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Audit quality and audit firm reputation: Evidence from China

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Audit Quality and Audit Firm Reputation: Evidence from China

ABSTRACT

The aim of this study was to evaluate the relationship between audit quality and audit firm reputation using a sample of listed companies in China. The Ordinary Least Square Model estimation technique was used to analyze the relationship between the audit firm reputation and audit quality. This study demonstrates a significant positive correlation between the audit firm's reputation and the audit quality. At the same time, the research results show that among the variables checked with the audit firm, except for total leverage of the company, all other variables are positively related to audit quality. Therefore, I recommend that superior companies give priority to firms with a higher reputation when hiring external audits.

Keywords: *Audit firm reputation, Audit quality*

JEL Classification: L11, L22, L25, G29

I. INTRODUCTION

Since the 21st century, with the rapid growth of the Chinese economy, the risk volatility of domestic capital markets has intensified, and financial scandals of listed companies have occurred frequently. An in-depth investigation into the causes of these cases will reveal a common problem is that the quality of the audit is not sufficient. Due to the entrusted relationship between the company's shareholders and the management, when there is a conflict between the interests of management and the interests of shareholders, management will have the motive to harm the interests of shareholders, a third party is required for mediation, Audit firm is this kind of third party that provides audit services and charges fee from clients and this kind of organization already existed as early as 1853. When acting as a third-party supervisor, the auditor needs to have sufficient professional knowledge and a careful and cautious work attitude. In performing his duties, the auditor needs to be practical. Auditors need to collect data for audit results and conduct sufficient verification. Ultimately, the auditor needs to submit an audit report to his client, and the reliability of this audit report is the audit quality. Audit quality can be used to evaluate audit firms, there are four most famous accounting firms in the world and they provide the best audit services in public awareness and due to the quality of market audits has continued to decline this year, hiring non-Big four accounting firms to conduct audits will result in serious public image loss, but is the Big Four's performance in Chinese listed companies really like what we expect? Either view is unconvincing without scientific and concrete data research. Edosa and Tina (2013) have investigated the impact of the Big Four accounting firms on the quality of audits in U.S. capital markets, their research confirms that the Big Four do provide companies in the U.S. with a higher quality audit than

other firms. According to DeAngelo (1981) the reputation of the audit firm hired is closely related to the production quality report because materials audited by reputable audit firm are unlikely to contain material misstatements. This means there is a connection between audit quality and the reputation of the audit firm. Some people have expressed opinions that high reputation firms will always provide customers with high quality audit services like Big Four. Some people disagree, Xia Hongbo (2012) research on audit quality in the domestic market found that for the same audit firm, companies with strong resources can often be provided with higher audit quality services. This phenomenon shows that the influencing factors of audit quality may also depend on the reputation of the auditee. Therefore, both external and internal factors of a company need to be taken into account when determining audit quality.

II. LITERATURE REVIEW

Concept of Audit quality

There is no definition or analysis of audit quality that has achieved universal recognition. Audit quality is, in essence, a complex and multi-faceted concept (“IAASB CAG Agenda”, March 2011). for the IAASB it encompasses five key elements that create an environment which maximizes the likelihood that quality audits are performed on a consistent basis. (1) Inputs (2) Process (3) Outputs (4) Key Interactions within the Financial Reporting Supply Chain (5) Contextual Factors. Therefore, Andrew Ratcliffe (2017), past president of ICAEW define audit quality as delivering an appropriate professional opinion that’s independent, reliable, understandable, and is supported by adequate evidence and objective judgement.

Audits increase the value of information in financial statements, which makes auditing very important and the auditor's opinion reflects the credibility of the financial report, which is why the auditor must exercise appropriate professional skills, diligence and prudence in the work process (Arrunada, 2000). He believes the professional judgement of auditors the criterion for audit quality. However, Riyatno (2007) considers audit quality as an abstract term, which is hard to measure and can only be adjudicated by the clients. He believes that different subjects have different criteria for judging audit quality. However, few people have specific statements about how to define the audit quality include:

Windram (1993) defines audit quality as the auditor's ability to detect client financial irregularities and the auditor's ability to report irregularities. The former refers to the professional level of auditors and the latter refers to the professional ethics of auditors. the higher the professional competence and ethical standards of the auditor, the higher the audit quality will be. In this regard, Takiah (1998) put forward different views, he believes if an audit doesn't missed disclosure of material errors in the financial statements then it can be realized as a competent auditor. Therefore, according to him, as long as a reasonable level of assurance can be achieved in the financial statements, the audit quality is qualified.

