

Research on Commercial Banks' Response to Climate Risk under the Goal of "Carbon Peak" and "Carbon Neutral"

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Abstract

In recent years, with the rapid development of industrial production, the phenomenon of global warming is becoming increasingly serious. In the context of the global challenge of climate change, the climate and environmental risks faced by financial institutions are also increasing. In China, especially after the goals of "carbon peak" by 2030 and "carbon neutrality" by 2060 are proposed, the climate risk faced by financial institutions will be significantly increased. As an important part of China's financial institutions, commercial banks have the role of adjusting macroeconomic leverage and rationally allocating social resources. Therefore, commercial banks need to actively respond to the financial risks caused by climate change and make early layout from the perspective of long-term planning.

Keywords

Carbon Peak; Carbon Neutral; Climate Risk; Commercial Banks; Financial Institution.

1. Research Background and Significance

In recent years, the climate has changed dramatically, and extreme climate disasters have occurred frequently all over the world. The ecological environment on which human beings live is facing great damage and threat. Climate change poses a severe challenge to China's food production security, water resources, ecology, energy and economic development. The level of climate risk tends to be high, which will cause huge property losses to economic growth, and then pose a systemic threat to the financial market and have a subversive impact. Under the situation of drastic climate change, how to strengthen the risk management of commercial banks to cope with the climate change risk is the purpose of this paper.

1.1. Political Significance

By analyzing the climate risk and its impact on the banking industry, combing and referring to the risk methods of coping with climate change in foreign countries, and combining with the actual economic development and the current situation of the policy system in China, this study puts forward the suggestions and requirements for Chinese commercial banks to cope with climate risk. It provides strong support for commercial banks to establish a sound climate risk management system, which is not only an important starting point for China to achieve the goal of carbon peak and carbon neutrality and ecological civilization construction, but also helps promote the world to build a community with a shared future for mankind and realize the vision of harmonious coexistence between man and nature.

1.2. Theoretical Significance

Climate change transmits risks from the economic system to the financial system through physical risks and transformation risks. By constructing the model method of climate risk management assessment, and by means of questionnaire survey, the motivation and obstacles faced by financial institutions at the application level to carry out climate investment and financing are clarified, and the solutions are given. In terms of the theoretical value of the

research methods, this study provides a theoretical framework for commercial banks to cope with climate risk in combination with the empirical research results.

1.3. Practical Significance

Through the analysis of the risks brought by global climate change, and through various case studies and questionnaire surveys, this paper provides experience for China's commercial banks to formulate climate risk response policies, such as environmental economic policies and fiscal and tax policies; At the same time, it provides policy suggestions for financial institutions to better participate in Climate Investment and financing and deploy investment decisions; Finally, it provides path reference and reference for enterprises to realize low-carbon transition, carry out climate friendly projects and obtain climate funds.

2. Climate Risks and Costs

Climate risks are divided into physical risks and transition risks. Physical risks are risks and losses caused by extreme weather and natural disasters, such as floods, hurricanes, droughts, etc; Transformation risk is the risk of economic and social transition to low-carbon, such as strengthening environmental protection policies, improving environmental awareness, supporting clean energy, etc., which will change the bank's risk exposure and promote the bank to re test and improve its business strategy.

Table 1. Comparison of years in which China and some developed countries committed to achieving "carbon neutral"

Country	Peak Year of Carbon Emission	Year of Commitment to Carbon Neutral	Year Difference
Japan	2013	2050	37
Germany	1990	2045	55
France	1991	2050	59
Britain	1991	2050	59
America	2007	2050	43
China	2030	2060	30

Table 2. Main types and contents of climate risks

Physical Risk	Transformation Risk
Global temperature change	Carbon pricing
Cyclone, typhoon, and hurricane	Carbon emission restrictions
Water shortages and prolonged drought	Subsidies for low-carbon alternatives
Farmland and residential areas were flooded	Carbon-intensive products are prohibited
Wildfires affecting densely populated areas	Higher taxes on carbon-intensive technologies
Sea levels rise in the coastal areas	Carbon-intensive technology is prohibited

The consequences of climate change are long-term, irreversible and highly uncertain. The global risk report 2020 released by the World Economic Forum (WEF) points out that extreme weather events, failure of climate change mitigation and adaptation measures and ecosystem collapse will become the most likely global risks in the next 10 years, and these risks are related to climate and environmental change. According to the article "climate risk and response" published by McKinsey Global Research Institute, climate change affects the production factors

on which human life and economic activities depend, and further affects the maintenance and appreciation of wealth.

