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AUDIT MARKET DYNAMICS AND AUDITORS' REMUNERATION OF LISTED COMPANIES IN EAST AFRICA

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ABSTRACT: *This study of companies listed on the stock exchanges in Tanzania, Kenya, Rwanda and Uganda has uncovered oligopolistic audit market structure. A total of 78 listed companies (74% of population) was analysed using audit fees' data from 2013-2017. The study revealed that Big4 had a statistically positive influence on the audit fees paid by the listed companies. Non_Big4 as a bloc had a negative influence as some of the firms experienced reduction in audit fees after taking over from Big4. The Herfindahl-Hirschman Index (HHI) was 0.94 while Concentration Ratio (CR4 – clients) which measures client market concentration of the Big4 was 86% and CR4- audit fees was much higher at 96% with PwC and KPMG the top two. Only 5% of variation in audit fees could be attributed to variation in stock exchange. Audit fees increased by a compound annual growth rate of 8% but Non_Big4 remain marginalized and forced into fee discounting to retain the few clients.*

KEYWORDS: Audit Market, Concentration, Competitiveness, Big-4, Audit Fees

INTRODUCTION

From time memorial, the trust and stability of the stock markets had relied heavily on auditing of the financial statements of the listed companies. Not only are independent external audits a requirement of the listing rules, it is a generally accepted worldwide practice to mitigate the risks of the agency problem. This problem arises from the conflicting interests of the company management (the Agent) and those of the shareholders (the Principal). The Board of Directors (BOD) provide oversight through a governance structure but majority or half of such directors tend to be non-executive and thus only meet on a quarterly basis or more often if there are extraordinary circumstances. The BOD appoints a Chief Executive Officer (CEO) or Managing Director (MD) or whatever name is given to that person to run the company in accordance with its Memorandum and Articles of Association and ultimately to ensure that shareholders get a return on their investment in the company. The shareholders meet annually at an Annual General Meeting (AGM) to appoint BOD and external auditors. These procedures are enshrined in Company Law, but have come to be embedded in a number of corporate governance best practices like the South African King IV code, US Sarbanes-Oxley Act, UK Corporate Governance Code to mention a few, plus many other regulations for listed companies.

The accounting profession has existed for decades and the external audit firms have evolved. In 1998, there was a merger between then Price Waterhouse and Coopers & Lybrand to form what is simply referred to nowadays as PwC. Unfortunately, Arthur Andersen collapsed four years later in 2002 following the Enron scandal that shocked the stock markets in the United States and within less than a decade, the top accounting firms had reduced from the Big8 to the Big4. Ever since 2002, the global accounting firm market has been dominated by what has

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come to be referred to as the Big4 (Deloitte, EY, KPMG and PwC). That dominance has been built over several centuries and occasioned by representation in most countries of the world. Thus, the revenue figures of the Big4 represent data from all the countries worldwide. In 2017, Deloitte earned USD 38.8billion for the full year, PwC USD 37.7billion, EY USD 31.4billion and KPMG USD 25.4billion (ICAS, 2017). The Next4 comprised of BDO USD 7.6billion, Grant Thornton USD 4.8billion, RSM USD 4.6billion and Crowe USD 3.7billion. As can be deduced from these figures, the Big4 are on a league of their own with a very huge gap between the fourth and fifth firm. Now, we return to the geographical scope of study, which is the East African region.

Scope of the study

The East African Community (EAC) is an inter-governmental organization representing the countries of Burundi, Kenya, Rwanda, South Sudan, Tanzania and Uganda. This study will focus on four countries that have established stock exchanges and these include Kenya, Rwanda, Tanzania and Uganda. According to the World Bank, Kenya has the biggest economy at USD 70.5billion of Gross Domestic Product (GDP at 2016 figures), followed by Tanzania USD 47.4billion, Uganda USD 25.5billion and Rwanda USD 8.4billion. With respect to our stock exchanges, it is not surprising that Kenya leads the table again with a large number of listed companies and market capitalization of their bourse. The ensuing statistics are extracted from the respective websites of the stock exchanges and the local currency converted into USD using an average exchange rate for the year 2017. The Nairobi Stock Exchange (NSE) had a market capitalization of USD 25.5billion, Dar-es-Salaam Stock Exchange (DSE) was USD 9.8billion, Uganda Securities Exchange (USE) had USD 7.8billion while Rwanda Stock Exchange (RSE) had USD 3.4billion. The stock markets in the EAC are still young with the NSE established in 1992 while RSE started operations in 2005. Not only do companies have to meet criteria to get listed, shareholders and the public must trust the whole concept of stock markets.

From published lists (either in newspapers or official internet websites), there are close to 1200 regulated accounting firms in the four East African countries. In addition to Burundi and South Sudan not having stock exchanges, the two countries coincidentally are not members of the International Federation of Accountants (IFAC) established in 1977. The professional accounting firms are regulated by IFAC member bodies, referred to as Professional Accountancy Organizations (PAO). The evolution of the PAOs in East Africa (all of them members of IFAC) is as follows (a) The National Board of Accountants and Auditors of Tanzania (NBAAT) is the oldest among the four having been established in 1972; (b) The Institute of Certified Public Accountants of Kenya (ICPAK) in 1978; (c) The Institute of Certified Public Accountants of Uganda (ICPAU) in 1993 and (d) Institute of Certified Public Accountants of Rwanda (iCPAR) established in 2008. In terms of the number of professional accounting firms that are regulated (including the Big4) by the respective Institutes and Board mentioned above, Kenya has the highest with over 710 as at 2018, Uganda had over 230, and Tanzania had over 220 while Rwanda had 35. IFAC has a number of independent standard-setting bodies whose main role is to standardize the profession worldwide. These standards are cascaded from IFAC to PAOs and expected every licensed accounting firm to abide by a Code of Ethics established by the International Ethics Standard Board for Accountants (IESBA®). They accounting firms are also expected to conduct the all independent audits of financial statements in accordance with the International Standards on Auditing (ISAs) set by the International Auditing and Assurance Standards Board (IAASB®). These financial statements

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are prepared by management but the responsibility rests with the BOD. These financial statements in East Africa are prepared based on International Financial Reporting Standards (IFRS) set by the International Accounting Standards Board (IASB) while some of them could be prepared based on International Public Sector Accounting Standards (IPSAS) set by the International Public Sector Accounting Standards Board (IPSASB®). In order to cope with these multitude of standards, IFAC established the International Accounting Education Standards Board (IAESB®) to produce a set of Internal Education Standards (IES) that are meant to provide guidelines upon which firms can enhance technical competence, professional skills, live the ethical values and maintain appropriate attitude.