Goodwin and Seow (2000) claims that audit quality can be observed from the perspective of users of financial statements and the competence and expertise of auditors. User perceptions of financial statements describe those users who can view audit reports, since there are many differences between users, this will reflect the reliability of the audit. Auditor competence and expertise refers to the ability of auditors to detect and report material misstatements. They

assert that due to users are not involved in the audit process, they cannot directly assess the quality of the audit, and they can only rely on the professional quality of the auditors.

Yuniarti (2011) claims that there are several basic factors for determining the audit quality include Objectivity (what level of independence was displayed during the audit process), Reliability (Whether the audit report truly reflects the company's financial situation, and whether it truly evaluates management's statement of the company's current situation), Significance (how important it is to the audit), Clarity (whether the audit work is well communicated in terms of findings and recommendations), Timeliness (minimum audit delay for submitting reports), Scope (appropriate coverage of the entire length and breadth of the audit), Effectiveness (whether the audit goal was achieved), Efficiency (the cost of tangent to the due benefits). According to him, these factors affect the audit quality, and an audit that includes all of these factors is perfect.

According to Fairchild (2008) there are many factors affecting audit quality include frequency of audit committee meetings; financial literacy of audit committee members; multiple directorship of audit committee members; external auditors' quality independence of audit committee members; and interaction between external audit and independence of audit committee. These factors have more or less impact on audit quality. However, in this age of countless financial scandals, the best measure of audit quality is the reputation of the audit firm (Semiu Babatunde, 2012).

Audit Quality and Audit Firm Reputation

The reputation of an audit firm refers to the corporate image established by the audit firm over time. This may be the result of the audit firm not being litigated for a long time, the increasing size of the firm, the expanding business and the increasing recruitment requirements. According to Bayesian belief, audit firm reputation can be realized as the sum of auditors' successful signals minus the unsuccessful signals of the past divide by audit times, where a successful (unsuccessful) signal is an audit in which a low economic state of the company is correctly (incorrectly) represented in the audit report (Sebastian Kronenberger, 2002). Zarova and Sucher (1999) think that the audit firm's reputation is built on the audit firm's business capabilities and gradually accumulates over time. According to Jeanes and Gregory (2007), in order to measure audit reputation, it must be based on assumptions about audit quality, which are difficult to assess, but researchers can infer from the auditing methods used by auditing firms. Based on the above, it can be concluded that the audit reputation can be basically inferred from the type of audit firm.

Audit firms may be broadly divided into two categories: reputable and unreputable. However, according to a research study of audit firm reputation by Kraten and Fuerman (2008), they successfully divide the audit firm into four different levels viz- Single CPA firms, Small CPA firms, Medium 2 and Big Four. Big Four belongs to the first level because Compustat Research Insight's index indicates that 496 of the world's top 500 companies accept their audit services. Although there are many differences in the other three levels, there are no clear zero

boundaries because national policy factors and long-standing partnerships have a significant impact on fluctuations between these three levels.

DeAngelo (1981) propounds the reputation rationale theory for audit quality. She chooses to use the size of the audit firm as a variable that affects audit quality in her research and she claims that once large companies continue to cooperate with low-quality audit firms, the company will lose more than it pays. Descombe and his team establish an endogenous quality model in 1998 to investigate company reputation and audit quality. They put forward a point from their survey results. A high reputable auditing firm will always continue to provide customers with high-quality audit services because they can deeply feel the benefits of high reputation, in contrast, low-reputation audit firms often give up their original intentions when being tempted. This means that the reputation is basically a constant variable for a specific audit firm.

