

Research on environmental accounting information disclosure of listed companies in textile industry

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Abstract. The textile industry is one of the heavy polluting industries in China. It is also one of the industries that the state clearly requires to disclose environmental information on a regular basis. Firstly, this paper analyzes the annual report and social responsibility report of listed companies in Shenzhen and Shanghai main-board textile industry. Then it points out that the disclosure of listed companies in China's textile industry is still existing in the optional way of disclosure, disclosure content is not standard and other problems. Finally, suggestions on rational use of environmental regulation tools and strengthening the construction of environmental audit system are put forward.

Keywords: Environmental accounting; Textile industry; Information disclosure.

1. Introduction

At present, the country has introduced a lot of policies related to environmental protection. On September 20, 2017, the Ministry of Industry and Information Technology issued the Textile Industry Development Plan (2016-2020), which clearly pointed out that the textile industry should be promoted to save energy and reduce emissions[1]. On January 1, 2018, the Environmental Protection Tax Law of the People's Republic of China was formally implemented. On September 30, 2018, the China Securities Regulatory Commission (CSRC) released the revised Code on Corporate Governance for Listed Companies (CGLS), stating that listed companies should disclose environmental information and fulfill social responsibilities[2].

The textile industry is one of the heavy polluting industries in China. It is also one of the industries that the state clearly requires to disclose environmental information on a regular basis. So, the research on its environmental information disclosure is particularly important.

2. Literature review

The theory of foreign environmental accounting is more mature. Gokce (2015) focuses on the general concepts of environmental accounting and reveals the importance of environmental accounting[3]. Hanifa (2015) adopted the quantum method to study the impact of environmental accounting on the earnings and stock price rise of Indonesian industrial companies[4].Tarus (2019) et al. believe that improving the education level of the board of directors is conducive to improving the disclosure level of environmental information[5].Md. Musharof Hossain (2019) studied 16 of the most polluting enterprises in Bangladesh. He believes that environmental accounting is faced with challenges such as cost, manpower and lack of rules, and emphasizes the important role accountants play in environmental accounting and reporting[6].

China's environmental accounting started late. In terms of disclosure content, Fanli Meng (1999) believes that the financial impact and environmental performance of environmental problems should be included[7].In terms of disclosure methods, Lianhua Li et al.(2001) proposed that environmental accounting information can be disclosed by means of environmental balance sheet, cost table, emission table, policy report, etc[8].Xu Xin(2009) proposed that environmental accounting information disclosure should include two modes: independent environmental accounting report and supplementary environmental accounting report[9].

In terms of disclosure, Jianxin Geng et al. (2002) selected 30 samples from heavily polluting enterprises for analysis and put forward suggestions such as the introduction of classification

standards for heavily polluting industries and the improvement of financial and accounting regulations related to financial protection. They mainly analyze the contents of disclosure, but lack the analysis of the method and quality of disclosure[10]. Fumin Liu et al. (2019) studied the listed companies in the coal industry as samples, and designed environmental statements[11], but they lacked research on the quality of disclosure. Yuan Yuan and Gaoliang Tian (2019) found through empirical test that enhancing the comparable performance of accounting information can improve the operating efficiency of capital market to some extent [12]. Therefore, in the study of disclosure problems, we should also analyze the quality of disclosure.

According to the investigation, most of the existing literatures are researches on part of the heavy pollution industry listed companies, but there is no special research on all listed companies in the textile industry. In view of this, this paper takes the listed companies in the textile industry of Shenzhen and Shanghai main boards as samples to conduct detailed research, analyze their existing problems and put forward corresponding suggestions.

3. Analysis of Disclosure Status

3.1 Sample selection

According to ‘The Industrial Classification of the Listed Companies in the Third Quarter of 2020’ published by the CSRC, there are 38 listed companies in the textile industry in the manufacturing industry. Eliminating two special-treatment (ST) listed company, 1 listed company within 1 year, 10 Small and Medium Enterprise Board companies and 5 the gem companies, the remaining 20 listed companies were selected as samples. Environmental information is clearly required to be disclosed in CGLS released in 2018. For the veracity of comparing the initiative of enterprises to disclose information and the implementation of relevant policies, the annual reports and social responsibility reports from 2017 to 2019 were selected for comparative analysis. The data are mainly from Shanghai Stock Exchange, Shenzhen Stock Exchange, Juchao Information Network, etc.

