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## Article

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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

# The impacts of audit committee expertise on real earnings management: Evidence from Hong Kong

Kwok Yip Cheung<sup>1\*</sup> and Chi Veng Chung

**Abstract:** This study examines the impacts of seven types of audit committee expertise (accounting academic, auditing, finance academic, CEO or finance director, other finance, industry and legal expertise) on real earnings management. 1054 firm-year observations are used in the study. The sample firms are collected from Hong Kong Hang Seng Composite Index between 2010 and 2015. Real earnings management are measured as abnormal cash flows, abnormal production costs, and abnormal discretionary expenditures. Using dynamic panel difference GMM model that is robust for endogeneity caused by reverse causality, we find that Hong Kong firms having strong audit committee expertise are more likely to have higher levels of real earnings management. Overall, our findings support the view that the strong accounting, finance and legal experts on the audit committee, no matter whether they have practical experience or academic experience, encourage managers to switch their earnings management strategies whilst CFO or finance director expertise constrains real earnings management. The findings are of potential interest to policymakers, professionals, boards of directors, audit firms and academics.

**Subjects:** Economics; Finance; Business, Management and Accounting

**Keywords:** agency theory; audit committees; oversight effectiveness; discretionary accruals; Hong Kong

### 1. Introduction

Earnings management can be recognized as accrual earnings management and real earnings management. Accrual earnings management is the managerial manipulation of earnings via the flexibility of accounting methods and estimates, which has no direct impact on cash flows. The professional qualifications and expertise may be effective to curtail accruals earnings management, which require strong skills in accounting and financial treatment of transactions. Prior studies show that accounting, finance, industry and legal experts on the audit committee have deterred accrual earnings management (Bedard & Gendron, 2010; R. Cohen et al., 2014; Krishan et al., 2011). In contrast with accrual earnings management, little research has been conducted in real earnings management (Zang, 2012). However, real earnings management lowers investment efficiency (Cohen et al., 2008) and future operating performance (Gunny, 2010), reducing returns to shareholders. The boards are responsible for the overall returns and financial reporting quality for shareholders, so the boards, particularly the audit committees, have the duties to oversee real earnings management.

The audit committee is responsible for overseeing behavior of management and enhancing financial reporting quality (Bedard et al., 2004). If the audit committee finds that there are usual accounting changes, they must discuss these items with management as required by Sarbanes-Oxley (2002) (hereafter SOX; Sun & Lan, 2014). Through effective discussion with management, the effective audit committee can limit opportunistic behavior of management (Robert, 2002). Expert members having more sophisticated expertise understand better accounting treatment and changes in some accounts. Visvanathan (2008) and Carcello et al. (2006) agree that the audit committee members possessing accounting and auditing knowledge can promote effective control of the financial report.

The debate, therefore, centers on the definition of audit committee expertise. A narrow definition refers to accounting expertise with accounting knowledge and experience, whereas a broad definition also includes non-accounting financial expertise such as supervisory or finance experience. While SOX in the US adopts a narrow definition, Hong Kong Stock Exchange (HKEx) adopts a broad definition. It states that at least one of the independent non-executive directors must have appropriate professional qualifications or accounting or related financial management experts<sup>1</sup>

The broad definition of expertise includes academic, auditing, CFO or finance director, other finance, industry, and legal expertise. Similar to the definition of expertise in Hong Kong, Choi et al. (2004) who investigates the impacts of audit committee expertise on earnings management, recognizes expertise as financial expertise, accounting expertise, the expertise of current or former university professors, the expertise of current or former employees working in other companies and expertise in law. They find that the presence of accounting or finance professors and the employees of financial institutions on the committee constrains earnings management.

The advantage of having financial experts on the audit committee is their capability to understand and oversee accounting issues and financial reporting process. Essentially, the audit committee has the power to control managers as they have expertise (Bedard & Gendron, 2010; Zalata et al., 2018). Furthermore, the audit committee financial experts have a better understanding of the appropriateness of managers' accounting choices (Li et al., 2012) and limit earnings management. (Zalata et al., 2018). The audit committee having the power from their financial expertise is in a better position to require the managers to diligently consider the appropriateness of their accounting treatment and the use of expenditure. Therefore, financial expertise is considered to be prominent for the audit committee to fulfill their responsibility. The arguments are supported by the prior studies. Sun and Lan (2014) conclude that audit committee accounting-financial expertise improves their oversight effectiveness. Badolato et al. (2014) agree that the audit committee having financial expertise is more effective to monitor quality of earnings. Bedard et al. (2004) observe that the audit committee having financial experts will discourage aggressive accounting choices. Similarly, Krishnam and Visvanathan (2009) agree that firms with the audit committee that consists of financial experts are more conservative in their accounting choices.

Non-accounting financial expertise improves the audit committee's ability to oversee the financial reporting process. As these experts have financial analysis expertise, they may have a better understanding of the appropriateness of the amount of expenditure in the firms. Dhaliwal et al. (2010) document that investment bankers and financial analysts complement accounting experts to enhance their oversight quality. Kusnadi et al. (2016) suggest that the composition of accounting, finance and supervisory expertise enables the audit committee to monitor financial reporting proves. They observe that the presence of accounting expertise has a positive correlation with financial reporting quality, but the presence of mere finance or supervisory expertise in the audit committee does not significantly affect financial reporting quality. Addition to accounting or non-accounting financial expertise, Abernathy et al. (2013), who suggest that audit experience is important as the audit committee understands the appropriateness of the internal and external audit processes, finds that the audit committee having more audit expertise enable them to improve financial reporting quality.

Some researchers go beyond the definitions of accounting, auditing, or financial expertise. They suggest that the audit committee that consists of other financial and non-financial expertise understand better the rational nature of accounting operations. They can provide advice on issues relating to risk, industrial common practices and legal situations (Ghafran & O'Sullivan, 2017; Zahn & Sultana, 2015). For instance, DeZoort and Salterio (2001) observe that in addition to accounting and auditing expertise, the audit committee members should have sufficient expertise in law.

We extend the existing research by investigating whether various professional expertise enables audit committees to constrain real earnings management. We perform analyses using Hong Kong firms for four reasons. First, family ownership and family members on the board are not rare among firms in Hong Kong (Tsui & Stott, 2004). Hong Kong is ranked as the third for having high family ownership of listed companies. Furthermore, Hong Kong firms rely on personal networking systems to manage corporate governance structure. Thus, firms rely on informal relationships rather than formal written contracts. As a result, the appointment of the audit committee expertise may not be dependent on their ability but informal relationships (Tsui & Stott, 2004). Owing to the concentration on the ownership in the hands of family members, minority shareholders may be taken advantage of as the controlling members may make decisions for their own benefits. The audit committee having professional expertise will be even more important to oversee company activities given the unique context in Hong Kong. Concentrated family ownership is prevalent in both developed and developing countries. For instance, 90% of the US listed firms are controlled by family members (Poza, 2007). In addition, one-third of the S&P firms and the Fortune 500 companies contains firms having founding families on the board (Anderson & Reeb, 2003; Shleifer & Vishny, 1986). In East Asian countries, family ownership is even more prevalent. Family members have controls among two-thirds of the firms (Claessens et al., 2002). In Western Europe, about 44% of the firms are family controlled (Faccio & Lang, 2002). Second, Hong Kong adopts principle-based rather than rule-based corporate governance structure. The composition of the audit committee members and oversight quality from them highly depend on the judgment of the audit committee members. To exercise high-quality judgment, the audit committee must have relevant expertise to perform their role. The findings of the studies may be generalized to countries with strong family ownership and principle-based corporate governance structure.

The purpose of this study is to investigate the effects of various audit committee expertise on real earnings management, an issue becoming even more crucial after Asian Financial Crisis in 2008 as managers may largely reduce firms' real activities in order to show that they can maintain good earnings after financial crisis (Arthur et al., 2015). Therefore, this period of time is particularly useful for the study of audit committees' oversight on real earnings management. This study investigates whether real earnings management is affected by seven audit committee expertise including:

- (1) accounting academic expertise;
- (2) auditing expertise;
- (3) finance academic expertise;
- (4) CFO or finance director expertise;
- (5) other finance expertise;
- (6) industry expertise;
- (7) legal expertise.

Following Roychowdhury (2006) we use abnormal operating cash flow, abnormal discretionary expenditures, and abnormal production costs to measure real earnings management. We observe that accounting and finance academic expertise as well as auditing expertise encourage managers to

manipulate discretionary expenditure downward whilst CFO or finance director expertise and other finance expertise constrain the manipulation. Legal expertise constrains sales manipulation but invites managers to engage in manipulation of production costs. We do not find evidence that industry expertise per se affects real earnings management. Interestingly, we observe that the audit committee with both audit and legal expertise curtails manipulation through discretionary expenditures.

Our study contributes to the literature in the following ways. First, there is the first research that has extensively examined the effects of various audit committee expertise on real earnings management in Hong Kong. Given the concentrated shareholdings and family control, executives have strong power to manipulate earnings, so the audit committees become even more important to oversee the executives. Second, our unique findings show that the impacts of various accounting, finance, auditing and legal expertise are not homogeneous. This may explain why prior studies find insignificant effects of audit committee expertise on real earnings management as some of the expertise have cancelling effects. Third, we find that while auditing expertise promotes earnings management, the interactions between auditing and industry expertise constrain real earnings management. This could provide inspirations to the policymakers to mandate that the audit committee should have at least one audit expert and one industry expert.