Elisabeth Plietzsch (2008) determine that the audit firm reputation is an independent variable, and the audit quality is a dependent variable. The higher reputation of an audit firm, the lower the marginal gain on every future signal. At the same time, she thinks the harm caused by low audit quality is much greater than the benefit of high audit quality. The gain or loss of the audit firm reputation also depends on the size of the client. Auditing for a large customer will have a great impact on the audit firm reputation, for example, although there are minor accounting scandals in the big four audit firms, a big audit firm is only forced out of business in extreme scandals such as Arthur Anderson in the Enron case. Evidence from Asthana (2014) and Kalkar (2014) also indicate that the audit firm reputational benefits are much bigger for

the first S&P 500 client than for any further S&P 500 client. Large enterprise project will not only affect the auditor's behavior seriously but also the symbiosis with important customers (Krishna Palepu, 2001). Aaron Yoon (2002) proves that larger companies tend to have higher financial reporting quality. Hennes (2007) finds that once the quality of audit is questioned, clients with high quality financial reports are likely to look for alternative auditors to avoid the capital market consequences of potentially unreliable financial reporting. However, it not always happens because long-term auditors are familiar with the company's business and have a certain understanding of the company's business expertise, it will be expensive for a new auditor to acquire (DeAngelo, 2011). And Lennox, C. S., & Xin, Q (2014) indicates the auditor supply is limited at a period time, especially when many companies are looking for new auditors at the same time. Therefore, Gana, M., & Lajmi, A. (2011) conclude that a slight margin of audit firm reputation reduction will not have much impact on clients and the successful profit-making companies generally like to cooperate with the big four accounting firms. His remarks can be understood as the reputation of the big four accounting firms will always be higher than the other firms.

Control variables

As the only dependent variable for this study, audit quality needs to be represented by variables other than the audit firm reputation. According to the final rules of the Securities and Exchange Commission, audit fees refer to annual audits and financial statement reviews. It differs from the fees paid for the provision of non-audit services. This is a fee paid by the company to the external auditor as a cost of performing the audit. Garson (2012) claims that

audit costs are an important factor affecting audit quality. According to him, higher audit fees often represent higher audit service costs and higher quality of service. Hosmer and Lemeshow (2000) link the audit quality with the company's audit committee and through research they find that there is a certain relationship between them. The independence of the audit committee will have a significant positive impact on the audit quality.

Regarding the impact of the reputation of the audited company mentioned above to the quality of the audit, according to DeAngelo (1981:183) “audit quality is not independent of audit firm size, even when auditors initially possess identical technological capabilities”. From his remarks, we can infer that the audit firm will adjust the quality of audit services according to the different customers when providing audit services. This is like an incentive mechanism. Although they have duty to provide adequate services to all customers, but they often choose to leave the best resources to the best customers in reality, Sharma’s (2008) research results from this phenomenon find that audit firms can gain a reputation much higher than smaller companies after successfully completing an audit of a large company. It also explains why the Big Four accounting firms can have a reputation far beyond other firms.

Based on a review of the above literature, this article proposes three related hypotheses:

H1: The main factor affecting audit quality is the reputation of the audit firm.

H2: Big four accounting firms have higher audit quality than other firms in Chinese capital market.

H3: The strength of the audited company is an important factor affecting the quality of audits.

III. METHODOLOGY AND RESEARCH DESIGN

This article assumes that audit quality is affected by the reputation of the audit firm, the company's internal audit committee, and the size of the company. Collecting specific data to verify the relationship between audit quality and audit firm reputation in China's capital market environment. Thus, the econometric model is specified below:

$$\text{AudQual} = \beta_1 \text{FinLit} + \beta_2 \text{ComSize} + \beta_3 \text{AudInd} + \beta_4 \text{Lev} + \beta_5 \text{AudSiz} + \beta_6 \text{AudRep} + \alpha$$

Audit Quality (AudQual): proxy using the amount paid for audit services as present in the audited financial statements. This is in line with prior researches such as chadegani (2011); Myers, Myers and Omer (2003); Yuniarti (2011).

Financial literacy (FinLit): proxy using the ratio of audit committee members who possess a degree or equivalent in accounting, finance, economics or business administration, insurance or actuarial science and/or professional qualification in business related areas to the total number of audit committee members.

Company Size (ComSize): proxy using log of total assets.

Independence of audit committee (AudInd): proxy using the Ratio of independent director number to the totals of audit committee members.

Leverage (Lev): proxy using total leverage of the company.

