

A study on the effects of state ownership on auditing cost

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ABSTRACT

This paper investigates the relationship between state ownership and auditing expenses of 141 Iranian firms from Tehran Stock Exchange over the period 2008-2012. Using stepwise regression technique, the study has detected a negative and meaningful relationship between state ownership and auditing costs. In addition, the study has determined a positive and meaningful relationship between auditing firm size and auditing expenses. Finally, state ownership has negative impact on relationship between auditing firm size and auditing expenses such that with an increase on state ownership, the effects of auditing firm and auditing expenses will be reduced.

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1. Introduction

During the past few decades, there has been growing interests in learning more about the impact of different factors on auditing fees (Chow, 1982; Faure-Grimaud et al., 1999). Wang et al. (2008), for instance, investigated the impact of state ownership on auditing fee and reported that Chinese state-owned firms controlled by province, city, and county governments were more likely to hire small auditors within the same region compared with non-state-owned companies. In regions with less developed organizations, county government controlled by central government also had such a tendency. Gul et al. (2010) studied the impacts of largest-shareholder ownership concentration, foreign ownership, and audit quality on the amount of firm-specific data incorporated into share prices, as measured by stock price synchronicity, of Chinese-listed firms over the period 1996–2003. They explained that synchronicity was a concave function of ownership by the largest shareholder with its maximum at an approximate 50% level. They also reported that synchronicity was higher when the largest shareholder was government related. They also reported that foreign ownership and auditor quality were inversely related to synchronicity. In addition, they reported that the amount of

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earnings information reflected in stock returns was relatively lower for companies with high synchronicity.

Niemi (2005) this study investigated the effect of audit client ownership kind on audit effort and fees based on proprietary audit hour and fee data from the internal records of four Big Six firms in Finland. The primary concern in this study was that there were differential impacts of ownership concentration depending on the specific nature of concentrated ownership. The study reported that audit hours and fees were lower for firms majority-owned by their management and higher for subsidiaries of foreign firms than for other firms. Nevertheless, they did not find any difference between firms owned by the state or municipalities and firms with a more diverse ownership structure, which means that governmental ownership was actually closer to a dispersed than a concentrated ownership structure in terms of audit quality.

Pérez-Castrillo and Riedinger (2004) considered a cost-reimbursement or a cost-sharing procurement contract between the administration and a business unit. The firm privately understands the true expense overrun once the project has initiated and it is able to manipulate this information. They characterized the optimal auditing policy of cost overrun claims as a function of the initial contractual payment, the share of the expense overrun devoted by the administration, the expense and the accuracy of the auditing technology, and the penalty rate imposed on fraudulent companies.

Feess and Schumacher (2006) studied a model where both a regulator and a company may detect and stop bad projects. They explained that full auditing by the regulator could be socially suboptimal even with zero auditing expenses. The reason was that the firm's own auditing incentive could be crowded out when protected by limited liability. Kuhn and Siciliani (2013) modeled purchaser-provider contracts when providers could inflate reimbursable activity through manipulation where in their model, providers were audited and fined upon detected fraud. They characterized the optimal price and audit policy both in the presence as well as the absence of commitment to audit intensity.

Kim (2006) investigated capital budgeting for new projects where information was obtained by managers. They reported that in the events the information acquisition expenses are small, optimal capital budgeting is not very different from that for routine projects where managers have pre-existing data. Nevertheless, the necessity to provide incentives to obtain information yields in more intensive auditing and further distortions in capital allocations. When information acquisition expenses become significant, optimal capital budgeting differs from that for routine plans. To present strong incentives for data acquisition, auditing becomes more extensive, and more than the first best amount of capital is devoted whenever auditing happens.

2. The proposed study

This paper investigates the relationship between state ownership and auditing expenses of 141 Iranian firms over the period 2008-2012. The study considers the following three hypotheses,

1. There is a negative relationship between state ownership and auditing expenses (Mautz & Sharaf, 1961).
2. There is a positive relationship between auditing expenses and auditing firm size.
3. State ownership has negative impact on relationship between auditing firm size and auditing expenses.

