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# ENVIRONMENTAL PERFORMANCE AND SYNDICATED LENDING

## ABSTRACT

Do firms with higher environmental scores receive more credit? We address this question using syndicated loan-level data matched with firm-level environmental scores over the period 2002–2019. We find that firms with higher environmental scores obtain significantly larger loan volumes: a one percentage point increase in environmental performance is associated with approximately 0.26%-1% higher lending. We further examine how this relationship strengthens following major climate policy developments. After the Paris Agreement, lending to firms with higher environmental score increases by an additional 0.70%-1.10% consistent with a shift in credit allocation toward greener firms.

**Keywords**: Climate change; Syndicated lending; Paris Agreement; ESG
**JELClassification**: E51; G28; H23

## RIASSUNTO

*Performance ambientale delle imprese e credito sindacato*

Le imprese con una migliore performance ambientale ricevono maggiori finanziamenti? Per rispondere a questa domanda, utilizziamo dati granulari sui prestiti sindacati, combinati con un indicatore della performance ambientale delle imprese, per il periodo 2002–2019. I risultati evidenziano una relazione positiva e statisticamente significativa tra performance ambientale e volume dei finanziamenti ottenuti: un aumento di un punto percentuale dell'indicatore di performance ambientale è associato a un incremento dei prestiti compreso tra lo 0,26% e l'1%. Analizziamo inoltre come questa relazione si sia rafforzata in seguito a importanti sviluppi delle politiche climatiche. In particolare, dopo l'Accordo di Parigi, un aumento di un punto

* This paper was written when Alessio Reghezza was a Lecturer at the University of Genoa.


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percentuale dell'indicatore di performance ambientale è associato a un incremento aggiuntivo dei finanziamenti compreso tra lo 0,70% e l'1,10%, coerentemente con una riallocazione del credito a favore delle imprese con migliori performance ambientali.

## 1. Introduction

Environmental, Social, and Governance (ESG) factors have gained growing importance in recent years. Among these, the environmental dimension (the "E" factor within the ESG) has garnered particular attention as policymakers, investors and financial institutions confront the challenges posed by climate change. A central question is whether financial markets allocate capital in a way that reflects firms' environmental performance, thereby supporting the transition to a low-carbon economy.

Environmental considerations have increasingly entered the regulatory and policy agenda. In Europe, initiatives such as the Sustainable Finance Disclosure Regulation (SFDR) and the Task Force on Climate-related Financial Disclosures (TCFD) promote transparency in the assessment of climate-related risks. At the global level, the Paris Agreement and the United Nations' Sustainable Development Goals emphasize the need to align financial flows with environmental objectives. In this context, firm-level environmental scores have emerged as a widely used metric to capture exposure to environmental risks and the adoption of sustainable practices.

These developments suggest that environmental performance may increasingly shape firms' access to credit. Firms with higher environmental scores typically exhibit stronger environmental practices, such as energy efficiency, emissions reduction, and climate resilience, while firms with lower scores are more exposed to regulatory, physical, and reputational risks related to climate change. As a result, environmental performance may affect how credit is allocated across firms, either because it proxies for risk or because it reflects broader shifts in investor and policy priorities. Consistent with this view, existing studies document that environmentally stronger firms face more favorable borrowing conditions, including lower loan spreads (Chava, 2014; Kleimeier and Viehs, 2016; Delis *et al.*, 2018).

Despite the growing importance of these issues, there is limited evidence on how firm-level environmental performance affects the allocation of credit at a granular level. Much of the


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existing literature focuses on pricing effects or on banks' aggregate exposures to climate-sensitive sectors (Battiston *et al.*, 2017; Ilhan, Sautner and Vilkov, 2021). While less is known about whether credit flows are systematically tilted toward firms with stronger environmental characteristics. Understanding this allocation is crucial for assessing whether financial intermediation contributes to the reallocation of capital toward more sustainable activities.

This paper addresses this gap by examining whether firms with higher environmental scores receive more credit in the syndicated loan market. We combine granular syndicated loan-level data with firm-level environmental scores over the period 2002-2019, allowing us to study how environmental performance is associated with credit allocation across firms at a granular level. Our empirical design exploits variation in environmental scores across and within firms while controlling for a rich set of fixed effects, thereby isolating differences in credit allocation that are not driven by observable firm characteristics or sectoral trends.

