

Study on the Influence of Corporate Governance on the Sustainable Operation Ability of Coal Listed Companies in China

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Abstract

Based on the relevant data of China's coal listed companies from 2014 to 2018, this paper explores the impact of corporate governance on the sustainable operation ability of China's coal listed companies. It is found that the ownership concentration and equity balance of coal listed companies can promote the ability of sustainable operation, and the size of the board of directors has a significant negative correlation with the ability of sustainable operation. It is suggested that we should strengthen the equity concentration and equity balance, design a reasonable compensation plan for senior executives, standardize the compensation management of senior executives, give full play to the role of external audit institutions in the audit of the company's ability to continue to operate, and promote the improvement of the company's ability to continue to operate.

Keywords

Corporate governance, Coal listed companies, Sustainable operation capability.

1. Introduction

Coal is the core energy in China's energy system, which plays an important supporting role in the development of national economy. Under the influence of many uncertain factors such as coal market, the overall operational risk of coal listed companies in China has increased, the financial situation has deteriorated, and the operating performance has gradually declined. There are many reasons, not only the impact of the external environment, but also the enterprise itself. A large number of literature studies show that corporate governance defects are often the important reasons for the crisis of sustainable operation of enterprises. The implementation of corporate governance plays an important role in coal listed companies, and its incentive function for the development of companies is far higher than that of corporate management. From the perspective of corporate governance, this paper quantitatively analyzes the factors that affect the improvement of the company's ability to continue to operate, which is conducive to the establishment of a reasonable corporate governance mechanism for coal listed companies, and the promotion of enterprise managers to restrain and coordinate all relevant stakeholders. By weighing the advantages and disadvantages, the sustainable development policies and strategies are formulated and implemented in accordance with the interests of all relevant parties and the sustainable development of the enterprise in the future, which can reduce enterprise supervision. The management and agency fees can ensure the continuous growth of business performance, provide strong support for improving the sustainable operation ability of coal listed companies, and explore an efficient and green development path conducive to the sustainable development of the company.

2. Research design

2.1 Sample Selection and Data Source

This paper selects the data from 2014 to 2018 as the sample data. In view of the late listing time of individual listed companies or the lack of their own sample data, they will be eliminated. After screening, they will finally determine a total of 24 coal listed companies in Shanghai and Shenzhen

that meet the requirements. The data mainly comes from wind database, CSMAR database and Juchao information network. The processing of the original data is mainly completed through SPSS 25.0.

2.2 Variable Definition

(1) Explained variable

Going concern ability is the quantification of going concern assumption. According to the accounting standards for business enterprises, it is necessary to consider "macro-economic risk, current or long-term profitability, solvency, financial flexibility and other factors" when evaluating the sustainable operation ability of enterprises. Therefore, in the study of coal listed companies' sustainable operation ability, this paper analyzes the debt paying ability, operation ability, profitability and financial adaptability of coal listed companies.

(2) Explanatory variable

This paper selects 8 indicators to represent the governance structure of coal listed companies from four aspects: ownership structure, board structure, management incentive, and social governance. The ownership structure is reflected in the ownership concentration degree expressed by the largest shareholder's shareholding ratio, the equity balance degree expressed by the Z value and the proportion of institutional investors, etc.; the board structure is reflected in the size of the board of directors and the proportion of independent directors, etc.; In the aspect of management incentive, the salary and the number of shares held by the top three executives are reflected; The social governance factors are reflected from two aspects: the type of audit opinion and whether to employ the four major accounting firms.

