IOSR Journal of Engineering (IOSRJEN) **www.iosrjen.org**
ISSN (e): 2250-3021, ISSN (p): 2278-8719
Vol. 06, Issue 01 (January. 2016), ||V3|| PP 01-11

Empirical Analysis of Characters of Board of Directors and Financial Performance of Oil Enterprises

ZHANG Yan-ming[1], CHENG Ze-chuan[1], LIU Duo[2]
(1. Oil economy and management institute of Northeast Petroleum University, Daqing 163318, China;
2. Heilongjiang Provincial Department of Education, Harbin 150001, China)

ABSTRACT: Owing to the oil enterprises have the mission of important energy development and energy supply, researching the influence of the characteristics of the board of directors and financial performance has a great important significance. 2007—2014 China's oil enterprises the annual and relevant report data of listed companies for oil industry in Shanghai and Shenzhen A shares are selected as research samples, describing the current situation of the characteristics of the board of directors and financial performance of oil enterprises. According to the theoretical analysis, putting forward the research hypothesis and analysing empirically the correlation and internal relation between the characteristics of the board of directors and financial performance of the oil enterprises. The results show that: the size of the board of directors and the directors shareholding ratio have a significant positive correlation with financial performance; the proportion of independent directors is negatively correlated with the financial performance, but the correlation is weak; the combination of general manager and chairman of the board was significant negatively correlated with financial performance; the frequency of the board of directors meetings is positively correlated with financial performance, but the correlation is weak. According to the analysis results, some suggestions are proposed to perfect the system of board of directors and finally to improve corporate financial performance.

Key words: *oil enterprises; the characters of the board of directors; financial performance; correlation analysis*

I. INTRODUCTION

Oil companies are important manufacturing processing enterprises about energy development and energy supply, which is an important factor affecting the economic development of our country, and the company's financial performance is an important standard to measure the development and expansion of the company. Through the correlation researches about the board of director characteristics and the financial performance of the oil companies, we can put forward the suggestion to improve the board of director characteristics and achieve the purpose of improving the financial performance of the company. Therefore, it is significant to explore the correlation between the two.

II. LITERATURE REVIEW

2.1 The relationship between the size of the board of director and the financial performance

Zhang Hai(2008), Xiang Rui(2008) that there is a certain positive correlation between the size of the board of director and financial performance, but not significant. Fan Linbang(2010) argues that the size of the board of director and financial performance is not significant statistically, and with the industry trend. Liu Li(2012), Deng Ting(2013) have come to that the size of the board of director and corporate performance is a negative correlation relationship. Chen Xianqiu(2010), Yu Xiaohong, Zhao Dang(2012), Chen Lufei(2012), Shi Dalin(2014) argue that the size of the board of director and financial performance is an inverted U-shaped relationship [1].

2.2 The relationship between the proportion of independent directors and financial performance

Chen Jun (2006) believes that the number of independent directors and financial performance of the company has a positive correlation. Lan Yujie (2007) believes that the proportion of independent directors and corporate performance has a certain positive correlation. Liu Yazheng (2009) believes that independent directors play a role in the development of the company. Gong Huifeng (2011) believes that the proportion of independent directors and corporate performance is significantly positively related to [2]. Chen Lufei (2012) empirical results show that the proportion of independent directors and corporate performance is inverted U type relationship. Yang Dian (2013) research that there is no significant correlation between the proportion of external directors and corporate performance.

2.3 The relationship between the two status and financial performance

Liu Li(2009) that the board of directors Professional Committee and chairman of the board and general manager of the setting condition has a strong policy, policy enforcement results. Two job separation has no significant impact on financial performance. Chen Zhongchang et al. (2009). Chen Xianqiu (2010), Wen Juan Dang (2010) study found that two posts together with corporate performance is negatively related; Gong Huifeng (2011), Yu Xiaohong, Chen Lufei (2012), Zhao Dang (2012), that two positions can improve financial performance; Yang Dian (2013) proposed separating the two roles on the performance of the company is opposite [3].

