Audit Quality, Earnings Quality and the Cost of Equity Capital

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Abstract

We investigate the influence of audit quality on the relation between earnings quality and cost of equity capital. We utilize total accruals as a measure of earnings quality and auditor choice, auditor effort and auditor opinion based audit quality proxies used in the prior literature for audit quality dimensions to estimate a cost of equity model for a sample of firm years where auditing and audit quality is likely to be in higher demand. We find that higher audit quality is associated with significant mitigation of the positive relation between total accruals and the cost of equity capital and the presence of a qualified audit opinion issued by the auditor increases the extent to which lower quality accruals are associated with an increased cost of equity capital.

1. Introduction

The organisation of contracts in firms between managers, shareholders and others creates conditions for audits to contribute significant value where the contracts are reliant on accounting information to allocate contract payoffs (see e.g. Jensen and Meckling 1976, Watts and Zimmerman 1986). From the demand side investors demand audits to reduce information asymmetry around the accounting information supplied by the firm and auditors invest in supplying audit quality in response to that demand and earn returns for doing so. Regulatory changes in the wake of high profile corporate collapses addressing the role of audits in the financial reporting process have further focussed the attention of markets, firms and investors on deriving value from audits. In this study we investigate the economic influence of audit quality on the relation between earnings quality and cost of equity capital to determine whether high quality external auditing contributes significant value to firms by lowering the cost of their financing for equity capital.

Our examination is premised on the assumption that observable attributes of audited financial data reflect the fact that financial statements are a joint product of management representations and the audit process. Hence, while the quality of the reported earnings and the quality of the audit are discrete properties, it also follows that judgements about earnings quality will be influenced by the perceived level of audit quality attached to the reported earnings. Following arguments linking information quality with the cost of capital (Easley and O'Hara 2004; Leuz and Verrecchia 2005), we expect that identifiable measures of higher audit quality will mitigate the effect of lower earnings quality on the cost of equity capital. Evidence of this effect can contribute to our understanding of how markets reward or penalize accounting quality in light of the process by which observable properties of accounting arise. This provides new insights into the value investors place on audit quality dimensions in contributing to the quality of the earnings and addresses the call for evidence on the value of auditing to investors (Healy and Palepu 2001).

The literature linking earnings quality to cost of capital is limited. Francis et al. (FLOS 2004) examine the relation between the cost of equity capital and seven earnings attributes, and find that firms with the least favourable values of each attribute experience a larger cost of equity capital.[1] In particular, they find that a measure of accrual quality based on the mapping of accruals into cash flows (Dechow and Dichev 2002) has the largest effect on the cost of equity capital after controlling for the innate determinates of earnings quality. FLOS (2005) further examine the relation between this measure of accrual quality and the cost of debt and equity capital and show that poorer earnings quality increases information risk and leads to a higher cost of debt and equity capital. Using a sample of Australian firm-years between 1997 and 2006, Wong (2008) conducts a study similar to FLOS (2004). After examining ten different concepts/dimensions of earnings quality he concludes that the strongest association with cost of equity capital is for a simple measure of total accruals.[2]

In each of these studies, the effect of earnings quality on the cost of capital is examined independent of any effect that actual or perceived variation in audit quality could have on the earnings quality and cost of capital. However, the accrual properties utilized to proxy for earnings quality in these studies are likely to reflect management opportunism as evidenced in the (unobservable) unaudited financial statements, as well as the extent of any mitigation resulting from the audit process. While the possibility of opportunism exacerbates information risk, higher audit quality is expected to mitigate information risk. If characteristics of audited financial data reflect the quality of auditing as well (i.e., the joint product hypothesis), then we expect that higher audit quality helps to disentangle these effects.

A higher quality audit increases the chances of detecting questionable accounting practices, constraining overstated earnings and revealing misreporting (Francis 2004). In turn, with the assurance of high audit quality, accruals are more likely to capture performance measurement rather than opportunism. Higher audit quality can mitigate concerns over unusual accruals (however measured) being opportunistically motivated. The perception of lower information risk is expected to be transformed into a tangible benefit for firms with high quality audits in the form of a lowering of the cost of equity capital attributed to the earnings quality.

[1] FLOS (2004) identify seven earnings attributes i.e., accrual quality, persistence, predictability, smoothness, value relevance, timeliness, and conservatism.

[2] Wong (2008) utilizes ten earnings quality concepts i.e., total accruals, unexpected accruals, cash-to-profit, accruals quality, persistence, predictability, smoothness, relevance, conservatism and timeliness.

Several papers report evidence of a direct relation between various dimensions of audit quality and the cost of equity capital (Khurana and Raman 2004, 2006; Li and Stokes 2008; Hope et al. 2008; Ahmed et al. 2008; Fernando et al. 2008). They show that audit quality matters to investors with companies appointing brand name auditors, and auditors (Big n, industry specialists) delivering more effort (proxied by higher unexpected audit fees) lowering the companies' cost of equity capital. Similar findings with various audit quality proxies have emerged in investigations of the cost of debt capital (Blackwell, Noland and Winters, 1998, Pittman and Fortin 2004, Mansi, Maxwell and Miller, 2004) whereby higher audit quality is associated with a lower cost of debt capital.

None of these audit quality studies controls for earnings quality. Research showing that higher audit quality is associated with higher earnings quality (e.g., Becker et al. 1998; Francis et al. 1999; Balsam et al. 2003; Caramanis and Lennox 2007) leaves open the question whether higher audit quality proxies at least in part for higher earnings quality in the demonstrated associations between audit quality dimensions and the cost of equity capital. Hribar et al. (2008) go so far as to characterize a measure of unexpected audit fees as a "new" measure of accounting quality, although they argue that higher unexpected audit fees are a reflection of lower quality accounting. Such conclusions miss an important point that otherwise observable properties of accounting are a result of the extra audit work, and so although additional audit effort could reflect underlying concerns with the accounting systems, the result of that extra work is likely to be higher quality accounting, rather than lower quality accounting.

This study draws these two streams of literature together to examine the joint attributes of earnings quality and audit quality on equity pricing. The study starts from the premise that financial statements are a joint product of management representations and the audit process. Hence, accruals utilised in prior earnings quality studies are subject to variation in audit quality. While managers have incentives to 'adjust' earnings to maximize firm and/or manager wealth, high quality auditing is more likely to detect questionable accounting practices, constrain overstated earnings and reveal misreporting. Auditing of the financial statements reduces information asymmetries between firm insiders and shareholders. High quality auditing could enhance confidence in the integrity of the financial reporting and temper investors' concerns with information risk attached to otherwise perceived poor earnings quality.

We employ the industry adjusted earnings–price ratio approach of FLOS (2005) to estimate the cost of equity capital for a sample of Australian companies. This approach to estimating the cost of equity capital is also utilised by Wong (2008) and Li and Stokes (2008) in their respective assessments of accounting and audit quality effects on the cost of equity capital using an Australian setting. Consistent with Wong's (2008) extensive investigation of alternative earnings quality proxies, total accruals are used as our proxy for earnings quality. We consider separately the four dimensions of audit quality found by Li and Stokes' (2008) to be directly associated with the cost of equity capital (i.e., auditor brand name, industry specialization, auditor effort, and audit qualifications).

