Manuscript ID:
IJEBAMPSR-2026-030410

Volume: 3

Issue: 4

Month: August

Year: 2026

E-ISSN: 3065-9140

Submitted: 07 July 2026
Revised: 12 July 2026
Accepted: 10 Aug. 2026
Published: 31 Aug. 2026

Address for correspondence:
Vaibhavi Shahane
Assistant Professor,Indira School of Business Studies,Tathawade, Pimpri-Chinchwad, Maharashtra

DOI: 10.5281/zenodo.23799534

DOI Link:
https://doi.org/10.5281/zenodo.23799534

OPEN ACCESS

Creative Commons (CC BY-NC-SA 4.0):
This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International Public License, which allows others to remix, tweak, and build upon the work noncommercially, as long as appropriate credit is given and the new creations ae licensed under the identical terms.

Green Financing and Financial Risk: Examining Its Relationship with Credit Risk and Borrowing Cost with Reference to Indian Renewable Energy Companies

Vaibhavi Shahane [1] Dr.Ratikant Ray [2]
[1,2]Assistant Professor,Indira School of Business Studies,Tathawade, Pimpri-Chinchwad, Maharashtra

Abstract

India's renewable energy sector requires substantial long-term investment to expand solar, wind, and other clean-energy projects. Green financing has emerged as an important funding mechanism for supporting this transition. However, its relationship with credit risk and borrowing cost among renewable energy companies requires further examination. This study analyses the potential relationship between green financing, credit risk, and borrowing cost in Indian renewable energy companies. The study adopts a descriptive and analytical approach using secondary literature and an illustrative quantitative framework. It considers green-financing availability, debt levels, interest coverage, and borrowing cost as key financial indicators. Illustrative results suggest that companies using green financing may experience lower borrowing costs and relatively favourable credit-risk indicators. However, these figures are hypothetical and cannot establish actual company-level outcomes. The study concludes that green financing may support funding diversification and transparency, but its financial benefits depend on repayment capacity, project performance, leverage, and market conditions.

Keywords: *Green Financing, Credit Risk, Borrowing Cost, Indian Renewable Energy Companies, Green Bonds, Sustainable Finance*

Introduction

India's renewable energy sector has become increasingly important in the transition towards a more sustainable energy system. The expansion of solar and wind power requires significant investment in generation facilities, transmission infrastructure, energy storage, and related technologies. Green financing, including green bonds and green loans, provides a mechanism for directing financial resources towards projects with defined environmental objectives.

Renewable energy companies commonly face high initial capital expenditure and long project-recovery periods. Their financial performance may be affected by interest-rate changes, project delays, fluctuations in electricity generation, payment delays, and regulatory developments. These factors can influence credit risk and the cost of borrowing. Research on renewable and non-renewable energy firms indicates that the cost of debt is an important consideration when evaluating financing conditions in the energy sector [1].

Green financing may help companies diversify funding sources and improve transparency regarding the use of funds. Such practices can potentially strengthen investor confidence and improve access to capital. Nevertheless, green financing does not automatically reduce credit risk or guarantee lower interest rates. Lenders continue to assess debt levels, cash-flow stability, credit ratings, and repayment capacity.

In India, the Reserve Bank of India has examined climate risk and sustainable finance, while the Securities and Exchange Board of India has introduced disclosure requirements for green debt securities [2][3]. These developments highlight the importance of evaluating environmental financing alongside conventional financial indicators. This study therefore examines the relationship between green financing, credit risk, and borrowing cost, with reference to Indian renewable energy companies.

How to Cite this Article:
Shahane, V., & Ray, R. (2026). Green Financing and Financial Risk: Examining Its Relationship with Credit Risk and Borrowing Cost with Reference to Indian Renewable Energy Companies. International Journal of Economics, Business, Accounting, Agriculture and Management Towards Paradigm Shift in Research (, 3(4), 54–57. https://doi.org/10.5281/zenodo.23799534

Need of the Study

The renewable energy sector requires substantial long-term funding to support infrastructure development and meet growing energy requirements. High borrowing costs may reduce project profitability and increase financial pressure, particularly for companies with significant debt obligations. At the same time, weak cash flows and high leverage may increase the likelihood of repayment difficulties.

