Can Big Auditors Increase Enterprises Value?

——An Empirical Study Based on A Stock Market in China

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***Abstract*-Based on the large sample data of 2009-2011 A-shares market, the paper tests whether the current capital market in China has cultivated higher quality auditors by studying whether big auditors can increase clients' market value. The results were analyzed by multiple regression analyses. It shows that audit firms, whether the international Big 4 auditors or national leading ones, pose no significant positive influence on enterprises value, which further indicates that there is still room to improve the capital market environment in China.**

Keywords-auditor;audit quality; initial discount;enterprise value.

Ⅰ.LITERATURE REVIEW

High quality auditors can reduce agent cost and promote enterprises' value by delivering true accounting information to market, that's why auditors are employed. DeAngelo (1981) holds that big audit firms, with more clients, are likely to suffer more serious loss if they are detected offering poor service secretly, which would make these firms attach importance to the quality of their service [1]. The capital market in China is an emerging market, where the international Big 4 auditors and domestic big auditors coexist. The aim of the paper is to make clear whether the service of these firms can increase their clients' market value.

A.Introduction of Overseas Relevant Research

Auditors are specialized in accounting and information assurance and their service is crucial for investors in making decisions. Generally, auditors with high quality service and reputation earn more trust from investors, who are more willing to buy their clients' stocks. So there is stronger market reaction to the unexpected earnings of big auditors' clients, which makes it possible to increase enterprises' market value through high quality auditing service.

Li, Song and Wong (2007) conducted a research against the situation when domestic auditing market had not been solely dominated by the international Big 4 auditors, and the listed firms of 2001-2003 in Shanghai and Shenzhen stock market were taken as samples. The researchers found there was a remarkable positive linear relationship between the prominence of audit firms and market reaction to ERC, and the interactive variable between the international Big 4 auditors and the ERC had tremendously boosted clients' market value [2].

B.Domestic Relevant Study

Few studies could be found in China either. Zhang Qifeng(2005) found that only the international Big 4 auditors had positive influence on market value of enterprises, and the national Big 5 and the second tier Big 4 auditors failed to do so [3]. Wang Yanyan, Yu Lisheng (2006), studied whether high quality auditors firms could help to reduce the cost of equity capital of their clients with the final aim to examine the extent to which auditors were recognized by investors. And the findings showed that it would be helpful for listed firms with higher degree of asymmetric information to choose audit firms with larger size and better reputation so as to effectively decrease their equity capital cost [4].

From the few relevant literatures we can notice that researchers, in exploring the direct effect of high quality auditing service on enterprises value, but paid less attention to control variables, such as enterprises risk factors, stock right structure, etc, which may to some extent weaken the explanatory power of the model. Additionally, conclusions researchers have drawn on this subject from the study of domestic market vary from one to another. The paper, once more launches an exploration on the base of a modified linear model of the relation between auditor's reputation and enterprise value.

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Ⅱ. INTRODUCTION OF STUDY HYPOTHESES, APPROACHES AND SAMPLE DATA

A.Study Hypotheses

A history of almost 100 years has earned the international Big 4 auditors a worldwide reputation in the field. The demand in international capital market for high quality auditing service fuels them to maintain independence and service level so as to keep their reputation, so it could be inferred:

H1: The international Big 4 auditors can bring a significant promotion to enterprises value.

There are, apart from the Big 4 auditors, big national audit firms with, compared with the Big 4 auditors, more clients, but lower client income and client assets. The study on whether these auditors can affecting investors' decision making is very important in constructing China's capital market system in the sense of practice, for if national leading audit firms play a positive role in increasing enterprises value, that means we have in the capital market established a system that is in favorable for auditors to seek and keep high audit quality. Audit industry in China has been in reform in recent years, and, among other things, the government and the supervisors have been encouraging audit firms to merge with other, thus making big audit firm in a short period. These big audit firms, however, are prominent in size, but may not necessarily in service and reputation, and in view of which, we put forward the following hypothesis:

H2: National big auditors haven't been so well established to increase clients' value significantly yet.

