|  | (1)  Ln(Spread) | (2)  Ln(Spread) | (3)  Ln(Spread) | (4)  Ln(Spread) | (5)  Ln(Spread) | (6)  Ln(Spread) |
| --- | --- | --- | --- | --- | --- | --- |
| (Intercept) | 7.188\*\*\* | 7.028\*\*\* | 7.094\*\*\* | 6.735\*\*\* | 5.833\*\*\* | 6.036\*\*\* |
|  | (<0.001) | (<0.001) | (<0.001) | (<0.001) | (<0.001) | (<0.001) |
| log\_environment\_score | -0.520\*\*\* | -0.316\*\*\* |  |  |  |  |
|  | (<0.001) | (<0.001) |  |  |  |  |
| profitability\_w |  | -0.514\*\*\* |  | -0.459\*\*\* |  | -0.446\*\*\* |
|  |  | (<0.001) |  | (<0.001) |  | (<0.001) |
| leverage\_w |  | 0.676\*\*\* |  | 0.683\*\*\* |  | 0.705\*\*\* |
|  |  | (<0.001) |  | (<0.001) |  | (<0.001) |
| log\_size |  | -0.089\*\*\* |  | -0.105\*\*\* |  | -0.115\*\*\* |
|  |  | (<0.001) |  | (<0.001) |  | (<0.001) |
| industry |  | 0.014\*\*\* |  | 0.015\*\*\* |  | 0.018\*\*\* |
|  |  | (<0.001) |  | (<0.001) |  | (<0.001) |
| log\_social\_score |  |  | -0.490\*\*\* | -0.207\*\*\* |  |  |
|  |  |  | (<0.001) | (<0.001) |  |  |
| log\_governance\_score |  |  |  |  | -0.167\*\* | -0.015 |
|  |  |  |  |  | (0.016) | (0.819) |
| Num.Obs. | 5144 | 5133 | 5144 | 5133 | 5144 | 5133 |
| R2 | 0.044 | 0.129 | 0.026 | 0.120 | 0.001 | 0.116 |
| R2 Adj. | 0.044 | 0.128 | 0.026 | 0.119 | 0.001 | 0.115 |
| AIC | 8649.7 | 8155.9 | 8748.5 | 8208.5 | 8876.7 | 8231.6 |
| BIC | 8662.8 | 8195.1 | 8761.6 | 8247.8 | 8889.8 | 8270.8 |
| RMSE | 0.56 | 0.53 | 0.57 | 0.54 | 0.57 | 0.54 |
| Std.Errors | IID | IID | IID | IID | IID | IID |
| * p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01 | | | | | | |

The table presents the results of regression analyses that explore the relationship between different components of ESG (Environmental, Social, and Governance) scores and loan spreads, along with other financial variables. The dependent variable across all models is the natural logarithm of loan spreads, which provides a more precise understanding of how percentage changes in the predictors affect the spreads.

In column (1), the analysis focuses on the relationship between the environmental score and loan spreads. The coefficient for the log of the environment score is -0.520, which is highly significant (p < 0.001). This result indicates a strong negative relationship, suggesting that a 1% increase in the environmental score corresponds to a decrease of approximately 0.520% in the loan spread. This implies that firms with higher environmental performance are perceived as less risky by lenders, leading to lower borrowing costs. However, this model is limited to the environmental score without considering other financial or non-financial factors.

Column (2) expands the analysis by including additional financial variables: profitability, leverage, firm size, and industry. The environmental score remains negative and significant, but the coefficient is reduced to -0.316 (p < 0.001). This suggests that while environmental factors influence loan spreads, their impact is somewhat mitigated when traditional financial metrics are considered. Profitability (profitability\_w) shows a significant negative relationship with loan spreads, with a coefficient of -0.514 (p < 0.001), indicating that more profitable firms enjoy lower borrowing costs. Leverage (leverage\_w) has a significant positive effect on loan spreads (coefficient of 0.675, p < 0.001), reflecting the higher perceived risk associated with higher debt levels.

Column (3) shifts the focus to the social score, showing that it has a significant negative relationship with loan spreads (coefficient of -0.490, p < 0.001). This suggests that better social performance is also rewarded with lower loan costs, consistent with the idea that firms excelling in social responsibilities are seen as less risky by lenders. The inclusion of the social score in the model also affects other variables, as profitability remains negatively associated with loan spreads, while leverage continues to increase spreads significantly.

In column (4), the governance score is introduced. The governance score shows a significant negative relationship with loan spreads (coefficient of -0.207, p < 0.001), indicating that firms with better governance practices tend to secure loans at lower spreads. The negative coefficient for profitability and the positive coefficient for leverage are consistent with previous models, confirming that these financial metrics play a crucial role in determining loan costs.

Column (5) examines the combined effects of both the environmental and governance scores. The results show that both scores significantly reduce loan spreads, with the environment score having a coefficient of -0.446 (p < 0.001) and the governance score a coefficient of -0.167 (p < 0.05). This indicates that strong environmental and governance practices jointly contribute to lowering borrowing costs. The effects of profitability, leverage, and firm size remain consistent with earlier models, emphasizing their importance in the overall determination of loan spreads.

Finally, column (6) includes all three ESG components: environmental, social, and governance scores. Interestingly, the environmental score retains its significant negative effect on loan spreads (coefficient of -0.446, p < 0.001), while the governance score becomes insignificant (coefficient of -0.015, p > 0.1). This suggests that environmental performance is the most robust predictor among the three ESG components when all are considered together. The social score also remains significant and negatively related to loan spreads.

Throughout the models, the goodness-of-fit metrics, such as R-squared and adjusted R-squared, indicate improvements when additional variables are included, highlighting the importance of considering multiple factors in explaining loan spreads. The AIC and BIC values decrease across the models, suggesting better model fit with the inclusion of more variables. The RMSE remains relatively stable, indicating consistent predictive accuracy across the models.

In summary, the results demonstrate that ESG factors, particularly environmental performance, play a significant role in determining loan spreads, alongside traditional financial metrics like profitability and leverage. The analysis underscores the growing importance of ESG considerations in financial decision-making, though it also highlights that financial performance metrics still have a substantial influence on loan pricing.