International Big Four, Customer Concentration and Audit Fees

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Abstract: With the development of economy, enterprises in the supply chain are competing more and more as a whole, so the downstream of the supply chain and the customers of enterprises are becoming more and more important for the development of enterprises. They are the main source of economic interests of enterprises and have an important impact on the economic activities of enterprises, so they may have an impact on audit expenses. This paper takes A-share listed companies as the research object, establishes an empirical regression model, and studies how the customer concentration of enterprises in the supply chain affects the audit cost from the perspective of the supply chain. In addition, when the audit unit of the enterprise is the Big Four, the effect of customer concentration on reducing audit fees is not significant. In the non-big four enterprises, the concentration of clients significantly reduces the audit fees.

1 INTRODUCTION

In recent years, with the development of economic globalization and industrial diversification, enterprises in the supply chain are no longer in the traditional relationship of buying and selling, but as a new type of partnership, the mutual influence is more and more serious, the relationship is more and more close, and the external competition is more and more as a whole (Kotabe et al., 2003). Supply chain relationship refers to the business relationship and personal friendship created by supply chain member enterprises in daily purchasing and sales activities (Li and Liu, 2016), including upstream supplier relationship and downstream customer relationship. So in pursuit of the stability of supply chain, enterprises will keep close contact with their upstream and downstream enterprises From the perspective of supply chain stability, business activities of enterprises are completed through the connection of supply chain, and the interruption and transfer of key nodes in the supply chain will bring huge losses to enterprises (Dhaliwal et al., 2016).As a community of interests, neither customer nor supplier can stand alone in the face of difficulties. Different from market-oriented transactions in western developed economies, in the Chinese market with widespread overcapacity, enterprises tend to rely more on downstream customers than upstream suppliers (Shi and Qin, 2018), and advantageous information brought by supply chain relationships spills over to businesses through customer relationships. The closer the relationship between the customers and the enterprise the customer concentration is higher, the more it helps enterprises to establish long-term and stable customer relationship with customers, the more it helps enterprises to strengthen cooperation with customers and maintain stable profits, also helps to promote the company's management ability, management level and the brand effect, resolve the company's financial and non-financial business risk. Previous studies have shown that customer concentration will have an impact on the operating activities, cost structure and profitability of enterprises, such as earnings quality, bank credit, financing cost, investment behavior, etc. As an important stakeholder, auditors' decisions are also influenced by the concentration of clients, such as audit quality and auditor selection. However, there are relatively few researches on audit fees. Wang et al. (2014) pointed out that the higher the client concentration, the lower the audit fee. However, the size and reputation of accounting firms will also affect the impact of client concentration on audit fees. This is because accounting firms with large scale and high reputation do not lack clients, but the clients

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need them to improve the credibility of audit reports, so these accounting firms tend to have a higher say in audit bargaining. Therefore, this paper studies the relationship between client concentration and audit fees from the perspective of different scale and reputation of accounting firms.

This paper uses Chinese A-share listed companies from 2016 to 2021 as empirical samples to study the relationship between client concentration and audit fees based on different sizes and reputations of accounting firms. The empirical results show that customer service concentration has a significant negative impact on audit costs. In addition, if the accounting firm has a large scale and high reputation, the negative correlation between client concentration and audit fees is not significant, while if the accounting firm has a small scale and low reputation, the negative correlation between client concentration and audit fees is more significant.

The research significance of this paper may be as follows: First, the study of audit fees, the study of factors affecting audit fees is conducive to strengthening the government's supervision of the audit market, so as to standardize the competition of the audit market. Secondly, this paper studies the influence of customer concentration on audit costs, and points out the direction for enterprises to reduce audit costs. Enterprises could maintain close contact with customers, so as to increase their right to speak in bargaining, so as to reduce audit costs. Finally, the paper supplements the literature on the impact of client concentration on audit fees. The influence of client concentration on audit fees is more significant when the enterprise has a larger voice.

