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HOW COMPANIES LISTED AT GHANA STOCK EXCHANGE (GSE) MANAGE EARNINGS?

The purpose of this paper is to examine whether listed companies in Ghana manage earnings to "just meet or beat" thresholds by making a distinction between companies audited by the Big Four auditors and those audited by other auditors. The paper also investigates the specific method of earnings management in Ghana. The findings reveal that companies manage earnings to avoid reporting negative earnings. The paper also reveals that companies audited by non-Big Four audit firms manage earnings to sustain recent financial performance. However, companies audited by the Big Four do not manage earnings to sustain recent financial performance. Finally, the paper finds out that companies listed at Ghana Stock Exchange manage earnings using abnormal non-core earnings. The study has policy implications for the regulatory bodies in Ghana.
Keywords: earnings management; Ghana; auditors; Big Four; companies listed at stock exchange.
JEL classification: M41; M42.

Безіл Абеіфаа Дер, Петр Поляк, Масайрол бін Хадж Масрі
ЯК КОМПАНІЇ, ЩО КОТИРУЮТЬСЯ НА ФОНДОВІЙ БІРЖІ ГАНИ, КЕРУЮТЬ ПРИБУТКОМ?

У статті зроблено спробу довести гіпотезу про те, що компанії, які котируються на фондовій біржі, керують прибутком точно до моменту досягнення гранично необхідного значення, проведено порівняння методів управління між компаніями, які пройшли аудит «великої четвірки», і тими, які пройшли аудит іншими компаніями. Досліджено специфіку методів управління прибутком в Гані. Результати дослідження доводять, що компанії в Гані при управлінні прибутком намагаються приховати збитки у звітності. Також доведено, що компанії, що пройшли аудит звичайними компаніями-аудиторами, використовують управління прибутком для підтримки показників на вже задекларованому рівні, в той час як компанії, що пройшли аудит «великої четвірки», не використовують даний метод. Крім того, доведено, що компанії, які котируються на фондовій біржі Гани, використовують в управлінні прибутком непрофільні надприбутки. Надано рекомендації для регулюючих органів Гани.
Ключові слова: управління прибутком; Гана; аудитори; «велика четвірка»; компанії, що котируються на фондовій біржі.
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Бэзил Абеифаа Дер, Петр Поляк, Масайрол бин Хадж Масри
КАК КОМПАНИИ, КОТИРУЮЩИЕСЯ НА ФОНДОВОЙ БИРЖЕ ГАНЫ, УПРАВЛЯЮТ ПРИБЫЛЬЮ?

В статье сделана попытка доказать гипотезу о том, что компании, котирующиеся на фондовой бирже, управляют прибылью ровно до достижения граничного значения, проведено сравнение методов управления между компаниями, которые прошли аудит «большой четвёрки», и теми, которые прошли аудит другими компаниями. Исследована специфика методов управления прибылью в Гане. Результаты исследования доказывают, что компании в Гане при управлении прибылью стараются скрывать убытки в отчётности. Также доказано, что компании, прошедшие аудит обычными компаниями, используют управление прибылью для поддержания показателей на уже задекларированном уровне, в то время как компании, прошедшие аудит «большой четвёрки», не используют данный

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метод. Кроме того, доказано, что компании, котирующиеся на фондовой бирже Ганы, используют в управлении прибылью непрофильные сверхприбыли. Представлены рекомендации для регулирующих органов Ганы.
Ключевые слова: управление прибылью; Гана; аудиторы; «большая четвёрка»; компании, котирующиеся на фондовой бирже.

Introduction. In this paper we provide empirical evidence pertaining to the management of earnings to "just meet or beat" thresholds at Ghana Stock Exchange.

Financial reporting is very flexible, it allows for treatment and reporting of the same issues. Judgments may be made in the process of applying an entity's accounting estimates and the use of these estimates. This flexibility allows managers prepare true and fair financial statements that are reflecting the actual business conditions. However, managers tend to use deliberate steps to abuse it thereby resulting in earnings management. C. Becker et al. (1998) remarked that accounting flexibility deteriorates audit quality.