Switches from non-Big n to Big n auditors is a widely used indicator of choice of a higher quality auditor (see e.g, Johnson and Lys, 1991 and Francis, 2004). Switching to a brand name auditor signals that the firm seeks more credibility to be attached to its accounting choices (DeFond and Subramanyam, 1998). Industry leadership has also been used as an indicator of higher audit quality (see e.g., Craswell et al,. 1995) and more recently industry leadership at the city level as distinct from the national level has been shown to be the key indicator of industry expertise (Francis et al. 1999; Reynolds and Francis 2001; Ferguson et al. 2003). Industry specialist auditors have also been shown to be associated with less earnings management (Krishnan, 2003; Balsam et al. 2003). If investors perceive audit quality to be higher when a firm chooses to switch to Big n audit firm or uses an industry specialist auditor and they perceive as a consequence that lower information risk is attached to higher accruals based earnings, this could lower the cost of equity capital.

Higher than expected audit fees has been used to indicate greater audit quality supplied through greater audit effort (see e.g, Beatty, 1989). Earnings quality is also shown to be higher when auditors deliver more audit effort which increases the probability of detecting potential errors, frauds and misstatements in the accounts (Caramanis and Lennox, 2007). In such circumstances, higher accruals based earnings are more likely to be perceived by investors as indicators of better firm performance. In the presence of greater audit effort, there could be a lowering of the perceived information risk of higher accruals based earnings and this could lower the cost of equity capital.

Finally, information risk of higher accruals based earnings could be higher if a qualified audit opinion accompanies the higher accruals based earnings. In such cases, investors are more likely to price protect themselves from perceived risk of management opportunism provided by the signal that there are issues with the accounts discovered by the auditor or there have been issues in conducting their audit which have prevented the auditor from completing the audit required and this could increase the cost of equity capital attached to the accruals based earnings.

In the case of each audit quality dimension, we examine interactive effects of earnings quality and audit quality on the cost of equity capital for those Australian companies where audit quality is likely to be in greater demand by shareholders for monitoring the quality of the accounting. Following prior literature (e.g., Francis et al. 2005; Liu and Wysocki, 2008), loss firms are excluded from the sample due to the difficulty of interpreting a negative earning-price ratio and the non-linearity in the distribution of negative and positive earnings-price ratio. Further to this reason for exclusion, prior research (e.g., Hayn 1995; Collins et al. 1999) also demonstrates that the earning numbers have low information content for loss making companies. Moreover, in Australia, the prevalence of losses is much higher, most commonly for smaller firms, many of which are involved in the mining industry (Balkrishna et al. 2007) where auditing and audit quality has been demonstrated to be less important as a monitoring mechanism (Lee, Stokes, Taylor and Walter, 2003).

We find that audit quality contributes to incrementally lowering the cost of capital for firms with earnings that are classified as having relatively low earnings quality. Specifically, switching to a Big N auditor and very high levels of external audit effort mitigate the positive relation between cost of equity capital and higher total accruals. For firms that receive a qualified audit opinion, the perceived risk around the higher accruals is increased, which incrementally increases the cost of equity capital.

Importantly, these interaction effects are in addition to the stand alone audit quality effects on the cost of equity capital documented by Li and Stokes (2008).

The remainder of the paper is organized as follows. Section 2 describes the research design. The results are presented in section 3 and section 4 provides conclusions.

2. Research design

2.1 Cost of equity capital model

Following the approach of FLOS (2005) and Wong (2008), this study utilizes an earnings-price ratio as the cost of equity capital measure. This approach is adopted because the PE ratio is a popular means of estimating rate of return in the equity market, and is a widely quoted measure (Easton 2004). An EP ratio is used to address the concerns of small values of earnings in the denominator (FLOS 2005). Also, as noted by FLOS (2005), the ratio is industry-adjusted because Alford (1992) finds that industry membership works well for selecting firms that are comparable in terms of risk and growth.[3] Consistent with FLOS (2005), only firms with positive earnings are included because of the difficulties in interpreting a negative EP ratio in terms of cost of equity capital. FLOS (2005) calculate industry-adjusted earnings-price ratio (*IndEP*) using a median EP first calculated for all firms with positive earnings in a given year in each GICS industry. A minimum of five positive earnings (excluding the firm *j*) in an industry is required. $IndEP_{j,t}$ is then calculated as the difference between the firm *j*'s EP and its median industry EP in year *t*.

The effects of the audit quality dimension interactions with earnings quality are tested by estimating several cross sectional regression models that allow for interaction of the audit quality dimensions (AQIR to indicate information risk attached to the audit quality dimension) and the accruals based earnings quality dimension (*EQ*). The basic model is outlined as follows:

[3] Using raw EP data produced qualitatively the same results. Moreover, when *IndEP* is used to create ranked decile portfolios and all tests are repeated, the results are similar. These results are available from the authors upon request.

$$IndEP_{j,t} = \beta_0 + \beta_1 Growth_{j,t} + \beta_2 Leverage_{j,t} + \beta_3 Beta_{j,t} + \beta_4 Size_{j,t} + \beta_5 EQ_{j,t}$$
$$+ \beta_6 AQIR_{j,t} + \beta_7 EQ_{j,t} * AQIR_{j,t} + \varepsilon_{j,t}$$

In this model, the coefficient of the interaction term (β_7) and its significance indicates whether and how an audit quality dimension influences the relation between earnings quality and the cost of equity capital. The average effect of earnings quality on the cost of equity capital is measured by β_5 and β_7, while the effect of audit quality is measured by β_6 and β_7. The model includes controls for growth, leverage, beta and firm size consistent with FLOS (2005) and Wong (2008). *Growth* is defined as the log of one plus a firm's growth in value of equity (sourced from AspectHuntleys data base, item 7010) over the past five years. A negative sign is predicted because higher equity growth could lead the market to expect high earnings growth in the future (FLOS, 2005). *Leverage* is defined as total debt (AspectHuntleys item 6040) divided by total assets (AspectHuntleys item 5090). Greater financial leverage is expected to result in higher risk, and therefore, a positive relationship is expected. *Beta* is calculated from the firm-specific CAPM using 36 month rolling returns, and a minimum of seven monthly returns are required. The capital asset pricing model suggests that a stock market beta will positively correlate with cost of equity capital. *Size* is estimated as the log of a firm's total assets (Aspect item 5090). Prior studies (e.g., Brennan and Subrahamanyam, 1996; Gebhardt et al. 2001; Fama and French 1992) note that large firms have more available information and are more liquid than small firms. Hence, a negative sign is predicted because of the lower risk of large firms.