2.4 The relationship between frequency of meetings and financial performance of the board of directors

Shi Qiao(2009) that too many meetings may be the poor financial performance of the company's reaction, and too few meetings may failed to fulfill their duties to the board of directors. Zhang Guoyuan (2009) that the meeting of the board of directors in the company's financial performance problems, will play a significant role. At the same time, the correlation between the number of meetings of the board of directors and financial performance is not significant. Zhang Na, Zhong Liang Guan, Zhi Guang Guo (2011) found that the board meeting with the bank performance has a positive correlation, but not significant. Shi Dalin (2014) believes that there is a significant positive correlation between the number of meetings and financial performance.

2.5 The relationship between shareholding ratio and financial performance of the board of directors

April, Klein, Audit(2002) an empirical study of the results show that board members shareholding and corporate financial performance in a certain range presented positive correlation [4]. Shen Xinji (2005) that the members of the board of directors shareholding ratio is one or two times curve relationship with financial performance. Zhang Xingliang (2012) found that the proportion of the board of directors and the company's performance is significantly positively correlated [5]. Liu Zhen (2015) study found that in non state controlled companies, the board held on the relationship between R & D investment and financial performance has significant positive moderating effect; in the state-owned holding enterprises, the board of directors Shareholding on the relationship between R & D investment and corporate performance regulation are not significant [6]. At present, many scholars think Management Holdings of shares, the more it will more to create incentives, so as to improve their enthusiasm for work, and ultimately improve the enterprise performance.

III. THEORETICAL ANALYSIS AND RESEARCH HYPOTHESIS

3.1 The scale of the board of directors and financial performance

Expansion of scale of the board of directors can strengthen oversight of executives and restrict some behaviors in the business process, so as to help the management to make decisions in line with the future development of the company. And the size of the board of directors of broadening indicate that board of directors in decision-making recommendations to reference the opinions will increase, can be more effective to deal with big questions about the company's decision, so as to improve the company's financial performance [7]. Therefore, hypothesis Ⅰ: the size of the board of directors of oil companies is positively related to financial performance.

3.2 The proportion of independent directors and financial performance

In order to improve the governance structure of listed companies, the China Securities Regulatory Commission requires listed companies to establish a sound system of independent directors, the board members of the independent director ratio can not be less than one third of that of independent directors should be remained independent and play its due role in the supervision and protection of shareholders and other stakeholders interests are not violated. The participation of independent directors are often able to from the objective and professional point of view to measure a decision whether it is conducive to improve the company's financial performance. Therefore, hypothesis Ⅱ: the proportion of independent directors of oil companies and financial performance is positively related.

3.3 Two status and financial performance

If in the petroleum enterprise chairman and general manager by the same person as, the board of management and supervision of the management function will be decreased, resulting in the expansion of the general manager has a corresponding power will, chairman is unable to general manager to implement effective supervision, will reduce the company's financial performance. Therefore, hypothesis Ⅲ: the two status of the petroleum enterprises and the financial performance of the company has a reverse relationship

3.4 The number of meetings of the board of directors and financial performance

Board meeting frequency can often reflect a company's recent operation and stable state, research achievements at home and abroad, domestic listed company's board of directors will meeting most of that is "fire" in the role, the board of directors meeting more times, passed to the user information is often business crisis or major events, and some western scholars believes that meetings of the board of directors is the board of directors actively as a manifestation [8]. Therefore, hypothesis Ⅳ: the number of meetings of the board of directors of oil companies is positively related to financial performance.

3.5 Shareholding ratio and financial performance of the board of directors

Board member of the shareholding can effectively combine the interests of the director's personal interest with the enterprise, because the operating performance of the enterprise will be with the wealth of the director's own closely together. Therefore, the board of directors member holdings can play to inspire the members of the board of directors, incentive more actively participate in company issues the decision and better fulfill the responsibilities of supervision and management, the board of directors operating efficiency will be significantly improved, and enhance the enterprise's financial performance. So to improve the board of directors shareholding ratio can effectively improve the financial performance of enterprises [9]. Therefore, hypothesis V: members of the board of directors shareholding ratio is positively related with financial performance.

