

Green management through financial schemes

- A case study of the Development Bank of Japan -

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Abstract

Green management has been paid attention under the movement of the sustainable environment. The key issue is the coexistence of the economic growth and the protection of the environment. The activities of seeking profit by companies may affect bad influence on the environment. The Japanese government has been trying to complement the market failure. In this context, the Development Bank of Japan has been implementing the role to keep environment through financial tools. The bank introduced the new lending scheme with favorable interest rates to companies that obtained the environmental ratings. The number of borrowers under this scheme has been successfully increasing since 2004. In addition, other tools such as the green building certification and some environmental funds are also developed. These systems will be able to introduce other countries for the effective green management.

1. Introduction

Green management has been paid attention under the movement of the sustainable environment. Especially, The Kyoto mechanisms, as defined by the Kyoto Protocol, were designed to make the reduction of greenhouse gas emissions more efficient at the COP 3 (The Third Session of the conference of the Parties to the United Nations Framework Convention on Climate Change) in 1997.

The key issue is the coexistence of the economic growth and the protection of the environment. The activities of seeking profit by companies may affect bad influence on the environment. In the market economy, this kind of external diseconomy that imposes negative effects on unrelated third parties tend to be happened. The market failure must be complemented by the governments

The Japanese government has been making efforts on green management especially since 1960's. The government enforces many regulations for the reduction of pollution. The government also enhances private companies to keep green management through giving subsidies. In terms of finance, governmental banks supply interest subsidies to companies that make investments to reduce negative effects on environments.

The Development Bank of Japan has been making loans with interest subsidies to companies that make investments for protecting environment under the policy of the governments. This system is the basic tool through financial scheme to complement the

market failure directly. In addition, the bank has started to offer some incentive systems such as the environmental ratings system. These systems are trying to support the CSR (Corporate social responsibility) activities of companies indirectly. These systems may be effective to enhance companies to focus on the green management.

First, this paper describes the activities of the Development bank of Japan on the green management through financial schemes. Second, this paper focuses on the 'Financing Employing Environmental Ratings' system introduced by the bank. Third, this paper examines the effectiveness of the system. The system is effective if the incentive successfully established the practical scheme for the internalization of externalities (Shimizu and Horiuchi, 2003). In this paper, the corporate strategies and the guidelines of activities on the green management of the listed companies in the First Section of the Tokyo Stock Exchange are surveyed. The total numbers of companies listed in the market are 1,671, and the samples are 923 including all companies in manufacturing sectors. This is to understand the actual situation of the efforts on the green management activities by major Japanese companies. Following this survey, the corporate strategies and the guidelines of activities on the green management of companies that have received loans from the bank with environmental ratings are surveyed. These companies may more focus on the green management activities. It means that the incentive schemes is effective.

Surveys on the relationship between the CSP (Corporate Social Performance) and the CFP (Corporate Financial Performance) has been made by many researchers from the perspectives of 1) event studies, 2) portfolio analysis, and 3) multiple regression analysis. Most of surveys conclude that the effects are positive (Endo, 2013). Kinbara and Kaneko (2005) pointed out the positive correlation between the Co2 per sales and the ROA (Return on assets) of Japanese manufacturing companies. Toyozumi (2007) pointed out the positive correlation between the ESG (Environment, Social and Governance) score and the EVA (Economic Value Added) of Japanese manufacturing companies. Managi (2010) pointed out the positive correlation between the ESG and the Tobin's q of Japanese companies.

2. Green management through financial schemes

2.1. The Development Bank of Japan

The Development Bank of Japan was established as a state owned bank in 1951. The Japanese government has been planning to privatize the bank since 2007. However, the government still owns the whole share of the stock of the bank. The bank has been in charge of environmental issues. The bank makes loans to companies that make investments for protecting environment such as waste processing and recycling, soil remediation, and new energy development. The bank offers a favorite interest rate: standard rate minus some basic points. Beginning in the 1960's with pollution countermeasures, during the past forty years, the bank has taken part in more than 30,000 million US dollar worth of financing of environment related projects.

