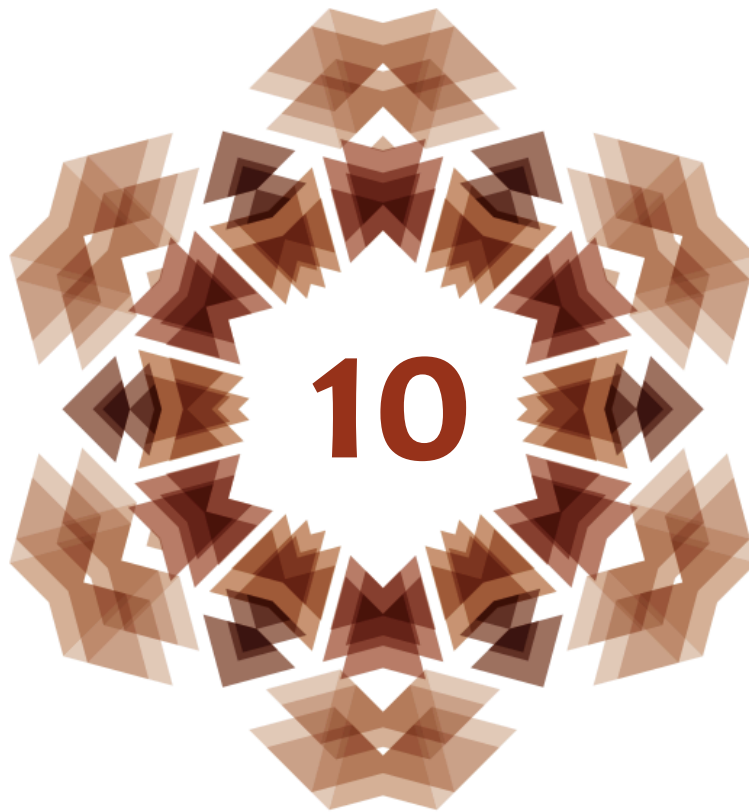


ESTABLISHING CHINA'S GREEN FINANCIAL SYSTEM

Detailed Recommendations 10: Develop Environmental Cost Analysis



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This is a background paper to the report: *Establishing China's Green Financial System* published by the Research Bureau of the People's Bank of China and the UNEP Inquiry into the Design of a Sustainable Financial System.

Detailed recommendation 10: Develop Environmental Cost Analysis

China's rapid urbanization and industrialization have led to a string of side effects including environmental pollution, ecological degradation, energy crisis and a shortage of natural resources. In this context, environmental issues have not only affected people's quality of life but posed barriers to China's sustainable social and economic development as well. A major cause of environmental problems is their 'externalities': conventional project and corporate cost accounting systems cannot fully reflect environmental impacts and relevant environmental costs cannot be reflected in the costs of products and transactions. Given that existing accounting system cannot effectively evaluate the environmental costs of projects or companies, these costs have been seriously underestimated in commercial and policy decision-making.

An important branch of environmental economics is the studies on quantitative measurement of environmental costs (i.e. calculations according to monetary value) and relevant theories have already developed sophisticated applications internationally. For instance, the British company Trucost developed the concept of 'natural capital liabilities' and created a set of methodologies and database for calculation. For instance, greenhouse gas emissions, water consumption and waste generation all constitute erosions to natural capital. By creating an environmental model and referencing expert calculations, Trucost quantitatively measures the environmental hazards and risks of companies and investors. Such results of measurement include not only changes to natural capital but may also be converted into economic value for the reference of investors. This company has collected the annual data of 'natural capital liabilities' of more than 4,500 listed companies and partnered with the Royal Bank of Scotland and the New York Stock Exchange, among others. The database supports international investment institutions to invest in industries and companies with good environmental performance and facilitates policy studies by research institutions and policy makers.

This sub-report aims to explore the necessity and methodologies for creating an environmental cost estimation system and database suitable for China in an effort to promote corporate environmental cost accounting for the development of China's green finance system.

(I) The case for environmental cost analysis

Creation of an environmental cost accounting system and database suitable for Chinese indigenous companies is a fundamental task in developing a green finance system and promoting green investments. It may not require significant government investments to build and operate such a system. Once this system is put into effective operation, it will be significantly less costly to evaluate green investments and help green enterprises to acquire investments that used to be difficult to access and discourage investments on polluting projects.