2 LITERATURE REVIEW AND THEORETICAL ANALYSIS

Audit fee is the price agreed upon by the supply and demand parties for audit services. It is a certain amount of fees charged by the accounting firm to the auditee after providing audit services, that is, the price of audit services provided by certified public accountants. Audit fee consists of three parts: audit product cost, risk cost and normal profit of the firm (Wu, 2003). Audit product cost refers to the cost of executing necessary audit procedures and issuing audit reports, which generally depends on enterprise characteristics such as scale and business complexity, corporate governance and internal control. And the risk cost mainly refers to the litigation loss and the potential cost of restoring reputation.

Customers are the most important economic entities in market transactions. Through implicit or explicit contractual arrangements, customers bring core economic benefits to the company and are the main source for the company to obtain sustainable competitive advantages. High customer concentration means a close relationship between the company and customers. Long-term and stable transactions between the company and customers in the supply chain can promote information sharing between the company and customers, so as to improve the efficiency of inventory management and the recovery rate of accounts receivable, which is conducive to the improvement of the company's performance (Feng et al., 2019). Large customers help to stabilize the supply chain, enhance the stability of the company's earnings, and the capital market will also produce a positive response. Customer relationship can affect business activities, cost structure and profitability. The high degree of integration between the buyer and the seller can enhance the ability of the supplier to serve customers, promote both parties to increase sales, reduce costs, and improve the profitability of both parties. The purchasing power of customers affects the price strategy, operation and product design, marketing and customer service activities, and then affects the cost structure and profit of the enterprise. Previous studies have also shown that client concentration can affect audit quality (Hung, 2021; Zhao et al., 2021) and audit pricing (Wang, 2020).

The customer characteristics of enterprises can also affect the cost of audit products and risk costs, and ultimately affect the audit fees If an enterprise has a close relationship with its customers and a strong performance correlation, the stronger the degree of mutual influence between the two, the situation of mutual prosperity and mutual loss will occur between the two. Then the retailer with large customers will have higher returns and earnings stability. (Gosman et al., 2004). In short, companies with large customers perform better, have lower own risk and audit risk; If enterprises can realize supply chain integration with customers (Kalwani and Narayandas, 1995), the improvement of enterprise operation efficiency will reduce the holding level of factors affecting audit expenses such as cash, inventory and accounts receivable (Patatoukas, 2012). At the same time, since enterprises mainly trade with a few important customers, The business complexity is reduced, which may reduce the audit effort and thus the audit cost. In summary, the hypothesis of this paper is as follows:

Hypothesis 1: The higher the customer concentration, the lower the audit risk, the smaller the audit workload, and the lower the audit fee.

There are big and small accounting firms, and there are high and low reputation accounting firms. In related studies, scholars often divide accounting firms into the Big Four and non-Big Four accounting firms. According to the study, DeAngelo (1981) proposed that large firms have higher independence and higher audit quality. The audit quality of Big Four firms is higher than that of non-Big Four firms (Beatty,1989; Palmrose,1988). Compared with non-Big Four accounting firms, Big Four accounting firms have higher audit fees (Li and Tang, 2020). Audit product cost, risk cost and audit fee constitute the firm's normal profit, and audit fee is the accounting firm and the audited unit can compete with each other. In the current market, the Big Four accounting firms have larger scale and higher reputation. Compared with non-Big Four accounting firms, they also have more say in bargaining with audited companies. This is because accounting firms with large scale and high reputation, such as the Big Four international accounting firms, do not lack clients, but the clients need them to improve the credibility of audit reports, so these accounting firms tend to have a higher say in audit bargaining. However, due to the long establishment time, large scale and high reputation of the Big Four accounting firms, it is difficult for the audited companies to play games with them, thus reducing their normal profits and ultimately reducing audit fees. Therefore, this paper puts forward the following hypotheses:

Hypothesis 2a: The audit firm is a non-Big Four accounting firm with a small scale and low reputation, and the audited firm has a high degree of client concentration, which can significantly reduce the audit fee.

