

DO BIG 4 AUDITORS IMPROVE THE ABILITY OF GOODWILL TO FORECAST FUTURE CASH FLOWS? THE MALAYSIAN EVIDENCE

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Abstract

The accounting rules prescribed in Malaysian Financial Reporting Standard (MFRS) 3, *Business combination*, and (MFRS) 136, *Impairment of Assets*, give managers considerable reporting discretion in allocating goodwill and estimating its actual value. Agency theory predicts that managers may use the accounting discretion granted by the new rules to pursue their own interests at the expense of shareholders. Hence, auditors are required to exercise professional judgement when investigating hard-to-verify management assumptions and valuations. We exploit this issue by examining whether predictive ability of goodwill improved in the presence of Big 4 auditors. We provide evidence that goodwill has a significant predictive ability for second and third-year ahead cash flows which exists only in the firms audited by the large international reputable accounting firms. This suggests that Big 4 auditors play an important role in ensuring appropriate implementation of the present accounting for goodwill.

Keywords: Audit Quality, Emerging Markets, Goodwill Impairment, Cash Generating Units, Fair Values, Recoverable Amount, Value In Use

1. INTRODUCTION

Audited annual reports represent major inputs used by shareholders, creditors and others, to evaluate firm's financial performance and to make proper business decisions. The quality of auditing and its ability to ensure credible financial reporting plays an important role in minimizing information asymmetry and boosting shareholders confidence in any stock market (Becker, Defond, Jiambalvo & Subramanyam, 1998; Khlif & Samaha, 2013). However, the collapse of Arthur Andersen in conjunction with other highly publicized audit failures have attracted widespread criticisms about the quality of audits by external auditors. In East Asian countries, this issue has been controversial subsequent to the Asian financial crisis, when the World Bank questioned the appropriateness of services supplied by the Big N audit firms (Johl, Jubb, & Houghton, 2007). The main question lies in this controversy: Are the Big N firms able to provide higher quality audit services compared to that of other accounting firms? This paper addresses this question by examining whether the ability of goodwill to forecast future cash flows is enhanced in the presence of Big N auditors, within the context of a unique emerging market, Malaysia.

The Malaysian setting provides very unique research advantages. Malaysia is a multiracial country (Mustapha & Che-Ahmad, 2011). It is grouped among common-law countries with weak enforcement of accounting standards (Muniandy & Ali, 2012) and with low level of audit quality (Ali, Haniffa & Hudaib, 2006). This is in contrast with

other common law countries such as the United Kingdom, wherein more rigorous mechanisms to enforce the application of accounting standards are in place (Ball, Robin & Wu, 2003; Johl et al., 2007). Perhaps a more critical feature in the Malaysian capital market is that, minority of shareholders are exposed to risk of wealth expropriation activities by controlling shareholders (Hashim & Devi, 2008). This is because, there is a high level of ownership concentration and wide prevalence of family dominated business (Amran & Ahmad, 2010; Chen, 2013; Hasnan et al., 2013). Thus, the fundamental agency problem in Malaysian companies arises from the conflict between dominating shareholders and minority shareholders (Salim, 2006). On the other hand, the agency problem in the Western countries is rooted mainly in the conflict between dispersed small shareholders and professional managers (Enriques & Volpin, 2007).

Additionally, the Malaysian stock market is characterized by a lack of active and liquid markets for numerous type of assets (Carlin, Finch, & Laili, 2009a). As such, managers relied largely on Value in Use (VIU) method to estimate the recoverable amounts of Cash Generating Units (CGUs) (Carlin et al., 2009a). Hence, they have more opportunity to report accounting amounts more for private interests than to reflect the true economic events affecting the firms (Landsman, 2007). These institutional settings enable the study to provide useful implications for both theory and practice in Malaysia and other emerging markets.