Table 1 Variable Selection

Category	Name	Symbol
Explained variable	Going concern ability	Y
	Ownership concentration degree	X ₁
	Z value	X ₂
	The size of the board of directors	X ₃
	Independent directors	X ₄
	The remuneration of the top three executives	X ₅
	The number of shares held by the top three executives	X ₆
	The type of audit opinion	X ₇
	Whether to employ the four major accounting firms	X ₈

2.3 Research Hypothesis

(1) Ownership structure

The sample data of this paper is based on the proportion of the largest shareholder in the company to reflect the degree of ownership concentration. Starting from this industry, because coal listed companies are related to the foundation of national economy and the pillar of all industries in our country, they should be controlled by the state in general, so the higher the concentration of equity, the higher the degree of state control, both in supervision and management, and in actual operation are conducive to the improvement of the company's ability of sustainable operation. Z index reflects the degree of equity balance of the company, that is, the proportion of the second to the tenth largest shareholder and the first largest shareholder. If the proportion of the first largest shareholder is too high, the supervision of other shareholders on the controlling shareholders will be weakened, which may bring negative impact on the business decision-making of the company. Therefore, we propose the following assumptions:

H1: the higher the equity concentration is, the higher the company's ability of continuous operation is, that is, there is a positive correlation between them.

H2: the degree of equity balance is positively related to the company's ability of continuous operation.

(2) Board characteristics

Appropriate board size is the basic condition to ensure that the board of directors can effectively perform its duties. According to the company law, a company limited by shares must set up a board of directors. The board of directors is too large, which is likely to lead to the inefficient management and supervision of the board of directors, increase the relevant expenses of the enterprise, and have a negative impact on the sustainable operation ability of the enterprise. Most of the independent directors of listed companies are experts and scholars in economy, law, accounting and taxation. Compared with the internal directors, the independent directors are more able to give reasonable and fair supervision and evaluation to the managers, economic decision-making and the development of the company, which is more conducive to the improvement of the company's sustainable operation ability. Therefore, this paper holds that the higher the proportion of the independent directors is, the more conducive to the improvement of the company's sustainable operation ability. Therefore, this paper puts forward the hypothesis:

H3: the size of the board of directors is negatively related to the company's ability to continue as a going concern.

H4: the proportion of independent directors is positively related to the company's ability to continue as a going concern.

(3) Management incentives

For the measurement of executive compensation, we choose the total compensation of the top three executives to measure. With the increase of senior management's salary, the company's sustainable operation ability can be effectively improved. With the increase of salary, the senior management will try their best to manage the company, improve the enterprise's operation efficiency, and promote the sustainable operation ability. Executive stock ownership refers to the total number of shares held by senior managers in an enterprise. The main purpose of the enterprise's incentive to the management by increasing the shares of the enterprise is to retain and encourage the capable people to better play their own talents to serve the enterprise, to maximize the value of the shareholders of the enterprise, so that they can link their own interests with the long-term development of the enterprise, so as to ultimately improve the company's sustainable operation ability and promote long-term development . Therefore, this paper puts forward the hypothesis:

H5: there is a positive correlation between the total compensation of the top three executives and the company's ability to continue as a going concern.

H6: there is a positive correlation between the shareholding ratio of senior executives and the company's ability of continuous operation

(4) Social governance factors

The types of audit opinions in this paper include standard unqualified opinions, unqualified opinions with explanatory paragraphs and qualified opinions. Audit opinion is a comprehensive evaluation issued by an accounting firm after auditing the financial status, operating results and cash flow of an enterprise. It is of great significance for the enterprise itself and external information users to make decisions. If the enterprise is issued with non-standard audit opinion, it indicates that there is a potential crisis in the financial operation of the enterprise. If the enterprise cannot improve its current situation, the enterprise will face the risk of bankruptcy. Different accounting firms have different professional abilities. As the top representative of audit industry, the audit ability and independence of the four accounting firms are higher than that of other accounting firms in the industry. Therefore, the appointment of the four major audit businesses can give full play to its external supervision function and better urge the sound and orderly sustainable development of enterprises. Therefore, we propose the following assumptions:

H7: the type of audit opinion is negatively related to the company's ability to continue as a going concern.

H8: the appointment of four accounting firms is positively related to the sustainable operation ability of the enterprise.

2.4 Model Building

In order to study the corporate governance factors that affect the sustainable operation ability of coal listed companies, find out the significant corporate governance characteristic factors and analyze the reasons, according to the selection of explained variables and explanatory variables and the above discussion and analysis, this paper constructs a linear model as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \varepsilon$$

It is constant term; is partial regression coefficient, is random interference term, $I = 1, 2, 3, \dots, 13$.