Statement of the problem

There are close to 1200 accounting firms in the four East African countries of Kenya, Rwanda, Tanzania and Uganda. This implies that there are 16 Big4 (less than 2%) and by extension 1184 are Non_Big4 or Small and Medium-sized Practices (SMPs). For this study, the latter are referred to as Non_Big4. Despite the Big4 constituting less than 2% of the population of firms, it is generally acknowledged that they are the firms of choice for listed companies, multinational companies, international non-government organizations, large companies and some Small and Medium-sized Entities (SMEs). There are few companies listed on the stock exchanges and the few have not shown appetite for the Non_Big4 to audit their financial statements.

Research objectives

i. To determine how Big4 status influences the audit fees paid by the listed companies

ii. To determine whether audit fees paid by the listed companies are different in each of the four stock exchanges

Research hypothesis

i. H_0: Big4 status has no influence on the audit fees paid by the listed companies

ii. H_0: Audit fees are not different in each of the four stock exchanges

Justification for this study

Audit market concentration has been widely studies in many other regions of the world, except East Africa. Whilst it is generally acknowledged that the Big4 dominate the market in each of the East African countries, the extent of such dominance has remained unknown and the resultant implications on the audit fees. This study will stimulate further studies into the Big4/Non_Big4 dichotomy with the expectation that policy changes across Africa may ensure in the long run.

LITERATURE REVIEW/THEORETICAL UNDERPINNING

The dominance of Big4 is not only visible in East Africa. A total of 1175 accounting firms provide external audit services to 5747 public companies within the European Union (EU) member countries out of which PwC had 17% market share, KPMG 15%, EY 15% and Deloitte 14%. The remaining 39% is share amongst 1171 Non_Big4 firms (Audit Analytics, 2018b). In

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terms of specifics of the top 100 companies listed on the London Stock Exchange (LSE) and constituting the FTSE 100 index, the Big4 still have the upper hand with PwC auditing financial statements of 36 companies, KPMG 24, Deloitte 23 and EY 17 (ICAEW Economia, 2018b). The Big4 audit the financial statements of the listed companies that constitute the Standard & Poor (S&P500 Index), with the exception of just three (Audit Analytics, 2018a). The perception has always been that the Big4 have higher quality assurance processes than the Non_Big4 and this explains the preference of investors of public companies. However, recent challenges have awoken the Big4 after gaps in audit opinions led to a dent in the reputation of KPMG culminating in the resignation of a number of partners and loss of major clients (Cotterill, 2018). In another example of issues to dog a Big4, an investigation was instituted to look into an auditor/client relationship that has spanned over 20 years (without audit rotation) and the company was on brink of collapse (ICAEW Economia, 2018a)

Joint audits are mandatory in France and were introduced to somehow reduce on audit concentration and specially to mitigate a potential systemic risk should there be problems with any of the Big-4. The combination of the joint auditors can be "Big4/Big4" or "Big4/non_Big4". However, there is little economic justification for Big4 combination "Big4/Big4" as it inevitably leads to escalation of audit fees for the client. This given an opportunity to the SMPs to be involved in many of the joint audits ("Big4/non_Big4"- mixed regime). The gap in revenues between the Big4 and the rest may not narrow anytime soon. However, there have been calls for more mergers amongst non-Big4 firms with the argument that it would lead to a much larger firm and economies of scale. A study on audit firm non_Big4 mergers revealed efficiency in terms of man-hours spent on assignments and this did not reduce audit quality. However, the resultant efficiency did not translate into reduced fees for the clients (Gong, Li, Lin, & Wu, 2015). The merger of then Price Waterhouse and Coopers & Lybrand to form PwC in 1998 led to overall improvements in audit quality compared to their Big5 peers (at the time Arthur Andersen was still in existence). The audit quality was measured based on propensity to issue going concern reservations, lower incidences of earnings management and accruals quality (Choi, Kim, & Raman, 2017)

The standards setting committees of IFAC as well as the IASB regularly publish new and updated standards. Due to globalization and interconnected global markets, a number of listed companies in Europe (but headquartered in the USA) had to switch their accounting policies to comply with IFRS. This brought about complexity in financial reporting and a number of accounting/finance department personnel had to rely on expertise of their external auditors. But because the Big4 have global presence and have invested heavily on industry expertise, complexity in financial reporting increased the dominance of the Big4 even further. IFRS adoption did not cause the market to become concentrated in favour of the Big4, but it may have led to further concentration (Dinh & Piot, 2014). And audit market concentration does not make the field less competitive (Ferguson, Pinnuck, & Skinner, 2017). The growth in size, structure and complexity of public companies has fuelled the need for external auditors to invest and specialize in industry-specifics. This has led to Big4 concentration. Statutory audits are enshrined in Company Law and the main objective is to protect public interest. Big4 concentration has continued to worry regulators because a collapse of one or more of them would lead to financial meltdown and total distrust in the accounting professional altogether. At the moment, the trust in the Big4 is still high with over 90% of the listed companies in the stock exchanges in the European Union being audited by the Big4. Even the requirement for mandatory audit rotation has not broken the cycle of Big4 dominance due to perceived limited choice and it appears the non-Big4 face an invisible barrier to entry (Mališ & Brozović, 2015).