Specifically, an environmental cost accounting system can serve the following functions:

1. Support green investment decision-making by institutional investors

The impetus of capital has served as a powerful driver of economic and social development. Many investments caused environmental damages mainly because investors paid little attention to the environmental impacts of projects. The cost of violations and investment risks are low due to inadequate environmental supervision. Furthermore, without a complete environmental cost accounting system, it is impossible to support the green decisions by investment institutions with quantitative analysis.

In the context of China's rapid updates of environmental policies and increasingly more demanding environmental laws and regulations, it is of particular relevance to create an environmental cost accounting system to support the green investment decisions by investment institutions. From the perspective of risk control, substantially increasing pollution tax and fees and penalties on violations will bring about tremendous economic risks for investments while systematic environmental cost accounting enables the ex-ante management of relevant economic risks and mitigate overall investment risk levels. In addition, as revealed by relevant studies, the application of an environmental cost accounting system may also assist institutional investors in identifying investment targets of superior quality.

2. Support environmental and economic policy-making

China has vowed to address environmental concerns through economic instruments such as green procurement, green credit, environmental tax policy, ecological compensation and green insurance. In order to implement these incentives and disincentives, target industries and companies must be identified based on certain statistics. In addition, the optimal intensity of policy design such as the levels of pollution charges and resource tax rates and differentiated electricity tariff cannot be determined without sufficient, timely and reliable environmental cost information as the basis for environmental and economic policy-making. Systematic environmental cost accounting system is essential to support policy-making and create a reasonable compensation mechanism for the consumption of natural resources.

3. Support enterprises to develop environmental strategies and risk management

Rapid changes of environmental policy will significantly increase the cost of environmental violations and present companies with greater environmental risks. With an environmental cost accounting system in place, companies will be able to systematically evaluate the environmental costs of different processes and time points, evaluate potential economic risks and take risk mitigation measures accordingly. Specific benefits include: first, based on quantitative evaluation, companies will be able to develop long-term strategies for green development; second, companies will be assisted in optimizing their products, manufacturing processes and distribution models to mitigate risks arising from environmental costs; third, companies will be assisted in conducting effective green supply chain management.

4. Increasing the environmental risk awareness of stakeholders and enhancing public supervision on corporate environmental performance

Disclosure of corporate environmental cost information enables corporate stakeholders and the public to follow corporate environmental performance, exert influence on companies through such channels as public opinion, green procurement and green investment, and thus improve corporate environmental performance.

(II) Recommendations on creating China's environmental cost accounting system

As mentioned above, international experiences with environmental cost accounting provide an important reference for China in developing and operating its own environmental cost accounting system. We should draw upon international experiences in creating a public interest environmental cost accounting system and database compatible with China's national conditions and build relevant mechanisms to ensure its effective operation. This project can be steered by the Ministry of Environmental Protection and relevant associations of financial industry and carried out on the basis of the existing efforts of financial institutions (such as the environmental benefits evaluation system already put into place by the China Development Bank and the China Industrial Bank). This evaluation system and database are of positive significance for increasing the transparency of environmental performance, reducing the cost of project environmental impact assessments and enhancing the reliability and accuracy of environmental impact assessments. Given the nature of public goods, this system and database should be made available to all investors and government institutions at minimum cost and open to the NGOs, news media and consumers. Our specific recommendations are as follows:

1. Develop relatively consistent and replicable corporate environmental cost accounting methods

A consistent environmental cost accounting method is the prerequisite for the comparability of evaluation results that support effective decision-making. Currently, China is yet to put into place an environmental cost accounting model and an official corporate environmental cost accounting method, which entails the acquisition of environmental load data and the calculation of economic cost for each unit of environmental load. Data sources should be consistent with existing statistical approaches and attributes of information disclosure in order to ensure the applicability of evaluation methods. Different methods exist for the acquisition of environmental load data and China has already put into place various systems including environmental impact assessments and environmental reports of listed companies. Hence, existing environmental monitoring data or corporate report data should be employed where possible in the environmental impact assessments. Economic costs for each unit of environmental load can be identified in the following different ways: first, the trading price of each unit of pollutants in the pollution rights trading market; second, local regulations on tax and fees; third, monetizable impacts such as the loss of human health identified by public studies; fourth, governance-based environmental cost accounting. Given the limitations of each method, economic costs for each unit of environmental load should be determined on a dynamic basis with consideration of local realities.

Once relatively scientific and localized environmental cost accounting methods have been put into place, efforts can be made to promote the application of accounting methods through training and capacity building and increase the awareness of corporate stakeholders about the risks and benefits arising from environmental factors. Green investor networks can be used as an effective platform for the application and the promotion of environmental cost accounting methods.

