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Do Big Four Auditors Limit Real Earnings Management?

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Abstract:
This study examines the relationship between audit quality and real earnings management (REM) among Top 100 firms listed on Bursa Malaysia. This study uses three proxies to measure REM; abnormal cash flow from operations (RCFO), abnormal production costs (RPC) and abnormal discretionary expenses (RDE) and one proxy for audit quality; Big 4 audit firms. Using a final sample of 656 firm-year observations from 2007 to 2014, this study finds that Big 4 auditor has a significant and negative relation with proxies of REM; RPC and RDE. Further, the results also document that a significant and negative relation between Price Waterhouse Cooper (PwC) and REM measures. The findings suggest that high quality auditor constrains real activities manipulations. In addition, the results suggest that PwC is the most effective audit firms in limiting REM among Malaysian Top 100 firms.

Keywords: *Big 4 Auditor, real earnings management, audit quality, Malaysia*.

I. Introduction

Kitiwong (2014) argues that earnings management indicates a defective audit which might results in high profile fraudulent accounting. She stresses that auditor is perceived as an effective third party who limiting earnings management which in turn increase the quality of accounting numbers. Prior empirical studies seem to support the arguments by documenting that high quality auditors limit their clients' earnings management practicesvia discretionary accruals (Krishnan, 2003; Becker, DeFond, Jiambalvo & Subraman-yam, 1998; Francis, Maydew & Sparks, 1999; Chen, Lin & Zhou, 2005; Tendeloo & Vanstraelen, 2008; Myers, Myers & Omer, 2003; Davis, Soo& Trompeter, 2009; Ismail, Zakaria & Sata, 2015).

Chi, Lisic and Pevzner (2011) however find that firms audited by high quality auditors use real activities manipulation to meet earnings benchmarks when such auditors limit accrual earnings management in their companies. In addition,Hamid, Hashim and Salleh (2016), who examined the view of auditors on earnings management in Malaysia, finds that auditors believe that discretionary accruals manipulation is more unethical that real activities manipulation. Further the auditors believe that real activity manipulation is hard to detect so they choose to keep quiet rather than adjust the manager's attempt to manage earnings.Thus, the main objectives of this paper are, first, to examine the impact of Big 4 auditor (proxy of audit quality) on REM practices among Malaysian public listed companies.Second, this studyadd to the literature on the heterogeneity in audit quality of Big 4 by showing each type of Big 4 monitoring that matters to REM.

Using 656 firm-year observations from 2007 to 2014, the results shows that Top 100 firms audited

by Big 4 auditor are less likely to engage in REM using abnormal production costs and abnormal discretionary expenses.Further, the results also that PwC limit all three measures of REM of its audited firms.

This paper has multifaceted contributions. First, the study expands on the existing body of knowledge on the relation between audit quality and the level of earnings management. Thisstudy expands research work by Krishnan (2003), Becker et al. (1998) and Ismail, Zakaria and Sata (2015)by examining the impact of Big 4 auditor on another perspective of earnings management activities; real earnings management. Second,the paper provides evidence on the effectiveness of Big 4auditor as a monitoring mechanism in promoting confidence in the quality and reliability of audited financial statements in Malaysia setting.

The remainder of the paper is organized as follows. Section two draws a connection between earnings management and audit quality and develops the research hypothesis. Section three elaborates the research design. Section four presents and discusses the findings. The final section provides the summary and conclusions.

II. Literature Review: Real Earnings Management and Auditor Quality

According to Fields, Lys and Vincent (2001), managers can influence reported accounting numbers by managing accounting choices either via accruals (hereafter referred to as accrual earnings management (AEM)) or real-based transactions (hereafter referred to as real earnings management (REM)). The former refers to the earnings management activities that have no direct cash flow implications. For example decision to write down assets, to recognize or defer revenues, to capitalize or expense certain costs such as repair expenditures, and timing of adoption of new standards. REM occurs when manager use real economic actions that affect cash flows to produce a desired earnings (Roychowdhury, 2006). Examples of REM include reductions in discretionary spending such as research and development (R&D), advertising and maintenance expenditures, aggressive price discounts to increase sales volumes, overproduction to report lower cost of goods sold (COGS) and repurchase common share.