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The collapse of Arthur Andersen in 2002 and the enactment of the Sarbanes-Oxley Act led to increased regulations. Many companies faced challenges complying with the new regulations and audit and compliance related fees increased drastically. There was very small impact of audit market concentration on the audit fees of large corporations (Evans Jr & Schwartz, 2014)

Just behind the Big4 is a group of non-Big4 leaders. In the USA, accounting firms tend to have several offices in major cities and a ranking of these firms based on office criteria is usually produced. A study into the competitiveness of this cluster of firms revealed that they commanded a higher fee premium than the other firms (Keune, Mayhew, & Schmidt, 2015) Fee competition among firms of similar size (especially among Big4 in a highly concentrated market) can propagate higher audit quality (Asthana, Khurana, & Raman, 2018)

Where there is low litigation risk, then it fuels a price war in which the competitive advantage is based on reduced fees and not necessarily higher audit quality (Rezaei, Saleh, & Ali, 2015). The opportunistic switching of auditors by clients so as to reduce audit fees is instigated from the demand side (clients). Fee discounting was more prominent among smaller audit firms jostling for jobs at time of mandatory audit rotation (Grant, Harber, & Minter, 2018). As the Big4 grow bigger due to big name fee premiums, the majority of the non-Big4 deploy a "red ocean" strategy involving cut-throat price competition. The audit market inequality can be calculated using the gini coefficient (Keune et al., 2015; Mališ & Brozović, 2015)

Big4 firms earned premium fees due to the perception that their work is of higher quality than the non-Big4. However, there has been debates on whether the higher audit fees translate into high quality work. To test this hypothesis, 2334 firm-year observations of the German audit market from 2005-2010 were analysed. The results showed that abnormal audit fees were negatively associated with audit quality. The high reliance on the client for firm revenue had led to compromise in auditor independence. However there was no sufficient evidence that audit fee discounts due to strong bargaining power of buyers led to reduction in audit effort and audit quality (Krauß, Pronobis, & Zülch, 2015). This is contradictory to another study that showed evidence that auditor size (using "Big4/non_Big4" dichotomy) affected the level of investment in information technology (software and hardware) which is critical in audit quality assurance and production efficiency. It was noted that non_Big4 could not afford such an IT investment race because their clients do not pay sufficiently high fees. This explains why audit quality and production efficiency is higher in the Big4 (Djerdjouri & Kandiel, 2013; Sirois, Marmousez, & Simunic, 2016). The Herfindahl-Hirschman Index (HHI) is commonly used to ascertain the Concentration Ratio (CR) for the top firms in the market. The HHI for CR4 reflects the concentration ratio for the top four firms in the market. The CR4, in the case of audit market, is high due to Big4 dominance which is a result of their audit fees being significantly higher than even the nearest competitor (that is, the fifth firm). Big4 dominance is also caused by negative economic feasibility of joint audits (Asien, 2014). This despite revelation that joint audits improve audit quality and enhance earnings conservatism (El Assy, 2015). There was no significant difference in audit quality between joint audits that were mandatory and those that were voluntary. Equally, no significant difference in audit quality between joint audits of "Big4/Big4" or "Big4/non-Big4" or "non-Big4/non-Big4"

Spatial competition is important in understanding audit market concentration. It is better to calculate competition distances within the Big4, within the non-Big4 and then between the two regimes. Due to competition within the regimes, compromises arise especially when audit fees

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are reduced or constant. These compromises led to skipped audit procedures and thus reduced audit quality. To retain competitiveness amidst downward audit fee pressure, firm have to invest in innovations that lead to production efficiency. The reputation of the firm is guarded as compromises lead to regulatory sanctions and litigation (White, 2018). Where a non-Big4 firm has a shorter competition distance away from the Big4, there is higher pressure on the latter with respect to the audit fees. The client may consider that the audit quality of the non-Big4 is not significantly different and opt for same quality at lower fees. Therefore, top tier SMPs (or non-Big4) play an important role in the competitive landscape (Bills & Stephens, 2015). Audit market concentration influences audit quality, but a positive indirect effect through audit fees. On the other side of the coin, audit market concentration had a direct, but negative effect on audit quality. The argument is that setting limits for audit fees may wipe out the positive indirect effects which may not be sufficient to offset the negative direct effects, and the end result could be deterioration of audit quality (Huang, Chang, & Chiou, 2015). On the contrary, there was no evidence that audit market concentration influenced audit quality among companies listed on Stockholm NASDAQ (Ohlsson & Carlsson, 2018). The audit fees obtainable from the audited financial statements can be used to calculate the Herfindahl-Hirschman Index (HHI), a measure of market concentration (Kirsten, Vermaak, & Wolmarans, 2015). Discretionary accruals were used as proxy for audit quality.

From the perspective of the African continent, there is evidence of institutional preference for the Big4. The large shareholders/investors in the companies listed on the stock exchange are institutions, some of which originate from USA, Europe or Asia. If the investors are already using Big4 auditors, they insist on the same auditor or substitute Big4 for their investments worldwide (Mokoaleli-Mokoteli & Iatridis, 2017). The Big4 are trusted in that they recognize losses on a timely basis, if required under the standards. There is also perception that earnings are not manipulated by management to influence stock prices. Big4 also have higher levels of conservatism in terms of ensuring full disclosures are required under IFRS, Companies Act and King III code (in the case of South Africa). Audit rotation often led to client restatements, and the latter precipitated higher audit fees. Once the auditor came onboard, there was no evidence of audit fee increase in second year in office (Grant et al., 2018). Listed companies in Nigeria that had more equity than debt tended to prefer the Big4 auditors (Okere, Ogundipe, Oyedeji, Eluyela, & Ogundipe, 2018). This appears to add to the negation of the Modigliani-Miller theorem of capital structure irrelevance from this perspective.

METHODOLOGY

Research design

Sampling frame is the listed companies extracted from the websites of the capital markets regulators in the East African Community (EAC) which would be Tanzania, Kenya, Rwanda and Uganda. The other two EAC countries of Burundi and South Sudan are yet to establish stock exchange. Cross-listed stocks (majority from the NSE) were counted only once to avoid overstatement of the numbers and values. The population of listed companies for this study was established as follows as at June 2018:

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Table 1: Number of listed companies, by stock exchange

Stock exchange	Website	No. of listed companies
Dar-es-Salaam Stock Exchange (DSE)	www.dse.co.tz	23
Nairobi Stock Exchange (NSE)	www.nse.co.ke	60
Rwanda Stock Exchange (RSE)	www.rse.rw	8
Uganda Securities Exchange (USE)	www.use.or.ug	14
		105

Source: Author's compilation from websites

Variables description

The dependent is the audit fees earned by the respective accounting firms for the independent opinion on the financial statements of the sampled listed companies for the years 2013-2017, a period of five years. The auditors' remuneration for the year is expected to be disclosed separately in the financial statements. The figures are extracted in their respective reported country currencies (KES- Kenya Shilling, RwF – Rwandese Francs, TZS – Tanzania Shillings and then UGX – Uganda Shilling) and translated into USD – United States Dollar for standardization purposes.