The remainder of the paper is organized as follows: Section 2 develops the hypotheses, followed by a description of the research design in Section 3. Section 4 analyzes and discusses the empirical results and Section 5 concludes the paper.

## **2. Literature review and hypothesis development**

### **2.1. Literature review**

The prior literature on earnings management focuses largely on accrual earnings management (Healy & Wahlen, 1999). However, fewer studies investigate that managers manipulate real transactions to distort earnings. Graham et al. (2005) survey more than 400 executives and notice the widespread use of real earnings management. Eighty percent of the CFOs agree that they decrease expenditure on R&D, advertising and maintenance to meet the earnings target. 55 percent of the participants explain that they postpone a new project although the postponement decreases firm value. In line with the survey, prior studies have examined managerial manipulation in R&D expenditure (Cheng, 2004), advertising expenditures (Cohen et al., 2010), stock repurchases (Hribar et al., 2006) and securitization (Dechow & Shakespeare, 2009) as well as sales, discretionary expenditures and inventory (Roychowdhury, 2006).

Recent research has started to examine the effects of boards or audit committees' monitoring on real earnings management. As real earnings management distorts the quality of information conveyed by firms and the integrity of financial statements, the boards and the audit committee have duties to limit it (Kang & Kim, 2012). Visvanathan (2008) concludes that the number of audit committee meetings constrains manipulation of discretionary expenditure. Garvan (2009) documents that firms, which have more audit committee directorships, are more likely to constrain real earnings management. Carcello et al. (2008) investigate the impacts of audit committee accounting financial expertise on abnormal production costs and abnormal discretionary expenditure. They document that audit committee accounting financial expertise has no association with abnormal production costs while it is positively associated with abnormal discretionary expenditure for firms with weak corporate governance structures.

In summary, prior studies show that audit committee characteristics may be important determinants of real earnings management. However, there is limited research into the relationships between various audit committee expertise and real earnings management, which is likely to be more salient in Hong Kong. Thus, it is warranted to conduct more research on this topic.

## 2.2. Hypothesis development

The audit committee is a committee that monitors the performance of the boards in financial reporting and internal control (Bedard & Gendron, 2010). To fulfil the role effectively, the Hong Kong Corporate Governance Code (Appendix 14) has required that the audit committees in Hong Kong have at least one of the members who has appropriate professional qualifications or accounting or related financial management expertise. Audit committees must possess financial expertise which enables them to understand financial reporting so that they can give assessment and evaluation of the fairness and integrity of financial statement to protect shareholders and perform their supervision functions (Defond et al., 2005).

Prior studies examine the relationships between audit committee expertise and real earnings management. The results are mixed. Abdul-Manaf et al. (2019) examine the role of audit committees in constraining earnings manipulation in firms listed on Bursa Malaysia between 2014 and 2017. Audit committee expertise is measured as the proportion of audit committee members with accounting or finance background or experience. They note that audit committee expertise is important to curb real earnings management. Mardessi and Fourati (2020) investigate the effects of audit committee on real earnings management in Dutch context during the period between 2010 and 2017. They find that audit committee financial expertise reduces real earnings management through manipulation of discretionary expenditures, sales and production cost. Thiruvadi et al. (2021) measure expertise as whether the audit committee chair has CPA license or prior audit experience. They note that audit committee chair with prior audit experience are more likely to constrain real earnings management. Baatwah et al. (2020) examine the effects of audit committees' financial expertise and religiosity on real earnings management. They document that a leader with religious belief and accounting expertise dramatically lower real earnings management.

However, other studies have found that the audit committee accounting and finance expertise is insignificant to curb real earnings management. Sagitaria and Mita (2019) examine the effects of audit committee financial expertise and their status on real earnings management. The financial expertise is measured as educational background in accounting and finance and CPA certification. They conclude that audit committee financial expertise is not significantly associated with real earnings management while its status reduces real earnings management. Sun and Lan (2014) investigate the impacts of various audit committee characteristics on real earnings management. They found that the audit committee's accounting financial expertise is not significantly associated with real earnings management. Susanto and Pradipta (2016) examine the effects of corporate governance on real earnings management. In their study, financial expertise is measured as accounting work experience. They found that audit committee expertise is not significantly related to real earnings management.

One study finds that audit committee financial expertise is even positively related to real earnings management. Fuad (2016) examines the impact of audit committees on real earnings management using manufacturing public listed companies from Indonesia Stock Exchange between 2012 and 2014. Audit committee financial expertise is measured as the number of financial accounting experts on the audit committee. They found that audit committee expertise promotes real earnings management.

The above studies largely measure audit committee expertise as accounting and finance background. However, they consider that all accounting and finance background is homogeneous. Some studies above show insignificant effects on real earnings management probably due to the cancelling effects of various accounting and finance expertise. Therefore, in this study, we have measured audit committee accounting and finance expertise in terms of auditing, academic, CFO or finance director expertise and other financial expertise so that we can understand different impacts of various accounting and finance expertise on real earnings management. As prior studies show mixed results, we have, therefore, formulated the following non-directional hypotheses:



H1a: Audit committee accounting academic expertise is significantly related to real earnings management.

H1b: Audit committee auditing expertise is significantly related to real earnings management.

H1c: Audit committee finance academic expertise is significantly related to real earnings management.

H1d: Audit committee CFO or finance director expertise is significantly related to real earnings management.

H1e: Other audit committee finance expertise is significantly related to real earnings management.

R. Cohen et al. (2014) suggest that the industry experts on the audit committee have a better understanding of the nature and extent of audit and accounting process within an industry, so they can ask managers more challenging questions about the processes. They note that industry and accounting experts on the audit committee help to limit restatement and discretionary accruals. Wang et al. (2015), who investigate the impacts of the industry expertise of the audit committee on affects board oversight effectiveness, note that the industry experts on the audit committee, similar to R. Cohen et al. (2014), lowers accrual earnings management. Falye et al. (2018) argue that industry expertise provides personal networks for gathering information to evaluate the appropriateness of transactions in the industry. They found that board industry expertise reduces real earnings management via research and development expenditure. As the effects of audit committee industry expertise on real earnings management have not been examined in Hong Kong, we investigate this issue and have formulated the following hypothesis:

H2: Audit committee industry expertise is negatively related to real earnings management.

We extend audit committees' legal expertise research on real earnings management to Hong Kong. Krishan et al. (2011) argue that directors with legal expertise understand legal liability that can arise from poor quality information and are more sensitive to litigation risk arising from poor oversight efforts. Legal experts can help enhance reporting quality indirectly through inquiry and questioning or through mergers and acquisitions, asset sales, distribution to shareholders, which require high levels of skills in law due to the complex nature. Krishan et al. (2011) find that audit committees' legal expertise enhance financial reporting quality. Sterlin (2020) investigates the influence of audit committee expertise on control decisions. He found that firms having industry and legal experts on the audit committees are less likely to opt out of first-year target internal control over financial reporting integration that provides an indirect path through which industry and legal expertise reduce the likelihood of misstatement.

Ghaleb et al. (2021) argue that managers in countries that have a strong legal regime or well developed regulations prefer to shift their earnings management strategies from accruals earnings management to real earnings management (Choi, et al. 2018) as regulation restricts accrual earnings management, but not real earnings management. Therefore, managers have high flexibilities to manage real activities as the reduction in real activities depend heavily on the managers' discretion. In their study, legal expertise is measured as whether the audit committee chair has legal qualification and expertise. They found that the audit committee chair's legal expertise promotes real earnings management. The effects of audit committee legal expertise on real earnings management have not been examined in Hong Kong. Since prior studies suggest that audit committee legal expertise may constrain or promote real earnings management, we have formulated non-directional hypothesis as follows:



**Table 1. Sample firms by industries**

Industry names	Number of firms
Consumer goods	319
Consumer services	156
Energy	109
Industrials	176
Information Technology	80
Properties and Construction	214
Total	1054

H3: Audit committee legal expertise is significantly related to real earnings management.

### 3. Research design

#### 3.1. Sample and data collection

The sample firms are selected from Hong Kong's Hang Seng Composite Index between 2010 and 2015 because 95% of market capitalisation of the listed companies are covered (Hang Seng Indexes, 2022). The research is conducted in this period as managers are more likely to engage in real earnings management soon after the financial crisis. Therefore, this sets up a good venue for examining how various expertise impacts real earnings management. The data for the audit committee and board members are found in the annual report. Financial data for control variables and estimating real earnings management are collected from Datastream and annual reports of firms. The firms in financial industries are removed due to their special accounting practices (Peasnell et al., 2000). The firms having no financial data or director information are eliminated. The final sample contains 1054 firm year observations. Table 1 shows the composition of the firms in a sample by industries. Table 2 presents the definitions and measurements of variables in the study.

#### 3.2. Definitions and measurements of variables

##### 4. Dependent variables: real earnings management

Extensive amount of research have used three proxies discussed below as measures of real earnings management developed by Roychowdhury (2006). Scholars have also provided evidence that these measures capture real activities manipulation (Cohen & Zarowin, 2010; Owusu et al., 2022; Zang, 2012). Consistent with Roychowdhury (2006), I consider three proxies (manipulation of production levels discretionary expenditures, and sales) for real earnings management.