3.2 Analysis of Disclosure Methods

Table 1. Statistical table of disclosure methods

Project		2017		2018		2019	
		Num	Pro	Num	Pro	Num	Pro
The annual report	Company Business Profile	7	35%	9	45%	7	35%
	Business situation discussion and analysis	10	50%	10	50%	12	60%
	Important items	15	75%	17	85%	17	85%
	Financial report	13	65%	15	75%	14	70%
Social responsibility report		3	15%	4	20%	5	25%

From Table 1, most of the listed companies in Chinese textile industry began to disclose environmental information. However, there is no independent module for centralized disclosure, the information is distributed in the whole text. It is also rarely disclosed independently in social responsibility reports.

In 2019, of the 20 listed companies surveyed, 17 companies (85%) disclosed environmental information in matters of importance, 14 companies (70%) disclosed it in their financial reports, and only 7 companies (35%) disclosed it in the company's business summary. In the important matters and financial report part, it mainly involves quantitative environmental accounting information, such as the treatment of pollutants, sewage charges, environmental protection fees, etc. In the company's business summary and business situation discussion and analysis part, mainly involved in qualitative environmental accounting information, such as the enterprise's environmental protection development concept, enterprise's environmental protection projects. The choice of disclosure means that enterprises begin to disclose more quantitative environmental information and the form of disclosure is gradually standardized.

From the vertical comparison, the environmental accounting information disclosure of sample enterprises is good, and the number of enterprises disclosed shows an increasing trend. The increase was mainly in 2018, which indicated that the formal implementation of environmental protection tax and other policies played a certain role in promoting the disclosure of environmental accounting information of enterprises. However, it is worth noting that there are still some listed companies that do not disclose environmental information.

3.3 Analysis of Disclosure Content

Table 2. Statistical tables of Disclosure content

Project	2017		2018		2019	
	Num	Pro	Num	Pro	Num	Pro
ISO environmental certification system	6	30%	8	40%	7	35%
Environmental protection concept and targets	10	50%	13	65%	13	65%
Technology research and R&D investment in environmental protection	10	50%	7	35%	8	40%
Environmental protection risk	4	20%	4	20%	3	15%
Projects under construction	0	0%	1	5%	1	5%
Environmental protection tax	—	—	11	55%	12	60%
Pollutant emissions	12	60%	15	75%	16	80%
Cost of sewage discharge	7	35%	9	45%	7	35%
Government subsidies for environmental protection	12	60%	13	65%	12	60%

The environmental protection tax was not formally implemented until January 1, 2018.

As shown in Table 2 16 listed companies disclosed pollutant emissions in 2019, accounting for 80%. This indicates that with the promotion of the policy, enterprises begin to pay attention to the disclosure of pollutant emissions. But the level of detail companies disclose about their emissions varies. Only a small number of enterprises have detailed disclosure of pollutant emission concentration and total amount. The disclosure of some enterprises is relatively rough, some listed the emission concentration, but did not quantify the total amount of emissions. As disclosed by Huamao Co., Ltd. (000850) : "Total emissions of waste gas, noise, solid waste and waste water from Liuyang Xinlei Mining Development Co., Ltd. : Cu $\leq$ 0.0762t/a, Zn $\leq$ 0.2286t/a, As $\leq$ 0.0152t /a, Cd $\leq$ 0.0015t /a, Pb $\leq$ 0.0152t /a; Total approved emission: Cu $\leq$ 0.0762t/a, Zn $\leq$ 0.2286t/a, As $\leq$ 0.0152 t/a, Cd $\leq$ 0.0015 t/a, Pb $\leq$ 0.0152 t/a, Fluoride $\leq$ 0.3048t/a, CO $\leq$ 0.1524 t/a, and COD $\leq$ 6.096 t/a ". It is only in a very rough way that the pollutant does not exceed the standard discharge. However, it did not give specific data on total emissions, which could not be further compared with similar companies. Similarly, listed companies such as Hangmin (600987) list the total amount of pollutants discharged, but do not specify the pollutant emission concentration, making it impossible for information users to carry out a comprehensive comparative analysis of the pollutant emission situation of different companies.