Green financing can potentially provide access to specialised funding and encourage improved financial disclosure. However, the benefits may differ across companies depending on their creditworthiness, size, profitability, project quality, and financing structure. Understanding these relationships can help companies make better funding decisions and assist lenders and investors in evaluating renewable energy projects.

The study is therefore needed to examine whether green financing is associated with credit-risk indicators and borrowing costs, rather than assuming that environmentally beneficial financing automatically produces better financial outcomes.

Scope of the Study

The study focuses on Indian renewable energy companies engaged in solar, wind, and related clean-energy activities. It examines green financing in relation to credit risk and borrowing cost. Green financing includes identifiable green bonds, green loans, and other financing instruments intended for eligible environmental projects. Credit risk may be assessed through leverage, interest coverage, credit ratings, and debt-servicing capacity. Borrowing cost may be measured using interest expense relative to average interest-bearing debt. The study is based on secondary literature and an illustrative analytical framework; the hypothetical figures are not representative of actual Indian companies.

Literature Review

Kempa, Moslener, and Schenker [1] examined the cost of debt of renewable and non-renewable energy firms. Their research provides a relevant foundation for understanding how sector characteristics and financial risk may influence borrowing costs. It highlights the importance of evaluating financing conditions alongside the financial profile of energy-sector businesses.

Dutt et al. [4] discussed the role of green bonds in financing India's energy transition, including renewable energy and electric transport. Their report emphasised the importance of mobilising capital for capital-intensive sustainable infrastructure. This is relevant to renewable energy companies that require long-term financing for project development.

The Reserve Bank of India [2] published a survey examining financial institutions' preparedness for climate risk and sustainable finance. The report highlighted the need for stronger institutional processes and greater consideration of climate-related risks. Although it does not directly establish the borrowing-cost effects of green financing on renewable energy companies, it provides important context for understanding sustainable-finance practices in India.

The Securities and Exchange Board of India [3] revised disclosure requirements for green debt securities. These requirements seek to improve transparency and accountability concerning green financing. Credible disclosures can help investors evaluate the stated environmental purpose of financial instruments, although disclosure alone does not guarantee lower credit risk or borrowing cost.

Overall, the literature indicates that green financing may support capital mobilisation and transparency. However, its financial effects depend on company-specific factors, including repayment capacity, leverage, project performance, and prevailing market conditions.

Research Gap

Existing studies and regulatory publications discuss green bonds, sustainable finance, climate-related risks, and the cost of debt. However, these areas are not always examined together in the context of Indian renewable energy companies.

- Limited integrated analysis examines green financing alongside credit-risk indicators and borrowing cost.
- The effects of green financing may differ according to company size, leverage, credit rating, and project characteristics.
- Further company-level analysis is needed to determine whether green financing is associated with measurable financial benefits after accounting for other factors.

This study addresses these issues by presenting a framework for examining green financing, credit risk, and borrowing cost together.

Objectives

Primary Objective: To examine the relationship between green financing, credit risk, and borrowing cost among Indian renewable energy companies.

- SO1: To examine the relevance of green-financing instruments in India's renewable energy sector.
- SO2: To assess the relationship between green financing and credit-risk indicators.
- SO3: To analyse the relationship between green financing and borrowing cost.
- SO4: To identify financial and operational factors that may influence credit risk and borrowing cost.