3. Empirical Analysis

3.1 Descriptive Statistics

As can be seen from table 5.1, with regard to the equity structure of coal listed companies in China, the average shareholding ratio of controlling shareholders is as high as 55.06%, while for individuals, the largest is 73.83%, while the smallest is 30.31%, with a standard deviation of 9.73, indicating that for coal listed companies in China, the largest shareholder holds a relatively large proportion of shares, with a relatively large shareholding ratio Relatively concentrated, mainly because the coal listed companies are related to the livelihood of the country, because of the intervention of the state, leading to the relative concentration of equity. The average value of equity balance degree is 0.30, and the standard deviation is 0.27, which shows that for the coal listed companies in China, the equity balance difference between individuals is relatively small, indicating that the second to the tenth largest shareholders have a certain influence on the decision-making of the controlling shareholders, indicating that the controlling shareholders' meeting is more conducive to the development of the company due to a certain degree of restraint.

According to the statistics in the table, it can be seen that the board structure of coal enterprises can reach 17 when the number of board of directors is the largest, and the average number of board of directors of each coal enterprise is 10. This data meets the requirements of the company law for the number of directors, but the standard deviation is relatively large, which shows that the number of board of directors of each individual coal enterprise is quite different. The average proportion of independent directors is 36%, which shows that China's coal listed companies have met the requirements of "company law" on the establishment of independent directors for listed companies no less than 1 / 3.

As for the incentive of senior managers in coal enterprises, the standard deviation of senior managers' compensation in coal listed enterprises in China is relatively large, which indicates that the compensation level of senior managers in coal listed enterprises in China is quite different; as for the index of senior managers' shareholding, the standard deviation is relatively large, which shows that in order to achieve their own interests, each shareholder is required to meet the principal-agent theory mentioned above To maximize the benefits, there are great differences in the ways of equity incentive for executives.

The average value of whether to employ the four accounting firms is 0.20, that is to say, most companies of coal listed companies do not employ the four accounting firms as audit institutions, mainly because of the development of domestic accounting firms, and because most of them are controlled by state-owned enterprises and the strengthening of national supervision, which makes most of the cost of coal listed companies It's not necessary to pay a lot of money to hire the "big four".

Table 2 Descriptive Statistics of Main Variables

Name	Mean value	Maximum value	Minimum value	Standard deviation
Ownership concentration degree	55.06	73.83	30.31	9.73

Z value	0.30	1.22	0.01	0.27
The size of the board of directors	10.33	17.00	5.00	2.90
Independent directors	0.36	0.50	0.33	0.04
The remuneration of the top three executives	4.98	6.11	3.00	0.57
The number of shares held by the top three executives	0.00	0.00	0.00	0.00
The type of audit opinion	1.04	3.00	1.00	0.24
Whether to employ the four major accounting firms	55.06	73.83	30.31	9.73

3.2 Factor Analysis

The specific process of using factor analysis to evaluate the sustainable operation ability of coal enterprises is as follows:

(1)Kmo and Bartlett test

Through kmo test and Bartlett sphericity test, we can judge whether the selected financial indicators are suitable for factor analysis to extract common factors. When the kmo value is more than 0.5, it can be considered that the Bartlett test shows that sig. Is 0.000, indicating that the test results are significant, and the assumption that each variable is independent should be rejected. Kmo value is 0.580, greater than 0.5, indicating that the correlation between variables is high, so we can try to do factor model.

Table 2 Kmo and Bartlett Test

Kmo	0.580
Bartlett	Sig. 0.000

(2)Initial factor extraction and factor load matrix

The selection of principal components should follow certain principles: ① cumulative contribution rate. Generally, the cumulative contribution rate of principal components should be more than 80%. Only in this way can we retain the information of the original data as much as possible and make further reasonable explanation. The larger the cumulative contribution rate is, the more conducive to explain the research object. ② Characteristic root. The characteristic root is mainly used to indicate the degree of influence brought by the principal component. If the characteristic root is less than 1, then it means that the degree of using the principal component to explain the problem is not better than using the original variable. Therefore, we choose the value of the characteristic root greater than 1 as a standard of whether it is suitable as the principal component.