Audit Committee Size (AudSiz): proxy using the number of members in the audit committee

Audit Firm Reputation (AudRep): proxy using the Big Four (1)/ Non Big Four (0) dichotomy

α = constant of the regression

In first stage of this study we capture company's internal factors that affect audit quality. Archival method and data collected by Semiu Babatunde Adeyemi, et al. (2012) are used. The previous data is collected by using survey research methods, according to Saunders, et al. (2007), survey research design can be used to analyze possible reasons for any particular relationships between variables. Based on the sample data collected by their team in the United States, the research questions and hypotheses are answered by estimating a logistic regression model that describes the relationship between the binary response variable and a set of explanatory variables. they derived the following regression model is valid so far.

$$\text{AudQual} = \beta_1 \text{FinLit} + \beta_2 \text{ComSize} + \beta_3 \text{AudInd} + \beta_4 \text{Lev} + \beta_5 \text{AudSiz} + \beta_6 \text{AudRep} + \alpha$$

Cause this research highly related to my research so it is reliable. This research strategy is considered appropriate because it helps to understand the study in a comprehensive and detailed view.

IV: EMPIRICAL DATA AND ANALYSIS

Data Selection

All empirical financial data in this research were obtained from CSMAR database. This research chose the number of audit committees, the number of independent directors in the

audit committee, the name of the audit firm cooperate with the company, the audit fees paid by the company, the qualification information of the company's audit committee members, the company's total assets and the company's total leverage from 2015 to 2017 as the basis for this study. Cause the variables in the research do not include the type of company and all the variables have no significant relationship with the type of company, there is no classification between all available record of different companies. Due to some parts of the required data is update in CSMAR only available until 2017 and some other part of the required data only updated on CSMAR after 2015, so this research selected data of listed companies from 2015 to 2017. After deleting a number of incomplete entries, a total of 459 complete observable entries were collected. According to Sharma's (2008) research, in order to compare the audit firm reputation between different audit firms, this paper creates the dummy variable "AudRep". "0" represents that non big four accounting firms participate in the audit and "1" represents that at least one of big four accounting firm participate in the audit. Overall, this article uses correlation analysis, descriptive statistics, and multiple regression analysis to reveal the relationships between all variables.

Data Analysis

Table I presents Summary statistics, it lists all variables used in this study. Cause the observations for audit cost is 459, resulting in only 459 full observations in this study. From this table, we can find the number of the company's internal audit committee member is basically three to seven in China-listed companies and most of these companies have only three members of the audit committee. From 2015 to 2017 about eight percent of the Chinese listed companies choose Big Four accounting firms to do audit for them. In these three years, the

audit fees paid by Chinese listed companies for annual reports were up to $1.41e+07$ RMB and at least 280000 RMB, it means that the highest audit fee of a listed company in China in these three years is 50 times the lowest audit fee. According to Sharma's theory (2008), among the listed companies in China, the highest audit quality is 50 times higher than the lowest audit quality, which looks pretty amazing. The average parameter number of independent of the audit committee is 0.554. According to Landsman (2009), if this parameter is less than 0.6, it means that the audit committee is basically controlled by the company's executive directors. Therefore, the audit committees of most Chinese listed companies are basically not independent. In addition, from the data analysis results, we can intuitively find that among these listed companies, at least two-thirds of the financial or accounting experts in these companies' audit committee, so the internal audit committee members of these listed companies in China basically have high financial qualifications. The largest listed company that can be observed currently has 12-digit total assets and the smallest listed company has 6-digit total assets from the analysis results of company size. It can be found that even if they are listed companies, there are huge asset amount differences between different companies. This discovery also proves the value that this research can provide.

Table I
Summary Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
audsiz	502	3.524	.877	3	7
audrep	497	.08	.272	0	1
audqual	459	1410000	1540000	280000	1.41e+07
audind	468	.554	.263	0	1
finlit	485	.978	.08	.67	1
lev	549	2.464	3.206	.724	50.655
comsize	460	9.732	.607	6.425	11.948

Note: audsiz represents the size of the company's internal audit committee, adurep represents the reputation of audit firm, audqual represents external audit quality, audind represents the independence of the company's internal audit committee, finlit represents average financial knowledge level of company's audit committee members, lev represents the total leverage of the company, comsize represents the size of the company.