Three additional reduced form regression models with AQIR alone (labelled Eq.1), EQ alone (labelled Eq.2) and both AQIR and EQ included (labelled Eq.3), are respectively estimated along with the full model (labelled as Eq. 4).[4] Eq. (1) establishes the baseline audit quality and cost of equity capital relationship for the sample used in our study after matching the available EQ data with the AQIR measures. Eq. (2) establishes the baseline earnings quality and cost of equity capital

[4] Eq. (1) to (3) could be summarized as follows,

$$IndEP_{j,t} = \beta_0 + \beta_1 Growth_{j,t} + \beta_2 Leverage_{j,t} + \beta_3 Beta_{j,t} + \beta_4 Size_{j,t} + \beta_5 AQIR_{j,t} + \varepsilon_{j,t} \quad \text{Eq. (1)}$$

$$IndEP_{j,t} = \beta_0 + \beta_1 Growth_{j,t} + \beta_2 Leverage_{j,t} + \beta_3 Beta_{j,t} + \beta_4 Size_{j,t} + \beta_5 EQ_{j,t} + \varepsilon_{j,t} \quad \text{Eq. (2)}$$

$$IndEP_{j,t} = \beta_0 + \beta_1 Growth_{j,t} + \beta_2 Leverage_{j,t} + \beta_3 Beta_{j,t} + \beta_4 Size_{j,t} + \beta_5 EQ_{j,t} + \beta_6 AQIR_{j,t} + \varepsilon_{j,t} \quad \text{Eq. (3)}$$

relationship for our sample. Eq. (3) examines the additive effect of earnings quality and audit quality without the interaction across the two information risk factors. It also addresses the robustness of the findings of Li and Stokes (2008) after controlling for the earnings quality factor in the model.

3.2 Measuring earnings quality

Earnings quality is measured as total accruals. Prior empirical studies (Dechow et al. 1999; Bailey and Taylor 2008) find that total accruals perform better than unexpected accruals in detecting earnings management for firms subject to SEC enforcement actions (i.e., unexpected accruals measures lack power). Accruals rely on management discretion and judgement and come under the scrutiny of an audit. In contrast, measures of accounting quality such as the popular Dechow and Dichev (2002) measure used by FLOS (2005) are the result of estimation processes which potentially reduce the link between audit and accounting quality. For example, the Dechow-Dichev measure proposed is essentially a measure of how well accruals fit lagged, lead and contemporaneous cash flows. The relation with future cash flows is unknown at the time of assessing an appropriate EP ratio. In addition, Liu and Wysocki (2008) suggest that use of the Dechow-Dichev measure by FLOS results in conclusions that are very sensitive to additional controls for operating risk.

As previously noted, Wong (2008) documents a positive relationship between total accruals and the cost of equity capital in Australia after controlling for other measures of earnings quality, consistent with total accruals being an indicator of lower accounting quality and dominating the effects of other earnings quality dimensions. Following Wong (2008), total accruals (*TAC*) is measured as net profit after tax and abnormals (AspectHuntleys item 8036) less operating cash flows (AspectHuntleys item 9100) scaled by lagged total assets (AspectHuntleys item 5090). A positive sign is expected for *TAC*.

3.3 Measuring audit quality

The measures of audit quality dimensions examined are the choice of a city-level industry specialist auditor (*CL*), high quality auditor switch (*Aswitch-NBtoB*), audit effort (*UnexpAF/LrgUnexpAF*), and qualified auditor opinion (*Opin/UnexpQalOpin*).. An indicator variable *CL* is created and assigned a value equal to 1 if a firm is audited by a city industry leader, defined as an audit firm that possesses the largest (audit fees based) market share in a given GICS industry city wide, and 0 otherwise. *Aswitch-NBtoB* is a dummy variable assigned a value equal to 1 if a firm switches from a non-Big n to Big n auditor, 0 otherwise.

The audit effort measure, unexpected audit fee (*UnexpAF)*, is measured as a ratio of actual to expected audit fee, where the expected fee is the anti-log of the fitted value of the audit fee model adopted from Ferguson et al. (2006). A firm is classified as having a *LrgUnexpAF* (= 1) if it is in the top decile of firms ranking on *UnexpAF.*

A qualified audit opinion variable *Opin* is an indicator variable equal to 1 if a firm receives a qualified or modified audit opinion and 0 otherwise. We also utilise an unexpected qualified audit opinion measure (*UnexpQalOpin*) created for those firms receiving a qualified opinion by taking the difference between the actual audit opinion (i.e., 1 = qualified) and the probability of receiving a qualified audit opinion estimated from the audit opinion model of Craswell et al. (2002). It is designed to capture the extent of surprise for companies receiving a qualified audit opinion. All other firms receiving clean opinions are coded as 0.

3.4 Sample selection and descriptive statistics

The initial sample consists of all firms listed on the Australian ASX market in the period 1999 to 2004 (10,275 firm-year observations). The requirement of positive earnings-to-price ratios cuts the number of observations down to 3,240. Financial firms (GICS 4000 to 4999) are also excluded because of their special financial leverage. This filter further reduces the sample down to 1,502. Finally, in order to meet the requirement of non-missing values for every control variable (i.e., *Growth*, *Beta*, *Leverage*, *Size*), the sample size arrived at is 1,080 firm-year observations. As noted in section 1, the resultant sample is one where auditing and high quality are likely to be in higher demand and so our sample increases the power of our tests. That is, this setting is likely to show economically important effects of audit quality on the relationship between earnings quality and cost of equity capital for such firms if the effect is present.

Audit quality measures are calculated or estimated across all listed companies available in the Capital Markets CRC – UTS audit database for the relevant years and are not restricted to the 1,080 firm year observations. Hence, industry specialist measures for a given year are based on the whole audit market not just those from 1,080 firm years applicable to that year. In order to meet the requirement of non-missing values for total accruals (*TAC*), the final sample size reduces slightly from 1,080 to 1,067 firm-year observations. Outliers are deleted for each regression after conducting the conventional regression diagnostics (i.e., studentized residuals greater than the absolute value of 2, and Cook's D greater than 4 divided by the number of observations (Chen et al. 2003)). All regressions apply the Kernel-based estimations for the panel data, and the standard errors reported are controlled for heteroskedasticity and autocorrelation.[5] None of our regressions appear to suffer from multicollinearity problems.[6]

Panels A and B of Table 1 display descriptive statistics. The mean and median of *TAC* are 0.087 and - 0.030 respectively.[7] The descriptive statistics for the audit quality measures are similar to those reported by Li and Stokes (2008) with 74% of the sample audited by Big n auditors and 34% audited by city industry leaders. A small percentage of firms switch auditors with 1.12% being to Big N auditors. The average ratio of actual fees to expected fees is 1.291 and 4% of companies have qualified audit opinions.

Insert Table 1 here

[5] The standard STATA commands are used to assure the regression estimator are effective in the presence of arbitrary heteroskedastistity and autocorrelation. All regression estimates reported in this study are equivalent to those produced by the robust regression and Newey-West regression.

[6] The VIF tests are untabulated for each regression and are available on request.

[7] Wong (2008) reports a mean and median for total accruals (TACOCA) of -0.0185 and -0.0239 for their full sample over the period of 1997 to 2006. Untabulated descriptive statistics show a mean and median for *TAC* of -0.0945 and -0.0413 respectively for all ASX listed firms from the period of 1999 to 2004.