We find a robust positive relationship between environmental performance and credit allocation. Depending on the econometric specification, a one percentage point increase in a firm's environmental score is associated with approximately 0.26%-1% higher loan volumes. This result is robust across a wide range of specifications, including sector, sector-by-year, firm, and loan-type fixed effects. Importantly, these specifications ensure that the results are not driven by stronger credit demand in greener sectors or by time-invariant firm characteristics. We also control for a comprehensive set of firm-level variables to account for potential confounding factors. We further investigate whether major climate policy developments are associated with changes in credit allocation. Focusing on the Paris Agreement as a shift towards a more sensible financial sector towards a sustainable economy, we examine whether the relationship between environmental performance and credit allocation strengthens after 2015[1]. We find that, following the agreement, firms with higher environmental scores receive an additional 0.70%-1.10% in lending, consistent with a shift in credit allocation toward environmentally stronger firms.

We contribute to the literature in several ways. First, we provide new evidence on how

[1] The Paris Agreement, signed in December 2015, represents a milestone as countries responsible for 97% of global greenhouse gas emissions agreed to take concrete action in order to keep global warming below 2°C above pre-industrial levels. In addition, COP21 represents the first climate deal that states the need to "make finance flows compatible with a pathway toward low greenhouse emissions and climate-resilient development".


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environmental performance affects firms' financing conditions along the quantity dimension of credit, complementing a large literature that focuses on prices. Existing studies show that firms with stronger environmental characteristics face lower borrowing costs and risk premia (e.g., Chava, 2014; Ilhan, Sautner and Vilkov, 2021), indicating that climate risks are priced in financial markets. We show that this pricing extends beyond interest rates to the allocation of credit itself: firms with higher environmental scores obtain significantly larger loan volumes. This identifies a different channel through which environmental performance shapes firms' access to external finance.

Second, we provide evidence that climate policy shocks strengthen this channel. While prior work (e.g., Reghezza *et al.*, 2022) documents a reallocation of lending away from more polluting firms following the Paris Agreement, we show that the sensitivity of credit allocation to firms' environmental performance increases after the agreement. This result highlights the role of firm-level environmental characteristics in determining access to credit.

Third, by combining granular syndicated loan data with firm-level environmental scores over a long-time horizon, we provide systematic micro-level evidence on how environmental performance shapes credit allocation across firms in an international setting. This allows us to move beyond event-based analyses, such as those focusing mostly on the Paris Agreement (Reghezza *et al.*, 2022; Degryse *et al.*, 2023; Delis *et al.*, 2024), and document a persistent and economically meaningful relationship between environmental performance and financing outcomes.

The paper is organized as follows. Section 2 introduces the theoretical framework and hypotheses. Section 3 outlines the data, whilst Section 4 the methodology employed in the analysis. Section 5 presents the results, followed by robustness checks. Finally, Section 6 concludes with a discussion of the implications of our findings for policymakers, and future research.

## 2. Theoretical framework and hypotheses

Financial intermediaries play a central role in allocating capital across firms, and the distribution of credit reflects how financial markets assess firms' risk, profitability, and long-term prospects. In this context, firms' environmental performance may influence their access


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to credit through several channels, including risk considerations, regulatory developments, and broader shifts in market expectations.

Our framework is also informed by stakeholder theory (Freeman, 2010), which emphasizes that firms' relationships with key stakeholders – including investors, creditors, and regulators – affect their economic outcomes. In this context, environmental performance can be interpreted as a signal of how firms manage stakeholder-related risks and expectations. As sustainability considerations become increasingly relevant for financial markets, firms with stronger environmental performance may benefit from improved access to external finance.

In this section, we outline these channels and derive testable hypotheses on how environmental scores are associated with credit allocation across firms.

### *2.1 Environmental Performance and Firm Risk*

Environmental performance may affect firms' access to credit through standard credit risk considerations (Coulson and Monks, 1999; Zhang, 2021). Firms with stronger environmental practices are likely to face lower exposure to both physical and transition climate risks (Capasso, Gianfrate e Spinelli, 2020; Huang *et al.*, 2022). They may also be better positioned to adapt to tightening environmental regulations and technological changes associated with the transition to a low-carbon economy.

Conversely, firms with weak environmental performance may be more exposed to transition risks arising from carbon pricing, regulatory tightening, or shifts in demand toward greener products. These risks can increase the likelihood of financial distress and reduce expected future cash flows. As a result, environmental performance can serve as a signal of firms' risk profile and resilience to climate-related shocks (Weber, 2012; Wellalage and Kumar, 2021).