3. Impact of Climate Change on Banking Industry

Climate risk and transformation risk are interrelated. Through chain reaction, fermentation and transmission, they directly or indirectly affect, risk and loss to the banking industry, including credit risk, market risk and liquidity risk.

3.1. Impact Mechanism of Climate Change on Banks

Climate change will affect the business development of the banking industry by causing changes in the relevant economic and regulatory behaviors of bank stakeholders (such as the government and regulatory authorities), and its market structure and scale will change accordingly.

3.2. Challenges of Climate Change to Bank Development

Industrial and Commercial Bank of China adopted the stress test method to analyze and prove the correlation and degree of correlation between climate and other environmental factors and credit risk. Due to the influence of bad weather, some enterprises were unable to repay their loans, which increased their credit risk, led to the market risk caused by the drastic fluctuation of commodity prices, the reputation risk caused by the increase of external pressure faced by banks, and the operational risk caused by coping with climate emergencies.

4. International Experience of Climate Risk Management

With the increasing global attention to climate risk, the international banking industry has begun to manage climate risk as an important risk it faces, and disclose the climate risk management in accordance with TCFD guidelines. ANZ group has incorporated climate risk into the group's organizational culture and risk preference, and developed the process and framework for climate risk identification and assessment; Royal Bank of Canada classifies the impact of climate change into three aspects: regulatory compliance requirements, business continuity and changes in products and services, and has formulated corresponding response strategies and risk mitigation measures.

5. Strategies for Commercial Banks to Cope with Climate Change Risks

First, commercial banks should define their strategic objectives and incorporate coping with climate risks into their corporate strategies. Climate change and the climate risks it brings have become important factors affecting economic development and financial stability, which will lead to various risks such as credit, market, liquidity, reputation, country, etc. such impact will become more obvious in the future. Commercial banks should attach great importance to climate risk management. Strengthen the understanding and understanding of climate risks, and integrate climate risks into the comprehensive risk management system. Fully consider the relationship and transmission path between climate risk and various risks, and establish and improve the whole process management mechanism of climate risk identification, measurement, monitoring, control or mitigation, and reporting.

Second, commercial banks should establish a climate risk identification and assessment framework and introduce forward-looking new risk management tools, including economic scenario generation tools and climate risk maps. First, strengthen the tracking research on global climate change and climate policy, actively study and judge the transformation path of economic structure, energy structure and industrial structure under the background of carbon peaking and carbon neutralization, and proactively adjust and optimize investment and

financing strategies. Second, we will improve the generation mechanism of climate risk stress scenarios and effectively carry out stress tests on the impact of climate risk on banks. Third, scientifically assess the medium - and long-term impacts of climate change and climate policies on investment and financing, timely adjust internal risk measurement parameters and models, make full use of advanced technologies such as big data, Internet of things and block chain, and improve the ability to cope with climate risks. Fourth, explore the ESG green rating for enterprises, and study the introduction of climate factors into the customer credit rating system. Fifth, take climate risk as an important consideration in investment and financing decisions and customer selection.

Third, we will continue to deepen the concept of green finance development and strengthen the top-level design and overall coordination of green finance. We will thoroughly implement the development concept of green finance and play a leading role in addressing climate change and preventing and controlling climate risks. Strengthen the top-level design and overall coordination of green finance, scientifically formulate the strategic plan for green finance development, medium and long-term or annual objectives, coordinate and promote the green finance construction of all business lines and branches of the bank, and supervise the implementation of green finance strategies and objectives.

Fourth, strengthen the construction of Climate Investment and financing infrastructure. First, we should reserve and train professionals. We will strengthen the pool of professionals in the fields of climate, environment, ocean and geography, and promote systematic training in the credit process around climate risk, climate policy, green finance and carbon finance products. Second, improve the information disclosure mechanism and further improve the relevant standards and requirements for EGS information disclosure, environmental information disclosure and climate information disclosure of financial institutions. Third, research and release the green index to guide social funds to enter green enterprises and related fields.

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