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Green Loans, Improved Risk Management, and Expanded Business Opportunities in China: A Case Study of Financial Institutions

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Abstract

Mandatory reporting requirements for green loans made by Chinese banks have been set up, and the infrastructure for conducting green finance operations has been built. China's Green Credit Policy is what's really getting things moving in the green finance sector in the country. China's Green Credit Policy is a leading empirical example of green finance due to its massive scale (8.08 trillion RMB) and numerous participants. Another great thing about the Green Loans Policy is that all the major Chinese banks use the same standards when issuing green loans. Since the CBRC assessed the bank's Green Credit Policy in 2013, its performance may be directly compared to that of other banks. Others may learn from the mistakes made by China's government with its Green Credit Policy.

Western financial organisations have a number of approaches when it comes to green finance. Western bank regulators do not often mandate that their institutions engage in environmentally friendly financing strategies. In contrast to the lack of standardizations in green finance, China's Green Credit Policy includes both established and emergent procedures. The definition of "green financing" is not universally accepted, even among Western institutions.

There are just too many interchangeable phrases that may be used in its place (discussed in section 2.1). While the UNEP, EP, and UNGC guidelines all contribute toward establishing a foundation for green finance, they do nothing to foster its development.

When it comes to green financing, Western banks are led by the knowledge of its decision-makers in areas like sustainable development and corporate social responsibility, whereas in China, green financing is led by government mandates. Regardless of the motivations of China's policymakers, the country's green financing sector grew from zero to 8.08 trillion RMB in 2015. The rapid expansion of green financing suggests that financial institutions are responding favourably to incentives.

Keyword: Credit Policy, Financial Institutions, Sustainable Development

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INTRODUCTION

Ensuring environmental sustainability and addressing climate change are part of a greener economy. Climate change mitigation financing and how to address the funding gap for low-carbon projects are two critical concerns in this context (OECD, 2017). This thesis intends to give information on how additional green credit might be issued as a response to this problem through an empirical analysis of green finance in China.

Carbon dioxide emissions peaked in China in 2014 at 30% of global totals, surpassing the United States for the first time since 2007. (Vidal & Adam, 2007; Boden, Marland, & Andres, 2017). It was mandated in 2007 that banks lend green financing to environmental protection, emission reduction, and energy conservation initiatives as well as to constrain loans to high pollutant, high-emission, and overcapacity businesses in order to reduce carbon emissions. Since then, the number of initiatives aimed at reducing their impact on the environment while also being financially viable has risen quickly.

LITERATURE REVIEW

Carbon-intensive activities have been widely regarded as the primary driver of rising global temperatures. Banks and other lending financial organisations do not manufacture or release dangerous substances or pollutants into the atmosphere. However, banks' lending practises to enterprises are increasingly recognised as being tied to economic activity that hurts the environment (Sarokin & Schulkin, 1991; Smith, 1994; Gray & Bebbington, 2001). To put it another way, when banks lend money to projects that violate environmental rules, they promote and assist industrial pollution (Thompson & Cowton, 2004).

Financial institutions, governments, and non-governmental organisations (NGOs) have known since the early 1990s that sustainable development is critical to addressing the world's mounting environmental problems. Some commercial banks teamed together with the United Nations Environment Program (UNEP) in May 1992 to release the Statement by Banks on Environmental and Sustainable Development and to launch the Banking Initiative (UNEP, 1992). Banks must prioritise sustainable development as one of their greatest goals, and they must be key contributors to sustainable development, according to the UNEP Financial Initiative. Since then, the financial industry has made an effort to contribute to long-term progress.

By requiring that bank-financed projects be both socially and environmentally responsible, the Equator Principles (EP) were established in 2003. As a baseline, the EP calls on banks to consider environmental and social risks in their loan decisions when supporting new projects with a capital cost of more than USD 10 million; to decline projects that do not meet environmental and social standards; or to provide advisory services, project finance, corporate loans and bridge loans (Equator Principles Association, 2013). Multilateral development institutions such as the World Bank are no longer solely responsible for responsive banking, thanks to the EP. The Equator Principles have been embraced by 91 financial institutions in 37

countries, accounting for more than 70% of worldwide Project Finance debt in emerging economies. Many people have expressed doubts about the EP's capacity to do what it set out to do (i.e., enable more sustainable initiatives on the ground) because of the large number of participants (O'Sullivan & O'Dwyer 2009; Macve and Chen 2010).