We focus on goodwill for many considerations. First, unlike other assets of the business, goodwill

can only be sold or purchased as part of a firm or as a whole. Hence, it cannot be sold separately (Henderson, Peirson & Herbohn, 2008). Second, goodwill is an economically significant asset. It represents about 5 per cent of Malaysian listed firms' assets between 2010 and 2011. Finally, the present accounting for goodwill increases the opportunities for deliberate manipulation of earnings (Massoud & Raiborn, 2003). For example, determining the recoverable amount of Cash Generating Units (CGUs) containing goodwill relied heavily on management's future behaviours, including managers' insight and execution of corporate strategy (Ramanna & Watts, 2012). As a result, managers can overstate/understate the true extent of goodwill impairments by distorting the inputs used in discounted cash flows analysis (DCF) to extract rents from shareholders (Wines, Dagwell & Windsor, 2007). Hence, agency theory predicts that managers can exploit the flexibility inherent in goodwill accounting under IFRS to pursue their private interests in the opportunistic sense (Ramanna & Watts, 2012). These issues provide an excellent laboratory to study whether goodwill, as attested by the Big 4 auditors has higher explanatory power and predictive ability than those by other auditors.

In view of the above, we assume that the Big 4 auditors have more ability, knowledge and expertise in enforcing the application of accounting standards that required much of discretion to be exercised by managers, than non-Big 4 auditors. We also expect that the goodwill of the Big 4 clients exhibits more predictive ability for future cash flows than those of the non-Big 4 clients. Consistent with our expectation, the evidence shows that goodwill possessed significant predictive power for second and third-year-ahead cash flows, but only in the presence of the Big 4 auditors. This suggests that larger offices of Big 4 auditors allow for better implementation of the present goodwill accounting under Malaysian Financial Reporting Standards (MFRSs). Our results are robust even when we control for the potential endogeneity arising from auditor choice with respect to client selection, and when all continuous variables are deflated by total assets.

Furthermore, the present study adds to the accounting literature in numerous ways. First, evidence is presented showing that, the predictive power of goodwill for next period cash flows is improved in the presence of the Big 4 auditors. To the best of our knowledge, our paper is the first empirical study to document such evidence. By demonstrating this evidence, we extend the stream of research indicating that the Big 4 auditors have superior ability to enforce high quality financial reporting over that of other auditors (e.g., Eshleman & Guo, 2014; Francis, Maydew, & Sparks, 1999; Francis & Wang, 2008). Second, we add to accounting literature by focusing on equity capital market in Malaysia. Because of the unique Malaysian institutional environment, our findings should be of interest to policy makers, financial analysts, shareholders, and other users of financial statements.

The remainder of this study is proceeds as follows. In Section 2.0, describes the goodwill

reporting in Malaysia. We reported the literature and developed our main hypothesis in Section 3.0. We then illustrated the study design and the sample in Section 4.0. Additionally, we presented the results and analysis in Section 5.0. Our implications and conclusion is reported in Section 6.0.

2. GOODWILL REPORTING IN MALAYSIA

Accounting for goodwill has been historically contentious issue in financial reporting for decades. In Malaysia prior to 2006, there were no mandatory financial standards to govern the reporting of goodwill (Carlin et al., 2009a). Indeed, the prevalence of lobbying activities from influential parties over accounting for goodwill were resulted in a failure to issue an effective standard with respect to this asset (Susela, 1999). Not surprising then, various accounting treatments were used by firms to deal with goodwill. These treatments ranged from capitalisation of goodwill as a permeants asset to immediate write off against reserves in the date of business combination (Susela, 1999). As firms were free to choose the accounting practice with respect to this asset, consistency and comparability were poor (Carlin et al., 2009a).

On January 1st 2006, all Malaysian listed firms have been required to prepare and present the statutory financial reports in accordance with Financial Reporting Standards (FRSs) adopted by the Malaysian Accounting Standard Board (MASB) (Carlin et al., 2009a). In essence, the approved accounting standards adopted by MASB were identical those of the International Financial reporting standards (IFRSs) issued by the International Accounting Standards Board (IASB). As a result of the adoption of IFRSs, firms must account for goodwill using accounting requirements included in MFRS 136, *Impairment of Assets*, and MFRS 3, *Business Combinations*.

The new standards required all business acquisition transactions to be accounted by employing the purchase method, which is now known as acquisition method, and changed the reporting of goodwill from the systematic amortisation to a method relied solely on impairment reviewing. The purchase method illustrated in MFRS 3 indicated that goodwill is recognised as an asset with indefinite life if the amount paid by the buyer exceeds the actual fair value of the identifiable assets acquired and liabilities assumed (MFRS 3, para. 32).