Earnings management is defined as the adjustment of a company's reported financial performance by management to misguide some stakeholders or to influence valid or contractual outcome that depend on financial statement numbers (Healy and Whalen, 1999). According to (Burgstahler and Dichev, 1997; Degeorge et al., 1999) earnings are managed because managers face pressure to "just meet or beat" benchmarks. These thresholds may include to report positive profits, to meet last year's earnings or also to meet analyst expectations. D. Burgstahler and I. Dichev (1997) studied managers' incentives to avoid reporting losses or earnings declines. Their findings indicate there is larger than expected frequency of earnings to the right of zero. This suggests that managers manage earnings to avoid reporting losses or decline in earnings. F. Degeorge et al. (1999) remarked that managers manage earnings so as not to fall short of analysts' expectations. Distribution of reported earnings for abnormal discontinuities at certain thresholds have proved to be an effective approach to capturing the effect of earnings management through cash flows that may not be captured by potentially noisy accruals (Healy and Whalen, 1999).

The evidence of earnings management to "just meet or beat" benchmarks stems from the studies primarily conducted at developed markets. Whether these findings in relatively developed capital markets can be generalized to Ghanaian capital market needs to be investigated. Prior studies relate to a particular period of time and the dynamic nature of accounting implies there is a continued need to fill of what is known about the state of earnings management to "just meet or beat" thresholds and in the case of this study, Ghana. The study is also needed because of dearth of information on earnings management in Ghana as such. Auditors in Ghana find it difficult to perform their duties because of the pressure exerted on them by directors (World Bank 2004, June 19). Auditors may therefore compromise on the extent of audit procedures they perform. Due to the shortage of accounting professionals in Ghana, companies employ non-qualified persons in accounting positions which affects the quality of financial reporting (World Bank 2004, June 19). Notwithstanding the inadequacy in the supply of accountants, intense competition exists at the audit market. Due to cut-throat price competition among audit firms, they tend to cut corners which consequently results in deteriorating quality of audit

(World Bank 2004, June 19). Corporate governance mechanisms in Ghana are also generally poor. Mechanisms to align the interest of management to that of shareholders are relatively inactive (Tsamenyi et al., 2007). All these plethora of lapses forms the foundation for the application of earnings management framework.

The aim of this paper is to contribute to the literature on earnings management to meet the benchmarks in developing countries by distinguishing between companies audited by the Big Four audit firms and companies audited by non-Big Four firms. It also highlights the specific method by which earnings are managed. The paper addresses 3 key research questions:

RQ1. Do companies audited by the Big Four manage earnings to meet thresholds in Ghana?

RQ2. Do companies audited by non-Big Four manage earnings to meet thresholds in Ghana?

RQ3. What is the specific method by which earnings are managed by the companies listed at GSE?

Literature review. Under generally accepted accounting practices (GAAP), managers may manage earnings through accounting or real cash flow choices. Managers manage earnings through accounting choices by overly aggressive recognition of provisions or reserves, overstatement of restructuring charges or asset write offs or understatement of provisions (Dechow and Skinner, 2000). According to (Dechow and Skinner, 2000), earnings are managed through real cash flow choices by delaying sales or accelerating sales, post ponding or accelerating R&D or advertisement expenditure among others. A strand of literature borders on whether managers manage earnings just "to meet or beat" thresholds. Distributions of reported earnings get distorted when managers react to these benchmarks: far too few observations lie to the left of the benchmark, too many just to the right of the threshold (Degeorge et al., 1999). These benchmarks may include the following:

1. To report positive profits, that is, higher than expected frequency of firms with slightly positive earnings and lower than frequency of firms with slightly positive earnings.

2. To sustain recent financial performance, that is, to avoid earnings decreases.

3. To meet analysts' expectations, particularly analysts' forecast.

F. Degeorge et al. (1999) remarked that the importance of benchmarks arises from 3 psychological effects: the fundamental nature of positive and non-positive numbers in the human thought process, the prospect theory and the transaction cost theory.