Hypothesis 2b: The audit firm is a Big Four accounting firm with a large scale and high reputation. Even if the auditee has a high concentration of customers, it can not significantly reduce its audit fee.

3 RESEARCH DESIGN

3.1 Sample Source

This paper selected A-share listed companies from 2016 to 2021 as the initial sample and conducted the following screening: ① Financial and insurance companies were excluded; (2) Eliminate ST or *ST companies; ③ Remove companies with incomplete data from the sample. You end up with 11,868 observations. In order to eliminate the influence of extreme values, the continuous variables in the model are shrunk at 1% and 99% quantile levels. All sample data were collected from CSMAR Database. Data screening and processing are mainly done by Excel and stata15 software. In this paper, the first two codes of 2012 China Securities Regulatory Commission industry classification standard are adopted to divide the industry.

3.2 Variable Definitions

3.2.1 Explained Variable: Audit Fee

According to the research of Wang Xiongyuan et al. (Wang,2014), the natural logarithm of audit fees in the financial statements of listed companies is used to measure audit fees (infe).

3.2.2 Explanatory Variable: Customer Concentration

According to the research of Zhang Min et al. (Zhang,2012), the proportion of the annual sales of the top five customers in the total annual sales in the financial statements of listed companies is used to measure the customer concentration degree (ab).

The variables are defined as follows:

Table 1: Variable definition table.

variable type	variable name	variable symbol	variable definition
explained variable	audit fee	infe	Natural logarithm of audit fee area
explaining variable	Concentration of customers	ab	The proportion of the annual sales of the top five customers to the total annual sales
control variable	The enterprise scale	size	Natural log of ending total assets

	Corporate financial leverage	lev	Total liabilities at year-end/total assets at year-end
	Cash flow from operating activities	cf	Cash flow from operating activities/total assets
	Type of Audit Opinion	Q	If the audit opinion of the enterprise in the last period is the standard unqualified opinion, the value is 1; otherwise, the value is 0
	If the big four	big4	If there are four accounting firms in the current period, the value is 1; otherwise, the value is 0
	Discretionary accruals	ada	Discretionary accrual earnings management level calculated using the modified Jones model
	Return on assets	roa	Average annual balance of net profit/total assets

3.3 Econometric Model

This paper mainly studies the relationship between client concentration and audit fees. By referring to factors affecting audit fees, this paper constructs a panel model as shown in Equation (1) for empirical analysis.

$$infe = \beta_0 + \beta_1 ab_{i,t} + \beta_2 control_{i,t} + \mu_t + \mu_i + \varepsilon \quad (1)$$

Among them, $infe_{i,t}$ is the audit expense of the enterprise in a certain year; $ab_{i,t}$ is the customer concentration degree of an enterprise in a certain year. $control_{i,t}$ is the control variable; μ_t and μ_i are year fixed effects and individual fixed effects, respectively. ε is the model disturbance term.

4 EMPIRICAL RESULT

4.1 Descriptive Statistics

Table 2 is the descriptive statistical results of each variable, from which it can be seen that the minimum value of enterprise audit fee (infe) is 11.513, and the maximum value is 18.146. It indicates that there are great differences in audit fees of sample companies, and audit fees of different companies are different, indicating that audit fee standards are different, and enterprises may reduce their audit fees by some means. The mean, minimum, maximum and standard deviation of enterprise customer concentration (ab) are 23.306, 0.01, 157.89 and 33.243, respectively, indicating that the customer concentration of different enterprises varies greatly. Some sample companies maintain a close relationship with their customers, but some sample companies do not. They don't even have regular customers.

