

Current Situation and Consequences of Environmental Information Disclosure in China's Automobile Manufacturing Industry

--Taking SAIC Motor Corporation Limited as an Example

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Abstract: A sincere commitment to establishing a community of human destiny is made through achieving carbon peak and carbon neutrality. Following the pace of affluent nations, China has incorporated carbon peak and carbon neutrality into overall economic and social development. Environmental information disclosure is the most basic and major part of environmental accounting, following the sustainable development strategy because of daily accounting supervision and accounting. In this research, a case study of SAIC Group's environmental information disclosure in China from 2019 to 2022 is chosen, and analyzes SAIC Group's operating capacity, profitability, solvency and development capacity by combining information asymmetry theory and stakeholder theory. This paper investigates the roots of environmental information disclosure in the automobile manufacturing industry, chooses a representative SAIC Group to summarize its environmental information disclosure, assesses the current level of corporate environmental information disclosure, and provides relevant departments with pointers and relates for the development of an environmental information disclosure system for enterprises in this industry. Finally, optimization recommendations are offered for the growth of listed businesses' environmental information disclosure in China's vehicle manufacturing sector.

Keywords: Environmental disclosure, automobile manufacturing industry, financial indicators, case study

1. Introduction

China has incorporated carbon peak and carbon neutrality into overall economic and social development, headed by a full green transformation of economic and social development, and prioritized green and low-carbon energy development. China has consistently pursued a high-quality development path that is environmentally responsible, green, and low-carbon. Therefore, this paper selects Chinese listed companies (SAIC) as the target of investigation, which has certain reference significance for developing countries and emerging economies.

Environmental information disclosure is mainly based on daily accounting supervision and accounting, following the sustainable development strategy, responding the consumption and

compensation of environmental resources to information users, and disclosing the fulfillment of social responsibility of enterprises in the process of using environmental resources. The practice of environmental information disclosure by Chinese enterprises started relatively late, and there is a considerable distance from the level of developed countries. There are many problems in the disclosure process, such as disclosure of mostly qualitative information while little quantitative information, lack of data support, etc. Exploring the influencing factors that prevent Chinese businesses from disclosing environmental information and optimizing listed companies' disclosure of environmental information are of utmost importance, for promoting and improving the standardization of environmental information disclosure system in China and even developing countries.

2. Literature Review

2.1. Theoretical Research on the Development of Environmental Information Disclosure

The idea of environmental information disclosure originally became popular in Western nations, when it was introduced as a result of studies on environmental accounting. In the 1950s, the western economy expanded quickly, the increasingly advanced modern industry has provided human society with abundant material products, but at the same time, there are numerous pollution incidents, so the ecological environment has been seriously damaged, to solve this contradiction, the synchronized growth of financial markets and ecology is now receiving attention from western academicians. Rob and Dave analyzed the lack of financial accounting theories from the point of view of fiduciary responsibility, elaborated on the social responsibility that enterprises should undertake, and explored the basic theories of environmental reporting. Ge was the first person to establish the concept of environmental accounting in China [1]. Xu pointed out that environmental accounting includes accounting recognition, measurement and reporting, but also the occurrence of environmental matters, measured uniformly in monetary terms, to form an environmental accounting report [2]. Meng suggested that the establishment of environmental accounting, the main and most basic is the disclosure of environmental accounting information [3]. Zhang and Yan pointed out the asymmetric situation of internal and external information and the problem of inadequate content of external information disclosure [4].

2.2. Research on the Contents and Methods of Environmental Information Disclosure

Geng and Jiao argued that the complete environmental information disclosure content of A listed firm should disclose environmental liabilities and expenditures in the financial statements and notes, as well as concerns about the environment and their effects, environmental countermeasures, and initiatives [5]. Suresh et al. noted that the company's annual report's disclosure of environmental accounting information is inadequate, and that disclosure methods need to be diversified. And that companies should have independent environmental reports such as social responsibility reports to effectively disclose environmental accounting information [6]. Huang pointed out that environmental accounting information should not only contain environmental assets, liabilities, costs, etc., but also statistical description of specific carbon emissions [7]. Li, after comparing Chinese and other countries' enterprises, found that very few domestic enterprises have set up environmental protection departments internally [8]. Liu proposed that it should be based on the comprehensive classification of enterprises, different environmental disclosure methods and contents should be adopted for different industries, and different industries should meet different regulatory requirements for the disclosure model of corporate environmental accounting information [9]. Zhan empirically studied two companies, SAIC in China and General Motors in the United States, using the comparative method. It was found that Chinese companies mainly use qualitative methods to disclose information,

although American-based companies typically combine quantitative and qualitative ways to share information with the public [10].