According to the results in the table, the eigenvalues of the first four factors are greater than 1, and the cumulative variance contribution rate to the original variable data reaches 78.28%. These four common factors explain 78.28% of the information of the original data, which can better reflect the content of the original data. Therefore, we choose the first four principal components T1, T2, T3, T4 to replace the original 13 indicators, all of which determine that they are suitable for factor analysis, so the final four principal components calculated by factor analysis can effectively explain the company's sustainable operation ability.

(3)Factor score and comprehensive ranking

According to the coefficient matrix in table 5.6, the expression of the factor of sustainable operation ability is obtained, so the score matrix of the factor of sustainable operation ability is as follows:

This paper needs to calculate the comprehensive score of the company's ability to continue operating, and the proportion of the 4 common factors needs to be calculated, so as to more reasonable express the influence proportion of each factor on the overall function. The calculation method of this proportion is that the variance contribution rate VI of each factor accounts for the total variance contribution rate k, so the total function calculated can be more comprehensive and complete to

express the sustainable operation ability of coal listed companies. The proportion of each main factor obtained in this paper is as follows:

3.3 Regression Analysis

Table 3 Regression Analysis Coefficient Table

Model	Non-Standardized Coefficient	Standardized Coefficient		t	Sig.	Collinearity statistics	
		B	Standard Error			VIF	
C	-3.121	0.841		-3.713	0.000		
Ownership concentration degree	0.032	0.006	0.618	5.741	0.000	0.508	1.968
Z value	0.317	0.191	0.171	1.665	0.099	0.558	1.793
The size of the board of directors	-0.032	0.015	-0.188	-2.089	0.039	0.728	1.373
Independent directors	0.502	1.175	0.038	0.427	0.670	0.744	1.344
The remuneration of the top three executives	0.070	0.077	0.08	0.910	0.365	0.768	1.302
The number of shares held by the top three executives	280.126	1419.951	0.016	0.197	0.844	0.863	1.159
The type of audit opinion	-0.495	0.170	-0.237	-2.914	0.004	0.894	1.119
Whether to employ the four major accounting firms.	-0.308	0.108	-0.247	-2.845	0.005	0.781	1.281

(1)Equity concentration

The regression coefficient of equity concentration on the company's ability to continue as a going concern is 0.032, and the probability value of significance is 0.000, indicating that the equity concentration is positively correlated with the company's ability to continue as a going concern by 1%, that is to say, the test is consistent with hypothesis 1. When the proportion of shares held by the largest shareholder increases, the more their own interests are related and unified with the overall interests of the enterprise, so they have more thoughts to understand the relevant affairs of the enterprise, and they are more concerned about the enterprises or industries related to their own shares

(2) Z index

The regression coefficient of Z index to the company's sustainable operation ability is 0.317, and the probability of significance is 0.099, indicating that Z index has a positive correlation with the company's sustainable operation ability. In modern production enterprises, the excessive concentration of equity is not conducive to the sustainable and stable operation and development of enterprises. Therefore, China's coal listed companies should continue to take certain measures to reform the existing equity checks and balances from the internal or external departments, and further improve the equity checks and balances mechanism, so as to truly play the important influence of the equity checks and balances of China's coal listed enterprises on the good development of the whole enterprise and even the whole coal industry.

(3) Board size

The regression coefficient of board size to the company's ability to continue as a going concern is -0.032, and the probability of significance is 0.039, showing a negative correlation with the company's ability to continue as a going concern. According to the data sample of China's coal listed companies, the size of the board of directors is about 10. With the expansion of the size of the board of directors, it is not conducive to the further improvement of the company's ability to continue to operate. Therefore, the size of the board of directors of the company cannot be too large, otherwise it will bring the result of the reduction of the company's ability to continue to operate because of the high cost.