Manipulation of production cost can be measured abnormal production costs ( $PRODDA_{it}$ ). Prior studies (Cohen et al., 2008; Roychowdhury, 2006; Zang, 2012) define production costs as the sum of the cost of goods sold and change inventory during the year. They calculate the normal level of production costs as a linear function of sales in the current period, change in sales in the current period and change in lagged sales for one year. Abnormal production cost is computed as the difference between the actual values of production costs and the normal levels of production cost from Eq.1. Abnormal production cost is estimated cross-sectionally for each industry and year.

$$PROD_{it} = \beta_1 \left( \frac{1}{A_{it-1}} \right) + \beta_2 \left( \frac{S_{it}}{A_{it-1}} \right) + \beta_3 \left( \frac{\Delta S_{it}}{A_{it-1}} \right) + \beta_4 \left( \frac{\Delta S_{it-1}}{A_{it-1}} \right) + e_{it} \quad (1)$$

Manipulation of discretionary expenditures can be measured as abnormal discretionary expenditures ( $DISCDA_{it}$ ). Following previous studies (Cohen et al., 2008; Cohen & Zarowin, 2010; Roychowdhury, 2006; Zang, 2012), discretionary expenditures are modelled as a linear function of lagged sales for one year. The following model is used to find the abnormal levels of discretionary expenses cross-sectionally for each industry and year. The discretionary expenditures are

**Table 2. Definitions and measures of variables**

<b>Variables</b>	<b>Definitions and Measures</b>
AGGRM	Overall measures of real earnings management measured as abnormal production cost less abnormal discretionary expenditure and abnormal operating cash flow
DISCDA	Abnormal discretionary expenditure
CFODA	Abnormal discretionary operating cash flow
PRODDA	Abnormal production cost
BMEET	Natural log value of number of board meetings
BSIZE	Natural log value of number of directors on the board
ACMEET	Natural log value of number of audit committee meetings
ACSIZE	Natural log value of number of directors on the audit committee
ACDIR	Average number of audit committee directorships
ACTENURE	Average years of audit committee members on the board
ACCACADEXP	Proportion of accounting academicians on the audit committee
AUDITEXP	Proportion of audit experts on the audit committee
CFOFDEXP	Proportion of audit committee members with CFO or finance director experience
FINACADEXP	Proportion of financial academicians on the audit committee
OFINEXP	Proportion of other financial experts on the audit committee
INDUEXP	Proportion of industry experts on the audit committee
LAWEXP	Proportion of legal experts on the audit committee
LEV	Debt to equity ratio
ROA	Net income divided by beginning total assets
INASSET	Natural log value of total assets
MVBV	Market-to-book ratio
AUDITFEES	Natural log value of audit fees
INDUAUDEXP	Equal to 1 if the audit firm accounts for the largest clients' revenues in an industry.

defined as the sum of research and development expense, advertising, and selling, general and administrative expenses in year  $t$  for firm  $i$ . Abnormal discretionary expenditures are estimated by the difference between the normal levels of discretionary expenditure and actual discretionary expenditure from Eq.2.

$$DISC_{it} = \beta_1 \left( \frac{1}{A_{it-1}} \right) + \beta_2 \left( \frac{S_{it-1}}{A_{it-1}} \right) + e_{it} \quad (2)$$

Following previous studies (e.g., Badertscher, 2011; Cohen et al., 2008; Cohen & Zarowin, 2010; Roychowdhury, 2006), sales-based manipulations are expected to lead to decreased current-period operating cash flows as lenient discounts are given to customers to boost sales. Normal cash flows from operations can be modelled as a linear function of current sales revenue and change in sales revenue in the current period (Roychowdhury, 2006; Dechow et al., 1998). Abnormal operating cash flows are estimated as the difference between the actual operating cash flow and normal levels of operating cash flows from Eq.3 cross-sectionally for each industry and year as follows:

$$CFO_{it} = \beta_1 \left( \frac{1}{A_{it-1}} \right) + \beta_2 \left( \frac{S_{it}}{A_{it-1}} \right) + \beta_3 \left( \frac{\Delta S_{it}}{TA_{it-1}} \right) + e_{it} \quad (3)$$

Where  $PROD_{it}$  = production cost for firm  $i$  in  $t$  period;  $S_{it}$  = sales for firm  $i$  in period  $t$ ;  $\Delta S_{it}$  = change in sales for firm  $i$  in period  $t$ ;  $\Delta S_{it-1}$  = change in sales for firm  $i$  in period  $t-1$ ;  $A_{it-1}$  = total assets at the beginning of a year;  $DISC_{it}$  = discretionary expenditures for firm  $i$  in period  $t-1$ ;  $CFO_{it}$  = operating cash flows for firm  $i$  in period  $t$ ;  $e_{it}$  = residuals for firm  $i$  in period  $t$ .

#### 4.1. Model specification

Endogeneity problem is a major concern as estimators will be biased (Adkins and Hill, 2008). Endogeneity stems from the significant relationships between independent variables and residuals.

Endogeneity may arise from omitted variable, measurement error and reverse causality (Wooldridge, 2012). In the study of corporate governance, it is likely that endogeneity stems from reverse causality. Leszczensky and Wobring (2019) agree that dynamic panel data model is a useful method to control endogeneity problems that arise from both reverse causality and unobserved heterogeneity. We use the dynamic panel regression for controlling the endogeneity. This approach allows current value of independent variable to be related to past value of dependent variable. Further, if there is endogeneity issue in the relationship between dependent and independent variable, it employs a set of internal instruments included within the panel itself (Embong and Hosseini, 2018). In this study, I employ Dynamic Panel Difference GMM (Arellano and Bond, 1991).

In this study, the effects of audit committee and board characteristics such as audit committee and board size (Shankaraiah and Amiri, 2017) as well as audit committee and board meetings (Zaman, et al., 2011) are controlled. leverage (Nelson and Devi, 2013), market-to-book value (Habbash, 2012), Firm size (Wilson, 2017), and return on assets (Yasser, et al., 2016) and are controlled as firm characteristics may influence the levels of real earnings management. Finally, audit fees (Lary and Taylor, 2012) and industry specialist expertise of the auditor (Jenkins, et al., 2005) are controlled as characteristics of the auditor influence earnings management strategies used by managers. The regression models are presented as follows:

$$\begin{aligned} DISCDA_{it} = & \beta_0 + \beta_1 BMEET_{it} + \beta_2 BSIZE_{it} + \beta_3 ACMEET_{it} + \beta_4 ACSIZE_{it} \\ & + \beta_5 ACDIR_{it} + \beta_6 ACTENURE_{it} + \beta_7 ACCACAEXP_{i,t} + \beta_8 AUDITEXP_{it} \\ & + \beta_9 CFOFDEXP_{it} + \beta_{10} FINACADEXP_{it} + \beta_{11} OFINEXP_{it} \\ & + \beta_{12} INDUEXP_{it} + \beta_{13} LAWEXP + \beta_{14} LEV_{it} + \beta_{15} ROA_{it} \\ & + \beta_{16} INASSET_{it} + \beta_{17} MVBV_{it} + \beta_{18} AUDITFEES_{it} \\ & + \beta_{19} INDUDAUEXP_{it} + e_{it} \end{aligned} \quad (4)$$

$$\begin{aligned} CFODA_{it} = & \beta_0 + \beta_1 BMEET_{it} + \beta_2 BSIZE_{it} + \beta_3 ACMEET_{it} + \beta_4 ACSIZE_{it} \\ & + \beta_5 ACDIR_{it} + \beta_6 ACTENURE_{it} + \beta_7 ACCACAEXP_{i,t} + \beta_8 AUDITEXP_{it} \\ & + \beta_9 CFOFDEXP_{it} + \beta_{10} FINACADEXP_{it} + \beta_{11} OFINEXP_{it} \\ & + \beta_{12} INDUEXP_{it} + \beta_{13} LAWEXP + \beta_{14} LEV_{it} + \beta_{15} ROA_{it} \\ & + \beta_{16} INASSET_{it} + \beta_{17} MVBV_{it} + \beta_{18} AUDITFEES_{it} \\ & + \beta_{19} INDUDAUEXP_{it} + e_{it} \end{aligned} \quad (5)$$

$$\begin{aligned} PRODDA_{it} = & \beta_0 + \beta_1 BMEET_{it} + \beta_2 BSIZE_{it} + \beta_3 ACMEET_{it} + \beta_4 ACSIZE_{it} \\ & + \beta_5 ACDIR_{it} + \beta_6 ACTENURE_{it} + \beta_7 ACCACAEXP_{i,t} + \beta_8 AUDITEXP_{it} \\ & + \beta_9 CFOFDEXP_{it} + \beta_{10} FINACADEXP_{it} + \beta_{11} OFINEXP_{it} \\ & + \beta_{12} INDUEXP_{it} + \beta_{13} LAWEXP + \beta_{14} LEV_{it} + \beta_{15} ROA_{it} \\ & + \beta_{16} INASSET_{it} + \beta_{17} MVBV_{it} + \beta_{18} AUDITFEES_{it} \\ & + \beta_{19} INDUDAUEXP_{it} + e_{it} \end{aligned} \quad (6)$$

$$\begin{aligned}
 AGGRM_{it} = & \beta_0 + \beta_1 BMEET_{it} + \beta_2 BSIZE_{it} + \beta_3 ACMEET_{it} + \beta_4 ACSIZE_{it} \\
 & + \beta_5 ACDIR_{it} + \beta_6 ACTENURE_{it} + \beta_7 ACCACAEXP_{it} + \beta_8 AUDITEXP_{it} \\
 & + \beta_9 CFOFDEXP_{it} + \beta_{10} FINACADEXP_{it} + \beta_{11} OFINEXP_{it} \\
 & + \beta_{12} INDUEXP_{it} + \beta_{13} LAWEXP_{it} + \beta_{14} LEV_{it} + \beta_{15} ROA_{it} \\
 & + \beta_{16} INASSET_{it} + \beta_{17} MVBV_{it} + \beta_{18} AUDITFEES_{it} \\
 & + \beta_{19} INDUDAUDEXP_{it} + e_{it}
 \end{aligned} \tag{7}$$