The study uses the following criteria to select the sample size,

1. All firms are required to be listed on Tehran Stock Exchange.
2. They all must have the same fiscal calendar.
3. No financial or insurance firm is permitted for the proposed study.
4. No firm has to change its fiscal calendar.
5. The ticker symbol must be active and there should not any long period of interruption.
6. The necessary information must be available.

The proposed study uses the following three regression models to examine the hypotheses,

$$\text{Logfee}_{i,t} = \beta_0 + \beta_1 \text{Gov}_{it} + \beta_2 \text{Size}_{it} + \beta_3 \text{ROA}_{it} + \beta_4 \text{Lev}_{it} + \epsilon_{it} \quad (1)$$

$$\text{Logfee}_{i,t} = \beta_0 + \beta_1 \text{AuditSize}_{it} + \beta_2 \text{Size}_{it} + \beta_3 \text{ROA}_{it} + \beta_4 \text{Lev}_{it} + \beta_5 \text{Opinion}_{it} + \epsilon_{it} \quad (2)$$

$$\text{Logfee}_{i,t} = \beta_0 + \beta_1 \text{AuditSize}_{it} + \beta_2 \text{Gov}_{it} + \beta_3 \text{AuditSize} \times \text{Gov}_{it} + \beta_4 \text{Size}_{it} + \beta_5 \text{ROA}_{it} + \beta_6 \text{Lev}_{it} + \beta_7 \text{Opinion}_{it} + \epsilon_{it} \quad (3)$$

where *Logfee* represents natural logarithm of auditing expenses, *Gov* states government ownership, *Size* denotes natural logarithm of total assets, *ROA* represents return on assets, *Lev* is associated with the ratio of total liabilities on total assets, *Opinion* is a binary variable, which is one if the firm is conditionally approved or even reject and zero, if the firm is accepted. Finally, *AuditSize* represents the size of auditing firm, which is calculated by taking natural logarithm of the number of employees who work for the firm. Table 1 demonstrates some basic statistics associated with the selected firms.

Table 1

The summary of some basic statistics

Variable	Number	Mean	Min	Max	Standard deviation
Auditing fee	864	7.834	4.483	10.504	1.239
% of state ownership	864	0.438	0.000	0.927	0.519
Auditing firm size	864	5.054	1.948	6.791	0.806
Firm size	864	13.751	9.736	18.129	1.093
ROA	864	0.185	-0.382	0.811	0.507
Debt ratio	864	0.638	0.132	1.107	0.983
Investment ratio	864	0.142	0.000	0.697	0.274
Having loss	864	0.07	0	1	0.186
Auditing firm results	864	0.575	0	1	0.408
Auditing firm dummy variable	864	0.224	0	1	0.379

The results of Table 1 indicate that the mean of the most firms is less than average and most firms maintain a small standard deviation, which means there was not much change on the values of the data.

In addition, government owns approximately, 43.8% of the firms in our study, 7% of the firms reported losses in their statements and finally, nearly a government based auditing firm audited 22% of the firms. The implementation of Kolmogorov-Smirnov test yields $z = 0.036$ with P-value = 0.20 and $df = 870$, which means auditing fee is normally distributed.

Next, we present details of our findings on testing three hypotheses of the survey.

3. The results

In this section, we present details of our findings on testing three hypotheses of the survey.

3.1. Testing the first hypothesis: The effect of state ownership on auditing fee

The first hypothesis is associated with the effect of state ownership on auditing fee. Table 2 demonstrates the results of our survey.