For most human beings who are not mathematically inclined, negative numbers appear to be hard to comprehend. In contrast, positive numbers appear to be an easier concept to grasp. This psychological property makes it important for companies to report positive earnings. There is therefore a very important invisible line between reporting positive and negative earnings. Meeting the threshold of reporting positive profits is the key because of their psychological effects.

The prospect theory created by (Kahneman and Tversky, 1979) is a behavioral economic theory which states that human beings when choosing among risky alternatives, make economic decision with regards to potential gains or losses rather than the final level of wealth. People evaluate these losses and gains using certain heuris-

tics. Individual's value function is s-shaped and asymmetrical – the concave curve corresponds to gains and the convex curve corresponds to losses. Where the reference point of an individual borders on the zero earnings mark or last year's earnings, managers are likely to manage earnings in response.

Transaction costs refer to costs incurred in participating at a market. The terms of transactions are likely to be favorable for a firm when it reports positive profits or when it meets certain earnings thresholds. Firms with reported profits are likely to be favored by stakeholders such as banks and suppliers as compared to those that make losses. Banks are likely to give lower interest rates to the companies whose performance meets certain thresholds. These thresholds may include reporting positive profits and sustaining recent financial performance. Suppliers are likely to give favorable terms to firms when they reach certain thresholds. Transaction cost is therefore likely to be high when companies report losses or fail to sustain recent financial performance and the vice versa is true.

The study of earnings management using simple heuristics have several appealing features. Firstly, the method is an effective way of estimating the pervasiveness of earnings management at these benchmarks (Healy and Wahlen, 1999). Q. Yu et al. (2006) provided some estimations of the possible range of pervasiveness of earnings management among Chinese-listed firms. In addition, studying earnings management using simple heuristics is an effective way of capturing earnings management through cash flows that may not be captured by (potentially noisy) unexpected accrual measures (Healy and Wahlen, 1999). P.M. Healy and J.M. Whalen (1999) commented that distribution of reported earnings around thresholds does not capture the magnitude of earnings management or the specific methods by which earnings are managed. Q. Yu et al. (2006) addressed this issue by studying the specific method by which earnings are managed among Chinese-listed firms by using the distribution of core earnings. They remarked that Chinese-listed firms manage earnings using non-core income. C. Charoenwong and P. Jiraporn (2009) investigated earnings management to exceed thresholds: evidence from Singapore and Thailand. They remarked that companies in Singapore and Thailand manage earnings to avoid reporting losses and negative earnings growth. This practice of managing earnings, however, varies between financial and non-financial firms in Singapore and Thailand. A.B. Amar and E. Abaoub (2010) revealed that Tunisian companies manage earnings to avoid reporting losses and decreases in earnings rather than to avoid negative earnings surprises.

Auditor type and earnings management has received considerable attention in earnings management research. A. Craswell et al. (1995) remarked that the Big Five auditors are identified with higher expertise because they have more resources, investments in information technology and specialized staff training than non-Big Five auditors. K. Kanagaretnam et al. (2010) reported that benchmark-beating behavior in banks is moderated by auditor type and auditor specialization. In a separate test, they revealed that both auditor type and auditor specialization limit income increasing earnings management. However, in a joint test only auditor specialization was significant. C. Caramanis and C. Lennox (2008) reported that low audit effort increases the extent in which aggressive high earnings are reported by auditors. They also highlighted that companies are likely to manage earnings upwards "to meet or beat" the zero earnings threshold in Greece.

Research design issues. Empirical investigation into earnings management to "meet or beat thresholds" requires the discussion of the following variables.

1. Bin interval. There are statistical approaches to bins construction. The choice of interval must, however, be balanced. In constructing the histograms, the Freedman-Diaconis rule[4] was applied as suggested in (Degeorge et al., 1999). The bin width is set to 2 x *IQR* x $n^{-1/3}$, where IQR is the sample interquartile range and *n* is the total number of observations.