Prior studies (Becker et al., 1998; Francis, Maydew & Sparks, 1999; Chen, Lin & Zhou, 2005; Tendeloo & Vanstraelen, 2008; Myers, Myers & Omer, 2003; Davis, Soo& Trompeter, 2009) highlight that high quality of audit limit opportunistic accrual earnings management activities. Becker et al. (1998) for example, examine whether audit quality reduce earnings management. The study hypothesizes that non-Big 6 auditors' clients are more likely to be involved in income increasing via discretionary accruals than Big 6 auditors' clients. It is because Big 6 auditors are more likely to constrain management's accounting choices that will overstate earnings in order to protect their reputation and to be sued. Using 12,558 firm-year observations, they find that companies that hired non-Big 6 auditors report higher discretionary accruals than its counterparts. The results indicate that firms that have high quality of audit have lower discretionary accruals and higher quality of earnings.

In a related study but using Taiwanese data, the work carried out by Chen, Lin and Zhou (2005) who investigates the pattern of discretionary accruals of 367 IPO firms. They hypothesize that Taiwanese firms with high quality auditors are less likely engaging in earnings management during IPO process. Consistent with their

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argument, the results show that firms audited by Big 5 have lower abnormal accruals. The findings suggest that Big 5 auditors are related with higher quality, as they are able to limit earnings management activities of Taiwanese IPO firms.

In Malaysia, Ismail, Zakaria and Sata (2015) examine the impact of Big 4 auditor on earnings management via discretionary accounting accruals. Using sample of 1002 firm-year observations from 2010 to 2012, the study finds that Big 4 auditor limits accruals earnings management. Further, Ching, Teh, San, and Hoe (2015) investigate the relationship between Big 4 auditor and accruals earnings management of Industrial Products and Consumer Products listed firms.The sample of the study consists of 100 companies listed on Bursa Malaysia from2008 to 2013. However, the results on the association between Big 4 auditor and discretionary accruals is insignificant.

Despite mixed results on the relationship between Big 4 auditor and earnings management via discretionary accounting accruals in Malaysia setting, this study attempts to extend this line of research by examining the impact of Big 4 auditor and other types of earnings management; real earnings management. This study choose to examine the degree of real earnings management instead of accruals earnings management due to recent studies that highlight that companies all over the world including Malaysia (see for example Suffian et al., 2015; Zamri et. al., 2013; Abdul Rahman, 2012; Sulong et. al. 2014) tend to switch from accruals to real earnings management as such practices are likely to be harder to detect (Cohen et al., 2008). Thus, this study hypothesises that:

H_1: Big 4 auditor has a significant and negative relationship with real earnings management measures.

III. Research Design and Methodology

3.1 Sample Selection and Data Collection

The sample for this study consists of Top 100 Public Listed Companies (PLCs) in Malaysia for the period 2007 to 2014. The selection was based on market capitalization in the year 2014. The initial sample consists of 800 firm-year observations. Data on external auditors are collected from the companies' annual reports. Meanwhile, data required for computing real earnings management and firms specific characteristics control variables are collected from Thompson Reuters Datastream. We exclude firms in banking and finance sector because they have different guidelines and governance systems (Abdul Rahman and Mohamed Ali, 2006). We also exclude firm-year observations with missing real earnings management measures data or whose annual reports are unavailable. This procedure yields 656 firm-year observations.

3.2 Operationalisation of the Dependent, Independent and Control Variables

3.2.1 Dependent Variables: Real Earnings Management

The central variable of this study is real earnings management. This study uses three proxies to measure real earnings management, namely the abnormal levels of cash flow from operations (RCFO), abnormal production costs (RPC) and abnormal discretionary expenses (RDE). The measurement of real earnings management used here, is taken from the study by Roychowdhury (2006), who estimates RCFO, RPC and RDE as the residual from the following model respectively.

$$CFO_{it}/A_{it-1} = \beta_1 [1/A_{it-1}] + \beta_2[Sales_{it} / A_{it-1}] + \beta_3[\Delta Sales_{it} / A_{it-1}] + \varepsilon_{it}$$

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Where,$CFO_{it}$is a cash flow from operation in period t, A_{it-1} is a total assets of firm i in year t-1, $Sales_{it}$ is a sales of firm i in year t, $\Delta Sales_{it}$is a sales of firm i in year t less sales of firm i in year t-1, ε_{it} is a residual term that captures the level of abnormal cash flow of firm i in year t.