The *Pearson* correlation matrix is displayed in Table 2. It shows that firms with greater total accruals (*TAC*) are more likely to be smaller firms (*Size*), experience less equity growth (*Growth*), have lower financial leverage (*Leverage*), and have higher unexpected audit fees (*UnexpAF).*

Insert Table 2 here

4. Results

Table 3 displays the regression estimation results for Eq. (1) to (4) for the audit choice dimension of audit quality using the *City Leader (CL)* measure. All regressions have explanatory power with statistically significant F test results. The effects of the significant control variables are consistent with expectations and similar to those reported in Li and Stokes (2008).

Eq. (1) reports a negative coefficient for *CL* (= -0.0076), which is significant at 5 percent level (two-tailed). This is consistent with the result in Li and Stokes (2008) on their larger sample. Eq. (2) displays a positive and significant (at 1 percent level, two-tailed) *TAC* with a coefficient of 0.0462. Thus, in this sub-sample of Wong (2008) data, the total accruals are positively associated with the cost of equity capital which is consistent with his results on larger samples. *CL* and *TAC* are jointly regressed in Eq. (3) which displays a significant coefficient of 0.0458 for *TAC* and a slightly reduced significant coefficient of -0.0071 for *CL* (significant at 10 percent level, two tailed). This evidence implies that the appointment of a city industry specialist auditor and total accruals are independent information risk factors.

In Eq. (4), the coefficient of the interaction of *CL* and *TAC* is positive (= 0.0068) but insignificant. The performance of *CL* and *TAC* remain almost unchanged in this model compared to Eq. (3). Hence, there is no evidence that the appointment of a city industry specialist auditor significantly influences the positive relationship between cost of equity capital and total accruals.[8]

[8] The sample is further partitioned into two sub-groups according to whether a firm engaged with a city leader or not. Separate Eq. (2) models are re-estimated in each sub-group and the results (unreported) show that the coefficients of *TAC* are positive and significant for both the groups of firms that engaged

Insert Table 3 here

The regression results of auditor switch dummy, *Aswitch – NBtoB* are reported in Table 4. All regressions are statistically significant (based on the F test). The other auditor switch dummies (i.e., *Aswitch – BtoB*, *Aswtich – BtoNB*, *Aswitch – NBtoNB*) and their interactions with *TAC* are also included in the models as control variables.

Eq. (1) reports a negative (-0.0214) and significant coefficient for, *Aswitch – NBtoB*, suggesting that firms switching to a higher quality auditor enjoy a lower cost of equity capital. This is consistent with the result in Li and Stokes (2008) on their larger sample. The coefficient on *TAC* is consistently positive and significant in Eq. (2) and (3), whereas *Aswitch - NBtoB* becomes insignificant after controlling for total accruals in Eq. (3). Eq. (4) displays a significant interaction on *Aswitch - NBtoB* and *TAC* (at 5 percent level, two-tailed) with a coefficient of -0.0621. *Aswitch - NBtoB* has a reduced (-0.0193) and significant coefficient (significant at 10 percent, two-tailed), while the coefficient of *TAC* increases slightly to 0.0801 and remains significant at the 1 percent level (two-tailed). The results suggest that for increasing levels of *TAC*, the *IndEP* for firms switching to a high quality auditor increases by 0.0180 (-0.0621+0.0801)[9] while for others not switching to a higher quality auditor, the cost of equity capital increases by 0.0801 This evidence indicates that the positive relationship between total accruals and the cost of equity capital for firms switching to a high quality auditor is significantly weakened compared to that for non-switching firms. [10]

Insert Table 4 here

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with city leaders (=0.0440) and those that did not (=0.0484). A Wald test further examining the equality of these two coefficients suggests that they are not significantly different from each other. This finding is identical to the results of the interaction model (Eq. 4).

[9] A Wald test is used to examine whether $\beta_5+\beta_7=0$. It shows that the sum of the coefficients is not significantly different from 0.

[10] The sample is also partitioned into firms switching to a high quality auditor versus non-switch firms. Then, Eq. (2) is re-estimated in each partitioned sample to test whether *TAC* is significantly different in each sub-grouping. The results (not tabulated) show that for the firms switching from a high quality auditor, the coefficient for *TAC* is positive (=0.0326) and significant (at 1 percent level, two-tailed), while the same coefficient is also significant (=0.0524) for the non-switching firms. A Wald test further examining the equality of these two coefficients suggests that the coefficient of *TAC* for the firms switching to a high quality auditor is significantly smaller than that for the non-switching firms. Therefore, these results are consistent with the results of Eq. (4).

Table 5 reports the results of the audit effort dimension of audit quality using unexpected audit fees, *UnexpAF*. All regressions are statistically significant (based on the F test).

Eq. (1) reports a negative (-0.0033) and significant coefficient for *UnexpAF* at the 5 percent level, suggesting greater external audit effort lowers the cost of equity capital consistent with the result of Li and Stokes (2008) on their larger sample. The coefficient on *TAC* is consistently positive and significant in Eq. (2) and Eq. (3). The performance of both *TAC* and *UnexpAF* remains almost unchanged in Eq. (3). These results indicate that external audit effort and total accruals are independent information risk factors. Eq. (4) reports a negative (-0.0044) but insignificant interaction of *UnexpAF* and *TAC*.

Insert Table 5 here

A further test is conducted on *LrgUnexpAF* (largest 10% *UnexpAF*) and the results are reported in Table 6. This variable focuses on the top decile firms paying higher audit fees than expected found by Li and Stokes (2008) to enjoy a lower cost of equity capital. All regressions in Table 6 are statistically significant (based on the F test). In Eq. (1), *LrgUnexpAF* is negative and significant (at 1 percent level) with a coefficient of -0.0163, suggesting that firms with greater external *audit effort* enjoy a lower cost of equity capital. This is consistent with the result in Li and Stokes (2008) on their larger sample. Eq. (2) has a positive and significant *TAC* with a coefficient of 0.0919. The magnitude and significance of the coefficients for *TAC* and *LrgUnexpAF*, in Eq. (3), are not different from that reported in Eq. (1) and (2), respectively. These results imply that the effect of *LrgUnexpAF* and *TAC* are independent.

Eq. (4) reports a negative interaction (*LrgUnexpAF**TAC*) with a coefficient of -0.1387, which is significant at the 1 percent level (two-tailed). The coefficient for *LrgUnexpAF* slightly increases to -0.0187 and remains significant (at 1 percent level), while the coefficient for *TAC* increases a little to 0.1000 (significant at 1 percent level). These results suggest that for increasing levels of *TAC*, the *IndEP* for firms with extremely large unexpected audit fees decreases by -0.0387 (-0.1387+0.1000), but it is not significantly different from 0.[11] For the rest of the firms, for a unit increase in *TAC*, the *IndEP* will increase by 0.1000. This evidence indicates that greater external *audit effort* adds additional value to the firm through tempering the information risk perceived from higher accruals.[12] Tests are repeated with the extremely large unexpected audit fee classified at 5%, 15% and 20% level and the results are robust.[13] The interaction term eventually becomes insignificant when the classification goes beyond the 20% cut-off.