The bank developed the 'Financing Employing Environmental Ratings' system to keep environment through the financial tools in 2004. The bank offers preferred interest rates to companies engaging advanced special efforts on environmental issues followed the ratings of companies. The aggregated loan amount is approximately 6,900 million US dollars to 417

companies as of March, 2014.

The bank also offers more incentive through the scheme of the interest subsidies system for investments on the protection of global warming under the policy of the Ministry of Environment of Japan. Companies receive loans with environmental ratings from the bank may enjoy the additional interest subsidies up to 1%. The conditionality is to reduce CO2 emission more than 5% within five years. In addition, the bank set up the 'Green Building Certification' award in 2012. The green building is defined as real estate properties evincing high environmental and social awareness. The evaluation points are 1) ecology, 2) amenity and risk management, and 3) community and partnership. 51 Buildings has been already evaluated by 5 ranks from these points.

The Kyoto mechanisms, as defined by the Kyoto Protocol, are designed to make the reduction of greenhouse gas emissions more efficient. At the heart of this system is the Clean Development Mechanism/Joint Initiative, which allows developed nations to use technology support or loans to reduce greenhouse gas emissions in developing nations as credits toward domestic targets. In 2004, the bank inaugurated the Japan Greenhouse Gas Reduction Fund through the cooperation of 32 companies. The bank set up Japan Carbon Finance, Ltd. to operate this fund. The company leverages the fullest bank's knowledge and experience in fund operations. The company assembles an extensive portfolio of contracts to acquire emissions rights in developing countries.

2.2. Incentive for companies

As the upward movement of green management in recent years, numbers of companies focusing on environmental issues as one of their CSR activities have been increasing. The key factors for companies to focus on their attention on the green management are related to 1) regulations by the governments, 2) the willingness as social vehicles and/or reputation from their customers and society, and 3) financial matters. There are both qualitative factors and quantitative factors.

The types of services for companies intended to the green management activities by the Development Bank of Japan are classified in Table 1. The bank offers the interest subsidies to companies to fulfill environmental regulations under the legal policy promulgated by the governments. This system is the basic tool through financial scheme to complement the market failure. The governmental banks in Japan including the Development Bank of Japan have been in charge of this role since 1960's.

In early 2000, the bank introduced some new tools. The bank has started supporting services other than loan services. The bank has been acting as an intermediary for companies to fulfill the regulation related to global warming issues through the Japan Greenhouse Gas Reduction Fund since 2004. Moreover, the bank has started to offer some incentives to companies engaged in the green management activities. The bank introduced qualitative tools on the green management such as the environmental ratings system in 2004 and the green building certification award in 2012. These systems are supporting the CSR activities of companies.

Table 1. The types of services for companies intended to the green management activities by the Development Bank of Japan

	Lead to fulfill the regulation	Offer incentives to companies engaged in the green management activities	
		Quantitative tools	Qualitative tools
Loans services	- Interest subsidies system	- Financing employing environmental ratings system	- Environmental ratings system
Supporting services	- Japan Greenhouse Gas Reduction Fund		- Green building certification award

Source: Made by author

3. Financing Employing Environmental Ratings

The procedure of the ‘Financing Employing Environmental Ratings’ is shown in Figure 1. There are two stages: the environmental rating and the credit rating. In the environmental rating stage, the first step is the ‘Environmental Screening (ES)’. At first, a company submits the application form to the Development Bank of Japan. The bank conducts a first screening by using disclosed information of the company to the public. Following the first screening, the bank makes interview with the company. After the bank completes the evaluation sheet, the second screening is held through the committee meeting. The evaluation points are 1) management system on environmental issues, 2) environmental consideration in the whole business areas, and 3) performance on major environmental measures. The total numbers of evaluation items are 120, and the total points are 250. The major evaluation items for the manufacturing company are shown in Table 2. The screening sheets are prepared by industries with the suitable evaluation items by reflecting characteristics of each industry. The evaluation sheets are prepared and modified by technical staffs with outside experts at times.