The independent variables for different hypothesis are (a) the category of the firm into Big4 or otherwise, (b) the primary stock exchange in which the company is listed.

RESULTS/FINDINGS

Descriptive statistics

18 cross-listed companies were counted only once. Companies which had not listed during the entire fiver year period were also excluded. Furthermore, companies for which auditor and auditors' remuneration information (these are typically found in published Annual Reports) could not be found on their website were also excluded. From the initial population of 105 companies listed on the four stock exchanges, a total of 78 was used for analysis for this longitudinal study. NSE had 54 companies (69%), followed by DSE 14 (18%), third was USE 7 (9%) and RSE 3 (4%). The spread of audits for the five years was as follows:

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Table 2: Number of audits per firm, by year

	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017
BDO	2	2	2	1	1
Crowe	1	1	-	-	-
Deloitte*	18	17	19	18	16
EY*	13	13	14	14	12
GT	2	1	-	1	1
Innovex	1	1	1	1	-
Jim Roberts	-	1	1	1	1
KPMG*	17	17	17	19	19
PKF	4	5	5	3	4
Parker	-	-	1	1	-
PwC*	20	20	16	16	20
RSM	-	-	1	2	2
TAC	-	-	1	1	1
	78	**78**	**78**	**78**	**78**

Source: Author's compilation with ascending name of audit firm. *Big4

Table 3: Average fees earned by all firms, using year-on-year progression

Variable	Obs*	Mean USD'000	Standard Deviation	Min USD'000	Max USD'000
auditfee_y1	78	106.987	89.172	4	419
auditfee_y2	78	116.128	99.049	4	413
auditfee_y3	78	117.885	103.898	4	400
auditfee_y4	78	127.269	114.339	6	480
auditfee_y5	78	135.244	121.948	7	570

Source: Author's compilation using STATA15® statistical tool. *Obs = Number of observations

Audit rotation among Big4

Table 4: Average fees earned by all firms, using year-on-year progression

		Clients gained from other Big4 firms in Year 2-5				
		Deloitte	EY	KPMG	PwC	
Clients ceded to other Big4 firms	Deloitte	-	1	-	7	**8**
	EY	1	-	2	2	**5**
	KPMG	2	2	-	3	**7**
	PwC	3	1	7	-	**11**
		6	**4**	**9**	**12**	**31**

Source: Author's compilation from websites

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Apart from the above migration of clients among the Big4, there were only three instances where Non_Big4 were appointed as replacement auditors. Two of the replacement auditors accepted lower audit fees upon assuming office while the third maintained the audit fees. There were two instances where Big_4 took over as auditor from a Non_Big4. In both cases, the new Big4 auditor earned a substantial increment in the audit fees.

Research Objective 1: To determine whether Big4 status has an influence on the annual audit fees paid by the listed companies

Regression analysis is the best method of determining such influence and this was done year by year. The influence of each Big4 firm was regressed individually while all the Non_Big4 firms were regressed as a bloc. From the details **(Tables 6-10: Appendix),** the probability of an F-value higher than those in the regression equations are all less than the set $\alpha = 5\%$ for each year.

Therefore, the null hypothesis that Big4 status has no influence on the audit fees was rejected. The alternative hypothesis was accepted and thus there is evidence of statistical significance.

Research Objective 2: To determine whether audit fees paid by the listed companies are different in each of the four stock exchanges

Table 5: Analysis of variance (ANOVA) – regression of stock exchange on audit fees for the five years

all_stockex	Coef.	Standard Error	t-value	p-value	Sig.
1b.stock_exch	0.000	0.000	0.00	0.000	***
2.stock_exch	258.714	151.082	1.71	0.091	*
3.stock_exch	-66.286	320.492	-0.21	0.837	
4.stock_exch	96.571	233.192	0.41	0.680	
_cons	418.286	134.634	3.11	0.003	***

Mean dependent variable	603.513	SD dependent variable	507.035
R-squared	0.051	Number of observations	78
F-test	1.336	Prob > F	0.269
Akaike criteria (AIC)	1195.894	Bayesian criteria (BIC)	1205.321

*** p<0.01, ** p<0.05, * p<0.1

1b.stock_exch = DSE
2.stock_exch = NSE
3.stock_exch = RSE
4.stock_exch = USE

F (3,74) = 1.336; p =0.269>0.05 **(Table 5)** for the combined five years, hence no significant statistical differences. Analysis of variance for individual years (2013 to 2017) revealed the same result of non-significance.

Therefore, the null hypothesis that audit fees are not different among the four stock exchanges is accepted.

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DISCUSSION

Research Objective 1: To determine whether Big4 status has an influence on the annual audit fees paid by the listed companies

The ANOVA (**Tables 6-10: Appendix**) showed statistical significance. Tukey Honestly Significant Difference (HSD) pairwise comparisons were performed to determine where the differences between these audit firms lie.

Tukey HSD for variables *firmcode** studentized range critical value (0.05, 5, 73) = 3.955817. The following pairwise comparisons revealed where the differences lie for each of the years analysed separately:

- Year 1: Significant differences existed between (i) KPMG and Non_Big4 (ii) PwC and Non_Big4 **(Table 11: Appendix)**
- Year 2: Significant differences existed between (i) KPMG and Non_Big4 (ii) PwC and Non_Big4 **(Table 12: Appendix)**
- Year 3: Significant differences existed between (i) KPMG and Non_Big4 (ii) PwC and Non_Big4 **(Table 13: Appendix)**
- Year 4: Significant differences existed between (i) KPMG and Non_Big4 (ii) PwC and Non_Big4 (iii) Deloitte and PwC (iv) EY and PwC **(Table 14: Appendix)**

  Given the change in the observed differences compared to Year 3, a triangulation was adopted to support this evidence. The *Sidak* post-hoc test was conducted which also returned the same results **(Table 15: Appendix)**

  as the Tukey HSD.
- Year 5: Significant differences existed between (i) KPMG and Non_Big4 (ii) PwC and Non_Big4 (iii) Deloitte and PwC (iv) EY and PwC **(Table 16: Appendix)**

  The *Sidak* post-hoc test was conducted which also returned the same results **(Table 17: Appendix)**

Table 3, the average annual audit fees had increased annually from 2013 to 2017 but this was primarily driven/influenced by the Big4. The regression tables reveal that the Non_Big4 had a negative regression coefficient on the audit fees for each of the five years. This implies that the Big4 had a significant positive influence on the audit fees paid by listed companies.