3. Overview of Environmental Information Disclosure in the Automobile Manufacturing Industry

According to the China Statistics Bureau, in 2021, the value added of China's automobile manufacturing industry above scale increased by 5.5% year-on-year. The operating revenue of industrial enterprises above scale in the automobile manufacturing industry was 8.67 trillion yuan, up 6.7% year-on-year, and the total profit was 530.57 billion yuan, up 1.7% year-on-year. The world's largest vehicle manufacturing and consumer market, China will have 281 million cars on the road by the end of 2020. China's auto industry has entered a key phase of transition from rapid connectivity expansion to high-quality development. and carbon emission reduction in the automobile industry is crucial to China's ability to successfully achieve carbon peak. The automobile sector has established a variety of green and low-carbon development benchmarks, built 312 green factories and 52 green supply chains, and developed 129 different types of green-designed goods throughout the 13th Five-Year Plan Era.

3.1. Introduction of SAIC Motor Corporation Limited

SAIC Motor Corporation Limited (SAIC, stock symbol 600104), China's largest publicly traded vehicle firm by production and sales volume, has formed a business pattern of synergistic development of six major segments, including vehicle business, parts and components, mobility and services, finance, international operations, and innovation and technology. SAIC takes "Leading Green Technology and Dreaming of Wonderful Mobility" as its vision and mission, and "Customer Oriented, Partnership and Innovation" as its values. Vision, mission and values are the core of SAIC's corporate culture concept system.

During the reporting period, the Company adhered to the principles of "truthfulness, accuracy, completeness, timeliness and fairness", and strictly complied with the relevant regulations on information disclosure, and completed the disclosure of 4 periodic reports and 69 ad hoc announcements through the website of the Stock Exchange and designated newspapers, and continuously improved the quality of information disclosure, and there was no corrective announcement during the reporting period to ensure the quality of information disclosure. No corrective announcements were published during the reporting period, thus ensuring the quality of information disclosure, and the Company has been rated as "Listed Company Information Disclosure Class A" by the Shanghai Stock Exchange for 8 consecutive years.

3.2. Overview of SAIC's Environmental Information Disclosure

This section will analyze SAIC's annual report and social responsibility report from two content dimensions.

3.2.1. Annual Financial Report

In SAIC's annual financial report, the part of environmental information disclosure is reflected in the "Environment and Social Responsibility" section. SAIC has established mechanisms for environmental protection and invested 532.51 million RMB in environmental protection during the 2022 reporting period. The following is a detailed explanation of the four sections.

(1) The environmental protection agency has announced the company's and its major subsidiaries' environmental protection statuses as key emission units.

Environmental impact assessments of construction projects and other administrative environmental protection licenses, environmental emergency preparedness plans, environmental self-monitoring programs, and SAIC's data on emissions are all covered in this section.

(2) Other than priority emission units, companies' environmental protection is described.

This section applies to the disclosure of other environmental information with reference to key emission units.

The Company, as a leading automobile group in China, fosters further improvement and transformation by firmly enforcing a number of environmental emission requirements and keeping up with the ISO14001 environmental management system, treating environmental protection standards and planning as a crucial component of company development and fully incorporating them into the Company's operational decision-making as well as the connected firms' medium- and long-term business development planning. It will help SAIC reach the high-end level of the industry in terms of environmental protection and manufacturing capacity and create value for all parties in the society.

(3) Information conducive to the protection of ecology, prevention of pollution and fulfillment of environmental responsibility.

During the reporting period, the Company urged its enterprises to strictly comply with environmental protection laws and regulations, improved the environmental management system, increased employee knowledge of the environment, and raised the standard of professionalism of the enterprise's environmental protection leadership team, upgrading environmental protection technologies and organizing environmental protection training. The company continued to encourage the development of green factories, green goods, green parks, and green supply chains, as well as the notion of sustainable development.