Table 2
The summary of testing the first hypothesis

Variable	Coefficient	t-value	Sig.	VIF
<i>C</i>	0.3357	19.076	0.0000	-
<i>Gov</i>	-0.0013	-7.838	0.0000	1.274
<i>Size</i>	0.0275	2.137	0.0047	1.435
<i>ROA</i>	0.0001	1.073	0.1412	2.836
<i>LEV</i>	-0.0897	-0.541	0.6241	1.262

Jarque-Bera statistics 0.218 P-value = 0.3247, F-value = 1.682 P-value = 0.000

Breusch-Pagan statistics 0.613 P-value = 0.7450 Durbin-Watson = 2.081 $R^2 = 0.4499$ Adjusted $R^2 = 0.3908$

The results of statistical tests indicate the goodness of regression fit and imply that we could use the results for testing the first hypothesis of the survey. The study has detected a negative and meaningful relationship between state ownership and auditing costs. Therefore, the first hypothesis of the survey has been confirmed.

3.2. Testing the second hypothesis: The effect of auditing firm size on firm size

The second hypothesis is associated with the effect of auditing firm size on firm size. Table 3 shows the results of our investigation.

Table 3
The summary of testing the second hypothesis

Variable	Coefficient	t-value	Sig.	VIF
<i>C</i>	0.4120	13.290	0.0000	-
<i>AuditSize</i>	0.0090	3.108	0.0000	1.462
<i>Size</i>	0.0198	2.274	0.0007	2.130
<i>ROA</i>	0.0002	1.361	0.1736	1.720
<i>LEV</i>	-0.0766	-0.770	0.5701	1.935
<i>Opinion</i>	0.0039	1.087	0.1059	1.923

Jarque-Bera statistics 4.742 P-value = 0.0933, F-value = 1.715 P-value = 0.000

Breusch-Pagan statistics 2.949 P-value = 0.0577 Durbin-Watson = 1.973 $R^2 = 0.1678$ Adjusted $R^2 = 0.1624$

The results of statistical tests confirm the goodness of regression fit and indicate that we could apply the results for examining the second hypothesis of the survey. The study has detected a negative and meaningful relationship between auditing firm size on firm size. Therefore, the second hypothesis of the survey has been confirmed.

3.3. Testing the third hypothesis

Finally, the study has investigated the role of state ownership on relationship between auditing firm size and auditing expenses and Table 4 presents the results of our survey. The results of Table 4 clearly indicate that state ownership has negative impact on relationship between auditing firm size and auditing expenses such that with an increase on state ownership, the effects of auditing firm and auditing expenses will be reduced and this confirms the last hypothesis of the survey.

Table 4
The summary of testing the third hypothesis

Variable	Coefficient	t-value	Sig.	VIF
<i>C</i>	0.3824	14.084	0.0000	-
<i>AuditSize</i>	0.0084	3.708	0.0000	1.571
<i>Gov</i>	-0.0017	-6.534	0.0000	1.283
<i>AuditSize</i> × <i>Gov</i>	-0.0008	2.834	0.0076	1.671
<i>Size</i>	0.0274	3.007	0.0001	1.557
<i>ROA</i>	0.0011	1.541	0.0976	1.243
<i>LEV</i>	-0.0667	-0.748	0.5973	1.259
<i>Opinion</i>	0.0057	1.291	0.1187	1.745

Jarque-Bera statistics 3.674 P-value = 0.1592, F-value = 2.826 P-value = 0.000

Breusch-Pagan statistics 0.530 P-value = 0.6621 Durbin-Watson = 2.138 $R^2 = 0.2894$ Adjusted $R^2 = 0.2751$

4. Conclusion

We have presented an empirical investigation to study the effect of state ownership on auditing firm expenses with the focus on firm size. The study has implemented stepwise regression technique on selected firms from Tehran Stock Exchange and has confirmed that there was a negative and meaningful relationship between state ownership and auditing costs. In addition, the results have indicated a positive and meaningful relationship between auditing firm size and auditing expenses. Finally, state ownership, in our study, had negative effect on relationship between auditing firm size and auditing expenses such that with an increase on state ownership, the effects of auditing firm and auditing expenses was reduced. Nevertheless, any auditing process cost and it may face different challenges as stated by Zarandi et al. (2013) and there is a need to learn more about the possible barriers and take necessary actions to overcome possible challenges.

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