Research Objective 2: To determine whether audit fees paid by the listed companies are different in each of the four stock exchanges

Coefficient of determination (R^2) is 0.051 implying that only 5% of the variation in the audit fees can be explained by variations in the stock exchange.

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IMPLICATIONS TO RESEARCH AND PRACTICE

The Small and Medium-sized Practices (SMP) Committee of the International Federation of Accountants was formed in 2005 to represent the interests of smaller audit firms (Non_Big4) to regulators, among others. Whilst the SMP Committee has done a good job is developing publications customized to SMPs or Non_Big4, evidence from this study in East Africa has revealed that SMPs are still marginalized and regulators have not yet done enough to promote the interests of this group. Part of the problem has been the lack of publications to highlight possible inequalities.

In this study, although some Non_Big4 were rewarded with audits of listed companies, this was at the minimum end of the audit fees continuum (**Table 3**). As revealed on **Table 18**, the Non_Big4 handled listed companies which were least paying, some less than USD10,000 per audit. On the other end, the Big4 earned "triple-digit" figures with the highest earning USD570,000. In South Africa, Big4 justified audit fee increments based on the restatements that had been made by the incoming auditor (Grant et al., 2018). But the previous auditor was also a Big4 and such prior period restatements could be an indicator of questionable audit quality. Traditionally, only the auditors' remuneration is disclosed separately in the financial statements. There have been calls for the directors of listed companies to disclose the auditors' remuneration (earned from the audit opinion on the financial statements) and the non-audit services fees (Šindelář & Müllerová, 2017). The excessive fees earned from non-audit services to the demised Enron may have caused the defunct Arthur Andersen to compromise on audit quality.

Although the auditor's remuneration is public information for listed companies, this study has highlighted that the oligopolistic texture of the audit market in East Africa has to a great extent driven audit fees higher and higher with probably less justification. The study has also revealed that auditor rotation is not compulsory with some Big4 firms remaining in office for five consecutive years.

CONCLUSION

Overall, the results show the Big4 dominance of the audit of the financial statements of the companies listed on the stock exchange. This is consistent with studies conducted in other regions and continents. The audit fees disparities that are observed at the global levels between the Big4 and the Next4 can be seen at the regional level in East African level.

Table 2 shows that Big4 have the lion's share in numbers of listed companies.

Table 3 is very informative in revealing the minimum audit fees paid to the Non-Big4 and the maximum audit fees paid to the Big4.

Table 4 reveals that audit rotation is within the Big4 themselves with PwC the biggest winner followed by KPMG.

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FUTURE RESEARCH

All external audits must be conducted in accordance with International Standards on Auditing (ISAs) published by the International Auditing and Assurance Standards Board (IAASB®) and audit quality should be judged based on full compliance with ISAs. Future research could ascertain how Management, Board of Directors and Shareholders evaluate potential audit firms based on their compliance with ISAs. This would particularly be insightful to the SMPs or Non_Big4 to understand salient factors that cause their non-selection as external auditors by listed companies. The IFAC and Pan African Federation of Accountants (PAFA) could sponsor academicians and accountancy practitioners in different countries of Africa to compile a continent-wide study report.

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APPENDIX

Table 6: Regression of Deloitte, EY, KPMG, PwC and Non_Big4 on audit fees for year 1 (2013)

auditfee_y1 2013	Coef.	Standard Error	t-value	p-value	Sig.
1b.firmcode_y1	0.000	0.000	0.00	0.000	***
2.firmcode_y1	20.491	29.286	0.70	0.486	
3.firmcode_y1	54.958	27.212	2.02	0.047	**
4.firmcode_y1	75.222	26.142	2.88	0.005	***
9.firmcode_y1	-54.378	31.735	-1.71	0.091	*
_cons	79.278	18.965	4.18	0.000	***

Mean dependent variable	106.987	SD dependent variable	89.172
R-squared	0.228	Number of observations	78
F-test	5.393	Prob > F	0.001
Akaike criteria (AIC)	910.683	Bayesian criteria (BIC)	922.466

*** p<0.01, ** p<0.05, * p<0.1

1b.firmcode = Deloitte, *2.firmcode* = EY, *3.firmcode* = KPMG, *4.firmcode* = PwC
9.firmcode = Non_Big4

Table 7: Regression of Deloitte, EY, KPMG, PwC and Non_Big4 on audit fees for year 2 (2014)

auditfee_y2 2014	Coef.	Standard Error	t-value	p-value	Sig.
1b.firmcode_y2	0.000	0.000	0.00	0.000	***
2.firmcode_y2	27.412	32.762	0.84	0.405	
3.firmcode_y2	63.176	30.499	2.07	0.042	**
4.firmcode_y2	83.762	29.333	2.86	0.006	***
9.firmcode_y2	-58.679	34.408	-1.71	0.092	*
_cons	84.588	21.566	3.92	0.000	***

Mean dependent variable	116.128	SD dependent variable	99.049
R-squared	0.236	Number of observations	78
F-test	5.635	Prob > F	0.001
Akaike criteria (AIC)	926.275	Bayesian criteria (BIC)	938.058

*** p<0.01, ** p<0.05, * p<0.1

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Table 8: Regression of Deloitte, EY, KPMG, PwC and Non_Big4 on audit fees for year 3 (2015)

auditfee_y3 2015	Coef.	Standard Error	t-value	p-value	Sig.
1b.firmcode_y3	0.000	0.000	0.00	0.000	***
2.firmcode_y3	-4.312	33.076	-0.13	0.897	
3.firmcode_y3	62.650	31.350	2.00	0.049	**
4.firmcode_y3	67.599	31.863	2.12	0.037	**
9.firmcode_y3	-74.026	34.626	-2.14	0.036	**
_cons	102.526	21.543	4.76	0.000	***