Table II gives the correlation matrix showing the correlations among all the variables used in the study. From the results shown in the matrix, we can find that the absolute value of the correlation between audit quality and audit firm reputation is the highest, based on this, it can be confirmed that of all the variables considered in this research, the quality of the audit is most affected by the reputation of the audit firm. We can also find that all independent and dependent variables are positively correlated except lev, there is a significant positive correlation between audit quality and audit firm reputation, we can also find the company size and audit quality is significant positive correlation. Therefore, it can be inferred that the audit firm reputation and company size almost have the same correlations to the audit quality. This may also prove that large-scale companies always like to hire the Big Four accounting firms to provide services for themselves, and the Big Four accounting firms also benefit from large-scale companies and

continue to gain high reputation. This actually verifies that the impact of the client's reputation on audit quality is inseparable from the impact of audit firms on audit quality. For the only company leverage that is negatively related to the strain, a reasonable explanation is while all of other terms being equal, the higher the company's debt to assets ratio, the lower the audit quality of the company, because this leverage index has a low correlation with audit quality, it is likely to be a coincidence and will not be explained in depth in the paper.

Table II
Matrix of Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) audqual	1.000						
(2) audrep	0.565	1.000					
(3) audind	0.066	0.028	1.000				
(4) finlit	0.090	0.082	0.019	1.000			
(5) lev	-0.008	0.083	0.030	0.011	1.000		
(6) comsize	0.555	0.420	-0.064	0.069	0.075	1.000	
(7) audsiz	0.099	0.106	-0.156	0.072	-0.003	0.203	1.000

Note: audsiz represents the size of the company's internal audit committee, adurep represents the reputation of audit firm, audqual represents external audit quality, audind represents the independence of the company's internal audit committee, finlit represents average financial knowledge level of company's audit committee members, lev represents the total leverage of the company, comsize represents the size of the company.

Table III presents a multiple regression analysis to show the relationship between all independent and dependent variables in the model and the correlation coefficient. The coefficient of determination is 0.447 in this model, which means that around 44.7% results of

audit quality can be explained by the variables in this model. In other words, the variables involved in this model are responsible for half of the audit quality in Chinese companies. The data results show financial literacy and audit committee size do not seem to be directly related to audit quality. The key factors that determine the quality of an audit are the reputation of the audit firm and the size of the company. At the same time, the independence of the audit committee and the total leverage of the company will also have a significant impact on audit quality. In the case of the company's audit costs as a proxy for audit quality, the reputation of the audit firm can have a huge impact on audit quality, The Big Four accounting firms will charge an average of 2,259,209 yuan more than ordinary accounting firms, This also means when all other variables are the same that the four major accounting firms can provide audit services of RMB 2,259,209 higher than ordinary accounting firms. At the same time, we can find when all of other variables are the same that every 1 parameter increase in the company's size can improve the audit quality equivalent to 1,009,462 yuan for itself and every 1 parameter increase in the independence of audit committee can improve the audit quality equivalent to 468,616 yuan. However, every 1 parameter increase in the total leverage will decrease the audit quality equivalent to 35,054 yuan.

Table III
Regression Analysis

VARIABLES	(1)
	audqual
audrep	2259209.130*** (10.393)
audind	468,616.671** (2.265)
finlit	568,710.219 (0.848)
lev	-35,054.599** (-2.094)
comsize	1009462.001*** (10.206)
audsiz	-23,767.444 (-0.377)
Constant	-9246715.568*** (-8.119)
Observations	459
R-squared	0.454
Year FE	YES
Adjusted R-squared	0.447

t-statistics in parentheses

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

Note: audsiz represents the size of the company's internal audit committee, adurep represents the reputation of audit firm, audqual represents external audit quality, audind represents the independence of the company's internal audit committee, finlit represents average financial knowledge level of company's audit committee members, lev represents the total leverage of the company, comsize represents the size of the company.

