

2014

# BioTechnology

*An Indian Journal*

FULL PAPER

BTAIJ, 10(8), 2014 [2319-2326]

## Empirical research on voluntary information disclosure——empirical evidence from listed company in technology industry

Jiemei Zhang\*, Like Li

Business Management Institute of Henan University, Kaifeng, (CHINA)

E-mail : [jiemei1226@163.com](mailto:jiemei1226@163.com)

### ABSTRACT

The board of directors is the core of corporate governance, which plays an important role in supervising the managers to generate the periodic reports and final disclosure, and the board characteristics affect voluntary disclosure degree. In China, the empirical analysis of the board characteristics affecting voluntary disclosure degree is seldom, especially from the board characteristics variables such as the board meetings, the proportion of stockholding directors variables. By researching the listed companies in Technology Industry from 2005 to 2006, this paper shows that: The proportion of independent directors and stockholding directors have significant positive correlation with voluntary disclosure level; CEO duality has significant negative correlation with voluntary disclosure level; The board size and meetings have no significant correlation with voluntary disclosure level. We can find defects in board system through studying the relationships between board characteristics and voluntary disclosure, which has great realistic meaning for perfecting the board system contribution.

### KEYWORDS

Voluntary disclosure; Board characteristics; Listed company.



## INTRODUCTION

The disclosures in Listed Company are divided into mandatory disclosure and voluntary disclosure according to whether they are controlled or not. Mandatory disclosure is the information must be disclosed by the requirements of laws and regulations. Voluntary disclosure is the information actively disclosed by listed company basing on the motive of company image, investor relationship, avoiding litigation risk etc, which is beyond mandatory disclose. But it does not mean that all of the information beyond mandatory disclosure is voluntary disclosure. The information of voluntary disclosure shall has value relevance and can help the investors and the creditors investigate the company strategic, the key management factors, the competitive environment、 the frame of making decisions as well as the processes made by company to make sure the sustainable management.

By researching the relationships between the board characteristics and voluntary disclosure, we can find defects in board system, and it also has great realistic meaning for perfecting the board system contribution. By researching the relationship between board characteristics and voluntary disclosure based on the theoretical and empirical, this paper tries to provide some empirical evidences for the board reformation and voluntary disclosure system construction in China's listed company from board size, independence, incentive mechanism and disposing capacity etc, and then promoting the development of voluntary disclosure in China's listed companies, which is helpful to improve the information quality and the current information disclosure environment.

## THEORETICAL BASIS

### **The influence of voluntary information disclosure**

The voluntary disclosure is an important component elements in China's stock market, which has been sustainable concerned by investors and academic circles. In China, with the constant development and fast maturity of capital market, there are also many malignant events take place in listed companies, which damage investors' benefits. Therefore, the investors will urgently ask for more information from company, with their increasing enthusiasm to participate in company and the improvement of professional quality, which is to say that the mandatory disclosure cannot meet their individual and specialized demands. Under this background and trend, the listed company will actively disclose information with the consideration of company image etc.

The listed company voluntary disclosure will improve its reputation and image and then increase the company value further. The listed company is a member of society, excepting for pursuing the maximize profits, it ought to undertake some social responsibilities such as environmental protection, community security etc. The listed company actively discloses the information about social responsibility can make all of the stakeholders benefit from its profit creative behavior not just the investors, which can improve its image and public trust.

The listed company's voluntary disclosure will reduce the litigation costs to a certain extent. Through disclosing company's disadvantage information in advance, the company can remind investors of the investment risk and making rational investment, by which can reduce or avoid the pleading costs. Kasznik & Lev and Skinner point out that voluntary disclosure can reduce the litigation costs. Skinner points out that although disclosure in advance cannot avoid litigation, at least it can reduce the litigation costs and economic losses. And disclosure is also helpful to maintain company's reputation.