Mean dependent variable	117.885	SD dependent variable	103.898
R-squared	0.226	Number of observations	78
F-test	5.315	Prob > F	0.001
Akaike criteria (AIC)	934.784	Bayesian criteria (BIC)	946.568

*** p<0.01, ** p<0.05, * p<0.1

Table 9: Regression of Deloitte, EY, KPMG, PwC and Non_Big4 on audit fees for year 4 (2016)

auditfee_y4 2016	Coef.	Standard Error	t-value	p-value	Sig.
1b.firmcode_y4	0.000	0.000	0.00	0.000	***
2.firmcode_y4	5.222	35.699	0.15	0.884	
3.firmcode_y4	60.170	32.951	1.83	0.072	*
4.firmcode_y4	116.535	34.421	3.39	0.001	***
9.firmcode_y4	-70.960	38.340	-1.85	0.068	*
_cons	97.778	23.613	4.14	0.000	***

Mean dependent variable	127.269	SD dependent variable	114.339
R-squared	0.272	Number of observations	78
F-test	6.825	Prob > F	0.000
Akaike criteria (AIC)	944.876	Bayesian criteria (BIC)	956.659

*** p<0.01, ** p<0.05, * p<0.1

Table 10: Regression of Deloitte, EY, KPMG, PwC and Non_Big4 on audit fees for year 5 (2017)

auditfee_y5 2017	Coef.	Standard Error	t-value	p-value	Sig.
1b.firmcode_y5	0.000	0.000	0.00	0.000	***
2.firmcode_y5	-35.792	39.538	-0.91	0.368	
3.firmcode_y5	59.230	35.131	1.69	0.096	*
4.firmcode_y5	118.025	34.727	3.40	0.001	***
9.firmcode_y5	-76.693	40.552	-1.89	0.063	*

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_cons	106.875	25.884	4.13	0.000	***

Mean dependent variable	135.244	SD dependent variable	121.948
R-squared	0.317	Number of observations	78
F-test	8.455	Prob > F	0.000
Akaike criteria (AIC)	950.014	Bayesian criteria (BIC)	961.797

*** p<0.01, ** p<0.05, * p<0.1

Table 11: Tukey's pairwise comparisons of audit fees by firm – Year 1 (2013) (critical value = 3.955817)

Group means – USD'000						
Group vs Group			First Group	Second Group	Mean Diff	HSD	Sig.
Deloitte	vs	EY	79.27	99.76	20.49	0.9748	
Deloitte	vs	KPMG	79.27	134.23	54.94	2.6143	
Deloitte	vs	PwC	79.27	154.50	75.23	3.5782	
Deloitte	vs	Non_Big4	79.27	24.90	54.37	2.5867	
EY	vs	KPMG	99.76	134.23	34.47	1.6395	
EY	vs	PwC	99.76	154.50	54.74	2.6035	
EY	vs	Non_Big4	99.76	24.90	74.86	3.5614	
KPMG	vs	PwC	134.23	154.50	20.27	0.9640	
KPMG	vs	Non_Big4	134.23	24.90	109.33	5.2009	**
PwC	vs	Non_Big4	154.50	24.90	129.60	6.1649	**

Source: Author compilation ` ** Sig, p<0.05

HSD above the critical value = statistically significant difference between the two groups

Table 12: Tukey's pairwise comparisons of audit fees by firm – Year 2 (2014) (critical value = 3.955817)

Group means – USD'000						
Group vs Group			First Group	Second Group	Mean Diff	HSD	Sig.
Deloitte	vs	EY	84.58	112.00	27.42	1.1901	
Deloitte	vs	KPMG	84.58	147.76	63.18	2.7429	
Deloitte	vs	PwC	84.58	168.35	83.77	3.6366	
Deloitte	vs	Non_Big4	84.58	25.90	58.68	2.5476	
EY	vs	KPMG	112.00	147.76	35.74	1.5528	
EY	vs	PwC	112.00	168.35	56.35	2.4465	
EY	vs	Non_Big4	112.00	25.90	86.10	3.7377	
KPMG	vs	PwC	147.76	168.35	20.59	0.8937	
KPMG	vs	Non_Big4	147.76	25.90	121.86	5.2905	**

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PwC	vs	Non_Big4	168.35	25.90	142.45	6.1842	**

Source: Author compilation ` ** Sig, p<0.05

HSD above the critical value = statistically significant difference between the two groups

Table 13: Tukey's pairwise comparisons of audit fees by firm – Year 3 (2015) (critical value = 3.955817)

Group means – USD'000							
Group vs Group			First Group	Second Group	Mean Diff	HSD	Sig.
Deloitte	vs	EY	102.53	98.21	4.32	0.1791	
Deloitte	vs	KPMG	102.53	165.18	62.65	2.6020	
Deloitte	vs	PwC	102.53	170.12	67.59	2.8075	
Deloitte	vs	Non_Big4	102.53	28.50	74.03	3.0745	
EY	vs	KPMG	98.21	165.18	55.97	2.7811	
EY	vs	PwC	98.21	170.12	71.91	2.9866	
EY	vs	Non_Big4	98.21	28.50	69.71	2.8954	
KPMG	vs	PwC	165.18	170.12	4.96	0.2055	
KPMG	vs	Non_Big4	165.18	28.50	136.68	5.6764	**
PwC	vs	Non_Big4	170.12	28.50	141.62	5.8820	**

Source: Author compilation ` ** Sig, p<0.05

HSD above the critical value = statistically significant difference between the two groups

Table 14: Tukey's pairwise comparisons of audit fees by firm – Year 4 (2016) (critical value = 3.955817)

Group means – USD'000							
Group vs Group			First Group	Second Group	Mean Diff	HSD	Sig.
Deloitte	vs	EY	97.78	103.00	5.22	0.2020	
Deloitte	vs	KPMG	97.78	157.95	60.17	2.3272	
Deloitte	vs	PwC	97.78	214.31	116.53	4.5073	**
Deloitte	vs	Non_Big4	97.78	26.82	70.96	2.7446	
EY	vs	KPMG	103.00	157.95	54.95	2.1252	
EY	vs	PwC	103.00	214.31	111.31	4.3053	**
EY	vs	Non_Big4	103.00	26.82	76.18	2.9465	
KPMG	vs	PwC	157.95	214.31	56.36	2.1801	
KPMG	vs	Non_Big4	157.95	26.82	131.13	5.0718	**