$$PROD_{it}/A_{it-1} = \beta_1 [1/A_{it-1}] + \beta_2[Sales_{it} / A_{it-1}] + \beta_3[\Delta Sales_{it} / A_{it-1}] + \beta_4[\Delta Sales_{it-1} / A_{it-1}] + \varepsilon_{it}$$

Where, $PROD_{it}$ is the sum of cost of goods sold and change in inventory of firm i in year t, ε_{it} is a residual term that captures the level of abnormal production cost of firm i in year t.

$$DISCEXP_{it}/A_{it-1} = \beta_1 [1/A_{it-1}] + \beta_2 [Sales_{it-1} / A_{it-1}] + \varepsilon_{it}$$

Where, $DISCEXP_{it}$ is the sum of R&D expenses and SG&A of firm i in year t, ε_{it} is a residual term that captures the level of abnormal discretionary expenses of firm i in year t.

3.2.2 Independent Variable: Big 4 Auditor

The key independent variable of this study is Big 4 auditor. The measure of Big 4 is a dummy variable indicating whether the firm audited by Big 4 auditor or not.

3.2.3Control Variables

First, this study controls for firm size. Large firms often receive more media attention, have higher analyst following and face regular political scrutiny (Ahmed & Duellman, 2007; Watt & Zimmerman, 1978). Therefore, they would tend not to manage their earnings upwards. Second, the study controls for leverage. Firms with higher levels of debt would have their earnings scrutinized by debt providers or their agents, e.g., trustees, such that they do not inflate earnings to benefit the shareholders or managers at the expense of the debt providers through dividends and earnings-based compensations (Ahmed et al., 2002). Third, the study controls for growth. Growth firms are likely to have higher manipulation because of increased revenue-generating activities, such as credit sales. Fourth, the study controls for profit. Abdul Rahman and Ali (2006) note that firms with low performance (ROA) have more incentive to engage in earnings management. Year dummy and industry dummy is also included in the study to controls for the year and industry effect.

3.3 Multivariate Regression Models

To test the research aims, this study run the following regression models:

$$RCFO_{ft} = \alpha + \alpha_1 BIG4_{ft} + f(control\ variables) + \xi \quad (1)$$

$$RPC_{ft} = \alpha + \alpha_1 BIG4_{ft} + f(control\ variables) + \xi \quad (2)$$

$$RDE_{ft} = \alpha + \alpha_1 BIG4_{ft} + f(control\ variables) + \xi \quad (3)$$

Where, $RCFO_{ft}$ is absolute value of abnormal cash flows of firm *f* in year *t*, RPC_{ft} is absolute value of abnormal production costs of firm *f* in year *t*, RDE_{ft} is absolute value of abnormal discretionary expenses of firm *f* in year *t*,$BIG4_{ft}$ is 1 if firms audited by Big 4 auditor and 0 otherwise, $SIZE_{ft}$is a natural log of total assets of firm *f* in year y,$LEVERAGE_{ft}$is a total liabilities to total assets of firm *f* in year, $GROWTH_{ft}$ is a market to book ratio of firm *f* in year *y*,$PROFIT_{ft}$is earnings (EBIT) to total assets, $YEAR_{ft}$ is a sample year,$IND_{ft}$is industry.

IV. Results and Findings

4.1 REM Measures and Big 4 Auditor and Control Variables

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Table 4.1 reports the results of the regression of Big 4 auditor on the REM measures. The results show that Big4 has a significant negative association with two proxies of REM; RPC and RDE. This suggests that Malaysian top 100 listed companies audited by Big 4 auditorare less likely to manage reported earnings via abnormal production costs and abnormal discretionary expenses. Table 4.1 also shows the effect of the control variables on REM. The results indicate a significant and negative association between REM proxies and SIZE, consistent with argument by Ahmed and Duellman (2007) and Watt and Zimmerman (1978). They argue that large firms are less likely to manage reported earnings as such firms often receive more media attention, have higher analyst following and face regular political scrutiny. Contradict with our expectation, the result shows that LEVERAGE is significant and positively associated with all REM proxies. The finding suggests that REM is higher among high debt firms. This in line with the argument put forward by Sweeney (1994) that highly-leveraged firms have greater incentives to use aggressive accounting techniques in order to avoid covenant violations. In addition, Table 4.1 indicates that PROFIT is positively significant with two REM proxies; RCFO and RDE. The finding suggests that profitable firms are more likely to manage their accounting numbers using abnormal cash flow from operation and abnormal discretionary expenses. In term of GROWTH, there is mixed results. In particular, GROWTH has a positive and significant relationship with RCFO but negatively related to RDE and RPC. The findings indicate that high growth firms are more motivated to manage reported earnings via abnormal cash flow from operation.