### **The influence factors of voluntary disclosure**

The researchers have great difficulties in studying voluntary disclosure due to the regulations of mandatory disclosure are different in each countries, and it is also difficult to compare the analysis results with others because there is a great difference between them. Under this existing studying situation, some researchers begin to investigate voluntary disclosure from the aspects such as macro environment and accounting. For example, Forker has studied the effect of different accounting

management system and disclosure system on voluntary disclosure. Yan Huahai points out that most of the studies focus on company level, and what's more, on company characteristics such as company size and performance. Yan's research shows that:

Firstly, company size is the key factor which influences voluntary disclosure. Because the big company pays more attention to its society image and reputation, communicating well with investors by voluntary disclosure is an very effective mean for big company to shape a good social image and improve reputation. So the bigger the company is, the higher disclosure willingness it becomes.

Secondly, the content and method of voluntary disclosure is different in the listed companies of different industries. Because of the difference between industries, although in same industry, each company has its own means to win the competition advantage, for the sake of security, the content and method of voluntary disclosure has great different in listed company. For example, the new Hi-Tech and Start-Up companies are more active to disclose the information of capital manpower such as famous scientists. But, for protecting the competition advantage, traditional companies relatively unwilling to voluntary disclose the information of capital manpower which can bring them great value. And the monopoly industry will disclose more because of less competitors and low diffusion cost.

Thirdly, the company performance will affect the content and method of voluntary disclosure in listed company. If the company's performance is good, its profitability will be stronger, its disclosure willingness will be higher and the managers will prefer to disclose earning forecast information. On the contrary, the companies often postpone or conceal the information as possible as they can.

Most of the studies on voluntary disclosure above are focus on company level, what's more on company characteristics such as company size and performance. Comparatively speaking, how to research the effects of board characteristics on the content and method of voluntary disclosure in listed company from company governance theory, and more concretely from the board characteristics, is worth studying further. Therefore, basing on it, this paper focus on the empirical evidences from listed companies in technology industry, studying the influence mechanism of board characteristics on voluntary disclosure, which can compensate the shortage of existing studies to a certain extent.

## **RESEARCH HYPOTHESIS**

### **Board size**

The board keeping small size is helpful to improve the efficiency. Beasley found that the board size has positive correlation with financial report fraud, that is to say, if the board size increases, the probability of financial report fraud will increase, too. Shen Yifeng etc hold that one of the reasons for failed governance of directors in ST is the board oversize. Although the board size in China's company is small, it is relatively big compared with S&P. And the board oversize is an important factor which blocks the improvement of board effectiveness, because excessive directors may cause the delay of decision time and the decrease of decision quality, also including the information disclosure decision. With these considerations, I put forward this hypothesis:

H1: the board size has significant negative correlation with voluntary disclosure.

### **The board meetings**

The directors who meet each other frequently can perform their duty well on supervising the managers' governance to consider the stockholders' benefits. The more times they meet, the more active and effective their supervise become. Therefore, the board which meets frequently may transfer more voluntary disclosure to the market. So I put forward this hypothesis:

H2: The board meetings have significant positive correlation with voluntary disclosure.

### **The proportion of stockholding directors**

Under the incentive mechanism in China at present, the incentive for inside directors or outside directors are all not enough, and directors holding stock is an effective way to incentive directors

to improve the company and board performance. As the senior manager of company, the board holds the company stock, in order to protect their own benefits, they will have a higher motivation to supervise managers, to improve the internal control governance level and the financial report quality, from which can enhance their accountability to improve the information disclosure level. Therefore, expecting the proportion of stockholding directors can help listed company to improve its voluntary disclosure degree. So, I put forward this hypothesis:

H3: The proportion of stockholding directors has significant positive correlation with voluntary disclosure.