IV. THE CHARACTERISTICS OF THE BOARD OF DIRECTORS AND THE FINANCIAL PERFORMANCE OF THE PETROLEUM ENTERPRISES

This paper selects listed companies in 2007 - 2014 Shanghai and Shenzhen "the oil industry" plate as analysis samples, according to the time to market for oil companies to obtain all the data needed in the course of the study, excluding the data of company data. Data from the resset database, database of Tai'an and cninfo published online listing Corporation financial statements.

4.1 The status quo of the board of directors

Board of directors are elected by the general meeting of shareholders, is mainly responsible for the command and management of the business activities of enterprises, is the highest decision making body of the company, and plays a decisive role to the operation and management of the company. By the board of directors of the association of scale, the proportion of independent directors, two duty state, the board of board meetings and board member of the shareholding ratio of the five indicators to the characteristics of the board of directors carries on the elaboration, petroleum enterprise directors will present characteristics are shown in Table 1.

Table 1 Characteristics of the board of directors of oil companies

	N	minimum	maximum	average	standard deviation
Board size	132	6	15	9.872	2.284
Proportion of independent directors	132	0.273	0.500	0.372	0.048
Two duty status (for 1, no 0)	132	0	1	0.19	0.396
The number of meetings of the board of directors	132	4	17	8.132	2.597
Proportion of board of directors	132	0.000	0.435	0.160	0.213

As shown in Table 1, we can see that:

(1) The minimum number of board of directors is 6, with a maximum of 15. China's "company law" clearly provides that the of a company limited by shares, the board size must be between 5-19, so data of petroleum enterprises in within the scope of the provisions of the law value, and the mean value is 9.872, standard deviation is small, is 2.284. Explain the choice of oil companies for the size of the board of directors tend to moderate scale.

(2) The proportion of independent directors is 0.273-0.500 between the, mean to 0.372, standard deviation is small, 0.048, explicitly stipulated in the company law of the people's Republic of China, the Co., Ltd. of the independent directors should be higher than 1 / 3 of, from the point of view of the mean and the variance, most of oil companies are in line with the provisions, less than 1 / 3 of the company accounts for the statistical data.

(3) Two post synthetic state in 81% of data is 0, that 19% of the data is two positions, indicating that the vast majority of the oil companies are in the two duty state of separation. But the oil companies announced financial report data of corporate governance structure can be seen, there are a handful of petroleum enterprises choose to let the deputy chairman of the board of directors or the board of directors of other members as the general manager of the company.

(4) The number of meetings of the board of directors in the range of 4-17 times, the mean is 8.132, the standard deviation of 2.597. According to the "company law" in China, Co., Ltd. annual meeting of directors will meetings shall be not less than 2 times, so oil company directors will meetings is relatively concentrated, the board of directors meetings are in line with the provisions of the company law.

(5) Director will be member of the shareholding proportion were not higher than those by 43.5%, the average was 16.0%, the board members of a higher percentage of ownership it is easy to cause the board members of the board of directors or the enterprise control, proportion is too low will not to members of the incentives for the board of directors, incentive to its better performance in corporate decision-making and supervision role.