Subsequently, goodwill must be allocated to cash generating units (CGUs) that are expected to take advantage of synergies (MFRS 136, para. 80). Manager is then required to test each of CGU containing goodwill, at least annually (MFRS 136, para. 10). This can be accomplished by comparing the recoverable amount CGU with its carrying amount (MFRS 136, para. 10). If the result of this test indicates that the carrying amount of CGU exceeds its recoverable amount, then an impairment charges should be recognised. Otherwise, managers can conclude the impairment loss has not occurred (MFRS 136, para. 59). It is important to note that there are two choices available for managers to determine the recoverable amount of CGUs

containing goodwill, namely, fair value less costs to sell and value in use. Value in use is defined as the present value of the future benefits derived from acquired goodwill (Ernst & Young, 2013).

The primary objective of the goodwill accounting under IFRS is to better reflect the underlying economic conditions of this asset (KPMG, 2014). Nevertheless, as discussed earlier, IFRS 136 gives managers substantial flexibilities to engage in opportunistic earnings management (Filip, Jeanjean, & Paugam, 2015). Hence, auditors play a pivotal role in ensuring that managers actually behave in line with the interests of shareholders.

3. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

An auditor is an independent person who is entitled under the law to review and report the weaknesses in the financial records, accounting information system and internal control through high quality audit services to clients (Dandago & Zamro, 2013). The idea that audit quality is not independent of audit firm size can be traced back to the seminal work of DeAngelo (1981), who suggest that large audit firms with a multiple clients have "more to lose" by failing to supply a high-quality audit. This is because a failure to discover any violation in particular client's financial statement may cause the auditor to lose significant investment in reputation, capital, termination by other clients, and decreased audit fees.

Subsequently, various academics opined that Big N auditors supply differential audit quality over that of other auditors (Lawrence, Minutti-Meza, & Zhang, 2011). Big N firms have a significant market share (Thoopsamut & Jaikengkit, 2009), work by means of network of semi-autonomous practice offices and have decentralized offices (Francis & Yu, 2009). These attributes may alleviate the information asymmetry and enable Big N to cultivate favourable knowledge about existing and potential clients (Francis & Yu, 2009). In addition, Big N firms devote more resources to training programs. As a result, they have better trained auditors (Eshleman & Guo, 2014). Thus, it comes as no surprise that Big N auditors have more in-depth experience, and knowledge in reviewing public companies, which would in turn improve their ability to discover and record material misstatements in the financial reports (Francis & Yu, 2009; Krishnan, 2003).

Big N firms are also more risk averse (Lai, 2013), and sensitive to the cost of client misstatements (Francis & Wang, 2008). This is because they are more adversely affected than non-Big firms by unfavourable events that lead to loss in reputation (Krishnan, 2003). For example, the Big 4 firms are likely to be prosecuted if they fail to discover any misstatements in financial reports (Becker et al., 1998; Khurana & Raman, 2004). Hence, the Big N auditors are most assuredly independent (Becker et al., 1998). Particularly, they are inclined, capable and well-positioned to challenge the wishes of management in order to shield their reputation (DeFond & Jiambalvo, 1993). On the other hand, non-Big N auditors are more susceptible to agree with managements in order to avoid dismissal since

they have less to lose (Francis & Wang, 2008; Lai, 2013).

In supporting the above lines of thought, various studies agree that Big N firms are better in mitigating earnings management in relation to other firms. DeFond and Jiambalvo (1991) show evidence that clients of Big N accounting firms have minor errors and irregularities than clients of non-Big N accounting firms. Empirical evidence also shows that clients of companies audited by Big N accounting firms have fewer magnitudes of discretionary accruals and less level of earnings management. This suggests that Big N accounting firms provide higher audit quality than non-Big Six firms (Becker et al., 1998; Francis et al., 1999; Francis & Yu, 2009; Krishnan, 2003).

Francis and Wang (2008) showed evidence that Big N auditors add value to the quality of client firms' earnings, but only when shareholder protection is rigorous. They also concluded that Big N auditors are more sensitive than other auditors to the consequences of managerial opportunisms in countries with strong shareholder protection. Eshleman Guo (2014) documented that after firms audited by Big N firms are less prone than other firms to issue accounting restatements.

Prior research also shows that Big N firms are less likely than other firms to agree with managements and to issue unclean opinions. For example, DeFond and Jiambalvo (1993) found that auditor-client disagreements arising from managerial agency-based motives to manipulate earnings are more likely to take place in firms audited by Big N firms. Also, Lai (2013) reported that the likelihood of issuing going-concern modified opinions or restricting the estimated degree of discretionary accruals to former Andersen clients is higher for Big N firms than non-Big firms. His study suggests that Big 4 firms are more interested in avoiding litigation threat than other firms.