2. Test statistics. To test the statistical significance of the hypothesized avoidance of earnings decreases and losses, we adopt the statistical test constructed by (Burgstahler and Dichev, 1997). The only assumption of this statistical test is that, under the null hypothesis of no earnings management, the cross-sectional distributions of the levels of earnings and earnings changes are relatively smooth — the expected number of observations of any given width is typical to the number of observations in the two immediately adjacent intervals. The test statistics constructed by (Burgstahler and Dichev, 1997) to test the null hypothesis is the difference between the actual number of observations in an interval and the expected number of observations in that interval, divided by the estimated standard deviation of the difference.

In particular,

$$EM = (AN_i - EN_i)/SD_i, \qquad (1)$$

where EM — the standardized difference; AN_i — the actual number of observations falling in the interval *i*, the interval to the left of zero; EN_i — the expected number of observations in the interval *i*, which is equals to the average of observations in the intervals $i + 1$ and $i - 1$; SD_i — the standard deviation of the difference:

$$SD_i = \left[Np_i(1-p_i) + \frac{1}{4}N(P_{i-1}+P_{i+1})(1-P_{i-1}-P_{i+1}) \right]^{1/2}; \qquad (2)$$

N is the total number of observations in the sample and pi is the likelihood that an observation would fall into the interval i — to the left of zero.

In interpreting our results, we rely on the standardized difference for the partition immediately to the left of zero. The decision rule is that where the standardized difference of the partition to the left of zero is greater than 2.33 in absolute terms, it is indicative of earnings management to meet thresholds (Brown and Caylor, 2005).

3. Specific method of earnings management. We adopt the abnormal non-core earnings approach to investigate the specific method of earnings management peculiar to companies listed at GSE. S.L. McVay (2006) argued that auditors' scrutiny is curtailed when companies use this method in earnings management. Investors weigh line items on the income statement differently and utmost importance is placed on permanent items (Bradshaw and Sloan, 2002; Francis et al., 1996). We adopt the abnormal non-core earnings method implored by (Qiu, 2004; Chen and Yuan, 2001). Core earnings and non-core earnings in the year *t* are calculated as follows:

$$CE_t = \left[Sales_t - (COGS_t + EXP_t) \right]/TA_t; \qquad (3)$$

$$NCE_t = (EBT_t - CE_t)/TA_t, \qquad (4)$$

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[4] To minimize the sum of squared errors between the histogram bar height and the probability density of the underlying distribution. The use of 2 x IQR as a measure of spread was determined from the experiments (Freedman and Diaconis, 1981).

where CE_t — core earnings in the year t; $COGS_t$ — cost of goods sold in the year t; EXP_t — operating expenses, administrative expenses, selling and distribution expenses and finance charges in the year t; TA_t — total assets in the year t.

4. Data description. We obtain information for our sample for the period 2004—2014 from the Datastream database and supplemented it with the data from Annual Reports Ghana. We limited our sample to this period because of data availability. We exclude financial firms from our sample because of their unique financial reporting requirements. Companies with insufficient data were also deleted. This limited our sample to 180 firm/year observations. The small sample size is due to the small number of non-banking companies listed at GSE.

ROA is used to study earnings management to report positive profits. ROA is computed by dividing net income by total assets. Change in ROA: $\Delta ROA_t = (ROA_t - ROA_{t-1})$ is used to examine earnings management to sustain recent financial performance.

5. Descriptive statistics. Tables 1 and 2 present the descriptive statistics for the sample — ROA and change in ROA. The mean ROA of companies audited by non-Big Four auditors is negative while the median is positive. This is indicative of the fact that some companies within this division make huge losses. This is confirmed by bin 1 in Figure 2. Yearly distribution of the sample indicates that majority of the companies listed at GSE are audited by the Big Four.

Empirical results.

1. Benchmark 1: to avoid reporting losses. Frequency in the figures refers to the number of ROA observations. The interval width is 4 pesewas (money units in Ghana) for both divisions. The interested bins are bin 5 and bin 6 for both divisions. Bin 5 refers to $-4 \le x < 0$ pesewas, bin 6 refers to $0 \le x < 4$.