4.2 Financial performance status

The financial performance is the enterprise strategy and its implementation and execution are the final performance contribution of [10]. The petroleum business enterprise financial performance status description source of main indexes in the database and the financial report data, and through the calculation of financial reporting data gets the financial analysis index. Were mainly from the four levels of debt paying ability, operating ability, profitability and anti risk ability of financial performance indicators calculation and description of the present situation of financial performance. The present situation of the financial performance of petroleum enterprises is shown in table 2:

Table 2 Financial performance status of Petroleum Enterprises

	N	minimum	maximum	average	standard deviation
Current ratio	132	0.202	88.768	2.239	8.522
Asset-liability ratio	132	0.012	1.246	0.489	0.196
Equity ratio	132	0.011	4.750	1.255	0.964
Equity multiplier	132	1.014	5.823	2.501	1.041
Cash flow debt ratio	132	-0.362	17.281	0.412	1.551
Turnover of current assets	132	0.022	8.835	2.937	1.713
Turnover of total capital	132	0.017	4.883	1.021	0.778
Inventory turnover	132	0.309	66.143	11.572	10.703
Return on net assets	132	-0.871	0.431	0.045	0.149
Return on total asset	132	-0.217	0.221	0.034	0.062
Earnings per share	132	-1.323	1.778	0.198	0.371
Cost profit margin	132	-1.000	1.006	0.052	0.161
Asset value preservation and increment rate	132	0.439	3.449	1.188	0.441
Main business growth rate	132	-1.003	61.987	0.689	5.519
Net cash flow per share	132	-1.559	2.173	0.487	0.549

According to table 2:

(1) Solvency, flow ratio, asset liability ratio, equity ratio, equity multiplier, cash flow, debt ratio of mean respectively 2.239, 0.489, 1.255, 2501, 0.412. Show that petroleum enterprise short-term debt paying ability is strong, long-term debt paying ability general, more corporate debt and this will make petroleum enterprise financial leverage rate is relatively high, eventually led to the increase of financial risk.

(2) Operational ability, the mean value of the inventory turnover rate for 11.572, inventory turnover rate the higher the no long-term backlog of inventory, the operation of the company. The mean value of the current assets turnover ratio, total assets turnover rate were 2.937, 1.021, the values were greater than 1, indicating that the oil companies pay more attention to the management of assets operation and asset value, so as to guarantee the shareholder rights and interests are not compromised.

(3) In terms of profitability, petroleum enterprise net assets income rate, the average rate of return on total assets respectively 0.045 and 0.034, the numerical maintained at a lower level, showed that petroleum enterprise

income is weak, that oil industry is relative to earnings lower industry. In addition, petroleum enterprises of average earnings per share was 0.198, maintained at a relatively high standard that oil companies pay more attention to the protection of shareholder returns.

(4) The ability to resist risks, the oil company's main business growth rate, increasing the value of assets rate of mean respectively 0.689, 1188, show that petroleum enterprise development level is relatively high. The per share net operating cash flow is 0.487. Higher values, indicating that the petroleum enterprise's cash flow situation well, can make the oil companies to the healthy and stable development.

V. STUDY PROCESS AND RESULT ANALYSIS

5.1 Variable selection

(1) Explained variable

In the current literature, the commonly used performance measure indicators include taking Tobin Q value, earnings per share (EPS), rate of return on net assets (ROE) and economic value added (EVA), the application of these indicators and improve the people's understanding of the performance. At present, most studies generally to net assets income rate as the index to measure the performance, this article uses the index to measure the financial performance of petroleum enterprises in our country. See table 3.

(2) Explanatory variables

Members of the sub board of directors in the proportion of the sum of composition: the board of directors of the board of directors on the basis of the literature at home and abroad, will reflect the oil enterprises characteristics of the explanatory variables are defined as follows: ①the size of the board of directors of the number; ② the independent directors, independent directors in petroleum enterprise total number of accounts for the proportion; ③two duty state: Chairman of the board of directors and the general manager of the two roles is, when two position temporarily, selection of data for 1, two duty temporarily, data selection is 0; ④the board of directors meetings: the annual board of directors held a number of meetings; ⑤board member of the shareholding ratio: the board of directors total holdings of shares in the company's total number of shares accounted for the proportion of [11]. See table 3.