(4) Effects of the actions made to reduce its carbon emissions during the reporting period.

In order to cut its carbon dioxide emissions by a total of 92,338 tons in 2022, SAIC has implemented carbon reduction initiatives. Utilizing clean energy for power generation, incorporating carbon reduction technologies into the manufacturing process, and creating and manufacturing new goods that help reduce carbon emissions are some examples of the several sorts of carbon reduction methods.

3.2.2. Social Responsibility Report

This paper compiles SAIC's environmental disclosures for the period 2019-2022 (Table 1):

Table 1: Disclosure of environmental information in SAIC's social responsibility report, 2019-2022.

Vintages	Content of environmental information disclosure in social responsibility reports			
2019	Environmental Management 1.System construction 2.Environmental Management System 3.Environmental theme activities 4.Specialized environmental training 5.Green Development System 6.Project EIA	New Energy Vehicle 1.Development Strategy 2.Product R&D	Energy saving and emission reduction 1.Reduce energy consumption 2.Reduce emissions	Environmental Practices 1.Green Office 2.Green Travel 3.Environmental Public Welfare Actions

Table 1: (continued).

2020	<p>Green Travel</p> <ol style="list-style-type: none"> Promote new energy development strategy through multiple lines of action Leading a quality traveling lifestyle 	<p>Green Development</p> <ol style="list-style-type: none"> System construction Energy saving and consumption reduction Emission Reduction 	<p>Green Home</p> <ol style="list-style-type: none"> Green Office Theme Activities Public Welfare Action 	
2021	<p>A New Journey of Green Development</p> <ol style="list-style-type: none"> New Energy Vehicle Development Environmental Technology R&D 	<p>Green Manufacturing Re-Upgrade</p> <ol style="list-style-type: none"> Saving energy resources Strengthen pollution prevention and control Developing Circular Economy 	<p>Green Management Strong Guarantee</p> <ol style="list-style-type: none"> Environmental monitoring program Environmental emergency response mechanism Environmental information disclosure Energy efficiency management platform 	<p>Green Travel is Lower Carbon; Green Finance for Development; Green Idea into the hearts of the people.</p>
2022	<p>Low Carbon Travel</p> <ol style="list-style-type: none"> New Energy Products New Energy Technology Fuel Cell Technology Frontier Technology Exploration 	<p>Cleaner Production</p> <ol style="list-style-type: none"> Energy management Emission Management Green factory construction Development of Circular Economy 	<p>Green Practices</p> <ol style="list-style-type: none"> Advocating Green Mobility Explore Green Financial Services Green concepts are deeply rooted in people's hearts 	

During the reporting period, SAIC's pollution prevention and control facilities and equipment were fully installed, environmental protection facilities and equipment were in good operation, and the legal and safe disposal rate of hazardous wastes was 100%; the concentration of major pollutant emissions met the standards in accordance with the environmental protection laws and regulations, and there was no exceeding of the standards.

SAIC-GM Finance actively responds to the national "dual-carbon" strategy, explores and innovates green financing tools, and contributes to the long-term and healthy development of new energy vehicles. In 2022, SAIC Finance issued two green bonds and asset-backed securities with a total size of RMB 2 billion. The successful issuance of these two green products is of great significance, creating a number of "firsts". Firstly, "Rongteng Tongyuan 2022 Phase I Green Asset-Backed Securities for Individual Auto Mortgage Loans" is the first asset-backed securities issued in the Shanghai Free Trade Zone, and all the funds raised will be invested in new energy vehicle loans.

Secondly, the green RMB bond issued in Hong Kong is the first product issued by the Company in the offshore capital market and the first overseas bond issued by a domestic auto finance company. The successful issuance of the two green products reflects SAIC Finance's active exploration and contribution to green environmental protection. The background of "carbon peak and carbon neutral" and sustainable development provide great support for the profitable and environmentally friendly growth of SAIC's new energy vehicle sector in general.

