoidance obtained from *Hofstede and Bond (1988)*; *Audit Quality* – Audit quality is an indicator variable with firm *j* scored one (1) if their incumbent auditor in fiscal year *t* is a Big-4 firm otherwise scored zero (0); *FSize* – Natural logarithm of market value of equity of firm *j* for their fiscal year *t*; *AbsTAC* – Absolute value of total accruals for firm *j* divided by total assets for firm *i* for year *t-1*; *Leverage* - Ratio of total debt of firm *j* for year *t* to total assets of firm *j* for year *t*; *RCFO* – Relative cash flow measured by the difference between cash flow from operations for firm *j* during the year *t* and *t-1* deflated by total assets as at end of year *t-1*

Table VII.
Multiple regressions:
discretionary working
capital accruals

Description	Panel A			Panel B			Panel C		
	Poor Beta	Good Beta	t-statistics	Poor Beta	Good Beta	t-statistics	Poor Beta	Good Beta	t-statistics
(Constant)	0.013	0.004	6.112*	0.044	0.019	4.907*	0.017	0.009	6.145*
<i>FCFLG</i>	-0.001	-0.001	1.439**	-0.001	-0.001	1.926**	-0.001	0.009	2.320**
<i>UnAvoid</i>	-0.010	-0.010	-0.837	-0.010	-0.011	-0.443	-0.008	-0.001	-1.028
<i>Audit quality</i>	0.005	0.014	-3.532*	0.005	0.014	-3.768*	0.005	-0.008	-2.374**
<i>Leverage</i>	-0.070	0.046	2.795*	-0.070	0.041	2.852*	-0.070	0.014	2.847*
<i>RCFO</i>	0.006	-0.003	-4.029*	0.006	-0.003	-4.052*	0.006	-0.041	-4.052*
<i>FSize</i>	-0.484	-0.675	-3.553*	-0.483	-0.675	-3.530*	-0.483	-0.003	-3.605*
<i>AbcTAC</i>			-55.941*			-55.983*			-55.953*
<i>FCFLG*UnAvoid</i>				-0.001	-0.001	-3.095*			
<i>FCFLG*Big 4</i>							-0.006	-0.011	-1.881***
<i>Model summary</i>									
R-squared	0.217	0.415		0.217	0.416		0.217	0.416	
Adjusted R-squared	0.213	0.414		0.213	0.416		0.213	0.415	
F-statistic	64.414*	497.556*		56.395*	437.322*		56.405*	436.029*	
Sample size	1,639	4,915		1,639	4,915		1,639	4,915	

Notes: *, **, and *** indicate significance at $p < 0.01$, $p < 0.05$ and $p < 0.10$, respectively (based on two-tailed tests); *DAC* – Discretionary accruals of firm j for year t measured by Modified Jones (1991) model; *FCFLG* – Free-cash-flow in low growth is an indicator variable with firm j scored one (1) if their relative cash flow is considered as excessive if it is above the sample median and their price to book (PB) ratio is below the sample median in fiscal year t otherwise is scored zero (0); *UnAvoid* – A country's cultural value for uncertainty avoidance obtained from Hofstede and Bond (1988); *Audit Quality* – Audit quality is an indicator variable with firm j scored one (1) if their incumbent auditor in fiscal year t is a Big-4 firm otherwise scored zero (0); *FSize* – Natural logarithm of market value of equity of firm j for their fiscal year t ; *AbcTAC* – Absolute value of total accruals for firm j divided by total assets for firm j for year $t-1$; *Leverage* – Ratio of total debt of firm j for year t to total assets of firm j for year t ; *RCFO* – Relative cash flow measured by the difference between cash flow from operations for firm j during the year t and $t-1$ deflated by total assets as at end of year $t-1$

As shown in Table VIII, FCFLG has significantly positive coefficients in all columns. The magnitudes of the coefficients are much higher in poor performing companies when compared with those of healthy firms. This evidence infers that FCFLG has a stronger impact on income-increasing earnings management for poor financial performance firms.

A negative sign and statistically significant coefficients on *Audit Quality* in all columns with the exception of Panel C-Poor performance firms are consistent with the main results tabulated in Table VI. The coefficients on *UnAvoid* are all negative but are statistically insignificant. The interaction term, $FCFLG \times UnAvoid$ and $FCFLG \times Audit\ Quality$, is statistically significant with good performing firms. This evidence suggests that culture dimension (UA) and the presence of Big 4 auditors mitigate the magnitude of the association between FCFLG and income-increasing earnings management especially in have well performing companies. The results of the sensitivity analysis and robustness tests validate the main results.

5. Conclusion

The growing importance of free trade agreements together with the recent financial and economic crises and high profile corporate collapses has engendered considerable debate on the quality of reported earnings and financial reporting. In this study, we scrutinise the relationships between FCFLG and earnings management and the direct and moderating effect of national culture and audit quality. In our paper, we control for *Leverage*, *RCFO*, *Size* and *Absolute Value of Total Accruals* and provide three explanations for the relation between FCFLG, earning management and culture and audit quality. The first explanation is based on agency theory. Managers of companies with excessive free-cash-flow will make investment decisions that are not always in the best interest of the shareholders and use accounting discretion to increase reported earnings. The empirical results presented in this paper provide support for this proposition and *H1*. The finding suggests that company managers with free-cash-flow in low growth tend to use discretion in selecting income-increasing accounting choices. The second explanation is that UA cultural aspects explain managers' accounting choices. Specifically, countries with a high score of UA tend to choose more conservative accounting techniques and report earnings. We also find evidence that this culture dimension acts to mitigate the degree of earnings management in companies that have high free-cash-flow with low growth. This finding supports our *H2* and *H3*. The third explanation is based on the effectiveness of external monitoring by high-quality auditors in deterring opportunistic earnings management. This study finds that firms audited by Big 4 accounting firms have lower DACs. Both *H4* and *H5* are therefore supported suggesting that high audit quality moderate the FCFLG-DAC relationship. Thus, these findings suggest that external monitoring by Big 4 auditors is effective in deterring managers' opportunistic behaviour in companies with free-cash-flow and low growth opportunities.

Consistent with Chung *et al.* (2005), we find that agency theory explains the relationship between high free-cash-flow in low growth and managers' income-increasing accounting. In addition to Ball *et al.* (2000), Fan and Wong (2002) document that cultural values influence the magnitude of earnings management. Similarly, we find that UA significantly affects earnings management and the FCFLG-DAC relation in Asia-Pacific economies. *In summary*, this study provides additional evidence of earnings management behaviour on companies with excessive free-cash-flow, and it assists in explaining the role of UA of cultural aspects on the managers' behaviour and the role of external monitoring as proxied by the use of a Big 4 auditor in mitigating this opportunistic behaviour. The results of a number of additional sensitivity and robustness checks provide supports that the inferences drawn are valid.

Whilst control variables incorporated in the regression models are all validated by prior research, there may other variables impacting managers' opportunistic behaviour. A number of previous accounting studies (Ball *et al.*, 2000; Fan and Wong, 2002; Han *et al.*, 2010) have shown that in addition to accounting standards, features of the institutional environment also explains the difference in the quality of accounting information across countries. We extend their study by examining auditor quality as a proxy for external monitoring. Other proxies for culture such as a religion dimension and other national attributes such as legal aspects including investor protection and political variables could form the basis of future work in this arena.

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