V. SUMMARY AND CONCLUDING REMARKS

Conclusion

This article gets data support from 2015-2017 of CSMAR database, part of the data is processed by the given research model. Based on the results of the final data substitution, we can find there is a high positive correlation between audit quality and the reputation of audit firms, so it can be preliminarily determined that the audit quality of Chinese listed companies will be significantly affected by the reputation of the audit firm. In this case, the first assumption is true. From the regression analysis, we found that the dummy variable of the audit firm's reputation has a very high degree of fit in this research model, this shows that it is reasonable to consider the reputation of the Big Four accounting firms as “1” and the reputation of non-Big Four as “0”. This means that the Big Four accounting firms have a higher audit reputation in the Chinese capital market, according to the first hypothesis that has been verified, a higher reputation means a higher audit quality under all other conditions being the same. Therefore, the second assumption holds. From the regression analysis and matrix of correlations, we can find the company size and audit quality show a high positive correlation, and in the regression formula model, the company size parameters also have a high degree of

fit. This can prove that audit quality will be affected by the size of the company. Therefore, the third assumption also holds. We can simply say that while all other terms being equal, with the increase of the reputation of the cooperate auditing firm, the audit quality improves. And with the increase of the company's total asset, the audit quality will also improve.

Suggestion

Based on three assumptions confirmed from this article, the reputation of the Big Four accounting firms in China is clearly recognized, so listed companies need to give priority to the four major accounting firms when choosing their own external auditors, because it has higher audit reputation, higher audit quality. The audit quality has great significance for the company's financing and loaning because investors will judge the credibility of the information according to the company's audit quality, low audit quality will cause investors to refuse to believe the information published by the company and thus the company will lose the financing opportunity. Good audit quality can also provide much more invisible convenience for listed companies like the improvement of company goodwill. The accumulation of these intangible assets is very important for the company's future operations and development. Then, this research shows that the Chinese listed companies holding very high assets can try to cooperation with firms whose audit reputation is not so high because audit quality is also affected by the companies being audited, when the audit firm's reputation is not so high, the quality of the audit can still be kept high. This may be due to the incentive of the audited company or the annual report is rarely flawed. After all, we know that the duty of external auditor is to find errors in annual reports, once there is no error, even the worst auditor can also

give perfect audit reports. Moreover, the company can save a large number of audit fee and provide more opportunities for the development of non-Big Four accounting firms as a result.

Limitation

The research in this article involves several limitations, the insufficient records is the most obvious one. As it mentioned that the data support for this study is from CSMAR database from 2015 to 2017, the number of members in company's internal audit committee and the member information of the audit committee in this study are entries published in the CSMAR database recently, so these data are incomplete so far, due to resource constraints, there are only 459 complete observation records in this study, contingency cannot be avoided to a large extent. In recent years, there have been more and more listed companies in China and the data uploaded to the cloud server platform has become more and more complete, so future research will be supported by more comprehensive data. Secondly, it seems not so practical to replace audit quality with audit costs because audit quality is an abstract concept, once it is expressed with fees, it will cause this parameter to be abnormally high. It can be found from the regression formula that changing the audit firm's reputation by one unit can lead to a change in audit quality of 2,259,209 units, which seems ridiculous. For further study, using log of total audit fees may seem to be much more appropriate. Finally, it is not very appropriate to set the Big Four accounting firms as "1" and other accounting firms as "0" in the dummy variable because there are differences in capabilities among the members of each firm. Big Four accounting firms are indeed better than other firms, but there may be deviations when subdividing into

specific projects and specific working groups. Therefore, for similar research in the future, choosing variable parameters that are more specific to the situation when determining the reputation of the audit firm will be much better.

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Appendix

Variable Name	Variable Code	Variable Definition
Audit Quality	AudQual	Proxy using the amount paid for audit services as present in the audited financial statements.
Financial literacy	FinLit	Proxy using the ratio of audit committee members who possess a degree or equivalent in accounting, finance, economics or business administration, insurance or actuarial science and/or professional qualification in business related areas to the total number of audit committee members.
Audit Firm Reputation	AudRep	Dummy variable. “0” represents non-Big Four and “1” represents Big Four.
Company Size	ComSize	Proxy using log of total assets.
Independence of audit committee	AudInd	Proxy using the Ratio of independent director number to the totals of audit committee members.
Leverage	Lev	Proxy using total leverage of the company.
Audit Committee Size	AudSiz	Proxy using the number of members in the audit committee