Figure 1 presents the results of earnings management to avoid reporting losses by companies audited by the Big Four. As shown in Figure 1, there is lower than expected frequency in the vicinity below zero — bin 5, and higher than expected frequency in the vicinity above zero — bin 6. The abrupt jump in the frequency from bin 5 to bin 6 is striking and the discontinuity is confirmed by the value of the standardized difference of -3.79 which is statistically significant at the 1% significance level and in absolute terms is greater than 2.33. This is an indication that companies audited by the Big Four auditors in Ghana manage earnings to avoid reporting losses. This is not consistent with literature that "benchmark beating behavior is moderated by auditor type" (Kanagaretnam et al., 2010).

Figure 2 shows that few observations fall in the vicinity to the left of zero — bin 5, of ROA distributions of companies audited by non-Big Four. There is a noticeable change in the number of observations from bin 5 to bin 6. The standardized difference of the distribution is -2.94 which is highly statistically significant as 2.33 is the benchmark for rejecting hypothesis. This reveals that earnings management in non-Big Four audited firms leads to reporting positive profits.

In conclusion, earnings management avoids reporting losses in both Big Four audited and non-Big Four audited firms listed at GSE. This is due to weak corporate governance mechanisms that exist in the country and also managers' desire to avoid reporting losses. This may also be due to the inadequacy of accountants and fierce competition at the audit market resulting in deteriorating financial reporting quality.

Table 1. **Basic,** *authors'*

	Number	ROA mean	Median	S.D	Change in ROA mean	Median	S.D
Companies audited by the Big Four	122	0.0682	0.0604	0.09333	0.0073	0.0117	0.0671
Companies audited by non-Big Four	58	-0.0188	0.0126	0.6525	0.2271	0.0095	1.7390

S.D refers to standard deviation of the distribution.

Table 2. **Yearly distribution of the sample,** *%, authors'*

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Mean
Companies audit by the Big Four	66.67	72.73	76.47	72.22	68.42	68.42	68.42	72.22	66.67	61.11	62.5	68.54
Companies audited by non-Big Four	33.33	27.27	23.53	27.78	31.58	31.58	31.58	27.78	33.33	38.89	37.5	31.46
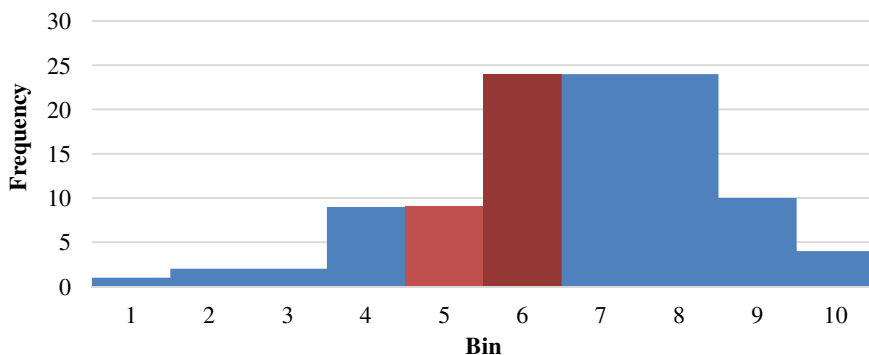
Figure 1. **Companies audited by the Big Four in Ghana – ROA,** *authors'*
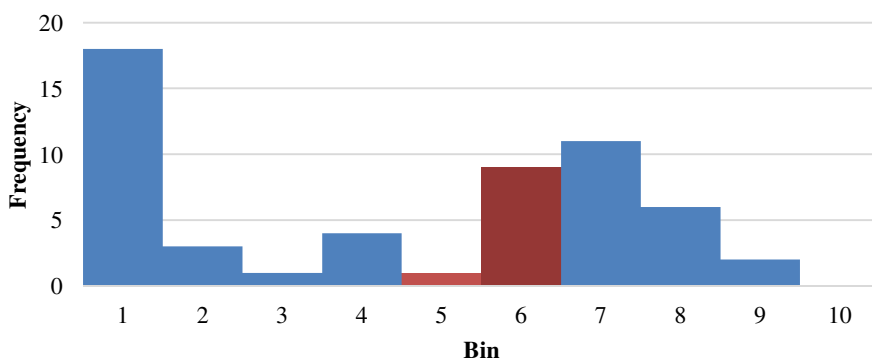