Insert Table 6 here

Table 7 displays the regression results of using information on whether there is a qualified audit opinion or not (*Opin*). All regressions are statistically significant (based on the F test). Eq. (1) reports a positive (0.035) and significant *Opin* coefficient, which is consistent with the *Opin* result displayed in Li and Stokes (2008). *TAC* has a positive and significant coefficient of 0.0488 in Eq. (2). In Eq. (3), the results for *TAC* remain unchanged but *Opin* becomes insignificant. Eq. (4) reports a positive and significant interaction (*Opin*TAC*) with a coefficient of 0.0697, which is significant at the 5 percent level (two-tailed). The performance of *TAC* and *Opin* remain similar to Eq. (3). These results suggest that for increasing levels of *TAC*, the *IndEP* for firms receiving a qualified audit opinion increases by 0.1044 (0.0347+0. 0697). For the firms not receiving a qualified opinion, for a unit increase in *TAC*, the *IndEP* will increase by 0.0347. The evidence indicates that the positive relationship between total accruals and the cost of equity capital is exacerbated for firms receiving a qualified audit opinion.

Insert Table 7 here

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[11] A Wald test is used to examine whether $\beta_5+\beta_7=0$. It shows that the sum of the coefficients is not significantly different from 0.

[12] The sample is further partitioned into two according to the dichotomous variable, *LrgUnexpAF*. Separate regressions (Eq. 2) are then re-estimated to test whether *TAC* are significantly different in each sub-grouping. The results (not tabulated) show that for the firms paying extremely higher audit fees than expected, the coefficient for *TAC* (=-0.00357) is insignificant. In contrast, for the rest of the firms, the same coefficient is 0.1010 which is significant at 1 percent level (two-tailed). These results are consistent with that of the interaction model (Eq. 4).

[13] Tests are repeated in the sub-sample of firms with *UnexpAF>1* (n=629), and the results (untabulated) are qualitatively the same.

Table 8 further shows the results for the unexpected qualified audit opinion, *UnexpQalOpin*. All regressions are statistically significant (based on the F test). Eq. (1) shows that the coefficient on *UnexpQalOpin* is positive (0.0669) and significant, which is consistent with the results of Li and Stokes (2008). *TAC* remains positive (0.0462) and significant in Eq. (2). These results for *TAC* and *UnexpQalOpin* remain almost unchanged in Eq. (3). This evidence implies that unexpected qualified audit opinion and total accruals are independent information risk factors that increase the cost of equity capital. Eq. (4) reports a positive (0.1054) and significant interaction coefficient for *UnexpQalOpin*TAC* (at 5 percent level, two-tailed). Both coefficients of *UnexpQalOpin* and TAC remain positive but are no longer significant. These results suggest that for increasing levels of *TAC,* a unit increase in the surprise of a firm receiving a qualified audit opinion leads to an average increase in the *IndEP* by 0.1361 (0.1054+0.0307). Therefore, the results indicate that a surprise in a qualified audit opinion exacerbates the effects of higher total accruals on the cost of equity capital.[14]

Insert Table 8 here

5. Conclusion

This study investigates the influence of audit quality on the relation between earnings quality and cost of equity capital. Although prior evidence suggests that lower accounting quality is associated with an increase in the cost of equity capital, such evidence ignores the potentially mitigating role of audit quality. Likewise, prior studies linking audit quality to the cost of capital fail to recognize that audit quality is not only a potentially useful signal of itself, but also that it affects the quality of audited accounting data. Put simply, prior research on cost of capital effects fails to recognize that properties of audited financial statements (such as earnings quality) are a joint product of managements representations (including the reliability of the accounting system, internal controls etc) as well as the audit process. Moreover theory

[14] Further tests in the partitioned sample according to *DUnexpQalOpin* (=1 if UnexpQalOpin>0.5, and 0 otherwise) (unreported) shows for firms surprisingly receiving a qualified opinion (n=22), the coefficient of *TAC* is positive (0.0640) and significant (at 10 percent level, two-tailed), whereas the same coefficient for the other group (0.0339) is insignificant. These results are consistent with the results of the interaction model reported in Table 8.

on the demand and supply of accounting and auditing argues that investors demand audits to reduce information asymmetry around the accounting information supplied by the firm and auditors invest in supplying audit quality in response to that demand and earn returns for doing so. In addition regulatory changes in the wake of high profile corporate collapses addressing the role of audits in the financial reporting process have further focussed the attention of markets, firms and investors on deriving value from audits. We therefore address an important gap in the literature and provide insights sought in the markets and by regulators to consider whether the audit quality attached to a firm's earnings could affect inventors' perceptions of information risk and could consequently influence the pricing of earnings quality.

Utilizing total accruals as a means of measuring earnings quality and with a sample of 1,067 firm year observations over the time period of 1999-2004 where auditing and audit quality is in demand by the firms, the key results of this study show that switching to a higher quality auditor mitigates the positive relation between total accruals and the cost of equity capital. Additional weight for this view also comes from the finding that very high levels of external audit effort, tempers the pricing effect of greater total accruals. The results on opinion outcomes of audits suggest that a qualified/a surprisingly qualified audit opinion increases the perceived risk around the reported earnings when there are large accruals based earnings, which further increases the cost of equity capital. These results hold typically in addition to the main effect of audit quality on the cost of equity capital documented in the prior literature.

These results indicate that with the assurance from higher quality auditing, earnings made up of larger accruals are perceived to have lower risk of these earnings generating higher future cash flows, which lowers the cost of equity capital. The accrual properties, utilized to proxy for earnings quality in these studies, are likely to reflect both management opportunism and performance measurement capturing growth and increasing capacity of business (FLOS, 2005). The opportunism exacerbates information risk, whereas the performance measurement will mitigate information risk. Higher quality auditing appears to help to disentangle these effects as well as having an effect in lowering the cost of equity capital in its own right.

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Table 1 Descriptive Statistics for the Pooled Sample, 1999 – 2004

Panel A Descriptive Statistics for IndEP and Control Variables

Variable	N	Mean	Median	Std Dev
IndEP	1067	0.026	0.000	0.163
EP	1067	0.096	0.069	0.164
Growth	1067	0.581	0.467	0.940
Leverage	1067	0.441	0.464	0.193
Beta	1067	0.356	0.430	4.528
Size	1067	18.678	18.444	2.033
Total Assets ($ Millions)	1067	1,120	103	4,080

IndEP = industry adjusted earnings-to-price ratio, equal to firm j's earnings-to-price ratio less the median earnings-to-price ratio of its industry classified by the GICS industry code; **EP** = earnings-to-price ratio; **Growth** = natural log of the fraction of firm j's current year's book value of equity and last year's book value of equity (Aspect item 7010); **Leverage** = firm j's total debt (Aspect item 6040) to total assets (Aspect item 5090). **Beta** = calculated from the firm-specific CAPM using 36-month rolling returns, to three months after financial year end, with minimum of 7 months of monthly returns; **Size** = natural log of firm j's total assets (Aspect item 5090).