## 5. Results

### 5.1. Descriptive statistics and correlations among variables

Table 3 shows the descriptive statistics. The means of our dependent variables, DISCDA, CFODA, PRODDA and AGGRM are 0.261, 0.004, 1.458 and 1.196, respectively. Regarding our independent variables in the study, the means of ACCACADEXP, AUDITEXP, CFOFDEXP, OFINEXP, INDUEXP, and LAWEXP are 0.0383, 0.099, 0.140, 0.189, 0.287, and 0.239, respectively. On average, most of the expertise on the audit committee is other financial expertise, followed by industry expertise and financial academic expertise. The least of the expertise on the audit committee is accounting academic expertise followed by audit expertise. Concerning our control variables, the mean of BMEET is 6.123 (log value of 1.812). On average, the board has 6.123 meetings in a year. The mean of BSIZE is 9.68 (log value of 2.270). A board has 9–10 members. The mean of ACMEET is 2.956 (log value of 1.084). Audit committees have nearly three meetings in a year. ACSIZE is 3.38 (log value of 1.219). Audit committees have three members on average. The mean of ACDIR is 1.675. The average directorship of audit committees is 1.675. The mean of ACTENURE is 6.154. On average, the tenure of audit committee members on the board is 6.154 years. The mean of LEV is 0.842, indicating that firms in Hong Kong are highly leveraged. The mean of ROA is 0.058, showing that on average the profitability is 5.8%.

Table 4 shows the results of Pearson correlation. CFODA is positively related to DISCDA ( $p < 0.10$ ), suggesting that when managers manipulate sales, they are likely to manage discretionary expenditures. The reason may be that when managers manipulate sales, they are likely to give lenient discounts or credit terms, so the firms have less cash. To obtain the cash, managers may largely reduce discretionary expenditures. The positive association between DISCDA and PRODDA ( $p < 0.10$ ) indicates that if managers manage production cost by overproducing inventory and largely reduce discretionary expenditures, they are afraid that this is too aggressive and their manipulations will be discovered. Thus, when managers overproduce inventory, they are less likely to manage discretionary expenditure. CFODA is negatively related to PRODDA ( $p < 0.01$ ), suggesting that when managers manipulate production cost, they are more likely to manipulate sales. OFINEXP is positively related to CFDA ( $p < 0.10$ ), suggesting that other finance expertise reduces sales manipulation. BMEET is positively related to most of the expertise except OFINEXP, indicating that a diligent boards are willing to appoint audit committee members with accounting, auditing, finance and legal experts. Table 4 shows that there are no correlations higher than 0.90. Table 5 shows that all variance inflation factors (VIFs) are less than 10. The issue of multi-collinearity is not present.

### 5.2. Main results

Table 6 shows the results of the main analysis. We find that ACCACADEXP are negatively associated with DISCDA ( $p < 0.01$ ), CFODA ( $p < 0.05$ ) and positively associated with AGGRM ( $p < 0.01$ ), suggesting that the proportion of accounting academicians on the audit committee reduces abnormal discretionary expenditure and abnormal operating cash flow and increases overall levels of real earnings management. Concerning audit experts on the audit committee, we observe that AUDITEXP is negatively related to DISCDA ( $p < 0.01$ ) and positively related to AGGRM ( $p < 0.05$ ) but insignificantly related to CFODA. The results are similar to those of ACCACAEXP except its correlation with CFODA. We also find that FINACADEXP is negatively associated with DISCDA ( $p < 0.05$ ),

**Table 3. Descriptive statistics**

Variable	Mean	SD	Min	Max
DISCDA	0.261	11.028	−35.872	404.924
CFODA	0.004	1.5151	−39.757	19.16
PRODDA	1.458	15.530	−376.40	347.501
AGGRM	1.196	18.950	−404.883	325.407
BMEET	1.812	0.512	0	4.263
BSIZE	2.270	0.258	1.386	3.091
ACMEET	1.084	0.407	0	3.091
ACSIZE	1.219	0.196	0.693	1.946
ACDIR	1.675	1.553	0	8
ACTENURE	6.154	3.921	0.04	24.03
ACCACADEXP	0.0383	0.107	0	0.667
AUDITEXP	0.099	0.157	0	0.667
CFOFDEXP	0.140	0.187	0	1
FINACADEXP	0.189	0.771	0	0.75
OFINEXP	0.287	0.259	0	1
INDUEXP	0.239	0.235	0	1
LAWEXP	0.109	0.163	0	0.667
LEV	0.842	9.617	0.0004	398.533
ROA	0.058	0.417	−8.504	11.036
INASSET	16.94	1.573	10.528	21.595
MVBV	3.473	72.95	−458.93	2933.91
AUDITFEES	8.428	0.961	5.704	11.482
INDUAUDEXP	0.290	0.454	0	1

indicating that the proportion of financial academicians increase real earnings management via discretionary expenditure. However, the coefficients of other financial expertise and CFO or finance director expertise have the opposite directions. CFOFDEXP ( $p < 0.01$ ) and OFINEXP ( $p < 0.05$ ) are positively associated with DISCDA, implying that other financial and CFO or finance director expertise reduce real earnings management via discretionary accruals while CFOFDEXP is negatively related to AGGRM ( $p < 0.05$ ) but OFINEXP has insignificant and negative associations with AGGRM. Our results are largely consistent with the findings of the Fuad (2016), but inconsistent with the studies of Abdul-Manaf et al. (2019), Mardessi and Fourati (2020), and Thiruvadi et al. (2021) who observe that audit committee accounting and finance expertise help curb real earnings management.

The inconsistent results with prior studies can be explained by the study of Zang (2012) who finds that managers may use real earnings management as substitutes for accrual earnings management. She opines that managers switch their earnings management strategies on the basis of their relative costliness. She uses various measures including Big Eight auditor, auditor tenure and post-SOX period as the cost of accrual earnings management. She documents that firms in a heightened regulatory scrutiny, shorter operating cycles and prior periods' accruals manipulation, managers will switch their strategies from accrual to real earnings management. Further, she finds that managers directly substitute two strategies as the accrual earnings management decreases when the outcome of real earnings management turns out to be high.

Our results are consistent with the implications of Zang (2012) as strong audit committee accounting and financial experts may provide more scrutiny in managers' accounting choice and their abuse of flexibilities given by the accrual accounting. Consequently, managers may turn to

**Table 4. Results of Pearson correlation**

	AGRM	DISCDA	CFODA	PRODDA	BMEET	BSIZE	ACMEET	ACSIZE	ACDIR
AGRM	1								
DISCDA	-0.539***	1							
CFODA	-0.320***	0.0541*	1						
PRODDA	0.806***	0.0577*	-0.255***	1					
BMEET	-0.0124	0.0356	-0.0703**	0.00342	1				
BSIZE	-0.0232	0.0210	0.00754	-0.0126	0.0112	1			
ACMEET	0.0246	0.0463	-0.00757	0.0622**	0.287***	0.134***	1		
ACSIZE	0.0150	0.0161	-0.00265	0.0294	0.0752**	0.349***	0.146***	1	
ACDIR	0.0320	-0.000150	-0.0210	0.0370	-0.157***	0.0197	-0.108***	-0.0456	1
ACTENURE	0.00620	-0.0295	0.0384	-0.00946	-0.147***	0.119***	-0.084***	0.000496	0.231***
ACCACADEXP	0.000652	-0.00412	-0.0374	-0.00597	0.0799***	0.0433	0.109***	-0.0410	-0.194***
AUDITEXP	0.00875	-0.0145	0.00464	0.000931	0.00829	-0.101***	-0.0450	-0.0661**	-0.0213
CFOFDEXP	0.00444	0.0240	-0.0444	0.0181	0.0719**	-0.0239	0.0664**	-0.124***	-0.120***
FINACADEXP	0.00595	-0.0134	0.000290	-0.00229	0.0798***	-0.00985	0.123***	0.0418	-0.136***
OFINEXP	-0.0291	-0.00128	0.0732**	-0.0292	-0.088***	-0.0299	-0.0683**	-0.0371	0.136***
INDUEXP	0.0332	-0.0334	-0.0164	0.0152	0.0172	-0.0182	0.0358	0.110***	-0.109***
LAWEXP	0.00853	-0.0340	0.0362	-0.0102	0.0846***	0.0257	0.00781	-0.0195	0.127***
LEV	-0.00605	-0.00264	-0.00278	-0.00951	0.0241	0.0102	-0.0251	-0.0158	-0.0184
ROA	-0.0104	-0.00475	0.0169	-0.0144	-0.0542*	0.0595*	0.00912	0.00323	-0.0302
INASSET	0.00475	0.0912***	0.00482	0.0710**	0.121***	0.380***	0.358***	0.216***	0.0809***
MVBV	-0.00245	-0.0000	0.000684	-0.00296	0.00234	-0.0126	0.00244	-0.0117	-0.0166
AUDITFEES	0.0160	0.0870***	-0.0159	0.0797***	0.0549*	0.356***	0.330***	0.147***	0.104***
INDUADEXP	0.0219	0.0179	-0.0738**	0.0324	-0.0325	0.0458	0.100***	-0.0227	0.105***