The second is the disclosure of environmental protection concept and targets. However, the information related to the concept of environmental protection development is mainly qualitative disclosure, without substantial comparative significance. The least disclosed project is under construction. From 2017 to 2019, only one listed company disclosed environmental accounting information in the project under construction. In addition, in the disclosed investment in environmental technology research and development, many enterprises simply explain the environmental protection part of the project, and do not quantify the amount of the environmental protection part.

Longitudinal, from 2017 to 2019, the number of companies disclosed generally shows an increasing trend year by year. Among them, the biggest increase is the concept of environmental development and pollutant emissions. These indicate that enterprises begin to pay attention to environmental protection issues, but the specific disclosure of the normative content is insufficient. Further guidance from national policies is needed.

3.4 Disclosure Quality Analysis

The statistics of disclosure method and content can not fully evaluate the level of environmental accounting information disclosure. Therefore, on this basis, academia will generally further consider the quality of information disclosure[13]. This paper evaluates the quality of environmental accounting information disclosure of listed companies in the textile industry by combining Content Analysis and Analytic Hierarchy Process (AHP). The specific quality evaluation index system is shown in Table 3.

Table3. Disclosure of quality evaluation index system

Level	Index	Evaluation standard	
Environmental management	ISO environmental certification system	Quantization (Q)	Content information is assigned 2 points, and pure text information is assigned 1 points
	The development concept and goal of environmental protection		
	Technology research and R&D investment in environmental protection		
	Environmental protection risk	significant (S)	Disclosure in both the annual report and social responsibility report at the same time is assigned 2 points, and disclosure in only one of the annual report or social responsibility report is assigned 1 points.
	Projects under construction		
Pollution control	Environmental protection tax	Time (T)	Past information is assigned 3 points, future information 2 points, and present information 1 point.
	Pollutant discharge		
	Cost of sewage discharge		
Environmental benefits	Government subsidies for environmental protection		

There are nine indicators in Table 3, each with a weight of 1. When each indicator is disclosed, the highest score for a single indicator is 7 and the lowest score is 3. Score 0 for non-disclosure. In particular, it is significant to note that the environmental protection tax was not implemented in 2017, so the score of this indicator in 2017 was 0. The score statistics of environmental accounting information disclosure quality index of all sample enterprises from 2017 to 2019 are shown in Table 4.

Table 4. Quality of environmental accounting information disclosure

Level		2017			2018			2019		
		Q	S	T	Q	S	T	Q	S	T
Environmental management	Ave	1.4	1.6	3.15	1.7	2.1	3.95	1.6	1.95	3.9
	Maximum proportion	14%	16%	21%	17%	21%	26%	16%	20%	26%
Pollution control	Ave	1.9	1.0	2.85	3.4	1.75	5.1	3.5	1.85	5.25
	Maximum proportion	48%	25%	48%	57%	29%	57%	58%	31%	58%
Environmental benefits	Ave	1.2	0.6	1.8	1.3	0.65	1.95	1.2	0.6	1.8
	Maximum proportion	60%	30%	60%	65%	33%	65%	60%	30%	60%

From Table IV, the overall quality score of environmental information disclosure is low. Although the part of environmental management discloses more items, the individual score is low. This shows that the disclosure of environmental management is mostly qualitative, lack of quantitative description. And it is mainly for the present and future information, the information that actually happened in the past is less disclosed. As a result, it is difficult for information users to compare various enterprises, and it is difficult to judge the actual environmental information disclosure of enterprises. The disclosure quality of the pollution prevention part is good, mainly because the emission of pollutants by enterprises has always been the focus of environmental protection and regulatory authorities[14]. However, there are still some enterprises to the pollution control part of the lack of disclosure, resulting in the overall score is not high. The disclosure of environmental subsidies is good. To some extent, this shows that enterprises avoid important matters and neglect important matters in environmental information disclosure, and disclose more positive information

such as government subsidies. However, on the whole, the environmental information disclosed by enterprises scores very low in significance. This is because many enterprises only disclose information in their annual reports, but less in their social responsibility reports, which causes some difficulties in the effective use of information.