Table 2: Descriptive statistical results of main variables.

variable	mean	standard deviation	minimum	maximum
infe	13.776	0.651	11.513	18.146
ab	33.243	23.306	0.01	157.89
ada	0.072	0.143	0	6.223
lev	0.409	0.206	0.008	3.919
size	22.247	1.348	17.786	28.624
roa	0.044	0.089	-1.872	0.969
Q	0.970	0.171	0	1
big4	0.061	0.239	0	1
cf	0.051	0.075	-1.794	0.879

4.2 Multivariate Regression Analysis

This paper first put all the sample data into the regression model to test the hypothesis 1 of this paper, and the specific regression results are shown in column (1) in Table 3. Then, this paper divided the samples into two groups according to whether the enterprise's auditing unit is a Big Four accounting firm, and put them into the regression model to test the hypotheses 2a and 2b of this paper. Specific regression results are shown in columns (2) and (3) in Table 3. From the analysis of regression results, it can be seen that: first, the P-value of F-test statistic in the three regression models is all 0. This indicates that the model is effective to a certain extent. Secondly, the regression coefficient of customer concentration and audit fees is negative, which verifies the negative correlation between them. In addition, in the group whose accounting firms are not the Big Four, the negative correlation between client concentration and audit expenses is still significant, while in the group whose accounting firms are the big Four, the relationship between client concentration and audit expenses is not significant.

As can be seen from column (1) in Table 3, the coefficient of customer concentration (ab) is -0.001, indicating that the customer concentration of

Table 3: Regression results.

variable	infe	infe	infe
	（1）All the samples	（2）big4=1	（3）big4=0
ab	-0.001***	0.000	-0.001***
ada	0.029	0.125	0.026
lev	0.002	-0.358**	0.025
size	0.337***	0.437***	0.322***
roa	-0.409***	-0.383*	-0.393***
Q	-0.114***	-0.007	-0.113***
big4	0.372***	4.618***	0.000***
cf	0.244***	-0.120	0.258***
_cons	6.414***	0.000***	6.731***
Vintage effect	control	control	control
Individual effect	control	control	control
N	11868	672	11196
P	0	0	0
R2	0.560	0.615	0.464

Note: *** indicates a significant correlation at the 0.01 level (bilateral).

enterprises negatively affects the audit expenses of enterprises to some extent, which verifies hypothesis 1 in this paper. For enterprise, customer concentration is high, means that companies with large customer, and maintain good relationship with customers, to some extent this ensures the stability of revenue sources, and to ensure the stability, higher earnings and earnings to reduce audit risk and audit work, by reducing product cost and risk cost audit, And ultimately lower audit fees.

From (2) column in the table 3 (3) as you can see, in the enterprise audit units for the big four, enterprise customer concentration and the relationship between audit fees is not significant, but in the enterprise audit units for the big four accounting firms, corporate customers remain negative correlation relationship between concentration and audit fees, and significantly. This is because the big four accounting firm after years of accumulation of experience, has a high brand advantage and higher audit quality, compared with the big four have higher competitive advantage, so even if the customer of the enterprise concentration is higher, the big four are often in a favorable position when negotiating with the enterprise, audit fees will not be lowered.

5 CONCLUSIONS

With the development of economy, enterprises in the supply chain compete more and more as a whole, and the relationship between suppliers and customers is becoming closer and closer. Good customer relationship can bring many advantages to enterprises, such as reducing the degree of financing constraints and improving the profitability of enterprises. As a stakeholder of enterprises, the decision of auditors will also be affected by the concentration of enterprises' customers. This paper makes an empirical analysis by combining customer concentration with audit fees. The results show that client concentration can significantly reduce audit fees. In addition, the effect of client concentration on the reduction of audit fees is different in whether the audit unit of the enterprise is the Big Four accounting firms. When the audit unit of the enterprise is the big four accounting firms, the effect of client concentration on the reduction of audit fees is not significant. However, in non-big four auditing firms, client concentration significantly reduces audit fees(that is, the expenditure paid by the audited entity to the auditing entity).

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