Ⅲ.APPROACHES AND SAMPLES

A.Sample Selection and Data Source

Data come from firms' annual financial report of 2009-2011, and samples from all listed firms in A-shares market. The following observations are excluded: financial firms, firms on B&H shares market (According to law, these kind of firms are subjected to dual auditing and they have their particular investors and face different governmental regulation policy), firms that not completely state information, particularly on auditing fees, and, in order to be free of the impact of extremes , the 1% maximum and minimum observations on auditing fees, market value (Tobin's Q) and surplus indicators are excluded. We get 3510 observations after selection.

$$\begin{aligned} \text{value} = {} & \beta_0 + \beta_1 AUDI1_i \quad MROA_i + \beta_2 AUDI2_i \quad MROA_i + \\ & \beta_3 AUDI1_i + \beta_4 AUDI2_i + \beta_5 OPIN_i + \beta_6 OPIN_i \quad MROA_i + \\ & \beta_{6+i} IND_i + \beta_{18} F1_i + \beta_{19} F2\text{-}10_i + \beta_{20} MROA_i + \beta_{21} LNASSET_i + \\ & \beta_{22} LEVERAGE_i + \beta_{23} YEAR_{09\ 11} + \varepsilon_i \end{aligned} \quad (1)$$

Ⅳ.REGRESSION MODEL

The regression model employed is as follows:

Value refers to enterprises value, measured by Tobin's Q and adjusted Tobin's Q(80). Tobin's Q=market value/replacement cost=(share price*circulating shares+ net asset value per share*non-circulating shares+ debt book value)/total assets. The data in the formula are that of year-end, and all are related to A-shares only for firms of B-shares and H-shares have been excluded. Adjusted Tobin's Q (80)=(share price*circulating shares + share price *80% *non-circulating shares +debt book value)/total assets.

Test variables are as follows:

AUIDI*MROA and AUD12*MROA are test variables, referring to the interaction between international Big 4 auditors and national big firms and MROA (Main Return of Assets), indicating investors' trust in audit firms' service.

Control variables are made as follows:

OPIN*MROA: interaction variable between qualified audit opinion dummy variable and MROA.

AUDI1: dummy variable, when the auditor is one of international Big 4 auditors, it equals to 1, otherwise it equals to 0.

AUDI2: dummy variable, when the auditor is one of national big three audit firms, chosen according to ranking based on client assets and client number, otherwise it equals to 0.

OPIN: dummy variable, when the audit opinion is qualified, it equals to 1, otherwise it equals to 0.

INDi : dummy variable, the industries that each listed company belonged to. Classifying in accordance with the industry classification index released by CSRC. They are not listed in the empirical results because of the limited space.

F1: the largest shareholder's proportion.

F2-10: the natural logarithm of square of the second to the tenth largest proportion of shareholders. (Songmin, etc, 2004)

MROA: main return of assets, calculated by (operating profit - non-operating profit)/total assets. Chen Xiaoyue, etc. (2001) point out that it is common that listed firms manipulate ROE under the existing supervision of CSRC. So MROA is more reliable than ROA in examining a firm's capability to make profit.

LNASSET: natural logarithm of assets, indicating the size of firm.

LEVERAGE: ratio of liabilities to assets of a firm.

YEAR: the years that are involved in the study. 2009 is taken as the base year and two dummy variables are formed to refer to year of 2010 and 2011.

According to theoretical expectation and relevant empirical studies, we expect that AUDI1, AUDI2, AUDI1*MROA, DUDI2*MROA, LEVERAGE and F2-10 are positive, which means a positive relation between them and enterprises value and that OPIN, OPIN*MROA, LNASSET and F1 are negative, which means a negative relation between them and enterprises value.

A.The Classification and Selection of Auditors

We classify auditors into three types based on reputation. The first are international Big 4 auditors in China, including PwC Zhongtian, Ernst & Young Huaming, Deloitte & Touche Huayong, KPMG Huazhen). The second are national big firms, and the third are the other local auditors. For the second type, we choose three from the top ten firms on the ranking of 100 national audit firms in years of 2003-2011 issued by CICPA, which include Zhongrui Yuehua, LiXin and Xinyong Zhonghe.