Figure 2. **Companies audited by non-Big Four in Ghana – ROA,** *authors'*

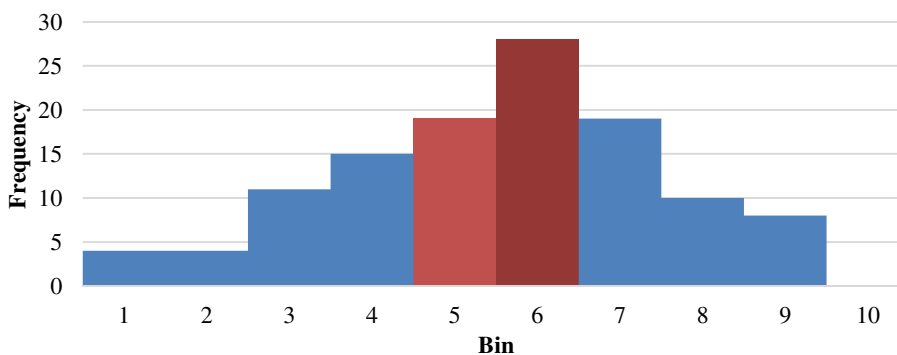**2. Benchmark 2: to sustain recent financial performance.**

Figure 3. **Companies audited by the Big Four – Change in ROA,** *authors'*

Frequency in figures refers to the number of changes in ROA observations. The interval width is 3 pesewas for both divisions. The interested bins are bin 5 and bin 6. Bin 5 refers to $-3 \le x < 0$ pesewas, bin 6 refers to $0 \le x < 3$. The research period is from 2004 to 2014.

Figure 3 presents the results of earnings management to sustain recent financial performance among the Big Four audited firms listed at GSE. It shows that the dis-

tribution is quite even and smooth. There is no substantial change in the number of observations. Changes in the number of observation from one vicinity to the other appears to be systematic. Overall, the distribution appears to be symmetric. D. Burgstahler and I. Dichev (1997) stated that in the situation of no earnings management, the distribution would be symmetric. However this analogy must be tested using a formal test. The standardized difference of the distribution is -0.52 which is less than the benchmark of 2.33. This is indicative of no earnings management to sustain recent financial performance among companies audited by the Big Four. The absence of earnings management to avoid earnings decreases of firms audited by the Big Four may be due to the specialized nature of employees at these firms. These firms also have sophisticated technology to detect unusual transactions and possible earnings management.
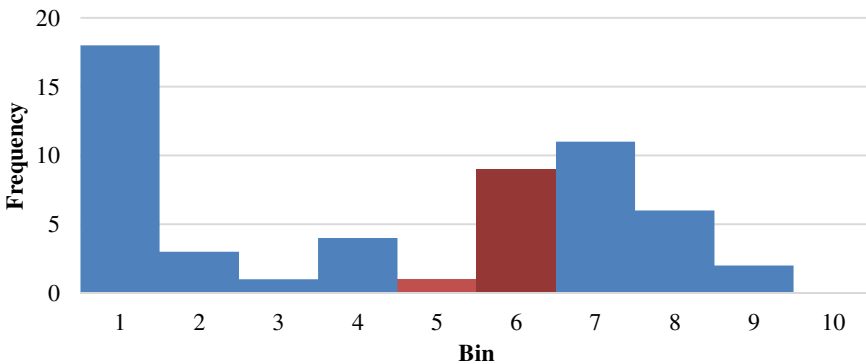

Figure 4. **Companies audited by non-Big Four – ROA,** *authors'*

Figure 4 presents the results of earnings management to avoid reporting earnings decreases among non-Big Four audited firms listed at GSE. It has the advantage of presenting an abrupt change in the number of observations from bin 5 to bin 6. The discontinuity is confirmed by the standardized difference of -2.46 which is greater than the benchmark of 2.33 in absolute terms. This is an indication of earnings management to sustain recent financial performance. This may be due to poor corporate governance mechanisms in the country coupled with the inadequacy of accountants and intense competition at the audit market which consequently results in low level of reporting quality.