### **The proportion of independent directors**

Because the independent directors don't serve on listed company and have less correlation with managers, they can supervise the economic activities, putting forward some objective and constructive suggestions. Besides, in order to protect their images, independent directors will enhance their supervision on company's management, and promote the disclosure to be more timely and reliable, by which can improve the content of voluntary disclosure. Thus, independent director system is taken as an effective tool to supervise managers. The improvement of the proportion of independent directors is helpful to strengthen the board being objective and independent, increasing the influence of independent directors, and then influence the management decision made by the board. So, I put forward this hypothesis:

H4: The proportion of independent directors has positive correlation with voluntary disclosure.

### **CEO duality**

The agent theory holds the idea that the combination of chairman and general manager will weaken the monitoring ability of the board, which lead the company to conceal disadvantage information. Forker (1992) proposes that CEO duality has threatened monitoring quality, so it has significant negative correlation with voluntary disclosure. If the chairman dominates the board and supervise the managers' economic activities, in some extent, it will directly influence the information supervisory role of board when chairman and general manager be one person, for the sake of themselves, the chairman is more likely to push the company false disclose and reduce the information disclosure degree. So, I put forward this hypothesis:

H4: CEO duality has negative correlation with voluntary disclosure.

## **SAMPLE SELECTION AND VARIABLE DESIGN**

### **Sample selection**

This paper takes the year of 2005 and 2006 as time window. Getting rid of the companies which are ST, PT and data missing, the author selects 125 companies in Technology Industry as research samples. In periodical reports, the information disclosure of annual reports often becomes the most effective information source for public investors which they can understand. So, the data collected to evaluate the voluntary disclosure index VDS are all from annual reports by hand. The sample data in this paper are from ShangHai stock market (<http://www.sse.com.cn>), ShenZhen stock market (<http://www.sse.org.cn>) and CNINFO (<http://www.cninfo.com.cn>). These data are analyzed with multiple regression by SPSS13.0 software. The reason why the author selects Technology Industry as research sample is that: in ce many companies in Technology Industry are listed abroad and its voluntary disclosure level is higher than others, it is good for improving the content data of the explained variable VDS; It is likely to appear the difference of information disclosure format between different industries if selecting all industries as sample; But if using only one standard, it is also likely to lead to large industry error in classification standard of voluntary information; (3) Because Technology Industry is a new High-Tech industry which shows a higher level in high technology, stuff qualification and knowledge system, as well as it tries hard to absorb oversea experience for company management and management operation etc, so the variables in Technology Industry will be more typicality.

## Variable design

### (1) The explained variable – voluntary information disclosure index(VDS)

Most of the existing studies use Botosan voluntary disclosure index to evaluate the voluntary disclosure level of listed company. But, the foreign index system is not suit for China's listed company, for the degree of capital market in China is not so high as in England and America, the motivation of voluntary disclosure is not strong, too; It is difficult to get data from the actual studies on China's listed company, and sometimes even cannot get the data. Since Chinese information disclosure system is always strict with the company financial information disclosure, we think the non-financial information is the research emphasis of voluntary disclosure. Combined with Professor Ma Lianfu's research, we divide the content of voluntary disclosure into two categories: strategic information and social information, with 9 indexes in total, and define the voluntary disclosure index as  $VDS = VD / MVD$ , of which, VD is the sum of scores in voluntary project which has been disclosed by listed company, MVD is the sum of scores in voluntary project which the company makes the most possible to disclose in annual report, VDS represents the voluntary disclosure level.

### (2) Explanatory variables

The explanatory variables in this research are the board size, the board meetings, the proportion of stockholding directors, the proportion of independent directors. And the dummy variable is CEO duality, which is to say that if CEO duality, assign one, if not, assign zero.