Ⅴ.EMPIRICAL RESULT AND ANALYSIS

A.Descriptive Statistics of Variables and Correlation Analysis

From table 1, we can see the averages of Tobin's Q and Tobin's Q (80) are 1.202 and 1.1578 respectively, both reasonably near to 1, indicating that market value of China's listed firms in this period are not excessively overestimated. The average of AUDI1 is 5.07%, indicating the proportion of firms choosing international Big 4 auditors is about 5%, which is much lower, compared with that in mature capital markets. And the average of OPIN is 7.98%.

The average of F1 is 39.6%, which indicates that the overall stock flow is at a low level. The average of MROA is 1.06%, showing that the general corporate profitability is low too, and the difference between the maximum number 20% and the minimum number -45% is big. The average 51.59 makes the corporate asset liability ration at a moderate level. Generally, as for the listed firms, there is still much room for improvement

TABLE 1. DESCRIPTIVE STATISTIC ANALYSIS OF VARIABLES

	samples	maximum	minimum	mean	St.D
TOBIN's Q	3510	0.60	3.86	1.2020	0.34385
TOBIN's Q（80）	3510	0.46	4.10	1.1578	0.35059
AUDI1*MROA	3510	-0.28	0.20	0.0021	0.01731
AUDI2*MROA	3510	-0.34	0.19	0.0029	0.02880
OPIN*MROA	3510	-0.45	0.12	-0.0065	0.03982
AUDI1	3510	0.00	1.00	0.0507	0.21944
AUDI2	3510	0.00	1.00	0.1741	0.37923
OPIN	3510	0.00	1.00	0.0798	0.27098
F1	3510	0.00	84.85	39.6659	15.90118
F2-10	3509	-2.04	8.58	5.2352	2.03944
MROA	3510	-0.45	0.20	0.0161	0.07175
LNASSET	3510	17.54	26.98	21.2359	0.96910
LEVERAGE	3510	0.01	6.03	0.5159	0.28492
YEAR11	3510	0.00	1.00	0.3376	0.47296
YEAR10	3510	0.00	1.00	0.3103	0.46266
YEAR09	3510	0.00	1.00	0.3521	0.47770

From the yearly descriptive analysis of variables (see table 2), we can see the averages of Tobin's Q and Tobin's Q in 2011 are slightly higher than those in previous years. The average of percentage of listed firms employing audit firms, whether the international Big 4 auditors or the domestic big ones, is the highest in 2009.

Seeing from the variables that reflect corporate characteristics, we see the proportion of the biggest shareholder declines annually, and asset liability ratio in 2009 is lower than 2010 and 2011. The rest indicators vary from year to year.

TABLE 2. YEARLY DESCRIPTIVE ANALYSIS OF VARIABLES

	2009（n=1236）				2010（n=1089）				2011（n=1185）			
	minimum	**maximum**	**mean**	**St. D**	**minimum**	**maximum**	**mean**	**St. D**	**minimum**	**maximum**	**mean**	**St. .D**
TOBIN's Q	0.60	2.73	1.14	0.30	0.71	3.86	1.16	0.34	0.82	3.22	1.30	0.36
TOBIN's Q(80)	0.46	2.85	1.09	0.31	0.64	4.10	1.11	0.35	0.70	3.17	1.28	0.36
AUDI1*MROA	-0.28	0.20	0.00	0.02	-0.28	0.19	0.00	0.02	-0.13	0.16	0.00	0.01
AUDI2*MROA	-0.26	0.19	0.00	0.03	-0.30	0.19	0.00	0.03	-0.34	0.19	0.00	0.03
OPIN*MROA	-0.36	0.11	-0.00	0.04	-0.45	0.11	-0.01	0.05	-0.44	0.12	-0.01	0.04
AUDI1	0.00	1.00	0.07	0.25	0.00	1.00	0.05	0.22	0.00	1.00	0.04	0.18
AUDI2	0.00	1.00	0.19	0.39	0.00	1.00	0.18	0.39	0.00	1.00	0.15	0.36
OPIN	0.00	1.00	0.08	0.27	0.00	1.00	0.10	0.30	0.00	1.00	0.06	0.24
F1	6.14	84.85	42.43	16.50	0.00	83.75	40.38	15.81	5.18	83.75	36.13	14.65
F2-10	-2.04	8.38	5.06	2.26	-1.39	8.30	5.30	2.06	-0.66	8.58	5.35	1.75
MROA	-0.36	0.20	0.01	0.07	-0.45	0.19	0.01	0.08	-0.44	0.20	0.02	0.07
LNASSET	18.42	26.98	21.27	0.99	17.54	24.78	21.17	0.93	18.16	25.74	21.27	0.98
LEVERAGE	0.01	3.72	0.49	0.30	0.03	6.03	0.54	0.33	0.02	1.99	0.52	0.21