If environmental performance captures differences in firms' risk and expected future performance, it should be reflected in their financing conditions. In particular, firms with higher environmental scores should obtain greater access to credit.

**Hypothesis 1:** *Firms with higher environmental scores receive larger loan volumes.*

### *2.2 Environmental Performance and Financing Frictions*

Beyond risk considerations, environmental performance may also affect firms' access to credit through broader financing frictions related to regulation, disclosure, and market expectations. Over the past decade, policymakers and international organizations have increasingly emphasized the role of the financial system in supporting the transition to a low-carbon economy. Regulatory initiatives and disclosure frameworks have enhanced the availability and relevance of environmental information, making it easier for financial markets to incorporate such information into financing decisions (Nieto, 2019; Smoleńska and van 't Klooster, 2022; Miguel, Pedraza and Ruiz-Ortega, 2024).

At the same time, investors and other stakeholders have increased their focus on sustainability, raising the potential costs associated with financing environmentally weak firms. This may affect firms' financing conditions by altering the supply of capital they face, even in the absence of changes in their observable financial characteristics.

Under this channel, environmental scores influence firms' access to credit not only because they proxy for risk, but also because they affect how firms are perceived in increasingly sustainability-oriented financial markets. As a result, firms with stronger environmental performance may face more favorable credit allocation.

**Hypothesis 2:** *Firms with higher environmental scores receive relatively more credit due to sustainability-related financing frictions.*

### *2.3 Climate Policy and the Reallocation of Credit*

Major climate policy developments can strengthen the role of environmental performance in shaping firms' financing conditions. The Paris Agreement represents a key milestone, as it established a global commitment to align financial flows with climate objectives.

Such policy shifts may affect firms' access to credit through several mechanisms. First, they can increase the salience of climate-related risks, making differences in environmental performance more relevant for assessing firms' future prospects. Second, they can strengthen market expectations regarding the transition to a low-carbon economy, increasing the perceived risks associated with environmentally weak firms. Third, they can enhance the role


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of environmental metrics in financial decision-making by promoting disclosure and standardization.

If climate policy developments increase the importance of environmental performance, the relationship between environmental scores and credit allocation should become stronger following such events.

**Hypothesis 3:** *The positive relationship between environmental scores and loan volumes is stronger following major climate policy agreements such as the Paris Agreement.*

## 3. DATA

We construct a comprehensive dataset by combining syndicated loan-level information with firm-level environmental and financial data. Syndicated loan data are obtained from the DealScan database of the Loan Pricing Corporation (LPC), which provides detailed information on loan characteristics, including loan size, maturity, and lender composition. These data are matched with firm-level environmental scores and balance sheet variables from Refinitiv Eikon.

Our focus on syndicated loan data is motivated by several considerations. First, syndicated lending is inherently international, allowing us to analyze credit allocation across firms in a global setting. This is particularly relevant in the context of climate change, which is a global phenomenon affecting firms and financial markets across jurisdictions. Second, syndicated loans are primarily extended to large corporations, which tend to have greater exposure to environmental risks, are subject to more stringent disclosure requirements, and account for a substantial share of global emissions. As a result, environmental performance is more likely to be economically relevant for financing outcomes in this segment of the credit market. Third, DealScan provides detailed deal-level information on loan amounts and characteristics, enabling us to study how credit volumes are allocated across firms as a function of their environmental performance.

Our final sample covers the period 2002-2019. We end the sample in 2019 to avoid potential confounding effects from the COVID-19 pandemic. The merged dataset comprises 6,606 syndicated loans issued to 1,097 firms worldwide. Descriptive statistics are reported in Table

1, while Table 2 reports a pairwise correlation analysis[2].

Syndicated loans are typically extended by a group of lenders, with a lead arranger responsible for structuring the loan, conducting due diligence, and monitoring the borrower. In our analysis, the unit of observation is the loan–firm–year, and we focus on the total loan amount granted to a firm in a given deal. This allows us to study how credit volumes are allocated across firms as a function of their environmental performance.

Firm environmental scores (E-scores) range from 0 to 98.4, with a mean of 35.2 and a standard deviation of 29. Figure 1 shows a steady increase in average environmental scores over time, from approximately 23 in 2002 to around 50 in 2019, consistent with the growing relevance of environmental considerations in financial markets. Appendix A provides further details on the construction and interpretation of the Refinitiv environmental score used in the analysis.