4. Analysis of Financial Indicators of SAIC after Environmental Information Disclosure

4.1. Operation Capacity

Accounts receivable turnover ratio, inventory turnover ratio, current asset turnover ratio, fixed asset turnover ratio, and total asset turnover ratio, these major operational capacity indicators reflect the ability of the enterprise in the process of operation. The degree of change of the indicators reacting to the operational capacity of SAIC Group from 2019 to 2022 varies. Among them, with an overall drop of 7.23 times, the accounts receivable turnover ratio exhibits a downward trend in variation. Inventory turnover ratio shows an overall decreasing trend, with the highest value occurring in 2019 and decreasing to the lowest value in 2022, falling 3.83 times during the study period. Current Asset Turnover and Total Asset Turnover showed a general downward trend with a slower decline, decreasing by 0.43 times and 0.25 times respectively during the study period. Fixed asset turnover ratio decreased from 10.86 times in 2019 to 9.15 times in 2022. This reveals that SAIC's inventory turnover has been progressively slower in recent years, and its liquidity is not as good as in 2019. Because of the epidemic's effects in recent years, the overall development of the automobile manufacturing industry has been hindered, so SAIC's performance in terms of operational capacity is not as good as before, SAIC but the overall trend is smoother. SAIC actively cooperates with the national environmental management and other policies, and actively participates in environmental public welfare activities to assist in promoting the corporation's growth that is sustainable, and its credibility has improved (see Table 2).

Table 2: SAIC's Operating Capacity Indicators, 2019-2022 (Unit: times).

	2019	2020	2021	2022
Accounts receivable turnover	20.29	17.02	16.69	13.06
Inventory turnover	12.81	10.43	10.90	8.98
Current assets turnover rate	1.71	1.34	1.37	1.28
Fixed Assets Turnover Ratio	10.86	8.71	9.42	9.15
Total Assets Turnover Ratio	1.01	0.82	0.83	0.76

4.2. Profitability

Operating profit margin, net profit margin, gross profit margin, and total return on assets among the four critical profitability indicators that primarily indicate an enterprise's capacity for profit. According to the 2019-2022 SAIC profitability line graph reflects that all four indicators show a downward trend, but the magnitude is not the same.

During the study period 2019-2022, SAIC's operating profit margin showed a maximum value of 5.45% in 2021, and the lowest value appeared in 2022, and the operating profit margin in 2022 decreased by 1.84% compared to 2021. Net profit margin shows a downward trend in volatility, decreasing by 0.87% from 3.10% in 2019 to 2.23% in 2022. Gross Profit Margin has shown the highest decline over the study period from 12.15% in 2019 to 9.61% in 2022, a decline of 2.54% over

the four-year period. The highest value of the return on total assets occurs in 2021, and the indicator shows a downward trend in volatility, with an overall decrease of 1.69%.

From the analysis of the indicators of SAIC's profitability in 2019-2022, it can be seen that SAIC's ability to gain profit shows a downward trend compared to 2019, but in 2021 the ability to gain profit has an upward trend. SAIC Group's profitability is affected by factors external to the company as well as internal factors. External factors mainly include China's economic development into a new normal, and the lack of power of mass consumption. Internal factors mainly include the large proportion of corporate R&D expenses and environmental protection capital investment, so the net sales margin is affected. It can be obtained from the analysis of the annual report and social responsibility report of the company in 2022.

4.2.1. Corporate R&D Expenses

In view of the development characteristics of the industry, new energy vehicles continue to grow explosively, and SAIC is actively seizing the opportunities for change in new energy and intelligent internet technology, and playing to the competitive advantages of the local supply chain. 2022 SAIC invested RMB 18,030,919,437.98 in R&D expenses, with a total of 34,800 R&D personnel, and the number of R&D personnel accounted for 16.1% of the company's total headcount.

4.2.2. Environmental and Social Responsibility

In order to fully support the development of an environmental protection system and carefully implement various environmental protection policies, SAIC has established a dedicated environmental protection leading group and working group. In 2022, SAIC invested RMB 532.51 million in environmental protection. SAIC invested a total of RMB 25.6118 million in external donations and public welfare programs, benefiting 210,712 people. The total investment in poverty alleviation and rural revitalization projects will be RMB 50,724,300, benefiting 28,483 people (see Table 3).

Table 3: SAIC Group Profitability Indicators, 2019-2022 (Unit: %).