Another stream of research indicates that users' confidence in financial statements improved in firms audited by Big N auditors. For instance, Teoh & Wong (1993) demonstrated that earnings response coefficients are larger in clients audited by Big N auditors than other auditors. Lee and Lee (2013) also noted that the shareholders place more valuation weight to earnings and book value of Big N clients relative to non-Big N ones. Choi and Lee (2014), and Khurana and Raman (2004) opined that clients of Big N auditors are associated with lower cost of equity capital than clients of other auditors. In addition, Behn, Choi, and Rang (2007) report a higher analysts' earnings forecast accuracy and a smaller forecast dispersion for clients audited by Big N clients compared to the clients audited by non-Big 4 firms.

Notwithstanding the submissions of the above empirical underpinnings, some recent research have suggested that audit work delivered by Big 4 auditors is not conspicuously different from those of non-Big N firms (Boone, Khurana, & Raman, 2010; Campa, 2013). After controlling for potential endogenous auditor choices which existed in client selection, Lawrence, Minutti-Meza, and Zhang (2011) provide evidence that firms audited by Big N firms exhibit comparable audit quality in

comparison to non-Big N firms as proxied by discretionary accruals, cost-of-equity capital, and analyst forecast accuracy. They conclude that the difference between Big and non-Big N firms with respect to audit quality is a mere reflection of clients' characteristics. This is consistent with the notion that Big N auditors often serve large firms that are under greater political cost; have good governance in place, and devote more resources to develop a better accounting system (Campa, 2013).

In Malaysia, prior research on the Big 4 and non-Big 4 firms is largely inconclusive. For example, Carlin, Finch, and Laili (2009) show evidence of poor compliance with the requirements of FRS 136, *Impairment of Assets*, by Malaysian firms whose financial statements were audited by the Big 4 auditors. They concluded that the Big 4 firms do not add value to the accurate representation of goodwill. On the other hands, Johl *et al.* (2007) utilize matched paired sample of companies listed on Bursa Malaysia between 1994 and 1999. They found that the magnitude and level of unexpected accruals is positively related to qualified audit opinions in the presence of Big N audit firms.

Consequently, there is a long-standing debate and controversy about whether Big N accounting firms render high quality audit services. The goal of this paper therefore is to investigate whether goodwill of firms attested by Big 4 auditors better predicts firms' future cash flows. To the extent that the presence of Big 4 auditors improves the quality of goodwill reporting, we hypothesize that:

Hypothesis 1 (H1): Ceteris paribus, the ability of goodwill to forecast cash flows enhanced in the presence of the Big 4 auditors.

4. RESEARCH DESIGN

4.1. Empirical models

Consistent with Lee (2011), we construct equation (1) to test the relationship between goodwill and firm's future cash flows:

$$OCF_{it} = \beta_0 + \beta_1 EARN + \beta_2 BVWG + \beta_3 GWILL + \beta_4 \sum YEAR + \beta_5 \sum INDUSTRY + error \quad (1)$$

Where, OCF_{it} represents cash flow from operations for firm i in year t . we consider three years forecast horizons: $t+1$, $t+2$, $t+3$. EARN stand for net income reported by firm i 's at year t . BVWG denotes firm i 's book value of equity excluding goodwill; GWILL is firm i 's recorded goodwill. We include year dummy to control for exogenous macro-economic shocks (Cazavan-Jeny, Jeanjean, & Joos, 2011). We also include many industry dummies to account for industry effects. Similar to Jarva (2009), all continuous variables are deflated by market capitalisation at the end of the year. The use of total assets may not be suitable as a deflector because there is a high correlation between total assets and reported goodwill. This in turn can increase the amount of bias in the estimated regression coefficients (Lee, 2011). Nevertheless, we used total assets as an alternative deflator in the robustness check to ascertain the stability of our conclusion.