(Continued)

**Table 4. (Continued)**

	ACTENURE	ACCACADEXP	AUDITEXP	CFOFDEXP	FINACADEXP	OFINEXP	INDUEXP
ACTENURE	1						
ACCACADEXP	-0.133***	1					
AUDITEXP	-0.108***	-0.131***	1				
CFOFDEXP	-0.152***	-0.0457	0.0942***	1			
FINACADEXP	-0.113***	-0.0507*	-0.0265	-0.0689**	1		
OFINEXP	0.0663**	-0.153***	-0.0109	-0.186***	-0.0799***	1	
INDUEXP	-0.099***	0.0473	-0.085***	0.139***	0.00928	-0.271***	1
LAWEXP	0.0443	-0.0321	0.00461	-0.092***	-0.0333	-0.0755**	-0.216***
LEV	-0.0363	-0.00630	-0.0154	-0.0191	0.0988***	0.0358	-0.0248
ROA	0.00981	-0.00191	-0.0188	-0.0440	0.0787**	0.0154	-0.00487
INASSET	0.143***	0.0552*	-0.113***	-0.0390	0.000312	-0.00624	0.0977***
MBV	-0.0386	-0.00810	-0.0193	-0.0158	0.0981***	0.0387	-0.0222
AUDITFEES	0.102***	0.0275	-0.080***	0.000997	0.0214	0.00750	0.0271
INDUAUDEXP	0.0857***	-0.000201	-0.0259	0.00849	-0.00753	0.0556*	0.0235
	LAWEXP	LEV	ROA	INASSET	MBV	AUDITFEES	INDUAUDEXP
LAWEXP	1						
LEV	-0.0152	1					
ROA	-0.0276	0.617***	1				
INASSET	0.0170	0.0115	0.0434	1			
MBV	-0.0137	-0.00243	-0.00310	-0.096***	1		
AUDITFEES	-0.0212	-0.0243	0.0155	0.683***	-0.0552*	1	
INDUAUDEXP	-0.0113	-0.0178	0.00735	0.126***	-0.0156	0.150***	1

\*, \*\* and \*\*\* represents p-value less than 10 percent, 5 percent and 1 percent, respectively. The definitions of the used variables are summarised in Table 2.



**Table 5. Results of VIF**

<b>Variables</b>	<b>VIF</b>	<b>1/VIF</b>
BMEET	1.16	0.860
BSIZE	1.35	0.740
ACMEET	1.33	0.753
ACSIZE	1.23	0.815
ACDIR	1.19	0.838
ACTENURE	1.18	0.850
ACCACADEXP	1.14	0.873
AUDITEXP	1.07	0.937
CFOFDEXP	1.15	0.867
FINACADEXP	1.10	0.911
OFINEXP	1.20	0.832
INDUEXP	1.22	0.820
LAWEXP	1.12	0.896
LEV	1.65	0.606
ROA	1.65	0.606
INASSET	2.16	0.463
MVBV	1.02	0.976
AUDITFEES	2.00	0.500
INDUAUDEXP	1.05	0.952

real earnings management, which relies on their judgment on necessities for expenditures rather than accounting choices. Our results indicate that managers may switch their earnings management strategies to real earnings management primarily via reduction in discretionary expenditure if audit committees have strong accounting and finance academician as well as audit experts. Although accounting and finance academician may not have practical experience in overseeing the financial reporting quality, they have a high status as experts in accounting and finance. Thereby, they can direct audit committees to diligently monitor financial statements. The reputation effects force them to be more diligent in monitoring financial statements. The audit experts have audit expertise to determine the appropriate accounting treatments for financial statements, so they are more likely to detect financial misstatements. As audit committee members primarily monitor accruals earnings management of financial statements, managers are afraid that audit committees will detect their misstatement of financial statements, so they may switch to real earnings management. Audit committee members with other finance expertise and CFO or finance director experience may have more expertise in the operations of companies in addition to financial expertise, so they are more likely to detect managers' actions to reduce discretionary expenditure as they may know whether the reduction in discretionary expenditure is appropriate from their past experience as a CFO or finance director and other finance experience.

Turning to legal expertise, we notice that LAWEXP is positively associated with CFODA ( $p < 0.05$ ), PRODDA ( $p < 0.05$ ) and AGGRM ( $p < 0.05$ ). The results imply that more legal experts on the audit committee encourages managers to engage in real earnings management via production cost but constrain it via sales manipulation. The explanation is that legal experts have the expertise in law but may not effectively understand the operations of the company and appropriate accounting treatment for cost of goods sold and inventories, so their expertise is not effective to constrain real earnings management via production cost. However, managers may fear that if they give lenient discounts or offer lenient credit terms to customers to manipulate sales, there may be legal consequences. Consequently, they are less likely to manipulate sales. The results are consistent

**Table 6. Results of main analysis**

	<b>DISCDA</b>	<b>PRODDA</b>	<b>CFODA</b>	<b>AGGRM</b>
Lagged DISCDA	−0.496*** (0.0846)			
Lagged PRODDA		−0.0321 (0.08)		
Lagged CFODA			−0.036 (0.045)	
Lagged AGGRM				−0.142 (0.079)
BMEET	0.651 (1.45)	−0.234 (2.17)	−0.268 (0.25)	−0.334 (2.60)
BSIZE	21.510*** (4.54)	−10.027 (6.82)	2.728*** (0.77)	−34.327*** (8.15)
ACMEET	−10.477*** (2.05)	0.429 (3.06)	0.292 (0.35)	9.924*** (3.66)
ACSIZE	4.539 (4.09)	−5.206 (6.11)	−0.436 (0.70)	−9.234 (7.32)
ACDIR	1.476* (0.77)	0.151 (1.15)	−0.087 (0.13)	−1.214 (1.37)
ACTENURE	−0.585** (0.25)	0.047 (0.38)	0.009 (0.04)	0.665 (0.45)
ACCACADEXP	−36.446*** (8.99)	15.844 (13.52)	−3.088** (1.54)	51.572*** (16.05)
AUDITEXP	−29.335*** (7.09)	4.641 (10.66)	1.415 (1.21)	30.440** (12.67)
CFOFDEXP	14.143*** (5.10)	−3.378 (7.56)	1.393 (0.86)	−19.019** (9.06)
FINACADEXP	−32.335** (14.41)	5.698 (21.52)	1.310 (2.45)	37.175 (25.76)
OFINEXP	7.946** (4.01)	−1.949 (5.92)	0.449 (0.68)	−9.764 (7.17)
INDUEXP	1.173 (4.33)	6.711 (6.48)	0.898 (0.74)	5.996 (7.76)
LAWEXP	−5.056 (5.83)	17.137** (8.67)	2.441** (0.99)	22.293** (10.40)
LEV	−0.039 (0.04)	0.031 (0.07)	0.000 (0.01)	0.064 (0.08)
ROA	−0.212 (1.12)	−0.297 (1.68)	−0.043 (0.19)	0.015 (2.01)
INASSET	2.229* (1.33)	−9.969*** (1.98)	−0.097 (0.23)	−11.806*** (2.38)
MVBV	0.004 (0.00)	−0.012* (0.01)	−0.000 (0.00)	−0.015* (0.01)
AUDITFEES	4.721** (2.00)	5.989** (3.00)	0.117 (0.34)	1.398 (3.59)
INDUDAUDEXP	−4.947* (2.366)	2.366 (0.354)	0.354 (5.872)	5.872

(Continued)

**Table 6. (Continued)**

	<b>DISCDA</b>	<b>PRODDA</b>	<b>CFODA</b>	<b>AGGRM</b>
	(2.57)	(3.86)	(0.44)	(4.61)
Constant	−117.97***	145.251***	−5.702	261.893***
	(24.63)	(36.89)	(4.20)	(44.09)
N	1054	1054	1054	1054

\*, \*\* and \*\*\* represents p-value less than 10 percent, 5 percent and 1 percent, respectively. The definitions of the used variables are summarised in Table 2. Standard errors are in the parentheses

with the study of Ghaleb et al. (2021) who argue that managers in countries that have a strong legal regime or well-developed regulations prefer to shift their earnings management strategies from accruals earnings management to real earnings management (Choi, et al. 2018). The results are also consistent with Zang (2011) who argues that managers may switch to real earnings management due to stronger regulatory scrutiny. Legal experts may provide similar monitoring effects as the regulatory scrutiny.