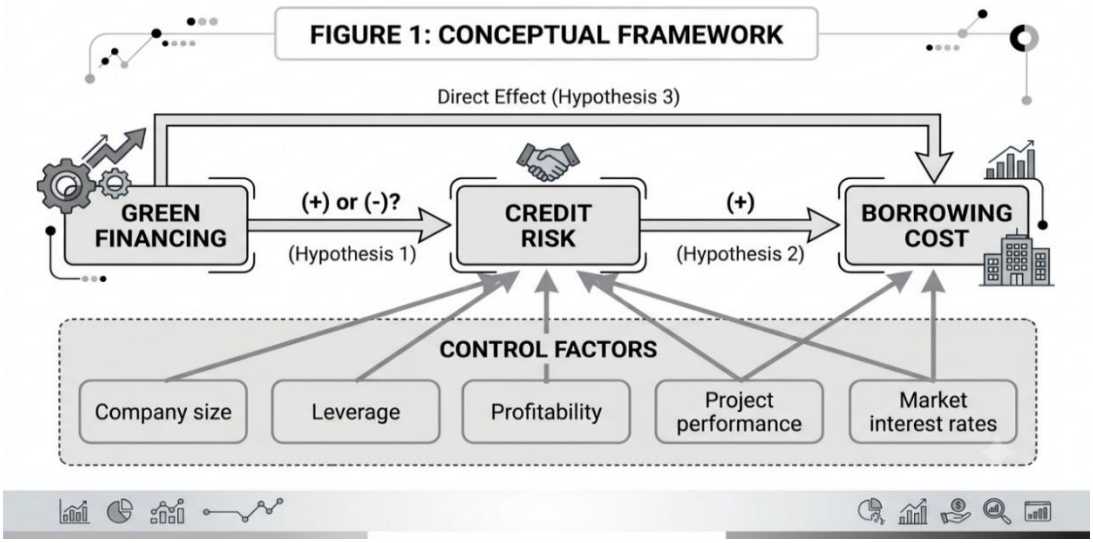
Hypotheses

- **H1:** Green financing has a significant relationship with credit risk among Indian renewable energy companies.
- **H2:** Green financing has a significant relationship with borrowing cost among Indian renewable energy companies.
- **H3:** Credit risk has a significant relationship with borrowing cost among Indian renewable energy companies.

Methodology

This study adopts a descriptive and analytical research design based on secondary literature, regulatory publications, and publicly available corporate disclosures. The target population comprises Indian renewable energy companies operating in solar, wind, and related clean-energy activities. For an empirical investigation, company-level information could be collected from annual reports, financial statements, credit-rating reports, and green-financing disclosures. Green financing could be measured through the presence or proportion of identifiable green funding instruments. Credit risk could be measured through leverage, interest coverage, and credit ratings, while borrowing cost could be calculated as interest expense divided by average interest-bearing debt. Descriptive statistics, correlation, and regression analysis could be used to assess the relationships between these variables while controlling for company size, profitability, and debt structure. The numerical values presented in the following section are hypothetical illustrations and are not derived from a verified company-level dataset.

Figure 1: Conceptual Framework



Results and Analysis

The following figures are illustrative and are included to demonstrate how quantitative results may be presented. They are not actual findings from Indian renewable energy companies.

Table 1: Illustrative Descriptive Statistics

Indicator	Green-financed group	Comparison group
Number of observations	30	30
Average borrowing cost	8.10%	8.65%
Credit-risk proxy index	2.30	2.70
Debt-to-assets ratio	0.42	0.45
Interest coverage ratio	2.40x	2.10x

In this illustration, the green-financed group has a lower average borrowing cost and credit-risk proxy, along with a higher interest coverage ratio. These differences demonstrate how a comparison might be presented, but they do not establish that green financing causes lower borrowing costs or credit risk. Actual results would require comparable company observations and statistical testing.