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PwC	vs	Non_Big4	214.31	26.82	187.49	7.2519	**

Source: Author compilation ` ** Sig, p<0.05

HSD above the critical value = statistically significant difference between the two groups

Table 15: Average audit fees pairwise comparisons using the *Sidak* post-hoc test

Row mean - Column mean	Deloitte	EY	KPMG	PwC
EY	5.22 Pr: **1.000**			
KPMG	60.17 Pr: **0.526**	54.95 Pr: **0.733**		
PwC	116.53 Pr: **0.011****	111.31 Pr: **0.033****	56.36 Pr: **0.657**	
Non_Big4	-70.96 Pr: **0.507**	-76.18 Pr: **0.479**	-131.13 Pr: **0.009****	-187.49 Pr: **0.000****

Source: Author compilation. **Pr = Probabilities significant at 5% (α<0.05)

Table 16: Tukey's pairwise comparisons of audit fees by firm – Year 5 (2017) (critical value = 3.955817)

Group means – USD'000							
Group vs Group			First Group	Second Group	Mean Diff	HSD	Sig.
Deloitte	vs	EY	106.87	71.08	35.79	1.3269	
Deloitte	vs	KPMG	106.87	166.10	59.23	2.1958	
Deloitte	vs	PwC	106.87	224.90	118.03	4.3755	**
Deloitte	vs	Non_Big4	106.87	30.18	76.69	2.8432	
EY	vs	KPMG	71.08	166.10	95.02	3.5227	
EY	vs	PwC	71.08	224.90	153.82	5.7024	**
EY	vs	Non_Big4	71.08	30.18	40.90	1.5163	
KPMG	vs	PwC	166.10	224.90	58.80	2.1797	
KPMG	vs	Non_Big4	166.10	30.18	135.92	5.0391	**
PwC	vs	Non_Big4	224.90	30.18	194.72	7.2188	**

Source: Author compilation ` ** Sig, p<0.05

HSD above the critical value = statistically significant difference between the two groups

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Table 17: Average audit fees pairwise comparisons using the *Sidak* post-hoc test

Row mean - Column mean	Deloitte	EY	KPMG	PwC
EY	-35.79 Pr: **0.990**			
KPMG	59.23 Pr: **0.636**	95.02 Pr: **0.141**		
PwC	118.03 Pr: **0.011****	153.82 Pr: **0.001****	58.80 Pr: **0.568**	
Non_Big4	-76.69 Pr: **0.476**	-40.90 Pr: **986**	-135.92 Pr: **0.009****	-194.72 Pr: **0.000****

Source: Author compilation. **Pr = Probabilities significant at 5% (α<0.05)

Table 18: Audit fees per firm, per year (starting with the least paying client)

		AUDITORS' REMUNERATION					AUDIT FIRM				
	Client Study	2013	2014	2015	2016	2017	**2013**	**2014**	**2015**	**2016**	**2017**
1	**M3**	4	4	4	6	7	**GT**	**GT**	**TAC**	**TAC**	**TAC**
2	**U2**	15	12	10	10	11	**EY**	**JRA**	**JRA**	**JRA**	**JRA**
3	**D4**	14	13	12	15	15	**KPMG**	**EY**	**EY**	**EY**	**EY**
4	**M1**	6	10	9	19	25	**Innovex**	**Innovex**	**Innovex**	**Innovex**	**EY**
5	**S8**	29	29	8	7	10	**BDO**	**BDO**	**BDO**	**BDO**	**BDO**
6	**E5**	12	22	20	20	20	**BDO**	**BDO**	**BDO**	**RSM**	**RSM**
7	**K2**	12	22	20	20	20	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**	**PwC**
8	**E6**	23	22	20	20	20	**PKF**	**PKF**	**PKF**	**PKF**	**PKF**
9	**N2**	29	23	19	23	21	**PKF**	**PKF**	**PKF**	**GT**	**GT**
10	**C2**	35	33	30	10	30	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**
11	**N7**	24	22	30	40	40	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**	**PwC**
12	**T6**	33	28	29	35	34	**EY**	**EY**	**EY**	**EY**	**EY**
13	**R1**	23	22	10	30	100	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**
14	**M2**	30	35	53	39	39	**PwC**	**PwC**	**PwC**	**EY**	**EY**
15	**F1**	24	33	40	40	60	**PKF**	**PKF**	**PKF**	**PKF**	**PKF**
16	**S9**	35	41	38	47	46	**KPMG**	**KPMG**	**KPMG**	**KPMG**	**KPMG**
17	**H2**	47	45	40	40	40	**PKF**	**PKF**	**PKF**	**PKF**	**PKF**
18	**O1**	35	45	50	50	40	**Crowe**	**Crowe**	**Parker**	**Parker**	**Parker**
19	**L2**	23	34	30	60	80	**Deloitte**	**Deloitte**	**Deloitte**	**PwC**	**PwC**
20	**B2**	40	40	42	37	70	**GT**	**PKF**	**PKF**	**Deloitte**	**Deloitte**
21	**N4**	40	40	102	29	35	**KPMG**	**KPMG**	**Deloitte**	**Deloitte**	**Deloitte**
22	**S7**	48	44	50	50	60	**KPMG**	**KPMG**	**KPMG**	**KPMG**	**KPMG**
23	**B5**	58	56	50	50	50	**KPMG**	**KPMG**	**KPMG**	**KPMG**	**KPMG**
24	**S2**	69	67	60	50	60	**KPMG**	**KPMG**	**KPMG**	**KPMG**	**KPMG**
25	**D1**	73	73	60	52	57	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**
26	**K1**	70	67	60	60	60	**PwC**	**PwC**	**PwC**	**Deloitte**	**Deloitte**
27	**B6**	70	77	37	62	74	**KPMG**	**KPMG**	**Deloitte**	**Deloitte**	**Deloitte**
28	**K4**	58	56	60	70	80	**Deloitte**	**Deloitte**	**Deloitte**	**PwC**	**PwC**
29	**I1**	85	71	59	69	50	**EY**	**EY**	**EY**	**EY**	**PwC**
30	**T7**	70	67	60	70	70	**EY**	**EY**	**EY**	**EY**	**EY**
31	**M4**	81	78	80	60	50	**Deloitte**	**Deloitte**	**RSM**	**RSM**	**RSM**
32	**D3**	70	67	70	70	80	**PwC**	**PwC**	**PwC**	**KPMG**	**KPMG**
33	**T4**	68	88	100	55	54	**EY**	**EY**	**EY**	**EY**	**EY**