The Results of Regression Model and Analysis

TABLE 3 .REGRESSION RESULTS

dependent variable	**Tobin's Q**				**Tobin's Q(80)**			
Samples period	**2009-2011**	**2009**	**2010**	**2011**	**2009-2011**	**2009**	**2010**	**2011**
(Constant)	3.844*** (30.598)	4.102*** (25.137)	3.928*** (16.698)	3.453*** (14.346)	3.734*** (29.948)	3.864*** (24.418)	3.787*** (16.428)	3.429*** (14.187)
AUDI1*MROA	-0.255 (-0.731)	1.110*** (2.868)	-1.342** (-2.150)	0.154 (0.161)	-0.283 (-0.818)	1.096*** (2.921)	-1.262** (-2.063)	-0.189 (-0.196)
AUDI2*MROA	-0.393** (-2.011)	-0.784*** (-3.171)	0.080 (0.235)	-0.176 (-0.427)	-0.463** (-2.385)	-0.811*** (-3.382)	0.067 (0.200)	-0.473 (-1.145)
OPIN*MROA	-1.002*** (-5.515)	-0.432* (-1.788)	-0.114 (-0.370)	-2.983*** (-7.934)	-0.940*** (-5.210)	-0.560** (-2.388)	-0.148 (-0.490)	-2.497*** (-6.612)
AUDI1	0.182*** (6.628)	0.163*** (5.344)	0.299*** (5.951)	0.031 (0.428)	0.173*** (6.331)	0.157*** (5.314)	0.290*** (5.884)	0.014 (0.192)
AUDI2	0.008 (0.563)	0.033* (1.902)	0.022 (0.914)	-0.019 (-0.681)	0.004 (0.303)	0.028* (1.663)	0.018 (0.768)	-0.016 (-.0584)
OPIN	0.021 (0.929)	0.036 (1.215)	0.062* (1.686)	-0.031 (-0.660)	0.021 (0.948)	0.031 (1.083)	0.062* (1.725)	-0.017 (-0.364)
MROA	0.791*** (7.524)	0.264** (2.027)	0.047 (0.244)	2.157*** (9.958)	0.777*** (7.445)	0.267** (2.111)	0.073 (0.387)	1.989*** (9.142)
F1	0.000 (-0.891)	-0.001** (-2.255)	-0.002*** (-2.865)	0.001 (1.455)	-0.001* (-1.742)	-0.002*** (-3.361)	-0.003*** (-3.577)	0.001 (1.602)
F2-10	4.133E-05 (0.012)	-0.012*** (-2.827)	-0.017*** (-2.806)	0.027*** (4.028)	-0.001 (-0.424)	-0.014*** (-3.386)	-0.020*** (-3.361)	0.028*** (4.220)
LNASSET	-0.135*** (-23.203)	-0.144*** (-19.069)	-0.131*** (-11.957)	-0.115*** (-10.212)	-0.133*** (-23.053)	-0.135*** (-18.506)	-0.128*** (-11.926)	-0.116*** (-10.216)
LEVERAGE	0.303*** (14.331)	0.356 (13.354)	0.321*** (9.683)	0.082 (1.475)	0.391*** (18.650)	0.444*** (17.176)	0.440*** (13.549)	0.080 (1.446)
Y2006	0.150*** (12.171)				0.166*** (13.596)			
Y2005	-0.012 (-0.982)				-0.017 (-1.385)			

* Indicate significance at the 0.10 level. ** Indicate significance at the 0.05 level. *** Indicate significance at the 0.01 level.