### (3) Control variables

The control variables in this research are company size, return on capital, big-fours. And the dummy variable is big-four, if the company's auditor is belongs to big-four, assign one, if not, assign zero. The reason why take company size as control variable is that it can influence the voluntary disclosure level. Compared with small company, the big company's business scope is so multiple that it can provide more sources for voluntary disclosure content; The big company's ownership structure is so complicate that it creates more external information demands; The big company's information management system is more perfect, the cost on information handling is relative low so it can provide necessary support for voluntary disclosure. Besides, disclosing information externally is probably due to the competitors scramble for financial resources. Since the public and regulation law draw less attention to small company, it may get no advantage to scramble for resources despite disclosing more information, and the cost on disclosure is relative high, so the net income it can get from increasing disclosure is less. The big company is much easier to be noticed by the public and regulation law, at the same time, the larger the size is, the greater the independence and needs for external foud will become, so it has high motivation to disclose more information, to reduce the agency cost due to asymmetry, and then get the public supports.

So, we construct model A and model B to make empirical test on the collected data:

Model A:  $VDS = \beta_0 + \beta_1 DSIZE + \beta_2 MEETING + \beta_3 DRO + \beta_4 IDE + \beta_5 CEO + \varepsilon$

Model B:  $VDS = \beta_0 + \beta_1 DSIZE + \beta_2 MEETING + \beta_3 DRO + \beta_4 IDE + \beta_5 CEO + \beta_6 LNSIZE + \beta_7 ROE + \beta_8 BIG4 + \varepsilon$

## EMPIRICAL RESULTS AND ANALYSIS

### Descriptive statistics

The TABLE 1 gives the descriptive statistics analysis of each variables in sample companies. According to the result, the variation of voluntary disclosure index VDS in China's listed companies is great. Among them, ZTE corporation gets the highest score 0.72, and the other one gets the lowest score 0.11, the average is 0.389, so the disclosure is not ideal. The average board size is 9.477, min 6 persons and max 15 persons, meeting the rules which the director numbers shall range from 6 to 15 required by Chinese Company Low. The board meeting averages 7.641 times, the proportion of stockholding directors averages 18.115 %, which indicates that most of directors haven't hold company

shares. The proportion of independent directors is about 35.238%, the standard difference is only 0.037, it follows that the proportion of independent directors in China's listed company floats slightly around the legal level of 33 % basically. The CEO duality company is 25%, which is reducing significantly. Besides, the net rate asset yield of the listed companies in Technology Industry averages 4.083 %, but the company which retains the big-fours to audit is only about 7.4 %.

TABLE 1 : Descriptive Statistics

Variable name	Variable definition	minimum	maximum	average	Standard difference
VDS	The degree of voluntary information disclosure	0.11	0.72	0.389	0.164
DSIZE	The board size	6	15	9.477	2.054
MEETING	The board meeting	4	16	7.641	3.423
DR0	the proportion of stockholding directors in board (%)	0	67	18.115	21.398
IDE	The proportion of independent directors in board (%)	30	45	35.238	3.733
CEO	CEO Duality	0	1	0.208	0.409
SIZE	Company size (the logarithms of assets)	19.506	26.280	21.165	1.169
ROE	The net rate asset yield (%)	-31.98	22.01	4.083	7.492
BIG4	The big-fours	0	1	0.074	0.264

### Correlation analysis

The TABLE 2 gives the correlation coefficient of variables. The TABLE 3 shows that variable VDS has positive correlation with DRO and IDE, and has negative correlation with CEO. The test results conform to the hypothesis H3, H4, H5 and the correlation coefficient is statistically significant at 5% at least. In addition, VDS has significant positive correlation with control variable SIZE and ROE. The research made by Hossain etc shows that as long as the coefficient between explanatory variables does not exceed 0.8, it will have no influence on multiple regression analysis. All of the correlation coefficients between explanatory variables in study are below 0.5, so they have no influence on multiple regression result.