Table 2: Illustrative Regression Results Predicting Borrowing Cost

Predictor	β coefficient	t-value	Significance
Green-financing indicator	-0.28	-2.12	$p = 0.038$
Credit-risk proxy	0.34	3.76	$p < 0.001$
Debt-to-assets ratio	0.21	2.24	$p = 0.029$
Company-size index	-0.08	-1.06	$p = 0.294$
Model fit	$R^2 = 0.31$	—	Illustrative

In this hypothetical model, the green-financing indicator has a negative coefficient, while the credit-risk proxy and debt-to-assets ratio have positive coefficients. This illustrates a possible relationship in which green financing is associated with lower borrowing cost and higher credit risk is associated with higher borrowing cost. However, the model must be estimated using verified data before any conclusions can be drawn.

Discussion

The illustrative analysis demonstrates a framework for investigating whether green financing is associated with borrowing cost and credit risk. A possible explanation for lower borrowing costs is that credible green-financing arrangements may attract investors, diversify funding sources, and improve transparency. Nevertheless, these benefits depend on the quality of the financing arrangement and the financial condition of the borrower.

Credit risk remains an important factor in the pricing of debt. Companies with stable cash flows, manageable leverage, reliable project performance, and stronger repayment capacity may obtain more favourable financing terms. Conversely, companies facing project delays, weak revenue collection, or excessive debt may experience higher borrowing costs despite having environmentally beneficial projects.

Regulatory disclosure requirements can support transparency and help investors assess green-financing instruments. However, environmental credentials should be evaluated alongside conventional credit indicators. Future research should use actual company-level data to determine whether green financing has a statistically significant relationship with credit risk and borrowing cost.

Recommendations

- Renewable energy companies should provide transparent disclosures about the allocation and use of green-financing proceeds.
- Lenders should assess repayment capacity, leverage, and project viability alongside relevant environmental considerations.
- Companies should maintain sustainable debt levels and adequate interest coverage to manage financial risk.
- Investors should compare borrowing costs after accounting for credit ratings, debt maturity, and other financing conditions.
- Future researchers should use verified company-level data and clearly defined variables to test the hypotheses statistically.

Conclusion

Green financing can contribute to the development of India's renewable energy sector by mobilising funds for environmentally beneficial projects and supporting transparency in financing. It may help companies diversify their funding sources and improve access to investors. However, green financing does not automatically reduce credit risk or guarantee lower borrowing costs.

The financial outcomes of green financing depend on repayment capacity, leverage, project performance, cash-flow stability, credit ratings, and market conditions. Companies and lenders should therefore combine environmental objectives with sound financial assessment. The illustrative tables in this study demonstrate a possible analytical approach but do not establish actual financial effects. Further empirical research using verified company-level data is necessary to determine the strength and direction of these relationships in Indian renewable energy companies.

Acknowledgement

The author sincerely acknowledges the valuable contributions of researchers, scholars, and financial institutions whose studies and insights have supported this research. Special appreciation is extended to the Indian renewable energy sector for providing relevant information on green financing, credit risk, and borrowing costs. Their contributions have enriched the understanding of sustainable finance and financial risk management.

Financial support and sponsorship

Nil.

Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of thesis paper.

Bibliography

1. Kempa, K., Moslener, U., & Schenker, O. (2021). The cost of debt of renewable and non-renewable energy firms. *Nature Energy, 6*, 135–142. https://doi.org/10.1038/s41560-020-00745-x
2. Reserve Bank of India. (2022). *Report of the Survey on Climate Risk and Sustainable Finance*. Reserve Bank of India. https://www.rbi.org.in/
3. Securities and Exchange Board of India. (2023). *Revised disclosure requirements for issuance and listing of green debt securities*. SEBI. https://www.sebi.gov.in/
4. Dutt, A., Soman, A., Chawla, K., Bhattacharya, S., & Vaze, P. (2019). *Financing India's energy transition: A guide on green bonds for renewable energy and electric transport*. Council on Energy, Environment and Water. https://www.ceew.in/
5. Government of India, Ministry of Finance. (2022). *Sovereign Green Bonds Framework*. Government of India. https://dea.gov.in/