Regarding control variables, BSIZE is positively related to DISCDA ( $p < 0.01$ ) and CFODA ( $p < 0.01$ ) but negatively related to AGGRM ( $p < 0.01$ ), indicating that a large board is effective to reduce manipulation of discretionary expenditure and sales. ACMEET ( $p < 0.01$ ) and ACTENURE ( $p < 0.05$ ) are negatively associated with DISCDA. The results indicate that a diligent audit committee with long-tenure encourages managers to manipulate discretionary expenditure. INASSET is negatively related to PRODDA ( $p < 0.01$ ) but positively and marginally related to DISCDA ( $p < 0.10$ ). The overall effects on real earnings management are significant and negative as indicated by the negative association with AGGRM ( $p < 0.01$ ). The results imply that in a large company, managers find it more difficult to manipulate discretionary expenditure and production cost as a large company should have stronger internal control and audit. MVBV is marginally and negatively related to PRODDA ( $p < 0.10$ ) and AGGRM ( $p < 0.10$ ), indicating that managers in a company with higher market value faces lower pressure to manipulate the real activities of a company. AUDITFEES is positively associated with DISCDA ( $p < 0.05$ ) and PRODDA ( $p < 0.05$ ), suggesting that higher audit fees encourage managers to manipulate production cost. However, managers are discouraged to manage discretionary expenditure. The explanation may be that production is more complicated than discretionary expenditure, so managers incline to engage manipulation of production costs as they are more familiar with the production process and cost allocation. INDUDAUEXP is marginally and negatively associated with DISCDA ( $p < 0.10$ ), suggesting that a strong external auditor with industry expertise encourages managers to manipulate discretionary expenditure.

### 5.3. Additional analysis

To shed more light on how industry and audit expertise enhance audit committees' competence to monitor real earnings management, we conduct analysis on the interaction effects of industry expertise and audit expertise on real earnings management. Table 7 shows that industry expertise per se does not reduce real earnings management, but industry expertise strengthens audit expertise to curb manipulation of discretionary expenditures. AUDITEXP x INDUEXP is positively associated with discretionary expenditures ( $p < 0.05$ ). However, if we consider audit expertise alone, the expertise promotes managers to manage discretionary expenditures as the coefficient is −29.335 ( $p < 0.01$ ). The results may suggest that industry experts alone may have the expertise in operations, but do not have audit experience to understand the financial decisions of managers on discretionary expenditures. Industry together with audit expertise strengthens the entire audit committee to monitor discretionary expenditures, as the audit committee understands the needs of discretionary expenditures in the industry from the perspectives of industry

**Table 7. Results of additional analysis**

	<b>DISCDA</b>	<b>CFODA</b>	<b>PRODDA</b>
Lagged DISCA	−0.4882*** (0.0848)		
Lagged CFODA		−.0355 (0.044)	
Lagged PRODDA			−0.317 (0.080)
BMEET	0.631 (1.46)	−0.268 (0.25)	−0.236 (−2.17)
BSIZE	21.687*** (4.55)	2.730*** (0.77)	−9.979 (6.82)
ACMEET	−10.45*** (2.05)	0.293 (0.35)	0.418 (3.06)
ACSIZ	4.295 (4.1)	−0.44 (0.7)	−5.238 (6.12)
ACDIR	1.719** (0.78)	−0.088 (0.13)	0.216 (1.16)
ACTENURE	−0.633** (0.25)	0.009 (0.04)	0.036 (0.38)
ACCACADEXP	−34.68*** (9.04)	−3.098** (1.55)	16.052 (13.59)
AUDITEXP	−38.09*** (8.14)	1.437 (1.4)	2.35 (12.26)
CFOFEXP	13.225*** (5.12)	1.38 (0.86)	−3.55 (7.58)
FINACADEXP	−34.839** (14.47)	1.309 (2.46)	4.877 (21.6)
OFINEXP	7.804** (3.95)	0.399 (0.67)	−1.991 (5.84)
INDUEXP	−3.629 (4.82)	0.894 (0.82)	5.535 (7.21)
LAWEXP	−6.083 (5.84)	2.430** (0.99)	16.816* (8.68)
AUDITEXP x INDUEXP	41.35** (18.8)	−0.084 (3.2)	10.353 (28.11)
LEV	−0.039 (0.04)	0.000 (0.01)	0.032 (0.07)
ROA	−0.193 (1.13)	−0.043 (0.19)	−0.3 (1.68)
INASSET	2.203* (1.33)	−0.093 (0.23)	−10.006*** (1.98)
MVBV	0.004 (0.000)	0.000 (0.000)	−0.012* (0.01)
AUDITFEES	4.549** (2.01)	0.117 (0.34)	5.972** (3)
INDUDAUEXP	−5.115**	0.356	2.354

(Continued)

**Table 7. (Continued)**

	<b>DISCDA</b>	<b>CFODA</b>	<b>PRODDA</b>
	(2.57)	(0.44)	(3.87)
Constant	−114.8***	−5.734	146.307***
	(24.69)	(4.2)	(36.96)
N	1054	1054	1054

\*, \*\* and \*\*\* represents p-value less than 10 percent, 5 percent and 1 percent, respectively. The definitions of the used variables are summarised in Table 2. Standard errors are in the parentheses

experts and approaches of managing them from the perspective of audit experts. The results are consistent with prior studies that industry experts understand better the operations of a company through which managers manage earnings (R. Cohen et al., 2014; Falye et al., 2004; Kusnadi et al., 2016)

#### **5.4. Alternative measures of expertise**

As a supplementary analysis, we use the number of audit committee members with the expertise rather than the proportion. Table 8 shows that results are similar except the results of legal expertise. When I use the number of legal experts on the audit committee, the results show that LAWEXP is marginally negatively related to DISCDA ( $p < 0.10$ ), but positively related to PRODDA ( $p < 0.10$ ) and CFODA ( $p < 0.10$ ). However, the results in the main analysis show that LAWEXP is insignificant with DISCDA, but positively related to PRODA and CFODA. The supplementary analysis shows that legal expertise may have the potential effects on promoting managers to manipulate discretionary expenditures.

#### **6. Conclusion**

This study evaluates the associations between various audit committee expertise and real earnings management in Hong Kong. Overall, the findings provide evidence that various accounting and finance expertise, except other financial expertise and CFO or finance director expertise, promotes the manipulation of discretionary expenditures. Legal expertise encourages managers to manipulate production cost. However, industry expertise alone is not significant in constraining real earnings management. The audit committees with both audit and legal expertise are effective to curtail manipulation of discretionary expenditures. The findings of the study suggest that managers have discretion to change their earnings management strategies given strong accounting, finance and legal expertise of audit committee members. The findings are consistent with prior studies that show the evidence that managers have discretion to switch from accrual earnings management to real earnings management. For instance, Zang (2012) shows that managers switch from accrual earnings management to real earnings management in a strong legal environment because the legal liability cost is higher. She also shows that firms are less likely to use real earnings management when tax rate is higher. Managers also rely on real earnings management when the firms in an environment with stringent accounting standards or enforcement (Ewert & Wagenhofer, 2005). In the same vein, firms under seasoned equity offerings are more likely to have incentives to inflate current-period earnings using real earnings management during post-SOX period as accrual earnings management is more costly after SOX period. To reduce this discretion to switch earnings management strategies, this study suggests that although Hong Kong firms follow principle-based governance structure, policymakers should consider to mandate certain number of audit committee experts with CFO or finance director expertise as well

**Table 8. Results of supplementary analysis**

	<b>DISCDA</b>	<b>CFODA</b>	<b>PRODDA</b>
Lagged DISCDA	−0.492*** (0.0844)		
Lagged CFODA		−0.0362 (0.044)	
Lagged PRODDA			−0.0333 (0.0795)
BMEET	0.691 (1.45)	−0.261 (0.25)	−0.217 (2.17)
BSIZE	20.874*** (4.52)	2.717*** (0.77)	−9.625 (6.79)
ACMEET	−10.517*** (2.04)	0.273 (0.35)	0.42 (3.06)
ACSIZE	9.661** (4.73)	−1.176 (0.81)	−8.984 (7.09)
ACDIR	1.503** (0.77)	−0.081 (0.13)	0.186 (1.15)
ACTENURE	−0.597** (0.25)	0.008 (0.04)	0.055 (0.38)
ACCACADEXP	−11.839*** (2.64)	−0.836* (0.45)	4.736 (3.98)
AUDITEXP	−9.255*** (1.98)	0.363 (0.34)	0.838 (2.99)
CFOFDEPN	4.204*** (1.51)	0.329 (0.26)	−0.723 (2.24)
FINACADEXP	−10.611*** (3.92)	0.396 (0.67)	1.699 (5.87)
OFINEXP	0.989 (1.14)	0.094 (0.19)	−0.887 (1.68)
INDUEXP	−0.736 (1.23)	0.158 (0.21)	1.804 (1.85)
LAWEXP	−2.889* (1.73)	0.567* (0.29)	4.703* (2.58)
LEV	−0.034 (0.04)	0.000 (0.01)	0.03 (0.07)
NI	−0.253 (1.12)	−0.04 (0.19)	−0.257 (1.68)
INASSET	2.163 (1.32)	0.117 (0.23)	−10.011*** (1.98)
MVBV	0.004 (0.000)	0.000 (0.000)	−0.012* (0.01)
AUDITFEES	4.910** (2)	0.124 (0.34)	6.101** (3)
INDUDAUEXP	−4.654* (2.56)	0.361 (0.44)	2.516 (3.85)
Constant	−120.1***	−4.261	149.074***

(Continued)

**Table 8. (Continued)**

	DISCDA	CFODA	PRODDA
	(24.69)	(4.22)	(37.05)
N	1054	1054	1054

\*, \*\* and \*\*\* represents p-value less than 10 percent, 5 percent and 1 percent, respectively. The definitions of the used variables are summarised in Table 2. Standard errors are in the parentheses

as audit and industry expertise while they allow the discretions to the firms for appointing legal experts and financial and accounting academicians but up to a certain level.