Additionally, to examine whether goodwill is more predictable in the presence of the Big 4 auditors, we introduced a dummy variable called BIG 4 which is equal to one of the annual report of firm i 's is attested by the Big 4 auditors (Ernst & Young, Deloitte, Ernst & Young, and PricewaterhouseCoopers), and zero otherwise. Then, we create interaction term between variable BIG 4 with GWILL. If the Big 4 auditors improve the predictability of goodwill, then significant coefficient on the interaction term between BIG 4×GWILL would be observed. Therefore, our next equation is:

$$OCF_{it} = \beta_0 + \beta_1 EARN + \beta_2 BVWG + \beta_3 GWILL + \beta_4 BIG4 + \beta_5 BIG4 \times GWILL + \beta_6 \sum YEAR + \beta_7 \sum INDUSTRY + error \quad (2)$$

4.2. Sample selection and industry classification

The data used in the regression analysis are obtained from two sources. First, the financial data are gathered from Thomson DataStream. Second, the data about Big 4 auditors is hand-collected from annual reports. As shown in Table 3.1, we start our sample selection procedures by identifying all Malaysian firms listed on the Main and ACE markets of Bursa Malaysia from 2011 to 2012. This procedure resulted in 1,898 firm-year observations. Out of these 1,898 observations, 1,046 are eliminated because they do not have positive ending goodwill balance. The sample is further reduced by eliminating 43 firm-year observations belonging in financial industries because of their special account structures. We then excluded 81 firm-years observations due to missing data. Consistent with the prior research (e.g., Ahmed, Morton, & Schaefer, 2000), two observations are excluded because they have negative book value of equity. Based on these common procedures, the final sample included in the empirical analysis consists of 726 firm-year observations.

Table 3.1. Sample selection process

	<i>Firm-year observations</i>
All firms listed on the Main and ACE markets	1,898
Less observations that have zero goodwill balance	(1,046)
Less observations falling in the financial sector	(43)
less observations with insufficient/missing data	(81)
less observations with negative book value of equity	(2)
Final sample	726

Table 3.2 shows the distribution the sample firms by sector. As shown, the sector with the highest prevalence in our sample is trading and services (30.72%) with 223 observations. This is followed by industrial products (26.31%) with 191 observations; customer products (14.05%), with 102 observations; property development (10.33%) with 76 observations; technology (8.40%) with 61 observations; plantation (5.23) with 38 observations; and construction (4.96%) with 36 observations.

Table 3.2. Sample classification by sector

Industry	Number of observations	Percentage of total sample
Construction	36	4.96
Customer Products	102	14.05
Industrial Products	191	26.31
Plantation	38	5.23
Property Development	75	10.33
Technology	61	8.40
Trading and Services	223	30.72
Total	726	100%

5. EMPIRICAL RESULTS

5.1. Univariate results

Table 4.1 shows the descriptive statistics for the Big 4 and non-Big 4 clients on an un-scaled basis, as well as the percentage of firm's market values. The two columns to the right display the average and median differences between the two subsamples for each of continuous variable employing parametric two-tailed t-test and nonparametric Wilcoxon Mann-Whitney test, respectively. Inconsistent with studies carried in Western countries (e.g., Khurana & Raman, 2004), the table show a fairly even distribution of the sample across the two sample groups, with 52% of client firms audited by Big 4 auditors.

As shown in Table 4.1, the mean and median of GWILL reported by Big 4 clients was greater than that reported by non-Big 4 clients. The mean and median of GWILL for Big 4 clients were RM142,002,000 and RM11,487,000 respectively, while the mean and median for non-Big 4 clients' firms were RM49,259,000 and RM5,217,000 respectively. The mean of GWILL represents 12.0% and 18.4% of market value of equity for the two sample groups, respectively. This indicates that

goodwill is economically significant for both Big 4 and non-Big 4 clients.

The results on BVWG show that Big 4 clients experienced better growth opportunities than non-Big 4 clients, captured in a significantly lower mean and median for scaled BVWG. The average (median) BVWG for Big 4 clients is 1.319 (1.116) compared with 1.526 (1.347) for non-Big 4 clients. In addition, the mean and median of scaled EARN for Big 4 clients were 6.90 and (7.60) respectively versus -0.50 and 6.90 respectively for non-Big 4 clients. Finally, the magnitude of OCF is significantly larger in Big 4 clients than non-Big 4 clients during the three-year horizons.