Table 4.1: Regression Analysis for Big 4 Auditor

Variables	Model (1)	Model (2)	Model (3)
	RCFO	RPC	RDE
Big4	.008	-.041***	-.025***
	(.931)	(-4.571)	(-3.428)
Control Variables: Firm's specific characteristics			
SIZE	-.004**	-.024***	-.019***
	(-1.911)	(-10.139)	(-9.692)
LEVERAGE	.081***	.136***	.097***
	(4.865)	(7.928)	(6.855)
GROWTH	.002***	-.001**	-.001**
	(3.751)	(-1.946)	(-1.524)
PROFIT	.163***	.035	.064***
	(5.372	(1.127)	(2.499)
Intercept	.068**	.412***	.324***
	(1.914)	(11.297)	(10.692)
Observations	656	656	656
Durbin-Watson	1.783	1.695	1.627
R-Square	22.40	21.90	21.40
Adjusted R-Square	21.70	21.20	20.70

Note:
***Statistical significance at the 1% level.** Statistical significance at the 5% level.
* Statistical significance at the 10% level.

4.2 Additional Analysis

To ensure the robustness of this study, additional analysis was undertaken to examine which types of Big 4 audit firms are effective in limiting REM. The results in Table 4.2 indicate that PwC is significantly and negatively related with all REM measures. The evidence suggests that PwC is the most effective Big 4 audit firms in limiting REM of its audited firms.

Table 4.2: Regression Analyses for each Big 4 Audit Firms

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Variables	Model (1) RCFO	Model (2) RPC	Model (3) RDE
PwC	-.024***	-.013*	-.012**
	(-3.014)	(-1.644)	(-1.756)
KPMG	-.012*	.019**	.025***
	(-1.635)	(2.533)	(4.008)
EY	.757**	-.015**	-.011**
	(2.698)	(-2.432)	(-2.275)
Deloitte	.017	.042**	-.016
	(1.003)	(2.395)	(-1.131)
Non Big4 audit firms	-.016**	.046***	.030***
	(-1.710)	(4.859)	(3.909)
Control Variables: Firm's specific characteristics			
SIZE	-.002	-.021***	-.017***
	(-.878)	(-8.340)	(-7.910)
LEVERAGE	.086***	.105**	.111***
	(5.057)	(8.584)	(7.804)
GROWTH	.001***	-.001**	-.001**
	(3.546)	(-2.113)	(-1.794)
PROFIT	.178***	.042*	.069***
	(5.835)	(1.358)	(2.684)
Intercept	.047**	.316***	.248***
	(1.234)	(8.133)	(7.768)
Observations	656	656	656
Durbin-Watson	1.816	1.726	1.687
R-Square	23.90	24.10	24.80
Adjusted R-Square	22.90	23.10	23.80

Note:
***Statistical significance at the 1% level. ** Statistical significance at the 5% level. * Statistical significance at the 10% level.

V. Summary and Conclusion

This paper examines the impact of Big 4 audit firms on real earnings management. To capture REM, the study uses three different measures: RCFO, RPC and RDE developed by Rochowdhury (2006). Using a final sample of 656 firm-year observations of Malaysian Top 100 companies listed on Bursa Malaysia from 2007 to 2014, the results show that Big 4 auditor limit REM activities using abnormal production costs and abnormal discretionary expenses. Further, the results indicates that PwC limit all three proxies of REM, suggesting that such audit firm is the most effective auditor in mitigating real activities manipulation of its audited firms.

One major limitations of this study is that examines only Malaysian Top 100 firms listed on Bursa Malaysia. Second, this study only focuses on three types of REM. Another avenue for future research is to include different proxies for measuring REM in order to test for robustness of the results. Finally, this study does not control for corporate governance mechanisms that affect earnings management practice. Future studies should therefore examine the impact of Big 4 auditor on other types of REM measures among all Malaysian listed firms to provide more meaningful and generalize results.

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