Like most studies of this nature, this study is subject to some limitations, first, the validity of these findings depends on abnormal discretionary expenditure, abnormal operating cash flow and abnormal production cost as proper proxies for real earnings management. Second, our study focuses on the firms in Hong Kong with concentrated shareholdings and family control, so the findings may not be generalized to other countries. Finally, our results are for the period 2010–2015, and caution should be exercised in extrapolating these results to more recent times, particularly after 2019 as COVID-19 has spread in Hong Kong and countries overall the world.

Despite their inherent limitations, the findings provide useful insights to policymakers for developing appropriate regulations on the corporate governance mechanism, particularly the appointment of audit committee members with CFO or finance director expertise as well as audit and industry expertise. The findings are relevant for countries with an institutional environment similar to that of Hong Kong. Investors may also benefit from the findings because they provide insight into the impact of future profitability of a company if the audit committee members have strong accounting, finance, and legal expertise.

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#### Note

1. With regard to “appropriate accounting or related financial management expertise”, the Exchange would expect the person to have, through experience as a public accountant or auditor or as a chief financial officer, controller or principal accounting officer of a public company or through performance of similar functions, experience with internal controls and in preparing or auditing comparable financial statements or experience reviewing or analysing audited financial statements of public companies. It is the responsibility of the board to determine on a case-by-case basis whether the candidate is suitable for the position. In making its decision, the board must evaluate the totality of the individual's education and experience (HKEx).

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#### References

- Abdul-Manaf, K. B., Ishak, R., & Amran, N. F. (2019). Real earnings management and audit committee characteristics. *UNIMAS Review of Accounting and Finance*, 2(1), 1–8. <https://doi.org/10.33736/uraf.1597.2019>
- Abernathy, J., Herrmann, D., Kang, T., & Krishnan, G. V. (2013). Audit committee financial expertise and properties of analyst earnings forecasts. *Advances in Accounting, Incorporating Advances in International Accounting*, 29, 1–11.
- Adkins, L. C., & Hill, R. C. (2008). *Using stata for principles of econometrics* (3rd ed.). John Wiley.
- Anderson, R., & Reeb, D. M. (2003). Founding Family Ownership and Firm Performance: Evidence from the S&P 500. *The Journal of Finance*, 58, 1301–1329.
- Arcello, J., Hollingsworth, C., Klein, A., & Neal, T. (2008). Audit committee financial expertise, competing corporate governance mechanisms, and earnings management, working paper, University of Tennessee, Clemson University, and New York University.
- Arellano, M., & Bond, S. (1991). Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. *The Review of Economic Studies*, 58(2), 277–297.
- Arthur, N., Tang, Q., & Lin, Z. S. (2015). Corporate accruals quality during the 2008–2010 global financial crisis. *Journal of International Accounting, Auditing and*



- Taxation*, 25, 1–15. <https://doi.org/10.1016/j.intaccudtax.2015.10.004>
- Baatwah, S. R. R., Al-Qadasi, A. A., & Al-Ebel, A. M. (2020). Religiosity at the top does it interact with accounting expertise to limit real earnings management? *Managerial Auditing Journal*, 35(9), 1343–1377. <https://doi.org/10.1108/MAJ-12-2019-2521>
- Badertscher, B. A. (2011). Overvaluation and the Choice of Alternative Earnings Management Mechanisms. *The Accounting Review*, 86(5), 1491–1518.
- Badolato, P. G., Donelson, D., & Ege, M. (2014). Audit committee financial expertise and earnings management: The role of status. *Journal of Accounting and Economics*, 58(2–3), 208–230. <https://doi.org/10.1016/j.jacceco.2014.08.006>
- Bedard, J., & Gendron, Y. (2010). Strengthening the financial reporting system: Can audit committees deliver? *International Journal of Auditing*, 14, 174–210. <https://doi.org/10.1111/j.1099-1123.2009.00413.x>
- Bedard, J., Sonda, M. C., & Lucie, C. (2004). The effect of audit committee expertise, independence and activity on aggressive earnings management. *Auditing: A Journal of Practice & Theory*, 23(2), 13–35. <https://doi.org/10.2308/aud.2004.23.2.13>
- Carcello, J., Hollingsworth, C., Klein, A., & Neal, T. (2006). Audit committee financial expertise, competing corporate governance mechanisms, and earnings management. Working paper, University of Tennessee, Clemson University, & New York University
- Cheng, S. (2004). R&D expenditure and CEO compensation. *The Accounting Review*, 79(2), 305–328. <https://doi.org/10.2308/accr.2004.79.2.305>
- Choi, A., Choi, J. S., & B. C. (2018). The Joint Effect of Audit Quality and Legal Regimes on the Use of Real Earnings Management: International Evidence. *Contemporary Accounting Research*, 35(4), 2225–2257.
- Choi, J. H., Jeon, K. A., & Park, J. (2004). The role of audit committees in decreasing earnings management: Korean evidence. *International Journal of Accounting Auditing and Performance Evaluation*, 1(1), 37–60. <https://doi.org/10.1504/IJAPE.2004.004142>
- Claessens, A., Diankov, S., Fan, J. P. H., & Lang, L. H. P. (2002). Disentangling the Incentive and Entrenchment Effects of Large Shareholdings. *The Journal of Finance*, 57(6), 241–277.
- Cohen, D., Dey, A., & Lys, T. (2008). Real and accrual-based earnings management in the pre-and post-Sarbanes-Oxley period. *The Accounting Review*, 83(3), 757–787. <https://doi.org/10.2308/accr.2008.83.3.757>
- Cohen, R., Hoitash, U., & Krishnamoorthy, G. (2014). The effect of audit committee industry expertise on monitoring the financial reporting process. *The Accounting Review*, 89(1), 243–273. <https://doi.org/10.2308/accr-50585>
- Cohen, D., Mashruwala, R., & Zach, T. (2010). The use of advertising activities to meet earnings benchmarks: Evidence from monthly data. *Review of Accounting Studies*, 15(4), 808–832. <https://doi.org/10.1007/s11142-009-9105-8>
- Cohen, D. A., & Zarowin, P. (2010). Accrual-based and real earnings management activities around seasoned equity offerings. *Journal of Accounting & Economics*, 50(1), 2–19. <https://doi.org/10.1016/j.jacceco.2010.01.002>
- Dechow, R., & Shakespeare, C. (2009). Do managers time securitization transactions for their accounting benefits? *The Accounting Review*, 84(1), 99–132. <https://doi.org/10.2308/accr.2009.84.1.99>
- Dechow, P. M. K., S. P., & Watts, R. L. (1998). The relation between earnings and cash flows. *Journal of Accounting and Economics*, 25(2), 133–168.
- Defond, M. L., Hann, R. N., & Hu, X. S. (2005). Does the market value financial expertise on audit committees of boards of directors? *Journal of Accounting Research*, 43, 153–193. <https://doi.org/10.1111/j.1475-679x.2005.00166.x>
- DeZoort, F., & Salterio, S. E. (2001). The effects of corporate governance experience and financial-reporting and audit knowledge on audit committee members' judgments. *Auditing: A Journal of Practice & Theory*, 20(2), 31–47. <https://doi.org/10.2308/aud.2001.20.2.31>
- Dhaliwal, D., Naiker, V., & Navissi, F. (2010). The association between accruals quality and the characteristics of accounting experts and mix of expertise on audit committees. *Contemporary Accounting Research*, 27(3), 787–827. <https://doi.org/10.1111/j.1911-3846.2010.01027.x>
- Embong, Z., & Hosseini, L. (2018). Analyst Forecast Accuracy and Earnings Management. *Asian Journal of Accounting and Governance*, 10, 97–108.
- Ewert, R., & Wagenhofer, A. (2005). Economic effects of tightening accounting standards to restrict earnings management. *Accounting Review*, 80(4), 1101–1124. <https://doi.org/10.2308/accr.2005.80.4.1101>
- Faccio, M., & Lang, L. H. P. (2002). The ultimate ownership of western european corporations. *Journal of Financial Economics*, 65(2), 365–395.
- Faleye, O., Hoiash, R., & Hoiash, U. (2018). Industry expertise on corporate boards. *Review of Quantitative Finance and Accounting*, 50(2), 441–479. <https://doi.org/10.1007/s11156-017-0635-z>
- Fuad, S. (2016). The influence of audit committee characteristics on real earnings management. *Jurnal Akuntansi & Auditing*, 13(1), 61–79.
- Garvan, S. A. (2009). The effects of board and audit committee characteristics on real earnings measurement: Do boards and audit committees play a role in its constraint, working paper, University of Alabama Tuscaloosa, AL.
- Ghafran, C., & O'Sullivan, N. (2017). The impact of audit committee expertise on audit quality: Evidence from UK audit fees. *The British Accounting Review*, 49(6), 578–593. <https://doi.org/10.1016/j.bar.2017.09.008>
- Ghaleb, A. A. A., Al-Duais, S. D., & Hashed, A. A. (2021). Audit committee chair's legal expertise and real activities manipulation: Empirical evidence from Malaysian energy and utilities sectors. *International Journal of Energy Economics and Policy*, 11(1), 65–73. <https://doi.org/10.32479/ijee.10258>
- Graham, J., Harvey, C., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, 40(1–3), 3–73. <https://doi.org/10.1016/j.jacceco.2005.01.002>
- Gunny, K. A. (2010). The relation between earnings management using real activities manipulation and future performance: Evidence from meeting earnings benchmarks. *Contemporary Accounting Research*, 27(3), 855–888. <https://doi.org/10.1111/j.1911-3846.2010.01029.x>
- Habbash, M. (2012). Earnings management, audit committee effectiveness and the role of block holders ownership: Evidence from UK large firms. *Journal of Risk and Governance*, 2(2), 77–103.
- Healy, P. M., & Wahlen. (1999). A review of the earnings management literature and its implication for