(3) Control variables

For the petroleum enterprise board characteristics and financial performance of the regression coefficient can accurately reflect the relationship between the two, so as to increase the other possible factors that affect the financial performance, were selected as control variables: ①An enterprise scale, that is the natural logarithm of total assets. The board of directors it takes more bigger decision-making time, thereby increasing the cost for coordination and communication board. But the size of the board of directors to expand the scale of economic benefits, so that enterprises gain additional revenue. Therefore, there is a certain relationship between enterprise scale and financial and performance. ②The growth of the enterprise, refers to the representative development stage of enterprise, is mainly used to measure the operating income growth rate. The growth index can eliminate the effects of human disturbance on the behavior of financial data results in a certain extent.

Table 3 expression and interpretation of variables

Variable type	Variable name	Expre	Variable interpretation
Explained variable	Financial effects	ROE	Return on net assets
Explanatory variable	Board size	DG	The number of board of directors
	Proportion of independent directors	DL	Total number of independent directors / board of directors
	Two state of unity	LH	When the joining together of two position, is 1; both out at that time, 0
	Number of meetings of the board of directors	HY	Board meeting within the year
	Proportion of board of directors	YG	The board members of the number of shares of the company in proportion to the total number of shares
Control variable	Enterprise size	QG	The natural logarithm of total assets
	Enterprise growth	CZ	Operating income growth rate

5.2 Model design

When doing regression analysis in this paper the financial performance as the dependent variable, the board of directors characteristics as independent variables, and control variables together build model as follows:

$$ROE=\beta_0+\beta_1*DG+\beta_2*DL+\beta_3*LH+\beta_4*HY+\beta_5*YG+\beta_6*QG+\beta_7*CZ+\varepsilon$$

Type, β0 as intercept, β_1-β_7 as the regression coefficient; ε as the random error term.

5.3 Correlation analysis

At present, a lot of the academic research of correlation analysis is used to measure the strength of the linear correlation between variables, the Pearson correlation analysis between the variables to examine the correlation coefficient between the variables to verify the existence of multiple linear problem, whether there is a causal relationship. Table 4 lists the variable correlation relationship.

Table 4 variables correlation analysis table

		ROE	DG	DL	LH	HY	YG	QG	CZ
ROE	P	1							
	Sig.								
DG	P	.209**	1						
	Sig.	0.008							
DL	P	-.412**	.583	1					
	Sig.	0.006	0.623						
LH	P	.405**	.039**	-.154	1				
	Sig.	0.004	0.007	0.127					
HY	P	.178**	.331**	-.247	.270**	1			
	Sig.	0.003	0.001	0.314	0.007				
YG	P	.192**	.259**	-.109	.232**	.405**	1		
	Sig.	0.006	0.01	0.281	0.008	0.002			
QG	P	-.017	.225	.443**	.122	.097**	-.059	1	

	Sig.	0.87	0.25	0.008	0.527	0.002	0.561		
CZ	P	.344	.259**	.099	.453*	.738**	.433**	.130	1
	Sig.	0.625	0.01	0.327	0.031	0.003	0.003	0.199	

Through correlation table can draw the following conclusion:

The explanatory variables such as: the board size, the joining together of two job status, number of board meeting, the board of directors is stake and explained variable roe exist positive correlation, while the proportion of independent directors are negatively related to its, enterprise scale and enterprise growth control variables are positively related to the net assets yield significantly. In general also has significant correlation between the explanatory variables, which provides guarantee for the validity of the regression analysis.

5.4 The empirical result analysis

After setting based on the empirical model, then use SPSS software to regression analysis on the sample data, through the variable intercept random effects model regression results as shown in table 5:

Table 5 Regression results of the model

Variable	Coefficient	Standard error	t	Sig.
(Constant)	-0.147	0.185	-0.792	0.389
DG	0.218	0.083	2.541	0.014
DL	-0.051	0.064	-0.779	0.453
LH	-0.046	0.021	2.442	0.016
HY	0.106	0.077	1.382	0.171
YG	0.216	0.091	2.405	0.017
QG	0.003	0.009	0.328	0.736
CZ	0.001	0.002	1.422	0.157
Adj-R^2		0.263		
F		10.523		
Sig.		0.019		

It can be seen from table 5:

(1) Directors the regression coefficient of the size variable is positive, that petroleum enterprise directors there was a positive correlation between firm size and financial performance and the variable through the significant test. Therefore, the empirical results show that the board of directors of the larger, corporate financial performance better. Therefore, accept the assumption I.