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34	**K8**	58	67	70	110	70	**Deloitte**	**Deloitte**	**EY**	**EY**	**EY**
35	**W1**	58	88	80	80	90	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**
36	**E1**	81	88	80	80	70	**KPMG**	**KPMG**	**KPMG**	**KPMG**	**KPMG**
37	**B3**	79	55	57	161	50	**KPMG**	**KPMG**	**EY**	**EY**	**EY**
38	**T5**	115	99	85	53	53	**PwC**	**PwC**	**PwC**	**PwC**	**PKF**
39	**C1**	70	78	80	90	90	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**
40	**T1**	87	61	68	98	96	**EY**	**EY**	**EY**	**EY**	**EY**
41	**C4**	58	67	100	30	160	**EY**	**EY**	**EY**	**EY**	**EY**
42	**E2**	81	88	80	90	90	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**
43	**I2**	47	122	120	50	100	**KPMG**	**KPMG**	**KPMG**	**KPMG**	**KPMG**
44	**C7**	81	100	100	110	110	**EY**	**EY**	**EY**	**EY**	**EY**
45	**B8**	105	111	100	100	100	**PwC**	**PwC**	**KPMG**	**KPMG**	**KPMG**
46	**A1**	104	111	90	110	110	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**
47	**B1**	115	111	100	110	100	**EY**	**EY**	**EY**	**EY**	**Deloitte**
48	**N1**	106	109	109	115	113	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**	**PwC**
49	**C5**	105	111	110	110	130	**EY**	**EY**	**EY**	**EY**	**EY**
50	**T3**	112	112	90	125	134	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**

Source: Author's compilation. Listed companies arranged in ascending order of auditors' remuneration paid.

Client's real name has been kept anonymous, as it is not the main focus of the study.

Table 18: Audit fees per firm, per year (continued…..)

		AUDITORS' REMUNERATION					AUDIT FIRM				
NUMBER	**Client Study**	2013	2014	2015	2016	2017	**2013**	**2014**	**2015**	**2016**	**2017**
51	**H1**	105	111	100	130	130	**KPMG**	**KPMG**	**KPMG**	**KPMG**	**KPMG**
52	**U4**	128	144	100	100	120	**Deloitte**	**PwC**	**PwC**	**PwC**	**PwC**
53	**K6**	130	133	130	140	150	**PwC**	**PwC**	**KPMG**	**KPMG**	**KPMG**
54	**K5**	162	156	140	150	170	**PwC**	**PwC**	**Deloitte**	**Deloitte**	**Deloitte**
55	**D2**	120	140	160	180	200	**PwC**	**PwC**	**PwC**	**KPMG**	**KPMG**
56	**S6**	165	167	150	150	170	**KPMG**	**KPMG**	**KPMG**	**KPMG**	**KPMG**
57	**K7**	151	156	170	180	150	**Deloitte**	**Deloitte**	**Deloitte**	**PwC**	**PwC**
58	**C3**	58	56	80	260	390	**PwC**	**PwC**	**PwC**	**PwC**	**PwC**
59	**S5**	140	144	170	180	230	**PwC**	**PwC**	**PwC**	**PwC**	**PwC**
60	**U1**	163	222	160	160	160	**EY**	**EY**	**EY**	**KPMG**	**KPMG**
61	**N3**	105	144	220	230	190	**PwC**	**PwC**	**PwC**	**PwC**	**PwC**
62	**T8**	173	178	170	200	200	**PwC**	**PwC**	**PwC**	**PwC**	**PwC**
63	**N5**	111	97	90	350	333	**KPMG**	**KPMG**	**KPMG**	**PwC**	**PwC**
64	**B4**	210	224	200	200	220	**PwC**	**PwC**	**PwC**	**PwC**	**KPMG**
65	**U3**	205	217	190	218	225	**EY**	**EY**	**KPMG**	**KPMG**	**KPMG**
66	**L1**	186	190	230	220	250	**PwC**	**KPMG**	**KPMG**	**KPMG**	**KPMG**
67	**S4**	247	168	245	206	235	**PwC**	**PwC**	**PwC**	**KPMG**	**KPMG**
68	**T2**	194	309	235	195	192	**PwC**	**PwC**	**PwC**	**PwC**	**PwC**
69	**C6**	185	179	244	291	290	**PwC**	**PwC**	**PwC**	**PwC**	**PwC**
70	**J1**	209	222	270	230	310	**KPMG**	**KPMG**	**KPMG**	**KPMG**	**PwC**
71	**N6**	244	255	240	250	260	**PwC**	**PwC**	**PwC**	**PwC**	**PwC**
72	**B7**	198	369	390	330	170	**PwC**	**PwC**	**Deloitte**	**Deloitte**	**Deloitte**
73	**S3**	230	289	340	330	330	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**	**Deloitte**
74	**E3**	395	333	360	330	400	**KPMG**	**KPMG**	**KPMG**	**PwC**	**PwC**
75	**E4**	212	300	350	430	570	**EY**	**EY**	**EY**	**EY**	**PwC**
76	**K3**	337	389	390	420	400	**KPMG**	**KPMG**	**KPMG**	**KPMG**	**KPMG**
77	**S1**	348	389	390	480	480	**PwC**	**PwC**	**PwC**	**PwC**	**PwC**
78	**T9**	419	413	400	450	450	**KPMG**	**KPMG**	**KPMG**	**KPMG**	**KPMG**

Source: Author's compilation. Listed companies arranged in ascending order of auditors' remuneration paid.

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