The second stage is the credit rating of the company. In this stage, a company submits the loan application form to the bank. The bank conducts the credit analysis. As a result, the bank makes decision whether to make loan to the company or not. The interest rate is decided by the credit risk of the company and other factors. As a result, the interest rate is deducted some basis points as the rank of the environmental rating of the company. The criteria of the environmental ratings are shown in Table 3. A company engages advanced special efforts on environmental issues (A rank) is applied the special rate 2. A company engages advanced efforts on environmental issues (B rank) is applied the special rate 1. On the other hand, a company that engages sufficient efforts (C rank) or normal efforts (D rank) on environmental issues is not applied the special rate. In addition, a company that engages insufficient efforts on environmental issues (E rank) is not able to proceed to this second stage.

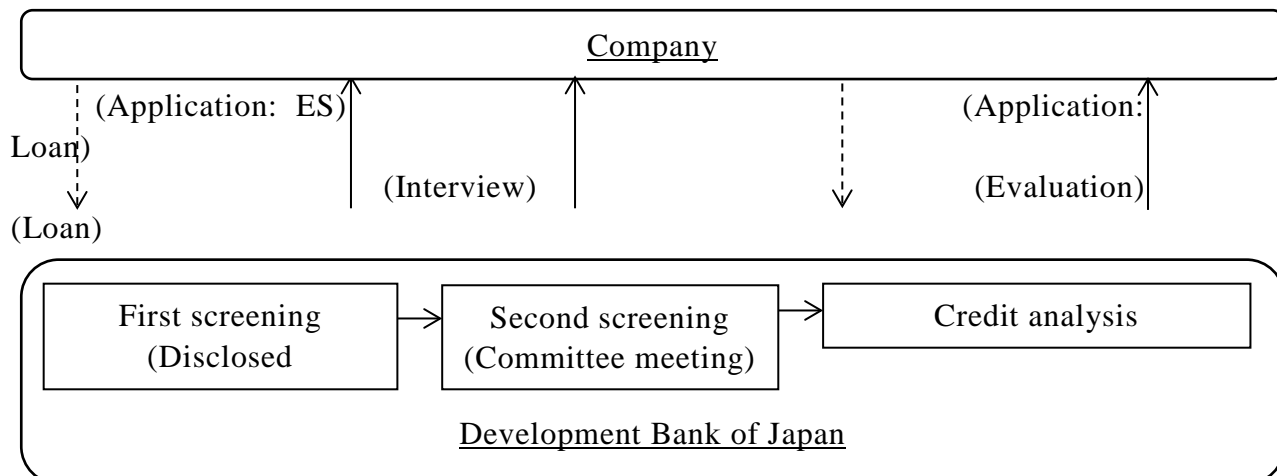


Figure 1. The procedure of the ‘Financing Employing Environmental Ratings’
Source: Development Bank of Japan, 2013 (modified by author)

Table 2. The major evaluation points of the ‘Environmental Ratings’
(The case for the manufacturing company)

1) Management system on environmental issues	2) Environmental consideration in the whole business areas	3) Performance on major environmental measures
A Management system	G Capital investment	K Global warming countermeasure
B Compliance	H Eco products	L Effective utilization of resources
C Risk management	I Supply chain	M Measure on water resources
D Biodiversity and partnership	J Reduce, reuse and recycle	N Management of chemical substances
E Education, contribution to society, employment and health		O Reduction of other environmental impact
F Disclosure		

Source: Development Bank of Japan, 2013

Table 3. The criteria of the ‘Environmental Ratings’

Rank	Evaluation	Loan rate
A	Advanced special efforts on environmental issues	Special rate 2
B	Advanced efforts on environmental issues	Special rate 1
C	Sufficient efforts on environmental issues	Standard rate
D	Engage in environmental issues	Standard rate
E	Insufficient	Reject

Source: Development Bank of Japan, 2013

4. Discussions and conclusion

Some private companies express that the green management activities are one of their main purposes. These statements may be true, but these companies must try to earn profits for stakeholders also. The good reputation of companies that are making strong efforts on the green management may contribute to increase their sales and profit through transactions with the governments, other companies and consumers. On the other hand, green management activities are the factors of the increase of costs. As a result, the balance of them would be the important indicator for the decision making.