TABLE 2 : Correlations

	VDS	DSIZE	MEETING	DRO	IDE	CEO	SIZE	ROE	BIG4
VDS	1.000	0.030	-0.150	0.258*	0.332**	-0.222*	0.306**	0.263*	0.406
ONE TAILED TEST	.	0.404	0.112	0.018	0.003	0.035	0.006	0.016	0.160
DSIZE		1.000	0.154	-0.067	-0.161	-0.228*	0.294**	-0.005	0.017
ONE TAILED TEST		.	0.107	0.295	0.096	0.032	0.008	0.485	0.446
MEETING			1.000	-0.213*	-0.011	-0.119	0.106	-0.176	-0.137
ONE TAILED TEST			.	0.042	0.465	0.169	0.197	0.077	0.134
DRO				1.000	-0.089	-0.020	-0.153	0.332**	-0.011
ONE TAILED TEST				.	0.238	0.436	0.108	0.003	0.465
IDE					1.000	0.205*	0.166	0.075	0.350**
ONE TAILED TEST					.	0.048	0.090	0.274	0.002
CEO						1.000	-0.225*	0.102	-0.006
ONE TAILED TEST						.	0.033	0.205	0.480
SIZE							1.000	0.002	0.511**
ONE TAILED TEST							.	0.492	0.000
ROE								1.000	0.131
ONE TAILED TEST								.	0.144
BIG4									1.000
ONE TAILED TEST									.

Note : \* is statistically significant at 5% level (one tailed test); \*\* is statistically significant at 1% level (one tailed test).

The TABLE 3 shows that the multiple regression results of model A and model B. In model A and model B, the adjusted R<sup>2</sup> are 30.3% and 39.9%, suggesting that the variable, board characteristic, has a strong explanation capability for voluntary disclosure level; F value are 9.897 and 14.554, and all significant at 1 % level, suggesting that the two models's overall regressiveness result is significant; The value of all variance inflation factors in models are less than 2, suggesting that there is no multicollinearity problem which influences the coefficient estimates. In the variable of board characteristic, the coefficients of DRO, IDE and CEO are statistically significant at 5% level, and the symbols also in the same director which is expected. But the coefficients of the rest variables are all significant at bigger than 10% level, which have no significant influence on voluntary disclosure level. From the control variables we can find that the larger the size is, the higher the disclosure level becomes, and voluntary disclosure has no significant correlation with profitability and auditor's reputation.

**TABLE 3 : Least Squares Regression for Determinants of VDS**

Hypothesis	Explanatory Variables	Expected direction	Model A		Model B	
			B(t)	VIF	B(T)	VIF
	Constant		-0.279 (-1.623)	1.094	-.907** (-2.10)	1.197
H1	DSIZE	-	0.014 (1.470)	1.069	0.006 (0.646)	1.134
H2	MEETING	+	-0.004 (-0.672)	1.099	-0.003 (-0.461)	1.247
H3	IDE	+	0.014** (2.742)	1.061	0.009* (1.735)	1.206
H4	DRO	+	0.002** (2.763)	1.080	0.002** (2.249)	1.168
H5	CEO	-	-0.082* (-1.69)	1.094	-0.107** (-2.284)	1.661
	SIZE	+			0.041** (2.521)	1.178
	ROE	+			0.003 (1.031)	1.608
	BIG4	+			0.077 (0.903)	1.197
	R <sup>2</sup>			0.326		0.419
	Adj- R <sup>2</sup>			0.303		0.399
	Statistic F(sig value)			9.897 (<0.001)		14.554 (<0.000)

Note: \* is statistically significant at 5% level (one tailed test); \*\* is statistically significant at 1% level (one tailed test).

## CONCLUSION

This study investigates the content and times of voluntary disclosure in Technology Industry, meanwhile investigates the effects on the voluntary disclosure degree from the board size, independent, incentive mechanism and disposing capacity etc. And the obtained conclusions as follows: Firstly, although the listed company in Technology Industry more or less voluntarily disclose some information, overall, the motive of voluntary disclosure is lack and the degree is not only low but also varies vastly from company to company. Secondly, the board size has no significant correlation with voluntary disclosure. It is possibly because the directors in big board size have more representativeness, specialized knowledge and experience while the small ones are more efficient, both the big size and the small size have their own advantages and disadvantages. Thirdly, the board meetings have no significant correlation with voluntary disclosure. Because the board meeting times cannot reflect the board efficiency level, and lots of meetings probably indicate lots of problems in company. Fourthly, the higher proportion of shareholding directors, the higher degree of voluntary disclosure will

become. It indicates that the directors holding company shares will have a much stronger motive to supervise and require the managers to disclose more information.