	2019	2020	2021	2022
Operating profit margin	4.88	4.92	5.45	3.61
Net profit margin	3.10	2.83	3.23	2.23
Gross Profit Margin	12.15	10.76	9.63	9.61
Return on total assets	3.14	2.31	2.67	1.69

4.3. Solvency

Solvency indicators mainly include current ratio, quick ratio and gearing ratio, which react to the size of the enterprise's ability to repay debts. The quick ratio and gearing ratio of SAIC are more stable from 2019 to 2022. The asset-liability ratio rises in fluctuation, and compared with 2019, the asset-liability ratio rises by 1.45% in 2022. The analysis of the solvency indicators leads to the conclusion that SAIC's capacity to repay debt increasingly deteriorates and financial risk increases. However, the indicators for the period 2019-2022 are generally within a stable and reasonable range of fluctuations (see Table 4).

Table 4: SAIC's Solvency Indicators, 2019-2022 (Unit: %).

	2019	2020	2021	2022
Current ratio	1.10	1.11	1.13	1.07
Quick ratio	0.99	0.97	1.02	0.91
Gearing ratio	64.58	66.28	64.14	66.03

4.4. Development Capacity

Growth rates of operating revenue, total assets, operating profit, net profit, and net assets are the primary components of development capability. The growth rates of net profit and operating profit showed an upward trend from 2019 to 2021, peaking at 20.08% and 16.40%, respectively, in 2021, before experiencing a significant decline from 2021 to 2022, by 54.38% and 53.62%, respectively. In this regard, the growth rate of operating income fluctuates up and increases by 1.76% in 2022 as compared to 2019. The growth rate of total assets fluctuates down, decreasing by 0.82% in 2022 compared to 2019. The growth rate of net assets has a maximum value of 6.54% in 2019 and a minimum value of 1.99% in 2022, with an overall decrease of 4.99%. The analysis of SAIC's growth capacity indicators shows that the operating profit growth rate and net profit growth rate grow significantly and reach the maximum value in 2021. General Secretary Xi Jinping noted on April 30, 2021 that during the duration of the Fourteenth Five-Year Plan. In order to succeed in a comprehensive green transformation of economic and social development and to realize quantitative to qualitative changes in the improvement of the quality of the ecological environment, China's ecological civilization construction has entered a critical phase in which carbon reduction is a key strategic direction. Therefore, SAIC Group, as the top-selling enterprise in China's automobile manufacturing industry, will take the lead in advocating environmental protection, etc., and the enterprise has invested a large amount of financial resources and experts in environmental protection, which may be a possible factor in the reduction of operating profit growth rate and net profit growth rate in 2022. The overall trend of operating income growth rate, total assets growth rate and net assets growth rate is more impressive (see Table 5).

Table 5: SAIC's Development Capacity Indicators, 2019-2022 (Unit: %).

	2019	2020	2021	2022
Revenue Growth Rate	-6.88	-12.52	5.10	-5.12
Total Assets Growth Rate	8.50	8.25	-0.27	7.98
Operating Profit Growth Rate	-24.83	-11.74	16.40	-37.22
Net Profit Growth Rate	-28.90	-20.20	20.08	-34.30
Net Assets Growth Rate	6.54	4.17	5.26	1.99

5. Conclusion

This paper combs through the contents related to environmental information disclosure in SAIC's sustainability report for the period of 2019-2022. SAIC has made great progress in dealing with environmental performance and is in the stage of stable development, which is of some reference significance for other enterprises to improve environmental information disclosure. China's business information disclosure still lags behind that of industrialized nations in some respects. On the one hand, the way of disclosing climate information is not systematic and standardized enough. On the other hand, although SAIC's disclosure of information related to environmental information has become more and more comprehensive in recent years, the information disclosed is poorly related to the financial statements and fails to fully reflect the financial impact of environmental matters.

As a result, this article will use SAIC Group's existing environmental information as a starting point, combine it with the theoretical framework of environmental information disclosure, and make recommendations for enterprises to improve environmental information disclosure. First, the enterprise should improve the internal cognition of environmental information disclosure, the enterprise internal staff should keep abreast of the national environmental protection policy, regularly study the environmental protection frontier knowledge, accelerate the construction of environmental information disclosure in the industry, and improve the level of information disclosure. Not only that, enterprises should also do to standardize the disclosure of financial reports, reasonable disclosure of relevant data, improve the level of corporate information disclosure, and promote the improvement of the level of application of environmental information technology in the whole society.

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