Panel B Descriptive Statistics for Measures of Unexpected Accruals and Audit Quality

Variable	N	Mean or percentage	Median	Std Dev
Earnings Quality Measure				
TAC	1067	0.087	-0.030	2.811
Audit Quality Measure				
Big	1067	73.76%	-	-
CL	1067	34.49%	-	-
Aswitch	1067	8.15%	-	-
Aswitch – BtoB	1067	3.84%		
Aswitch – BtoNB	1067	1.59%		
Aswitch – NBtoB	1067	1.12%		
Aswitch – NBtoNB	1067	1.59%	-	-
UexpAF	1067	1.291	1.123	0.986
Opin	1067	3.94%	-	-
UnexpQalOpin^	42	0.603	0.652	0.278

^ Only the values of *UnexpQalOpin* for firms that receive a qualified audit opinion are reported.
TAC = net profit after tax and abnormals (Aspect item 8036) less operating cash flows (Aspect item 9100) scaled by lagged total assets; **Big** = 1 if firm j is audited by Big N auditor, and 0 otherwise; **CL** = 1 if firm *j* is audited by city leader defined as an audit firm has the largest market share based on audit fees in firm *j*'s industry in a specific city market, and 0 otherwise; **Aswitch** = 1 if firm *j* switches its incumbent auditor in the current year, and 0 otherwise; **Aswitch – NBtoB** = 1 if firm *j* switches its incumbent auditor, and the preceding auditor is non-Big N auditor and the succeeding auditors is Big N auditor, and 0 otherwise; **UnexpAF** = unexpected audit fee denoted as actual audit fees divided by expected audit fees, where the expected audit fees is the anti-log of the fitted value of the audit fee model adopted from Ferguson, Francis and stokes (2006); **Opin** = 1 if firm *j* receive a qualified audit opinion, and 0 otherwise. **UnexpQalOpin** = unexpected qualified audit opinion denoted as the difference between the actual audit opinion (=1) and the probability of a qualified audit opinion estimated from the audit opinion model adopted from Craswell et al. (2002) for those that have qualified audit reports, 0 otherwise.

Table 2 (Pearson) Correlation Matrix

	TAC	Growth	Lev	Beta	Size	UnexpAF	UnexpQal
TAC	1						
p							
Growth	-0.0583*	1					
p	0.057						
Leverage	-0.0712*	-0.0552*	1				
p	0.020	0.071					
Beta	-0.0032	0.02	-0.0024	1			
p	0.917	0.514	0.936				
Size	-0.0972*	0.1586*	0.4025*	-0.0383*	1		
p	0.002	0.000	0.000	0.211			
UnexpAF	0.0534*	-0.0679*	0.0692*	-0.0347*	0.2300*	1	
p	0.081	0.027	0.024	0.258	0.000		
UnexpQalOpin	0.0069	-0.0831*	-0.0593*	-0.0015	-0.1571*	-0.0623*	1
p	0.821	0.007	0.053	0.960	0.000	0.042	

* Significant at 5 percent level (two-tailed).

TAC = net profit after tax and abnormals (Aspect item 8036) less operating cash flows (Aspect item 9100) scaled by lagged total assets; **Growth** = natural log of the fraction of firm j's current year's book value of equity and last year's book value of equity (Aspect item 7010); **Leverage** = firm j's total debt (Aspect item 6040) to total assets (Aspect item 5090). **Beta** = calculated from the firm-specific CAPM using 36-month rolling returns, to three months after financial year end, with minimum of 7 months of monthly returns; **Size** = natural log of firm j's total assets (Aspect item 5090).
UnexpAF = unexpected audit fee denoted as actual audit fees divided by expected audit fees, where the expected audit fees is the anti-log of the fitted value of the audit fee model adopted from Ferguson, Francis and Stokes (2006); **UnexpQalOpin** = unexpected qualified audit opinion denoted as the difference between the actual audit opinion (=1) and the probability of a qualified audit opinion estimated from the audit opinion model adopted from Craswell, Laughton and Stokes (2002) for those that have qualified audit reports, 0 otherwise.

Table 3 *IndEP* Cost of Capital Regression Estimation with Total Accruals and City Leader

Indep. Var.	Pred. Sign		(1) CL	(2) TACOCA	(3) CL & TACOCA	(4) Interaction
Growth	-	*Coef.*	-0.0034	-0.0033	-0.0036	-0.0036
		t	(-1.46)	(-1.39)	(-1.53)	(-1.53)
Leverage	+	*Coef.*	0.0315**	0.0382***	0.0386***	0.0385***
		t	(2.56)	(3.23)	(3.27)	(3.27)
Beta	+	*Coef.*	-0.0002	-0.0001	-0.0001	-0.0001
		t	(-1.16)	(-0.78)	(-0.81)	(-0.79)
Size	-	*Coef.*	-0.0034***	-0.0035***	-0.0029***	-0.0029***
		t	(-3.41)	(-3.74)	(-2.93)	(-2.93)
CL	-	*Coef.*	-0.0076**		-0.0071*	-0.0069*
		t	(-2.02)		(-1.91)	(-1.75)
TAC	+	*Coef.*		0.0462**	0.0458**	0.0453**
		t		(2.33)	(2.32)	(2.15)
CL*TAC	-	*Coef.*				0.0068
		t				(0.20)
Constant	+/-	*Coef.*	0.0641***	0.0618***	0.0529***	0.0525***
		t	(3.52)	(3.55)	(2.94)	(2.94)
Observations			1050	1050	1050	1050
Adj R-squared			0.0208	0.0398	0.0417	0.0408
F test			5.43***	5.76***	5.29***	4.85***

*** p<0.01, ** p<0.05, * p<0.1 (two-tailed)

IndEP = industry adjusted earnings-to-price ratio, equal to firm j's earnings-to-price ratio less the median earnings-to-price ratio of its industry classified by the GICS industry code; **Growth** = natural log of the fraction of firm j's current year's book value of equity and last year's book value of equity (Aspect item 7010); **Leverage** = firm j's total debt (Aspect item 6040) to total assets (Aspect item 5090). **Beta** = calculated from the firm-specific CAPM using 36-month rolling returns, to three months after financial year end, with minimum of 7 months of monthly returns; **Size** = natural log of firm j's total assets (Aspect item 5090).

TAC = net profit after tax and abnormals (Aspect item 8036) less operating cash flows (Aspect item 9100) scaled by lagged total assets; **CL** = 1 if firm *j* is audited by city leader defined as an audit firm has the largest market share based on audit fees in firm *j*'s industry in a specific city market, and 0 otherwise.