Table 4.2 provides the coefficients of Pearson correlation for the variables incorporated in the regression models. Although there are some of significant correlation between the explanatory variables, but the amount of the correlation coefficients do not exceed the threshold 0.8 (Studenmund, 2005). Furthermore, the Variance Inflation Factors (VIF) (not reported) estimated after the regression analysis ranges from 2.39 to 1.10. This suggests that the absence of multicollinearity problem (Chao & Horng, 2013).

Table 4.1. Descriptive statistics (N = 727)

Panel A: Unscaled								
Variables	BIG 4 Clients, N = 378			Non-Big 4 Clients, N = 348			p-values	
	Mean RM000	Median RM000	SD RM000	Mean RM000	Median RM000	SD RM000	t-test	W-test
OCF _{it+1}	254,824	26,444	813770	48,088	7,855	277226	.000***	.000***
OCF _{it+2}	240,387	34,688	755231	48,429	7,875	272808	.000***	.000***
OCF _{it+3}	245,167	38,549	739167	51,991	7,684	312499	.000***	.000***
EARN	151,074	27,754	405585	35,123	5,518	212513	.000***	.000***
BVWG	1,523,546	353,300	3726473	373,533	117,101	1456808	.000***	.000***
GWILL	142,002	11,487	597237	49,259	5,217	341909	.010***	.000***
Panel B: Scaled by total market capitalisation								
Variables	BIG 4 Clients, N = 378			Non-Big 4 Clients, N = 348			p-values	
	Mean	Median	SD	Mean	Median	SD	t-test	W-test
OCF _{it+1}	0.122	0.092	0.207	0.115	0.105	0.351	.750	.181
OCF _{it+2}	0.126	0.096	0.281	0.097	0.094	0.355	.239	.882
OCF _{it+3}	0.147	0.107	0.342	0.079	0.074	0.399	.015**	.075*
EARN	0.069	0.076	0.137	-0.005	0.069	0.494	.007***	.102
BVWG	1.319	1.116	0.950	1.526	1.347	1.130	.008***	.007***
GWILL	0.120	0.026	0.229	0.184	0.050	0.401	.009***	.001***

Notes:

- Variable definitions: OCF is cash flows generated from firm i's operations Scaled by firms' market value; EARN is firm i's reported net income Scaled by firms' market value; BVWG is firm i's adjusted book value of equity Scaled by firms' market value; GWILL is firm i's reported goodwill Scaled by firms' market value; Big 4 is dummy variable equal to one if the annual report of firm i's is attested by Big 4 accounting firms (Deloitte, Ernst & Young, Ernst & Young, and PricewaterhouseCoopers), and zero otherwise.
- *, **, ***, significant at the threshold of 10%, 5% and 1%, respectively.

Table 4.2. Pearson correlation coefficients between variables

	<i>EARN</i>	<i>BVWG</i>	<i>GWILL</i>	<i>BIG 4</i>	<i>BIG 4</i> × <i>GWILL</i>
<i>EARN</i>	1.0000				
<i>BVWG</i>	0.1307***	1.000			
<i>GWILL</i>	-0.1418***	0.1405***	1.0000		
<i>BIG 4</i>	0.1075***	-0.1133***	-0.0948**	1.0000	
<i>BIG 4</i> × <i>GWILL</i>	-0.0729**	0.0076	0.5557***	0.3483***	1.0000

Note: Variables definitions are provided in Table 4.1

5.2. Multivariate results

Table 4.3 displays the estimated results of ordinary-least squares (OLS) regressions used to test our hypothesis. The adjusted R^2 ranges from 12.37% to 6.07% and the F-Statistic of the regression models is significant 1% level. This suggests that the regression analyses exhibit reasonable goodness-of-fit for the observed sample data. We winsorize all non-dichotomous variables at 1st and 99th percentiles to alleviate the adverse effect of abnormal observations on the regression results. We also perform the Huber-White robust standard errors to adjust for potential heteroscedasticity.

As shown in Table 4.3, regression Model (1), Model (2), and Model (3) examine the association between goodwill and firm's future cash flows over three year forecast horizon, respectively. Consistent with our expectations, the regression results demonstrate that the coefficients of earnings (EARN) are positively and significantly associated with firm's future cash flows for one, and third- year cash flows ($\beta = 0.197$; p-value = 0.010, $\beta = 0.266$; p-value = 0.013), and marginally significant for second-year cash flows ($\beta = 0.203$; p-value = 0.068). This significant results for EARN confirms the notion that earnings is vital components in predicting firm's future cash flows (Barth, Cram, & Nelson, 2001).