From the statistical results, we conclude that firms audited by the Big Four do not manage earnings to sustain recent financial performance. However, companies audited by non-Big Four audited firms do manage earnings to avoid earnings decreases in Ghana.

3. Abnormal non-core earnings as a measure of earnings management in Ghana.

The frequency in Figures 5–8 refers to the number of firm/year observations. The horizontal axis indicates the core and normal ROA. The interval width for Figures 5 and 6 is 4 pesewas, and for Figures 7 and 8 it is 3 pesewas.

Q. Yu et al. (2006) used the non-core earnings approach to determine the method of earnings management in China. They plotted the distribution of normal ROE vs. the distribution of core ROE to determine earnings management. But not all non-core earnings can be categorized as earnings management. In this study we cal-

culate abnormal non-core earnings as a proxy for earnings management. Modifying Q. Yu et al. (2006) approach, we plot the distribution of normal ROA vs. core ROA plus the non-earnings management portion of the non-core ROA. If the abnormal non-core earnings approach is the primary means used in earnings management in Ghana, then the distribution of the core ROA should not show big spikes at the top, especially at the bins within the vicinity of zero.
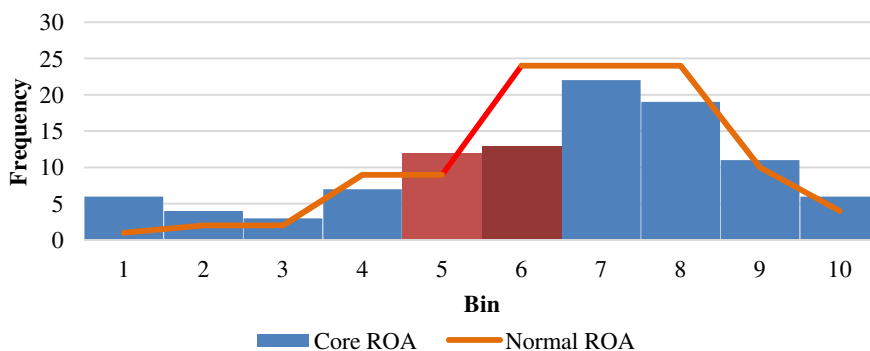

Figure 5. Normal ROA vs. core ROA – Companies audited by the Big Four,
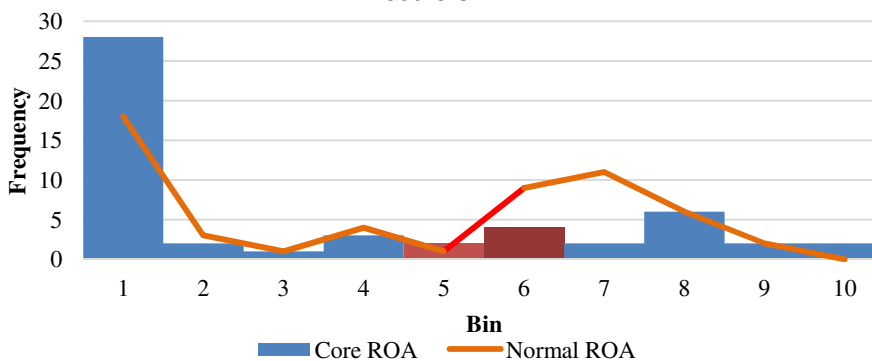*authors'*

Figure 6. Normal ROA vs. core ROA – Companies audited by non-Big Four,
authors'