The Development Bank of Japan offers some favorable incentives to companies that make strong efforts on the green management. First, companies are able to receive long term loans, and may be able to receive other loans from other commercial banks in terms of resource mobilization for new investments related to the green management. Second, companies can enjoy the favorable interest rate, some basis points under the standard rate. It contributes to reduce the financial cost of companies. Third, companies are able to get favorable status. Companies obtain the environmental ratings and the green building certification from the bank. Companies can appeal their strong efforts to their customers to use these statuses as one of tools. These activities may contribute to increase their sales and profit.

In Japan, there are some stock markets. The most major market is the First Section of the Tokyo Stock Exchange for large scale companies. The total number of listed companies is 1,671 as of March, 2015. Some of companies state their corporate strategies and their guidelines of activities. Some companies mention their green management policy in their corporate strategies or their guidelines of activities. In this paper, 923 companies that are listed in the First Section of the Tokyo Stock Exchange are surveyed. The samples are all companies in the manufacturing sectors including fishery (6 companies), mining (8), construction (98), food (60), textile (40), pulp and paper (11), chemistry (118), medicine (35), ceramics (26), oil (9), rubber (13), steel (34), nonferrous metals (59), machinery (116), electronics (156), shipbuilding (4), automobile (41), transport equipment (14), precision equipment (26), and others (49). The results of the survey by industries are summarized in Figure 2. It shows that 8.7% of companies (80 companies) state the green management policy in their corporate strategies, 35.6% of companies (329 companies) state it in their guidelines of activities, and 55.7% of companies (514 companies) do not state it.

On the other hand, companies received loans with environmental ratings from the Development Bank of Japan are relatively positive on the green management. The samples are 60 companies that are officially disclosed by the bank. The result of the comparison is shown in Figure 3. It shows that 21.7% of companies (13 companies) state the green management policy in their corporate strategies, 63.3% of companies (38 companies) state it in their guidelines of activities, and 15.0% of companies (9 companies) do not state it.

The result shows the effectiveness of the loans with environment ratings to lead companies focusing on the green management activities. The incentive successfully establishes the practical scheme for the internalization of externalities. This type of financial schemes would be useful for the green management in the public financial sector in other countries.