(4) Proportion of independent directors

The regression coefficient of the proportion of independent directors is 0.502 and the probability of significance is 0.670, which indicates that the proportion of independent directors is positively related to the company's ability of sustainable operation, but the result is not significant. Hypothesis 7 fails the significance test. The reasons may be as follows: first, the domestic capital market of coal listed companies in China started late, the corporate governance structure was institutionalized, independent directors did not play their due role, most of the listed companies in the coal industry are state-owned enterprises, with obvious institutionalization and formalization. Second, the independence of independent directors is generally not strong, and the proportion of controlling shareholders of coal listed companies in China is too large, which restricts the independent directors to play a role to a certain extent. The supervision function of independent directors is limited by many restrictions of the management and the board of directors, which leads to their failure to give full play to their external supervision function, thus leading to the proportion of independent directors and the company's ability to continue to operate is not significant.

(5) Executive compensation

With the increase of executive compensation, the company's ability to continue to operate is not significantly improved, mainly because China's coal listed enterprises are mostly state-owned enterprises, and the compensation fluctuation is not big, so the company's ability to continue to operate cannot be improved by giving more compensation incentives to senior managers. In theory, the goal of senior management work is actually in conflict with the goal of the company's owner. At the same time, it is necessary to ensure that the performance of the next year can also be achieved. His year-end goal is not to maximize the shareholder value, but to maximize the company's profit as much as possible, which results in agency costs.

(6) Executive shareholding

The empirical results show that there is no significant correlation between ESOP and the company's ability of going concern. The reason may be that most of China's coal listed companies are state-owned holding enterprises, the salary incentive mechanism is relatively simple, the appointment of core executives is often directly appointed by the SASAC, the shareholding of executives often does not have an absolute equal relationship with the company's performance, and the incentive mechanism cannot play its real role. At the same time, the role of the state-owned company's managers under the supervision of shareholders is limited, which is easy to cause executives' inaction and misbehavior, to a certain extent, it will hinder the growth of the company, the improvement of performance, and the improvement of the company's ability to continue operating.

(7) Type of audit opinion

The regression coefficient of audit opinion type to the company's sustainable operation ability is -0.495, and the probability of significance is 0.04. The audit opinion type is positively related to the company's sustainable operation ability. Hypothesis 9 passes the significance test. To some extent, the audit opinion reflects the financial status, operating results and cash flow of the auditee. If the accounting firm issues an unqualified opinion or a qualified audit opinion with an explanatory paragraph, the so-called major uncertainty refers to the extent to which the auditor can not predict the impact of an event on the accounting statement. Some important events are not Meeting the auditing

standards may cause major doubts and major uncertainties about the ability of continuous operation. It also reflects that the company's financial operation has bad hidden dangers, which will hinder the company's future good operation and development.

(8) Employ four accounting firms

The regression coefficient of whether to hire the four accounting firms is -0.308, and the probability of significance is 0.005, indicating that whether to hire the four accounting firms has a significant negative correlation with the company's ability to continue to operate. Hypothesis 10 holds. Most of China's coal listed companies are state-owned holding companies, whose competitiveness needs to be improved. Hiring four major audit companies will increase the expenditure of enterprises, reduce the profits of enterprises and hinder the sustainable development of enterprises under the condition of stable enterprise benefits and incomes.