Table 4 *IndEP* Cost of Capital Regression Estimation with Total Accruals and Audit Switch Dummies

Indep. Var.	Pred. Sign		(1) Aswitch Dummies	(2) TAC	(3) Dummies & TAC	(4) Interaction
Growth	-	*Coef.*	-0.0047*	-0.0048*	-0.0046*	-0.0048*
		t	(-1.75)	(-1.75)	(-1.77)	(-1.85)
Leverage	+	*Coef.*	0.0268**	0.0380***	0.0377***	0.0385***
		t	(2.11)	(3.18)	(3.18)	(3.24)
Beta	+	*Coef.*	-0.0002	-0.0001	-0.0001	-0.0001
		t	(-0.94)	(-0.39)	(-0.41)	(-0.40)
Size	-	*Coef.*	-0.0046***	-0.0037***	-0.0039***	-0.0038***
		t	(-4.60)	(-3.86)	(-4.04)	(-3.94)
Aswitch – BtoB	+/-	*Coef.*	0.0358*		0.0392*	0.0430**
		t	(1.79)		(1.92)	(2.11)
Aswitch – BtoNB	+	*Coef.*	-0.0171		-0.0130	-0.0153
		t	(-1.24)		(-0.95)	(-1.06)
Aswitch – NBtoB	-	*Coef.*	-0.0214**		-0.0117	-0.0193*
		t	(-2.14)		(-0.99)	(-1.95)
Aswitch – NBtoNB	+/-	*Coef.*	0.0049		0.0053	0.0056
		t	(0.25)		(0.27)	(0.31)
TAC	+	*Coef.*		0.0757***	0.0758***	0.0801***
		t		(3.79)	(3.75)	(3.68)
BtoB*TAC	+/-	*Coef.*				0.0919
		t				(0.72)
BtoNB*TAC	+	*Coef.*				-0.0523
		t				(-0.96)
NBtoB*TAC	-	*Coef.*				-0.0621**
		t				(-2.51)
NBtoNB*TAC	+/-	*Coef.*				-0.0221
		t				(-0.16)
Constant	+/-	*Coef.*	0.0871***	0.0690***	0.0711***	0.0689***
		t	(4.52)	(3.82)	(3.91)	(3.81)
Observations			1049	1048	1048	1048
Adj R-squared			0.0312	0.0594	0.0710	0.0707
F test			4.37***	7.97***	5.04***	4.26***

*** p<0.01, ** p<0.05, * p<0.1 (two-tailed)

IndEP = industry adjusted earnings-to-price ratio, equal to firm j's earnings-to-price ratio less the median earnings-to-price ratio of its industry classified by the GICS industry code; **Growth** = natural log of the fraction of firm j's current year's book value of equity and last year's book value of equity (Aspect item 7010); **Leverage** = firm j's total debt (Aspect item 6040) to total assets (Aspect item 5090). **Beta** = calculated from the firm-specific CAPM using 36-month rolling returns, to three months after financial year end, with minimum of 7 months of monthly returns; **Size** = natural log of firm j's total assets (Aspect item 5090).

TAC = net profit after tax and abnormals (Aspect item 8036) less operating cash flows (Aspect item 9100) scaled by lagged total assets; **Aswitch – BtoB** = 1 if firm *j* switches its incumbent auditor and the preceding and succeeding auditors are both Big N auditors, and 0 otherwise. **Aswitch – BtoNB** = 1 if firm *j* switches it incumbent auditor, and the preceding auditor is Big N auditor and the succeeding auditor is non Big N auditor, and 0 otherwise; **Aswitch – NBtoB** = 1 if firm *j* switches its incumbent auditor, and the preceding auditor is non-Big N auditor and the succeeding auditor is Big N auditor, and 0 otherwise; **Aswitch – NBtoNB** = 1 if firm *j* switches its incumbent auditor and the preceding and succeeding auditors are both non-Big N auditors, and 0 otherwise..

Table 5 *IndEP* Cost of Capital Regression Estimation with Total Accruals and Unexpected Audit fees

Indep. Var.	Pred. Sign		(1) UnexpAF	(2) TAC	(3) UnexpAF & TAC	(4) Interaction
Growth	-	*Coef.*	-0.0025	-0.0023	-0.0027	-0.0029
		t	(-0.98)	(-0.97)	(-1.11)	(-1.22)
Leverage	+	*Coef.*	0.0240*	0.0393***	0.0387***	0.0386***
		t	(1.85)	(3.31)	(3.28)	(3.29)
Beta	+	*Coef.*	-0.0002	-0.0001	-0.0001	-0.0001
		t	(-1.26)	(-0.60)	(-0.70)	(-0.76)
Size	-	*Coef.*	-0.0040***	-0.0035***	-0.0030***	-0.0032***
		t	(-3.83)	(-3.63)	(-3.01)	(-3.20)
UnexpAF	-	*Coef.*	-0.0033**		-0.0033**	-0.0044**
		t	(-2.04)		(-2.01)	(-2.05)
TAC	+	*Coef.*		0.0934***	0.0934***	0.1225***
		t		(4.60)	(4.61)	(3.63)
UnexpAF	-	*Coef.*				-0.0291
***TAC**		*t*				(-1.07)
Constant	+/-	*Coef.*	0.0811***	0.0610***	0.0576***	0.0626***
		t	(4.08)	(3.41)	(3.17)	(3.39)
Observations			1048	1048	1048	1048
Adj R-squared			0.0187	0.0787	0.0803	0.0826
F test			6.23***	8.51***	8.74***	7.78***

*** p<0.01, ** p<0.05, * p<0.1 (two-tailed)
IndEP = industry adjusted earnings-to-price ratio, equal to firm j's earnings-to-price ratio less the median earnings-to-price ratio of its industry classified by the GICS industry code; **Growth** = natural log of the fraction of firm j's current year's book value of equity and last year's book value of equity (Aspect item 7010); **Leverage** = firm j's total debt (Aspect item 6040) to total assets (Aspect item 5090). **Beta** = calculated from the firm-specific CAPM using 36-month rolling returns, to three months after financial year end, with minimum of 7 months of monthly returns; **Size** = natural log of firm j's total assets (Aspect item 5090).
TAC = net profit after tax and abnormals (Aspect item 8036) less operating cash flows (Aspect item 9100) scaled by lagged total assets; **UnexpAF** = unexpected audit fee denoted as actual audit fees divided by expected audit fees, where the expected audit fees is the anti-log of the fitted value of the audit fee model adopted from Ferguson, Francis and Stokes (2006).