2. Develop a public interest corporate environmental cost database

On the basis of science-based and consistent environmental cost accounting methods, efforts should be made to create a corporate environmental cost database to systematically include the environmental cost information of large and medium-sized enterprises and support relevant analysis by investors, policymakers and research institutions through the online functions of database. Currently, overseas corporate environmental cost databases are run on a for-profit basis and require exorbitant fees of access for users. Given the poor environmental awareness of Chinese investment institutions, it would be unrealistic to require them to cover these costs in making investment analysis. Therefore, it is suggested that the Ministry of Environmental Protection and institutes (or associations) of financial industry take the lead in creating a public-interest corporate environmental cost database to reduce the cost of conducting research and analysis for investment and research institutions.

Such a database can be developed in a step-by-step manner. In the preliminary stage, evaluations can be carried out for listed companies and key polluters with high data availability and at least in the process of financial information disclosure by listed companies, various costs that have been confirmed, recorded and reported in existing accounting system should be employed to arrive at environmental costs according to a consistent method and such information should be publicly disclosed in the form of annex to public financial reports. Once the database is put into operation, consideration can be given to more companies and more environmental impact costs. Ultimately, the database will extensively include companies and industries, realize the function of information display and analysis and support more in-depth research. With the environmental cost database, professional consulting institutions may provide investment institutions and companies with individualized technical services.

3. Require investment institutions to employ environmental cost accounting in their investment management activities

The government may include compulsory environmental cost analysis into investment decision-making by state-owned institutional investors such as social security funds and the tendering processes of central and local government procurement and construction projects. For instance, in screening fund management companies, social security funds should require that fund managers consider the indirect environmental risks and benefits brought about by investment portfolios in light of their environmental cost analysis. In addition, fund managers should be evaluated by their investment and green returns and the results of evaluation should be reported to pension fund management institutions on a regular basis. Furthermore, private institutional

investors should also be encouraged to carry out environmental risk management using environmental cost accounting system.

4. Enhance requirements on environmental information disclosure by companies and investment institutions and encourage rating agencies to conduct green rating for public placement funds

Accounting of environmental cost information must be carried out in conjunction with the reporting and disclosure of environmental cost information in order to develop a government and public supervision mechanism beyond internal corporate application. Requirements for environmental information disclosure can be enhanced in such processes as IPO, refinancing, bond issuance and crowd-funding. Moreover, a system can be put into place to ensure regular reporting of corporate environmental cost information to stakeholders including investment institutions and government departments. It is also necessary to formulate unified corporate reporting formats, stipulate consistent methods and contents of disclosure and where necessary, introduce third-party verification.

Despite the great number of fund rating agencies in China, not many of them have factored environmental information into their considerations for ratings. It is advisable to encourage rating agencies to carry out environmental cost analysis of fund investments and publish rankings and promote the supervision of third-party evaluation on the environmental management of investment institutions.

5. Gradually include environmental cost estimates into corporate management accounting systems

Environmental cost information should be included in existing accounting systems and relevant information on environmental management systems in order to provide justification for environmental tax policies and decision-making by investment institutions and companies. For companies that cannot provide complete information, such options as the collection of existing data, gathering of site data and industry experience can be made available for them. Moreover, for high-risk industries like petrochemical and nuclear power industries, environmental incident risk information should be taken into account according to the severity of risk consequences. Regulatory information of environmental violations should be reflected in the evaluation. Pilot programs for environmental cost accounting can be carried out for certain companies to develop experiences in preparation for China's environmental cost estimation system, which will be rolled out for qualified companies after its official promulgation. In addition, environmental cost information collection and competition software, third-party review and other services should be explored to provide technical support for corporate implementation of environmental cost estimation.

In addition, an environmental cost estimation system should be applied to supply chain management to bring about coordination between the two, enable cross-agency environmental cost control and provide market guidance and predictability. Consideration must be given to the

potential environmental load arising from each process of the product life-cycle and environmental costs should be minimized throughout procurement, design and product service life termination.

THE GREEN FINANCE TASK FORCE

The Green Finance Task Force was initiated by People's Bank of China (PBC) Research Bureau and the UNEP Inquiry into the Design of a Sustainable Financial System in 2014. The Task Force brought together leading Chinese financial policy and regulation experts together with experts from the private sector, academia and think tanks, as well as international experts.

A number of organizations have lent great support to this Task Force, chief among them are Chongyang Institute for Financial Studies of Renmin University, the Ecological Finance Research Center at the Renmin University of China, the Eco Forum Global, the International Institute for Sustainable Development, the Green Credit Special Committee of China Banking Association, and China Finance 40 Forum.

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