From a vertical perspective, due to the implementation of more environmental policies in 2018, the quality of corporate information disclosure has significantly improved in 2018. This indicates that enterprises are not active enough in the disclosure of environmental information. Therefore, the government should further strengthen the implementation of the policy.

4. Problems Existing In Environmental Accounting Information Disclosure

The development of environmental accounting in China is relatively late. It was only in 1992 that Jiashu Ge and Ruoshan Li, leading figures in the accounting department of Xiamen University, published relevant papers [15] that environmental accounting theory was formally introduced into China. At present, China's environmental accounting information disclosure system is not complete, leading to enterprises cannot actively, normative disclosure of relevant information. The problems in the process of disclosure are mainly reflected in the following aspects.

4.1 The choice of disclosure method is arbitrary

The main ways of disclosure include annual report, social responsibility report, etc. Most listed companies use annual reports for disclosure. In the annual report, the enterprise may, according to its own needs, choose to make disclosure in one or more parts of the company's business summary, business situation discussion and analysis, important matters and financial report. As a result, the locations of disclosure are scattered and the ways of disclosure are not fixed, which is highly arbitrary[16]. Decentralized information disclosure will cause great difficulties to the users of accounting information. In addition, the length of the annual report itself is long. It will consume a lot of energy for users to sort out and analyze the information successively, and cannot guarantee the integrity of the information obtained.

4.2 Disclosure content is not normative

1) Disclosure is selective

In the revised CGLS published by CSRC in September 2018, it only stipulated that listed companies need to disclose environmental information, but did not provide detailed provisions on the specific content to be disclosed and the punishment for failure to disclose[17]. This has led many companies to be selective about what they disclose for the purpose of "profit maximization". For example, enterprises will disclose more positive information such as protection concept, protection development goals, protection projects and protection technology research, while they will not disclose negative information such as environmental compensation and litigation costs.

As a result, the information users can't understand the enterprise's environmental information comprehensively and objectively, and can't evaluate the enterprise's environmental performance objectively.

2) Qualitative and quantitative description is not normative

Environmental information can be described either quantitatively or qualitatively. Only a small number of enterprises listed the name of the environmental protection project and the specific amount of investment. However, there are still most enterprises only mention the environmental protection investment in the part of R&D investment. They highlighted their efforts and expected goals in environmental protection projects, but did not specify the names of specific projects or the amount of money invested.

As a result, the environmental accounting information disclosed by different enterprises cannot be compared quantitatively and the efforts made by enterprises in environmental protection cannot be correctly evaluated.

3) The selection of measurement objects is not standardized

When describing the same index, different enterprises choose different measurement objects. For example, when explaining the pollutant emission, some enterprises explain the pollutant emission types and total amount in detail. However, the classification of pollutants in some enterprises is relatively rough, and only lists the total amount of pollutants such as waste water and waste gas, without further explaining the specific types and emissions. The measurement objects selected by different enterprises in different years are not necessarily the same.

This leads to the lack of comparability of the information disclosed. Information users cannot fully compare the environmental information of different companies or even the same company in different years to make the right decisions.

5. Suggestions

5.1 Rational use of environmental regulation tools

"Porter Hypothesis" believes that a reasonably designed environmental regulation can achieve a win-win situation between environmental benefits and economic benefits [18]. The command-type environmental regulations represented by legislative means such as pollutant discharge fee and environmental protection tax have been gradually implemented, but still need to be further strengthened. At the same time, incentive environmental regulation tools such as emission trading should be used reasonably to encourage enterprises to disclose environmental information spontaneously. The implementation of emission trading can control the emission of some pollutants [19], and the government should set up a large emission trading market nationwide to strengthen the regulation of market mechanism on enterprises' disclosure of environmental information.

5.2 Strengthen public oversight and improve the environmental audit system

At present, the Chinese government has not set up a full-time environmental accounting audit institution [20]. However, it is far from enough to rely only on the active disclosure of enterprises and the compulsory implementation of government policies. The state should strengthen the construction of environmental audit system and rely on external professional audit institutions to identify the relevant information disclosed by enterprises, and issue audit opinions, so as to ensure the authenticity and usability of information.

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