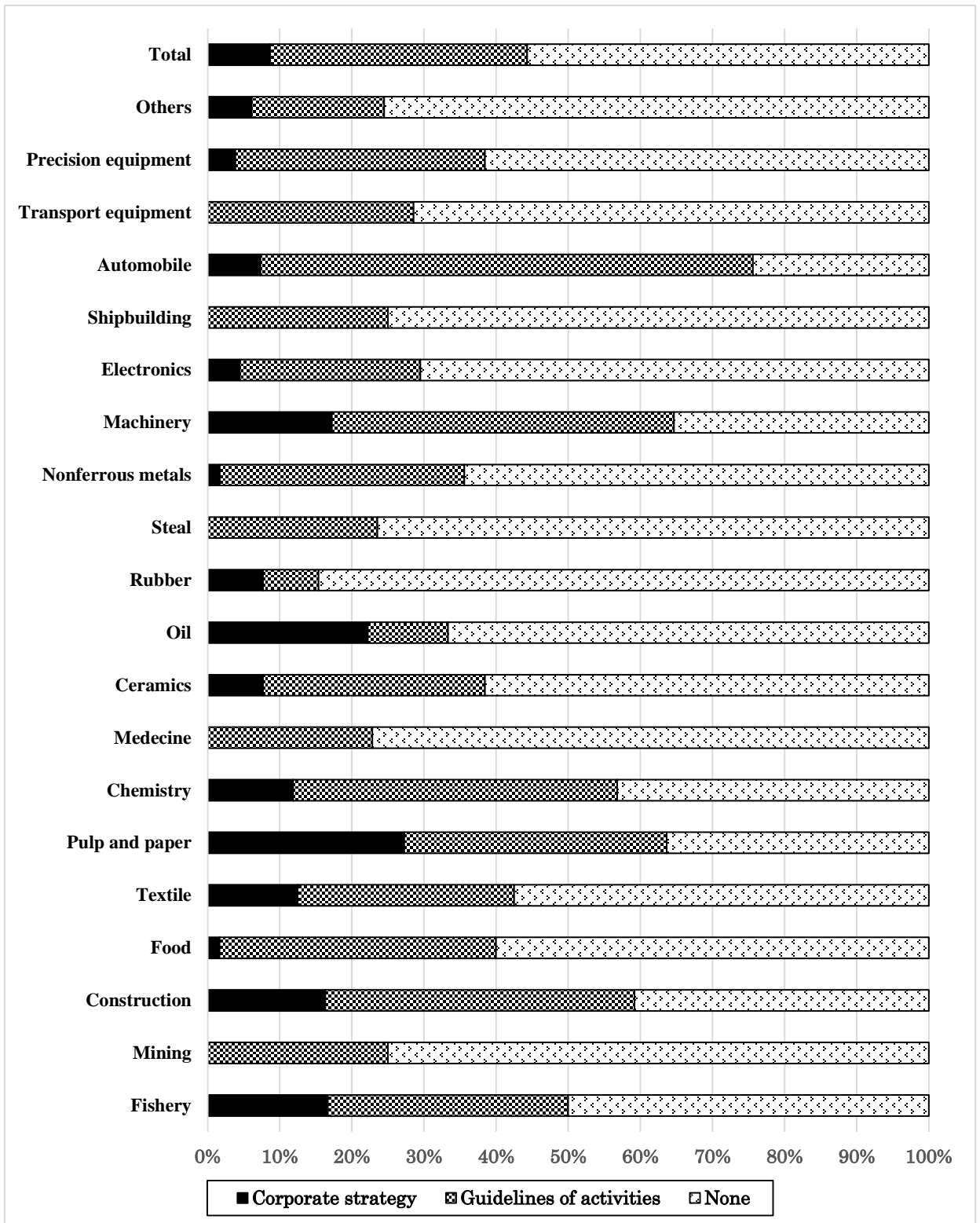


Figure 2. The ratios of manufacturing companies in the First Section of the Tokyo Stock Exchange that state their green management policy in their corporate strategies or their guidelines of activities

Source: The Tokyo Stock Exchange, 2015 (made by author)

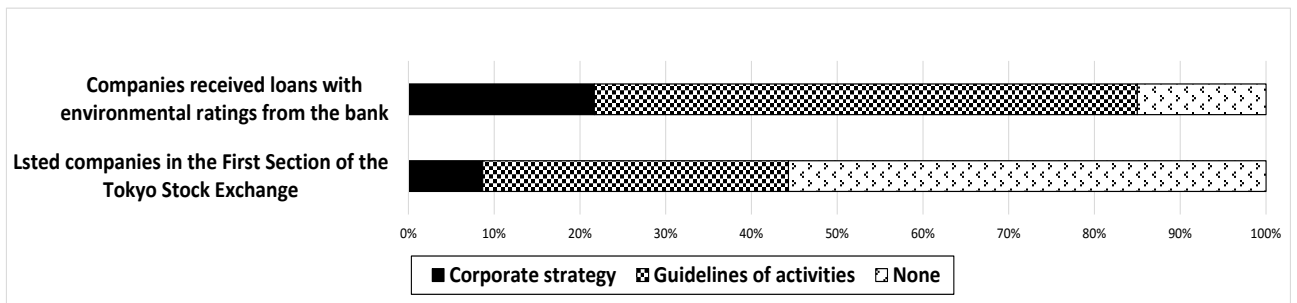


Figure 3. The ratios of manufacturing companies in the First Section of the Tokyo Stock Exchange and companies received loans with environmental ratings from the Development Bank of Japan that state their green management policy in their corporate strategies or their guidelines of activities

Source: Made by author

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