UN Global Compact (UNGC) and UN Concepts for Responsible Investment (PRI) are two more notable green finance principles and programmes. UNGC's Ten Voluntary Principles on Human Rights, Labor and Environment, Anti-Corruption, and the Environment are contained in the UNGC. Environment-friendly technology should be developed and promoted, and corporations are urged to adopt a more proactive approach to environmental issues (UNGC, n.d.). A set of six optional and aspirational UN Principles for Responsible Investment (PRI) provides a framework for incorporating ESG considerations into the investment process. From more than 50 nations, there are 1,750 signatories to the Principles, which represents an estimated US$70 trillion in investments (UNPRI, n.d.).

A consortium of banks has signed on to each of these projects. There are advantages to the projects in terms of reputation, public awareness, and investor support, but higher standards and greater openness may offer obstacles (Bal, Faure, & Liu, 2014).

Governments may also employ green financing as a method to tackle the ever-increasing environmental issues. To be called the World's Factory is an understatement: China's economy has grown significantly since 1978, when the country began implementing economic reform. The phrase *Made in China* appears on tags, labels, and stickers all over the world. In their rush to get on this rapid train, many firms have neglected the needs of society and the environment. There are many environmental concerns across the world that have been caused by China's rapid economic growth. In an effort to reduce environmental concerns, the Chinese government has implemented a programme known as the Green Credit Policy to guarantee that the country's economy grows in a healthy and sustainable manner.

Statement of the Problem

Green finance serves as a link between the environmental sector and the financial sector (Salazar, 1998). There is still a paucity of financing for environmentally friendly projects such as renewable energy plants, waste treatment facilities, and green cars despite the financial sector's efforts. Green finance is being questioned by both society and academia on its capacity to deliver on its promises (i.e., enabling more sustainable initiatives on the ground) (Macve & Chen 2010). Research in this thesis begins with the subject of how to increase the amount of green credit available in China.

Objective of the Study

- To evaluate the strategic impact of green credit to financial institutions.

Research Questions

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- How does green credit influence the risk management of the banks?

RESEARCH METHODOLOGY

For this analysis, the theoretical framework proposed in the study by Weber et al. (2015) is used. This is because banks are concerned about risk management (Weber, 2012) and the potential for profit in green-lending (Weber, 2015). (Aizawa & Yang, 2010). The following hypotheses are put to the test using random-effects panel regression, Two-stage Least Square (2SLS) regression analysis, and matching tests in this study to see if they are the driving factors behind bank green finance.

Three hypotheses to be tested are:

Hypothesis 1: Green credit is an expanding product or service that grows at a faster rate than total loans.

Hypothesis 2: Allocating large shares of green credit to the loan portfolio reduces credit risk (i.e., NPL ratio of the bank).

Hypothesis 3: Allocating large shares of loans to high-pollution, high-emission, and overcapacity industries to the loan portfolio increases credit risk (i.e., NPL ratio of the bank).

RESEARCH DESIGN

The extent to which a company participates in green financing is mostly up to management. To put it simply, the decision-making process from the standpoint of a bank includes managing: 1) bank performance, 2) securities and interest rate risks, 3) liquidity and capital management, 4) loans/credit management, 5) investments/globalization/technology. Examine if the decision-makers' expectations can be met if they make a commitment to green financing.

Based on Weber et al research the conceptual framework of the study is constructed (2015). Credit risk management, new business prospects, company reputation, and compliance risk are among the reasons why banks are interested in green financing (Weber, 2012). As it is impossible to directly quantify the other two motivations, this study solely examines the first two of them.

DATA ANALYSIS

The availability of green credit data presents the greatest obstacle in the course of this investigation. There is a considerable quantity of data on green credit balance that is missing as a result of the fact that many banks did not give the green credit data that relates to them in their annual reports or sustainability reports. This study calculated the missing green credit balance and loan to "two-high and one-over" projects based on the compound annual growth rate (CAGR) from the data that was available. This was done so that the study could consider the data that was missing. The estimate is broken down into two stages. In the first phase of the process, you will determine the compound annual growth rate (CAGR) of green credit (also known as "two-high and one-over") using the provided time periods.

$CAGR = (Ending\ value/Beginning\ value)\ (1/Number\ of\ years) - 1$

The next thing to do is to use the CAGR to make some educated guesses about the missing data. The following equation may be used to get a rough approximation of the data that was collected before the beginning period and the data that was collected after the ending period:

$Estimated\ value\ of\ year_{t-1} = Value\ of\ year_t/(1+CAGR)$

$Estimated\ value\ of\ year_{t+1} = Value\ of\ year_t \times (1+CAGR)$

Because the amount of the green credit balance tends to increase over the course of time, the compound annual growth rate is an appropriate choice for this kind of assessment. The disadvantage of using this approach is that the growth rate of the green credit balance provides less useful information now than it did in the past. This is due to the fact that the growth rates of those estimated periods are identical to the compound growth rate. As a result, only the original data were utilised in the validation of hypothesis 1.