Table 6 *IndEP* Cost of Capital Regression Estimation with Total Accruals and Large Unexpected Audit fees

Indep. Var.	Pred. Sign		(1) LrgUnexpAF	(2) TAC	(3) LrgUnexpAF & TAC	(4) Interaction
Growth	-	*Coef.*	-0.0026	-0.0024	-0.0028	-0.0032
		t	(-1.04)	(-0.98)	(-1.19)	(-1.34)
Leverage	+	*Coef.*	0.0225*	0.0389***	0.0370***	0.0383***
		t	(1.73)	(3.28)	(3.14)	(3.29)
Beta	+	*Coef.*	-0.0003	-0.0001	-0.0002	-0.0001
		t	(-1.53)	(-0.57)	(-0.97)	(-0.88)
Size	-	*Coef.*	-0.0038***	-0.0033***	-0.0028***	-0.0032***
		t	(-3.78)	(-3.52)	(-2.88)	(-3.33)
LrgUnexpAF	-	*Coef.*	-0.0163***		-0.0176***	-0.0187***
		t	(-3.17)		(-3.18)	(-3.62)
TAC	+	*Coef.*		0.0919***	0.0926***	0.1000***
		t		(4.51)	(4.59)	(4.94)
LrgUnexpAF	-	*Coef.*				-0.1387***
***TAC**		*t*				(-3.67)
Constant	+/-	*Coef.*	0.0747***	0.0581***	0.0510***	0.0591***
		t	(3.83)	(3.29)	(2.84)	(3.26)
Observations			1047	1047	1047	1047
Adj R-squared			0.0213	0.0782	0.0839	0.0911
F test			6.93***	8.25***	9.22***	8.21***

*** p<0.01, ** p<0.05, * p<0.1 (two-tailed)
IndEP = industry adjusted earnings-to-price ratio, equal to firm j's earnings-to-price ratio less the median earnings-to-price ratio of its industry classified by the GICS industry code; **Growth** = natural log of the fraction of firm j's current year's book value of equity and last year's book value of equity (Aspect item 7010); **Leverage** = firm j's total debt (Aspect item 6040) to total assets (Aspect item 5090). **Beta** = calculated from the firm-specific CAPM using 36-month rolling returns, to three months after financial year end, with minimum of 7 months of monthly returns; **Size** = natural log of firm j's total assets (Aspect item 5090).
TAC = net profit after tax and abnormals (Aspect item 8036) less operating cash flows (Aspect item 9100) scaled by lagged total assets; **LrgUnexpAF** = 1 if a firm's unexpAF is one of the largest 10% in the overall market in year *t*, where UnexpAF = unexpected audit fee denoted as actual audit fees divided by expected audit fees, where the expected audit fees is the anti-log of the fitted value of the audit fee model adopted from Ferguson, Francis and Stokes (2006).

Table 7 *IndEP* Cost of Capital Regression Estimation with Total Accruals and Qualified Audit Opinion

Indep. Var.	Pred. Sign		(1) Opin	(2) TAC	(3) Opin & TAC	(4) Interaction
Growth	-	*Coef.*	-0.0032	-0.0037	-0.0035	-0.0035
		t	(-1.39)	(-1.58)	(-1.54)	(-1.51)
Leverage	+	*Coef.*	0.0323***	0.0377***	0.0386***	0.0406***
		t	(2.63)	(3.19)	(3.26)	(3.41)
Beta	+	*Coef.*	-0.0002	-0.0001	-0.0001	-0.0001
		t	(-0.97)	(-0.68)	(-0.65)	(-0.68)
Size	-	*Coef.*	-0.0036***	-0.0036***	-0.0032***	-0.0033***
		t	(-3.85)	(-3.84)	(-3.47)	(-3.59)
Opin	+	*Coef.*	0.0350**		0.0275	0.0168
		t	(2.00)		(1.62)	(0.95)
TAC	+	*Coef.*		0.0488**	0.0446**	0.0347*
		t		(2.43)	(2.26)	(1.67)
Opin*TAC	+	*Coef.*				0.0697**
		t				(1.97)
Constant	+/-	*Coef.*	0.0635***	0.0640***	0.0553***	0.0562***
		t	(3.71)	(3.69)	(3.25)	(3.32)
Observations			1049	1049	1049	1049
Adj R-squared			0.0300	0.0431	0.0489	0.0542
F test			5.31***	6.06***	5.42***	6.86***

*** p<0.01, ** p<0.05, * p<0.1 (two-tailed)

IndEP = industry adjusted earnings-to-price ratio, equal to firm j's earnings-to-price ratio less the median earnings-to-price ratio of its industry classified by the GICS industry code; **Growth** = natural log of the fraction of firm j's current year's book value of equity and last year's book value of equity (Aspect item 7010); **Leverage** = firm j's total debt (Aspect item 6040) to total assets (Aspect item 5090). **Beta** = calculated from the firm-specific CAPM using 36-month rolling returns, to three months after financial year end, with minimum of 7 months of monthly returns; **Size** = natural log of firm j's total assets (Aspect item 5090).

TAC = net profit after tax and abnormals (Aspect item 8036) less operating cash flows (Aspect item 9100) scaled by lagged total assets; **Opin** = 1 if firm *j* receive a qualified audit opinion, and 0 otherwise

Table 8 *IndEP* Cost of Capital Regression Estimation with Total Accruals and Unexpected Qualified Audit Opinions

Indep. Var.	Pred. Sign		(1) UnexpQalOpin	(2) TAC	(3) UnexpQalOpin & TAC	(4) Interaction
Growth	-	*Coef.*	-0.0029	-0.0033	-0.0031	-0.0030
		t	(-1.25)	(-1.39)	(-1.34)	(-1.31)
Leverage	+	*Coef.*	0.0318***	0.0382***	0.0380***	0.0401***
		t	(2.60)	(3.23)	(3.22)	(3.38)
Beta	+	*Coef.*	-0.0002	-0.0001	-0.0002	-0.0002
		t	(-1.11)	(-0.78)	(-0.82)	(-0.84)
Size	-	*Coef.*	-0.0034***	-0.0035***	-0.0031***	-0.0031***
		t	(-3.69)	(-3.74)	(-3.29)	(-3.38)
UnexpQalOpin	+	*Coef.*	0.0669**		0.0576**	0.0436
		t	(2.47)		(2.17)	(1.61)
TAC	+	*Coef.*		0.0462**	0.0407**	0.0307
		t		(2.33)	(2.11)	(1.52)
UnexpQalOpin	+	*Coef.*				0.1054**
***TAC**		*t*				(1.97)
Constant	+/-	*Coef.*	0.0604***	0.0618***	0.0518***	0.0521***
		t	(3.54)	(3.55)	(3.05)	(3.08)
Observations			1050	1050	1050	1050
Adj R-squared			0.0369	0.0398	0.0528	0.0584
F test			5.48***	5.76***	5.47***	6.61***

*** $p<0.01$, ** $p<0.05$, * $p<0.1$ (two-tailed)

IndEP = industry adjusted earnings-to-price ratio, equal to firm j's earnings-to-price ratio less the median earnings-to-price ratio of its industry classified by the GICS industry code; **Growth** = natural log of the fraction of firm j's current year's book value of equity and last year's book value of equity (Aspect item 7010); **Leverage** = firm j's total debt (Aspect item 6040) to total assets (Aspect item 5090). **Beta** = calculated from the firm-specific CAPM using 36-month rolling returns, to three months after financial year end, with minimum of 7 months of monthly returns; **Size** = natural log of firm j's total assets (Aspect item 5090).

TAC = net profit after tax and abnormals (Aspect item 8036) less operating cash flows (Aspect item 9100) scaled by lagged total assets; **UnexpQalOpin** = unexpected qualified audit opinion denoted as the difference between the actual qualified audit opinion (Opin=1) and the probability of a qualified audit opinion estimated from the audit opinion model adopted from Craswell, Laughton and Stokes (2002) for those receiving a qualified audit report, and 0 if a clean audit opinion (Opin=0) is received.

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