Consistent with Lee (2011), we find evidence that the estimated coefficients on book value of equity (BVWG) is strongly and positively significant in all regression models, irrespective of the forecast horizon ($\beta = 0.049$; p-value = 0.000, $\beta = 0.038$; p-value = 0.006, and $\beta = 0.057$; p-value = 0.001 or the one, second, and third-year-ahead cash flows, respectively). This suggests that the amounts of residuals available to common shareholders are associated with the generation of future cash flows.

Table 4.3 also shows that the coefficients on goodwill (GWILL) is found to be significant only over one year forecast horizon ($\beta = 0.122$; p-value = 0.003). The insignificant association between goodwill and second and third-year horizon is in line with the notion that goodwill does not have future economic benefits. Hence, it has no room in the balance sheet. Alternatively, the significant coefficient for one year-horizon suggests that goodwill is related with the production of short term benefits.

The main experimental variable in our study is the interaction term between GWILL and BIG 4. Models (4), (5), and (6) test whether the relationship between goodwill and future cash flows is enhanced in the in presence of Big 4 auditors for the one, second- and third-year future cash flows, respectively. In Model (1), we discover that the estimated coefficient on the interaction term between GWILL×BIG 4 is insignificant ($\beta = .061$; p-value = 0.426). This insignificant finding suggests that Big 4 firms do not provide incremental

contribution to the predictability of goodwill over one year forecast horizon. However, the results of Models (5) and Model (6) demonstrate that the estimated coefficients on the interaction term *BIG 4*×*GWILL* are statistically significant for the second-year ($\beta = .210$; p-value = 0.034), and the third-year-ahead cash flows ($\beta = 0.398$; p-value = 0.002). This suggests that goodwill have more predictive ability for future cash flows in the presence of Big 4 auditors.

5.3. Robustness tests

In order to address the issue of endogeneity in the choice of the firm's auditor, we performed robustness tests. We also explored whether the results of regression analyses are consistent after replacing market value of equity as a deflator by lagged total assets.

5.3.1. Endogeneity choice of the firm's auditor

Prior research indicates that auditor's decision to select clients is endogenous, because client firms are not randomly allocated to Big N auditors and other auditors (Azizkhani, Monroe, & Shailer, 2010). For example, Big N auditors may tend to accept less risky clients with effective corporate governance structure (Campa, 2013; Eshleman & Guo, 2014). Thus, the auditor self-selection bias may lead to inaccurate results in the classical OLS regression (Chaney, Jeter, & Shivakumar, 2004).

Consistent with Azizkhani *et al.* (2010), Eshleman and Guo (2014), and Krishnan (2003), we employed two-stage analysis to correct for self-selection. For the first stage, we seek to include some of the explanatory variables influencing the auditor-client choice. We adopted the model employed by Azizkhani *et al.* (2010) estimate auditor-selection model. The estimates from the first stage are then employed to calculate the inverse Mills ratio (IMR) for each of the sample observations. In the second stage, we include the inverse Mills ratio as further control variable. Untabulated OLS regression findings (available upon request) are qualitatively similar to the findings reported in Table 4.3.

5.3.2. Alternative deflator

We re-estimate the models by deflating all continuous variables by total assets. The results obtained from regression analyses are in line with the previous findings. Overall, it can be concluded that our estimated regression findings are robust to alternative model specification.

Table 4.3. Multivariate analysis of the association between goodwill and future cash flows