Both of Tobin's Q and Tobin's Q (80) are regressed in the paper, and the AGF of the model are 26.6% and 30.5% respectively, which are satisfactory. D-W statistics are 1.919 and 1.905 respectively, which indicates there is no positive correlation between the independent variables. The maximum VIF of the two variables are 2.305, which means there is no multiple co- linearity in the model.

In the regressed results, we find the coefficient of the interaction variable between the internal Big 4 auditors and MROA is negative, but not evident, and that indicates the international Big 4 auditors don't tremendously boost their clients' market value. If analyzed more thoroughly, its coefficient in 2009 is positive, evident at the level of 1% while, in 2010, the coefficient is negative, evident at the level of 5%. And the coefficient in 2011 is not evident. The results show the international Big 4 auditors' role in helping investors make assessment on corporate value is not steady. Overall, it is hard to tell that the international Big 4 auditors have established a good reputation, so H1 is not certified.

The significant negative coefficient of AUDI2*MROA at the level of 5% shows that domestic capital market reacts more negatively to the higher ROA in the financial report that have been audited by national big firms. And this coefficient is remarkably negative in 2009, but not in 2010 and 2011, which indicates that for domestic firms, leading ones earn less trust from investors. Therefore, H2 is certified.

Additionally, the coefficient of OPIN*MROA is negative, evident at the level of 1%, which means that firms with higher MROA, once receive modified audit opinion, will encounter negative response from investors, and which further indicates that investors will change their attitude toward listed firms that may release false information upon receiving the modified audit opinion. Therefore, we conclude that, generally, auditing plays a role for investors in judging listed firms' market value.

The coefficient of AUDI1 is positive, which, along with Tobin's Q, is evident, meaning that leading firms are more likely to choose the international Big 4 auditors. AUDI2 is positive too, but not evident, which means there exists no obvious difference in client size of national leading firms and local ones. OPIN is positive, which means the value of firms receiving modified audit opinion is a little too high, which does not accord with our expectation. But its effect on corporate value is not significant. Seen from the regressed results of the control variables, coefficients of MROA, LANSSET and LEVERAGE are evident, which is in accordance with our expectations.

We get the same conclusion from the yearly regressed results. Corporate value in 2011 is higher than that in 2010 and 2009, which may be caused by policy change, referring to the large-scale equity division reform among listed firms in 2010, the impact of which begins to be evident in 2011. And we find no big difference between the regressed results of Tobin's Q and Tobin's Q.

Ⅵ.CONCLUSIONS

Generally, there exists no type of audit firms that have been surely acknowledged in current capital market. The international Big 4 auditors bring an impact on investors in assessing listed firms' value in certain years, which cannot certify their steady and high quality service level, for the influence of reputation should be sustainable and steady. As for national leading firms, their size swelled quickly due to one wave of merge after another, which, however, doesn't mean better reputation and higher service, for we see from our study that investors have shown increasingly negative attitude toward their work. And this phenomenon should be taken as evidence that in terms of audit industry development, governmental intervention by fostering firm merging is not necessarily a wise act.

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REFERENCES

[1] Linda Elizerbeth DeAngelo. 1981. "Audit Size and Audit Quality,"Journal of Accounting and Economics,3: 183-189.

[2] Chuntao Li, Frank M. Song and Sonia M. L. Wong. 2007. "Audit firm size effects in China's emerging audit market," InternationalJournal of Auditing, 12:111–127.

[3] Zhang Qifeng. 2005. "Can Governmental Control Boost Audit Firm's Reputation?—— Testing by empirical evidence from China's Stock Market," Management World, 12: 58-69.

[4] Yu Lisheng, Wang Yanyan. 2006. "Audit Firm Choosing and Cost of Equity Capital," Working Paper.