(2) The regression coefficient between the proportion of independent directors and corporate financial performance is negative, indicating that the petroleum enterprises in the proportion of independent directors and corporate performance is negatively correlated, but its absence through significant test, shows that in the proportion of independent directors in the petroleum enterprises accounted for less and less, better financial performance is not feasible. Therefore, rejected the hypothesis Ⅱ.

(3) Two post synthetic state and corporate financial performance of regression coefficient is negative, indicates that in the listed family firms chairman and general manager are combined to improve the financial performance of the companies, and through a significant test, therefore, accept the hypothesis III.

(4) The board meetings and corporate financial performance of regression coefficient is positive, indicating that

petroleum enterprise board meeting more times, the better the financial performance of the enterprise, but the relationship between the two does not have significant. This indicates that many directors meeting and not on the financial performance of enterprises have a greater impact, the cost to far outweigh the benefits. Therefore, the number of meetings of the board of directors and financial performance is positively related to the argument is not necessarily correct. Therefore, rejected the hypothesis Ⅳ.

(5) Director between members of the shareholding and corporate financial performance of regression coefficient is positive, that petroleum enterprise board members holding ratio is high, enterprise financial performance is better and the variable through the significant test, at the 5% level of significant positive correlation. Therefore, accept the hypothesis of V.

VI. CONCLUSION AND SUGGESTION

6.1 Research conclusion

An empirical analysis of feature and financial performance through the petroleum enterprise's board of directors, the conclusion can be obtained as follows: An Empirical study:

(1) The scale of the board of petroleum enterprises has a significant positive effect on financial performance. Board of directors of the larger, which means get a more expert advice in the decisions of the board of directors, which greatly improves the decision of the board of directors is reasonable and scientific, so as to improve the efficiency of corporate governance, finally to corporate financial performance to the certain positive role.

(2) The proportion of independent directors and corporate financial performance is not significantly negative correlation. That oil companies are not of independent directors, and the important role of get the attention it deserves, some oil companies the proportion of the independent directors has not yet reached the provisions of the state, some even reached the corresponding proportion, but independent directors in the board of directors did not play its due role, because of the independent director system in the petroleum enterprises should arouse the attention of the corresponding management departments.

(3) The two status of the post and the enterprise financial performance is a significant negative correlation. In petroleum enterprises, the two posts together a less proportion, most oil companies set up separately the position of chairman and general manager. The empirical results can also be seen, the duty of the state is not conducive to the improvement of financial performance, namely, the separation of the two duty state can further improve the financial performance.

(4) The number of meetings and the financial performance of enterprises is not significant positive correlation. The board of directors meeting more times will make the directors will members can timely on the inside and outside enterprises making decision for major matters, also can timely find problems existing in the management and corporate financial performance is better. However, more and more of the directors will be meeting times made the board of directors members have to spend time and energy to solve has been the emergence of various problems, so from the perspective of the board of directors meetings more, the time and cost to is far greater than the income. The relationship between the number of meetings of the board of directors and corporate financial performance is not clear.

(5) The shareholding ratio of the board of directors has a significant positive correlation with the corporate financial performance. Board member of the shareholding can effectively the director of personal interests and corporate financial performance together, can play to encourage the board members, encourage the more active the involved in major strategic issues of the decision and better perform the responsibility of supervision and management, so as to improve the governance efficiency of the board of directors, and further enhance the corporate performance.