4. Research Conclusions and Suggestions

The sustainable operation ability of coal listed companies in China is not only related to the promotion and long-term development of the company's comprehensive competitiveness, but also to the healthy and stable development of the whole coal industry. Especially in the context of supply side structural reform, it is of great significance to improve the governance structure of coal listed companies in China and improve their sustainable operation ability. This paper empirically tests the impact of corporate governance on the sustainable operation ability of coal listed companies in China from the perspective of corporate governance, and puts forward the following suggestions based on the research topics and conclusions:

(1) Optimize equity structure and improve equity balance

The ownership structure is too centralized, and the controlling shareholders have too much discourse power, which is easy to cause the large shareholders to use improper means to erode the interests of small and medium shareholders in order to meet their own requirements, that is, the occurrence of tunnel behavior. According to the analysis of ownership concentration in this paper, more than half of the coal listed companies in China have the largest shareholder holding more than 55%, and the average holding ratio of the second to the tenth largest shareholders is about 30%, which shows that there is a serious phenomenon of "one share dominating" in China's coal listed companies. The holding ratio of the controlling shareholders is too large, and the difference between the second to the tenth largest shareholders' holding ratio and that of the controlling shareholders is too large. Obviously, this seriously hinders other major shareholders' restriction and balance on the power of controlling shareholders. Therefore, in the development of full circulation of equity, we should reduce the proportion of the largest shareholder, introduce diversified strategic investors, and develop mixed ownership management, which is conducive to the balance of the equity structure of enterprises, improve the degree of equity balance, and avoid the absolute control of large shareholders of listed companies. It is necessary for listed companies to control the shareholding ratio of the first largest shareholder in an appropriate range, play a positive and effective role in the formulation, implementation and adjustment of corporate strategies, and promote the long-term stable operation and development of enterprises.

(2) Improve the structure of the board of directors and strengthen the independence of independent directors

There is a significant negative correlation between the size of the board of directors and the company's ability to continue as a going concern. Properly reducing the number of board of directors and controlling the size of the board of directors to a certain extent can produce positive effects on the efficiency of business management decision-making and other aspects, and reduce the frequency of free riding of directors. This paper proposes to further improve the composition of the board of directors, improve the enthusiasm of the members of the board of directors, and improve the structure of the board of directors. For the independent directors, the independent directors have the duty of good faith and diligence to the company and all shareholders. However, there is a phenomenon that

independent directors are set up for the purpose of setting up in China's enterprises. In the eyes of many investors, they are only set up. Under such a social system and economic development level in China, there are too many differences among listed companies. According to the nature and structure of stock rights of listed companies, China should establish different independent director systems according to the classification of state-owned enterprises, private enterprises, equity concentration and equity dispersion, and establish corresponding compensation and punishment from the aspect of independent director compensation. The mechanism enables independent directors to be truly responsible for their own actions, and independent directors should also abide by their own professional ethics.

(3) Design a reasonable salary plan for senior executives and standardize the salary management of senior executives

At present, China is in the period of transition from traditional energy to new energy, and the development prospect of new energy is very good. However, the salary level of executives in traditional energy industry such as coal industry is relatively low in the industry, and the economic level is still far behind that of western developed countries. In order to improve the performance level of the company, it is necessary to standardize the salary incentive mechanism of executives. In view of the different attributes of coal listed enterprises and the different ways of appointing executives, we should treat the incentive of executive compensation differently. For the executives who engage in market-oriented employment, they will be given a higher social status by increasing their salary so as to better serve the enterprise. Reasonable salary structure and scheme can improve the work enthusiasm of senior executives, make them pay more attention to the future development of the company, link the development of the company with their own interests, and bring greater value to the company. It can also reduce the turnover rate of senior executives and improve the stability of the company's personnel.

(4) Give full play to the audit function of external audit institutions on the company's ability of continuous operation

For the accounting firm that performs internal control audit for the first time, when determining the level of importance and tolerable misstatement, it should pay attention to the transaction of the company and the relevant characteristics (scale and audit opinion type) of the former certified public accountant, and communicate with the former certified public accountant in a timely manner; for the continuous company audit, the certified public accountant should focus on the high-risk situation Domain, pay attention to the change of the company's financial status, business status and the company's transaction scope. At the same time, the regulatory authorities should pay attention to the firm size and audit opinion type of the company. By analyzing the audit results of coal listed companies in China and combining with the characteristics of the company, the supervision department is conducive to the improvement of the company's operating conditions, increase the profits of the enterprise under the condition of stable benefits and incomes, and play a positive role in the sustainable development of the enterprise.

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