Figures 5–8 present the normal and core ROA in combination charts. Changes in the number of observations from one vicinity to the other appears to be systematic for the distributions of core ROA. Normal ROA exhibited a significant substantial change in the distributions around the zero threshold in Figures 5, 6 and 8 but core ROA does not exhibit that behavior in the combination charts. The standardized difference of the distributions of core ROA are insignificant. The spikes are much smaller and flatter for the distribution of core ROA than those presented for the distribution of normal ROA, except for bin 1 in Figures 6 and 8. The disappearance of spikes is striking, especially at the vicinity of zero. This indicates the extent of earnings management at GSE. The spikes at bin 1 of Figures 6 and 8 are indicative of the fact that earnings management might not be confined to the vicinity of zero and if earnings are managed at threshold 1 in Figures 6 and 8, possibly it is not by the abnormal non-core earnings approach.
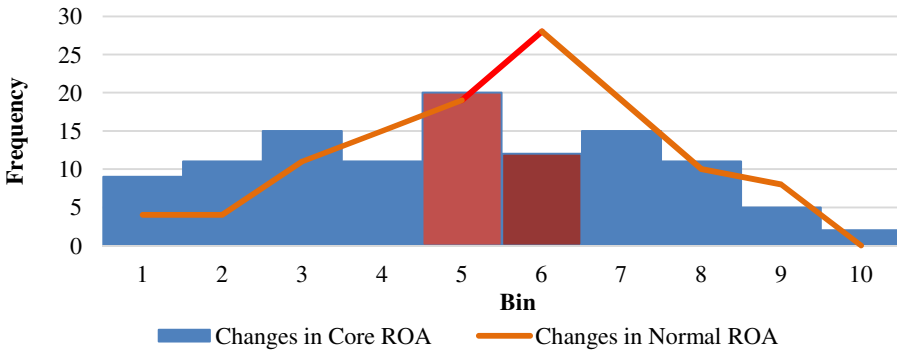
Figure 7. **Changes in normal ROA vs. changes in core ROA –
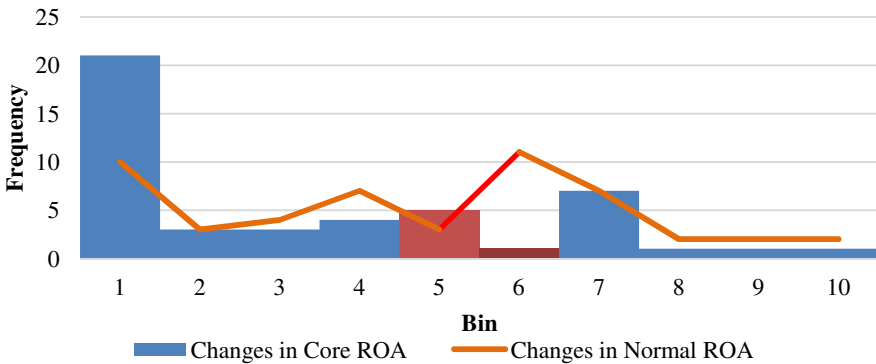Companies audited by the Big Four,** *authors'*

Figure 8. **Changes in normal ROA vs. changes in core ROA –
Companies audited by non-Big Four,** *authors'*

Conclusion. In this article, we analyze whether earnings are managed to "just meet or beat" thresholds by companies listed at GSE by drawing a distinction between companies audited by the Big Four and those audited by non-Big Four auditors. We concentrate on earnings management to beat the zero threshold and earnings management to sustain recent financial performance. We also investigate the specific method managers use in earnings management.

Our findings suggest that both divisions of companies engage in earnings management to report positive earnings. This is consistent with the findings of (Amar and Abaoub, 2010; Burgstahler and Dichev, 1997; Charoenwong and Jiraporn, 2009). We also find that companies audited by the Big Four do not manage earnings to sustain recent financial performance. However, companies audited by non-Big Four audit firms engage in earnings management to sustain recent financial performance. In further analyses, we find that the abnormal non-core earnings approach is the specific method by which companies manage earnings at GSE.

Our results have policy implications. They suggest that auditor type has an important role in constraining earnings management to sustain recent financial performance but not earnings management to report positive earnings. We therefore suggest that ICAG and other stakeholders in the country should bring in some pragma-

tic measures to constrain earnings management. Corporate governance principles in the country should also be improved as they have the tendency to moderate earnings management.

The results of this study must, however, be interpreted with caution as earnings management is a serious matter to solely depend on auditor type.

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