6.2 Related suggestions

(1) The size of the board of directors. Petroleum enterprises should choose appropriate board size, the number of directors will number will increase the company's communication and coordination costs. For China's petroleum enterprises shall, according to the characteristics of the industry, the company's stage of development and scale to select a suitable for the company's board of directors will scale, so as to fully improve the effectiveness of the board's decision.

(2) To improve the independent director system, and give full play to the role of independent directors. Independent directors as business management experts to provide professional suggestion for the management and decision-making of the enterprise, and to supervise the managers of the enterprise. For the oil companies, first of all, we should according to the provisions of the relevant laws and regulations of the state, establish and perfect the system of independent directors, independent directors to participate in the enterprise production and management decision-making.

(3) To avoid the two. For petroleum enterprises, most of the companies did not let the chairman held the post of general manager, but the description of the characteristics of the present situation of the board of directors of the front, there are a few oil company vice chairman of the board of directors or the board of directors of other members to undertake, general manager of such a phenomenon, this will lead to the petroleum enterprise board of directors and the supervisory role of the management decentralization is reduced, is not conducive to the improvement of the financial performance of the company. So for the oil companies to avoid the chairman and general manager of the two job is more perfect.

(4) To improve the quality of the board meeting and to reduce the unnecessary meetings. To improve the efficiency of the work of the board of directors, first of all to avoid held unnecessary meetings of the board of directors, the board of directors meetings are not held, the more the better; secondly to continue to improve the evaluation system of the board of directors and improve the board will so members of the quality and ability. Finally, to achieve the purpose of improving financial performance.

(5) Reasonable optimization of the board of directors shareholding ratio. Because there was a significant positive correlation between the financial performance of shareholding and corporate members, so should increase the director of board of directors of petroleum enterprises shareholding ratio, but also to consider the rationality of the proportion of shares held by directors. Reasonable shareholding ratio of the director's personal business interests and interests together, so as to better coordination of directors will and conflict of interest between shareholders, directors incentive from a long-term point of view to consider problems for the company, to prevent short-term behavior, to improve financial performance has played a positive role.

REFERENCES

[1] Shi Dalin. Equity concentration, the relationship between the board characteristics and corporate performance study [J]. Journal of northeast university of finance and economics, 2014 (91):28-33.

[2] Gong Huifeng. Characteristics of the board of directors of the listed companies and corporate performance empirical study [J], business research, 2011(10):56-62.

[3] Chen Lufei. Gem board characteristics and corporate performance empirical research [J]. Journal of hainan finance, 2012(8): 59-63.

[4] April, Klein, Audit. Committee board of director characteristics and earnings management[J]. Journal of Accounting and Economic, 2002 (8):378-400.

[5] Zhang Xingliang. Characteristics of the board of directors of the listed companies and corporate performance [J]. Journal of accounting, 2012(2) : 59-61.

[6] Liu Zhen. The board of directors characteristics on the relationship between r&d investment and corporate performance adjustment effect research [J]. Journal of accounting, 2015(6): 51-55.

[7] Zhang Yanming, Zhang Bingru etc. Corporate social responsibility and financial performance relation theory research [J]. Journal of accounting, 2012(11): 38-39.

[8] Zheng Shiqiao, Jiang Hongqiao, Wang Jianjun. Study on the relationship between the number of the board of directors and corporate performance [J]. Journal of accounting, 2010(1): 99-105.

[9] Zhu Song. Corporate social responsibility evaluation and surplus information content, market [J]. Journal of accounting research, 2011(11): 27-34.

[10] Zhang Zhaoguo, Liu Xiaoxia, Zhang Qing. Corporate social responsibility and financial management change, based on the research of stakeholder theory [J]. Journal of accounting research, 2009(3): 54-59.

[11] Zhang Yanming, Cheng Zechuan etc. Corporate governance structure and petroleum enterprise social responsibility [J]. Journal of China petroleum university (social science edition), 2015(1): 11-17.