	<i>Model 1</i> (<i>OCF_{t+1}</i>)	<i>Model 2</i> (<i>OCF_{t+2}</i>)	<i>Model 3</i> (<i>OCF_{t+3}</i>)	<i>Model 4</i> (<i>OCF_{t+1}</i>)	<i>Model 5</i> (<i>OCF_{t+2}</i>)	<i>Model 6</i> (<i>OCF_{t+3}</i>)
<i>Variable</i>	Coefficient <i>p</i> -value	Coefficient <i>p</i> -value	Coefficient <i>p</i> -value	Coefficient <i>p</i> -value	Coefficient <i>p</i> -value	Coefficient <i>p</i> -value
<i>Constant</i>	-0.043 0.081*	-0.014 0.659	-0.025 0.521	-0.045 0.123	-0.025 0.487	
<i>EARN</i>	0.197 0.010***	0.203 0.068*	0.266 0.013**			
<i>BVWG</i>	0.049 0.000***	0.038 0.006***	0.057 0.001***			
<i>GWILL</i>	0.122 0.003***	0.066 0.272	0.008 0.916	.098 0.056*	-.014 0.850	-0.144 0.129
<i>BIG 4</i>				-.001 0.950	.006 0.797	0.011 0.663
<i>BIG 4 × GWILL</i>				.061 0.426	.210 0.034**	0.398 0.002***
<i>Year dummies</i>	Included	Included	Included	Included	Included	Included
<i>Industry dummies</i>	Included	Included	Included	Included	Included	Included
<i>R²</i>	12.37%	6.07%	7.35%	12.51%	7.38%	10.83%
<i>F-statistics</i>	8.40***	4.16***	4.64***	6.74***	4.82***	6.05***
<i>N</i>	726	726	726	726	726	726

Notes:

1. Variables definitions are provided in Table 4.1.
2. Coefficient estimates and analyses are obtained employing robust standard errors.
3. *, **, ***, significant at the threshold of 10%, 5% and 1%, respectively.

6. IMPLICATIONS AND CONCLUSION

The Malaysian Accounting Standard Board's (MASB) conceptual framework clearly indicates that the financial reporting of firms should offer useful information to assist shareholders and other users in predicting firms' future cash flows. In this paper, we investigated whether the predictive power of goodwill for future cash flows improved in the presence of the Big 4 auditors. Our assumption is that the Big 4 firms, due to their larger office, have more resources, knowledge, and expertise than other auditors to ensure higher reporting quality with respect to goodwill.

Using a sample of 726 firm-year observations, we found that the predictive ability of goodwill is limited to one-year-ahead cash flows. An explanation for this result may be that some benefits of goodwill has already impaired. Such an explanation is consistent with the line of literature showing that managers delayed the recognition of goodwill impairments; arguably they have private incentives to do so (Beatty & Weber, 2006; Lapointe-Antunes, Cormier, & Magnan, 2008; Ramanna & Watts, 2012).

However, when we included the interaction term between the Big 4 and goodwill, we found that goodwill of the Big 4 clients is significantly associated with second and third-year-ahead cash flows. The result implies that Big 4 auditors can better deal with the complexity associated with difficult to verify current goodwill accounting under MFRSs. It suggests that Big 4 improves the quality of goodwill reporting practices. This goes in line with argument that Big 4 firms render higher audit quality than other audit firms (Becker et al., 1998; Eshleman & Guo, 2014; Francis et al., 1999; Francis & Wang, 2008; Francis & Yu, 2009; Krishnan, 2003). However, this finding does not support Carlin et al. (2009b) who shows that firms in Malaysia are poorly complied with MFRS 136 requirements even those audited by Big 4.

The inconsistent results may be attributed to increase litigation risk faced by Big 4 through Audit Oversight Board (AOB). The AOB has established on April 2010 and it has the legal authority to perform inspections of the external auditors and evaluate the level of their compliance with recognised auditing, ethics and accounting standards (Tong, 2012). During 2010 and 2013, the AOB were taken action against eight auditors for failing to adhere with the recognised auditing standards, as well as failing to adhere with the ethical and professional standards of the MIA (The Star News, 2015). Thus, Big 4 firms have more incentive to perform high quality audits; considerably, they have "more to lose" since litigation thread increases following AOB regime.

Our paper has a number of implications for standard setters, regulators, analysts and shareholders. First, standard setters indicate goodwill is an asset that has future economic benefits. Our results suggest the benefits of goodwill increased in firms audited by Big 4 auditors. For regulators, our results suggest that Big 4 firms play a pivotal role in ensuring better implementation of principle based accounting standards. For financial analysts and shareholders, our results highlight the value of Big 4 auditors in forecasting firms' future prospects.

We acknowledge that our paper has certain limitations. These limitations may provide some possible avenues for future research. First, the data included in the regression models is limited to two years. Therefore, future research may obtain more robust results by extending this study to include additional years and observations. Second, we do not consider the role played by corporate boards/ audit committees. Hence, the empirical analysis could be expanded by including corporate governance mechanisms. Finally, we focus on metric of accounting quality. Future research may consider other metrics such as value relevance and timeliness.

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