We did not include any samples in our analysis that had fewer than three years of green credit balance data available since doing so would have increased the amount of error introduced by our reliance on growth rate between two years. Since of this, 13 of the 39 financial institutions were disqualified because they had only declared their green credit for a period of two years or fewer. In addition, the Agricultural Development Bank of China (ADBC) and the Bank of Guiyang were not included since there was insufficient information on their financial situations. Only 14 of the remaining 24 banks gave the balance of loans to "two-high and one-over" for at least three periods, despite the fact that all of the remaining banks had reported the green credit balance for at least three times. When doing the statistical tests associated with "two-high and one-over" loans, a total of just 14 samples were available.

For the remaining 24 samples, 50% do not need estimation, 33% had a green credit balance available for five or six periods, requiring estimations for only one or two periods, and only 17% needed estimations for three or four periods. In total, 50% of the samples do not need estimation, 33% had a green credit balance available for five or six periods, and 17% needed estimations for three or four periods. Appendix A contains the actual data that was collected after the data imputation was performed.

Number of years available / Variable	7	6	5	4	3	2	1	0	Total
Green credit balance	12	5	3	3	1	0	0	0	24

Table: **Data Availability of Included Samples**

"Two-high and one-over"	3	6	3	2	0	0	2	8	24

For the purpose of determining whether or not the imputed data were of sufficient quality, a comparison of the original data and the imputed data was carried out. The early years of the dataset, which had a smaller green credit balance, were added to the dataset, which resulted in the mean value of the green credit balance decreasing by around 20,000 million RMB. The bare minimum balance of green credit has dropped from 33 million RMB to 2.28 million. This represents a huge decrease. In point of fact, this is an assessment of the same banks from prior years of operation. Although the banks were rather slow to start offering green credit, they have greatly boosted the amount of green money available. This extremely rapid growth rate was used to estimate the total amount of green credit available in the previous years, which resulted in a very considerable decrease.

Variable name	Obs	Mean	SD	Min	Max
Green credit balance (before)	144	143,092	254,828	33	1,570,000
Green credit balance (after)	168	123,052	240,895	2.28	1,570,000
Loan to "two-high and one-over" projects (before)	90	120,901	167,780	533	669,160
Loan to "Two-high and one-over" projects (after)	109	122,107	171,103	553	669,160

CONCLUSION

This thesis looks at green financing from the bank's perspective, specifically in the fast-growing industry that is China's banking sector. Between 2022 and 2024, information on the economic and ecological performance of 24 banks will be collected and analysed using panel regression methods including Two-stage Least Square Regression Analysis (2sls) and Random-effect Panel Regression. (RE).

Based on the results, banks may have a financial reason to keep on offering green lending. Based on the findings of this study, 1) green credit is a rapidly expanding product or service, and 2) include large parts of green credit in the loan portfolio may reduce credit risk (i.e., NPL ratio of the bank). Reducing the number of loans given to polluting, emission-causing, and overcapacity enterprises might theoretically reduce the NPL ratio.

LIMITATIONS OF THE STUDY

The availability of data is a key drawback. This analysis was hampered by the absence of data on green finance. Even when the most appropriate estimating approach is chosen for data imputation, the results still rely on a small number of estimated variables. It's not an accurate depiction of reality, but it's the most accurate one available. Many of the KPIs for green credit have been implemented, however there are few to choose from. Only a limited number of financial periods were accessible to the institutions that made the data public. Because of this, this thesis is unable to conduct a full analysis of green finance implementation based on several

KPIs. For example, this thesis does not know if giving more green credit to particular industries will result in a lower NPL percentage because of a lack of green credit statistics.

If a bank sells non-performing loans to lower its NPL ratio, the bank is taking on more risk than it is actually absorbing. There may still be some sale of non-performing loans (NPLs) on a modest scale, despite the fact that the time of banks selling NPLs to asset management businesses ended in 2009. NPL ratio adjustments are predicted to have a little impact on the study's outcome due to these artificial modifications.

The study's implications are the final drawback. However, the findings of this study may not be immediately transferable to other financial markets. Banking rules and macroeconomic conditions are quite different in China than in other nations. According to clause 3.1.3, the Chinese government and state-owned companies own a majority stake in the country's largest banks. Compared to other countries, this ownership arrangement is highly unique.

Therefore, it is necessary to undertake research on the financial benefits of green loans in other markets before determining if this is the case in the current market.

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