### ACKNOWLEDGMENT

The completion of this paper owes the great help from Prof. Wei Chenglong at Henan University and Associate Prof. Jiaohao at Beijing Normal University, who have given theoretical and practical guidance.

### REFERENCES

- [1] FASB. Improving Business Reporting: Insights into Enhancing Voluntary Disclosures, Steering Committee Report Business Reporting Research Project, 2001 FORKER J.J. Corporate Governance and Disclosure Quality, *Accounting and Business Research*, **86**, 111-124 (1992).
- [2] S.M.Simon, Kar Shun Wong; A study of the relationship between corporate governance structures and the extent of voluntary disclosure, *European Accounting Review*, **10**, 139-156 (2001).
- [3] S.Lim, Z.Matolcsy; The Association between Board Composition and Different Types of Voluntary Disclosure, *European Accounting Review*, **3**, 555-583 (2007).
- [4] Beasley S.Mark; An Empirical Analysis of the Relation between Board of Director Composition and Financial Statement Fraud, *The Accounting Review*, **10**, 443-465.
- [5] C.A.Botosan; Disclosure Level and the Cost of Equity Capital, *The Accounting Review*, **7**, 323-349 (1997).
- [6] E.F.Fama, M.C.Jensen; Separation of ownership and control, *Journal of Law and Economics*, **2**, 301- 325 (1983).
- [7] J.P.Chen, Charles, Jaggi Bikki; The Association between independent non- executive directors, family control and financial disclosures, *Journal of Accounting and Public policy*, **19**, 285- 310 (2000).
- [8] S.M.Simon, Kar Shun Wong. A study of the relationship between corporate governance structures and the extent of voluntary disclosure, *Journal of International Accounting, Auditing & Taxation*, **10**, 139 -156 (2001).
- [9] J.J.Forker; Corporate governance and disclosure quality, *Accounting and Business Research*, **86**, 111- 124 (1992).
- [10] M.Hossain, M.Perera; Disclosure in Annual Reports of New Zealand Companies, *Journal of International Financial Management and Accounting*, **23(2)**, 69-85 (1995).
- [11] Yan Huahai; The research and development of the problem of voluntary disclosure, **10**, 42-48 (2004).
- [12] Shen Yifeng, Zhang Junsheng; On the Reason of Weak Corporate Governance The analysis of several reasons for the board governance failure in ST company, *Securities Market Herald*, **3**, 21-25 (2002).
- [13] Li Yuxiang, Fu Xiuming, Peng Cong, Li Liming; The empirical analysis of corporate governance and voluntary disclosure in China, *Journal of Chongqing University*, **12**, 4-7 (2004).
- [14] Du Shujie; The empirical analysis of the relationship between the proportion of independent directors and the extent of voluntary disclosure in listed company [J]. *Inner Mongolia Science & Technology and Economy*, **1**,34-36 (2005).
- [15] Zhong Weiqiang, Zhang Tianxi, Zhang Yanni; Voluntary disclosure and Corporate governance [J]. *Journal of Management Sciences*, **6**, 81-87 (2006).
- [16] Ma Lianfu, Zhao Ying; The non-financial information disclosure index and empirical research based on investor relations management strategy [J]. *Journal of Management Sciences*, **4**, 86-96 (2007).
- [17] Wang Huaiming, Su Jingxiang; The board characteristics and corporate voluntary disclosure, **3**, 73-76 (2007).