- standard setting. *Accounting Horizons*, 13(4), 365–383. <https://doi.org/10.2308/acch.1999.13.4.365>
- Hong Kong Stock Exchange (NoDate) Corporate Governance Code Appendix 14. Retrieved 1 April 2022 from: [https://www.hkex.com.hk/-/media/hkex-market/listing/rules-and-guidance/listing-rules-contingency/main-board-listing-rules/appendices/appendix\\_14](https://www.hkex.com.hk/-/media/hkex-market/listing/rules-and-guidance/listing-rules-contingency/main-board-listing-rules/appendices/appendix_14)
- Hribar, P., Jenkins, N., & Johnson, W. (2006). Stock repurchases as an earnings management device. *Journal of Accounting and Economics*, 41(1), 3–27. <https://doi.org/10.1016/j.jacceco.2005.10.002>
- Jensen, M. C. (2005). Agency Costs of Overvalued Equity. *Financial Management*, 34(1), 5–9.
- Kang, S. A., & Kim, Y. S. (2012). Effects of corporate governance on real activities-based earnings management: Evidence from Korea. *Journal of Business Economics and Management*, 13(1), 29–52. <https://doi.org/10.3846/16111699.2011.620164>
- Krishan, J., Wen, Y., & Zhao, W. (2011). Legal expertise on corporate audit committees and financial reporting quality. *The Accounting Review*, 86(6), 2099–2130. <https://doi.org/10.2308/accr-10135>
- Krishnam, G., & Visvanathan, G. (2009). Do auditors price audit committee's expertise? The case of accounting versus non-accounting financial experts. *Journal of Accounting, Auditing & Finance*, 24(1), 115–144. <https://doi.org/10.1177/0148558X0902400107>
- Kusnadi, Y., Leong, K. S., Suwardy, T., & Wang, J. (2016). Audit committees and financial reporting quality in Singapore. *Journal of Business Ethics*, 139(1), 197–214. <https://doi.org/10.1007/s10551-015-2679-0>
- Lary, A. M., & Taylor, D. W. (2012). Governance characteristics and role effectiveness of audit committees. *Managerial Auditing Journal*, 27(4), 336–354.
- Leszczensky, L., & Wobring, T. (2019). How to deal with reverse causality using panel data? Recommendations for researchers based on a simulation study. *Sociological Methods & Research*, 51(2), 837–865. <https://doi.org/10.1177/0049124119882473>
- Li, J., Mangena, M., & Pike, R. (2012). The effect of audit committee characteristics on intellectual capital disclosure. *The British Accounting Review*, 44(2), 98–110. <https://doi.org/10.1016/j.bar.2012.03.003>
- Mardessi, S. M., & Fourati, Y. M. (2020). The impact of audit committee on real earnings management: Evidence from Netherlands. *Corporate Governance and Sustainability Review*, 4(1), 33–46. <https://doi.org/10.22495/cgsrv4i1p3>
- Nelson, S. P., & Devi, S. (2013). Audit committee experts and earnings. *Corporate Governance*, 13(4), 335–351.
- Owusu, A., Zalata, A. M., Omoteso, K., & Elamer, A. A. (2022). Is there a trade-off between accrual-based and real earnings management activities in the presence of (fe) male auditors? *Journal of Business Ethics*, 175(4), 815–836. <https://doi.org/10.1007/s10551-020-04672-5>
- Peasnell, K. V. P., Young, P. F., & S. (2000). Detecting earnings management using cross-sectional abnormal accruals models. *Accounting and Business Research*, 30(4), 313–326.
- Poza, E. J. (2007). *Family business*. Thomson South-Western.
- Robert, K. (2002). *Making audit committees more effective, chief accountant*. Tulane Corporate Law Institute.
- Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42(3), 335–370. <https://doi.org/10.1016/j.jacceco.2006.01.002>
- Sagitaria, A., & Mita, A. F. (2019). Role of audit committee financial expertise and their status in reducing corporate real earnings management. *Academy of Accounting and Financial Studies*, 23, 1–14.
- Shankaraiah, K., & Amiri, S. M. S. (2017). Impact o Audit Committee Quality on Corporate Governance: The Case of Select Indian Listed Firms. *Global Review of Accounting and Finance*, 8(1), 1–9.
- Shleifer, A., & Vishny, R. W. (1986). Large Shareholders and Corporate Control. *The Journal of Political Economy*, 94, 461–488.
- Sterlin, M. (2020). The influence of audit committee expertise on firms' internal controls: Evidence from mergers and acquisitions. *Accounting Horizons*, 34(3), 193–211. <https://doi.org/10.2308/horizons-19-076>
- Sun, J., & Lan, G. (2014). Independent audit committee characteristics and real earnings management. *Managerial Auditing Journal*, 29(2), 153–172. <https://doi.org/10.1108/MAJ-05-2013-0865>
- Susanto, K. Y., & Pradipta, A. (2016). Corporate governance and real earnings management. *International Journal of Business, Economics and Law*, 9(1), 17–23.
- Thiruvadi, S., Thiruvadi, S., & Carter, K. (2021). Audit committee chair chair characteristics and real earnings management. *Journal of Accounting and Finance*, 21(4), 1–16.
- Tsui, J., & Stott, V. (2004). Governance in family-owned Hong Kong corporations in Fedinand, A.G. In J. Tsui (Ed.), *The governance of East Asian corporations: Post Asian financial crisis*. Palgrave Macmillan.
- US. House of Representatives. (2002). The Sarbanes-Oxley Act of 2002. In *Public Law* (pp. 107–204). Government Printing Office.
- Visvanathan, G. (2008). Corporate governance and real earnings management. *Academy of Accounting and Financial Studies Journal*, 12, 9–22.
- Wang, C., Xie, F., & Zhu, M. (2015). Industry expertise of independent directors and board monitoring. *Journal of Financial and Quantitative Analysis*, 50(5), 929–962. <https://doi.org/10.1017/S0022109015000459>
- Wilson, T. E. (2017). Does director tenure affect audit committee effectiveness?. *Journal of Finance and Accountancy*, 21, 1–11.
- Wooldridge, J. M. (2012). *Introductory econometrics: A modern approach* (5th ed.). South-Western Cengage Learning. Retrieved from [https://economics.ut.ac.ir/documents/3030266/14100645/Jeffrey\\_M.\\_Wooldridge\\_Introductory\\_Econometrics\\_A\\_Modern\\_Approach\\_2012.pdf](https://economics.ut.ac.ir/documents/3030266/14100645/Jeffrey_M._Wooldridge_Introductory_Econometrics_A_Modern_Approach_2012.pdf)
- Yasser, Q. Y., Mamun, A. A., & Ahmed, I. (2016). Quality of financial reporting in the Asia Pacific region: The influence of ownership composition. *Review of International Business and Strategy*, 26(4), 543–560.
- Zahn, M. V. D., & Sultana, N. (2015). Earnings conservatism and audit committee financial expertise. *Accounting & Finance*, 55(1), 279–310. <https://doi.org/10.1111/acfi.12042>
- Zalata, A. M., Taurigana, V., & Tingbani, I. (2018). Audit committee financial expertise, gender, and earnings management: Does gender of financial expert matter? *International Review of Financial Analysis*, 55, 170–183. <https://doi.org/10.1016/j.irfa.2017.11.002>
- Zaman, M., Hudaib, M., & Haniffa, R. (2011). Corporate Governance Quality, Audit Fees and Non-Audit Service Fees. *Journal of Business, Finance & Accounting*, 38(1–2), 165–197.
- Zang, A. Y. (2012). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *The Accounting Review*, 87(2), 675–703. <https://doi.org/10.2308/accr-10196>



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