TABLE 1 - *Descriptive Statistics*

| Variable | Obs | Mean | Std.Dev. | Min | Max |
|---|---|---|---|---|---|
| **Dependent variable** | | | | | |
| Ln(Lending) | 6598 | 19.54 | 1.506 | 13.049 | 24.41 |
| **Control variables** | | | | | |
| E-score | 6605 | 35.206 | 29.036 | 0 | 98.419 |
| Cash/TA | 6581 | .076 | .071 | .001 | .365 |
| LTD/TA | 6595 | .238 | .162 | 0 | .761 |
| EBIT/TA | 6599 | .076 | .061 | -.047 | .33 |
| WC/TA | 5213 | .085 | .151 | -.708 | .832 |
| Log(TA) | 6606 | 10.465 | 2.673 | 3.933 | 20.983 |

*Notes*: Lending is the logarithm of the syndicated loan amount. E-score is the environmental score as part of the ESG score. Cash/TA is the ratio of cash to total assets. LTD/TA is the ratio of long-term debt to total assets. EBIT/TA is the earning before interest and taxes to total assets. WC/TA is the ratio of working capital to total assets. Log(TA) is the logarithm of firm total assets.

[2] Tables A1 and A2 report the number of loans by country of syndication (Table A1) and firm headquarter (Table A2).

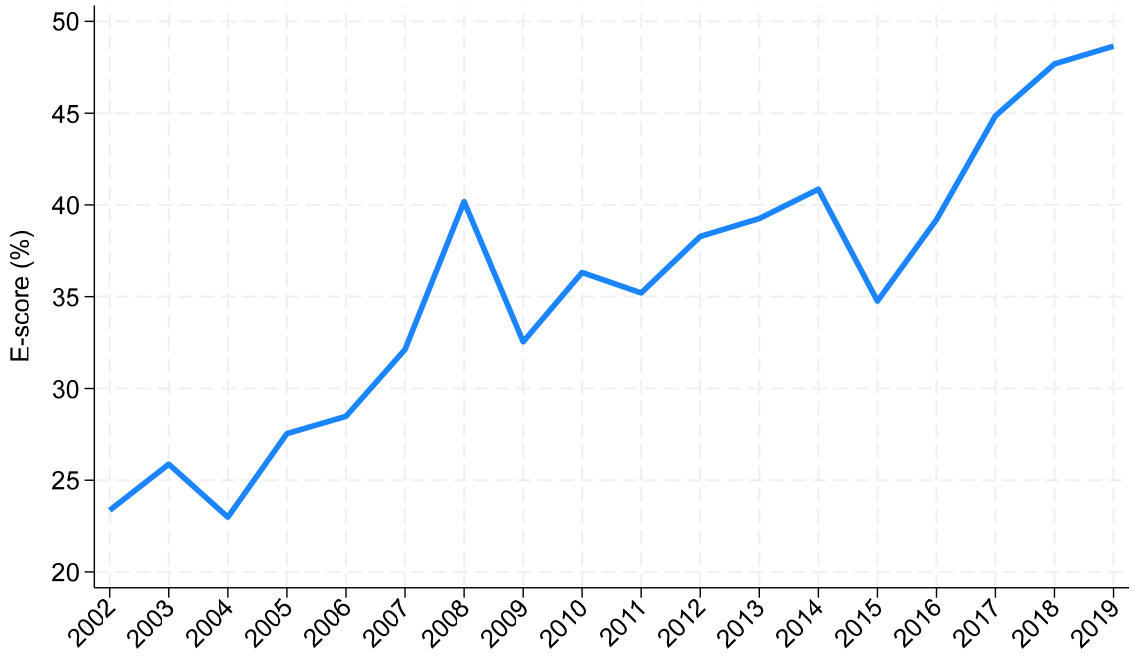

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TABLE 2 - *Correlation Matrix*

| | E-score | Cash/TA | LTD/TA | EBIT/TA | WC/TA | Log(TA) |
|---|---|---|---|---|---|---|
| **E-score** | | -0.00 | -0.07 | -0.09 | -0.13 | 0.23 |
| **Cash/TA** | -0.00 | | -0.18 | 0.20 | 0.40 | -0.13 |
| **LTD/TA** | -0.07 | -0.18 | | -0.01 | -0.20 | -0.11 |
| **EBIT/TA** | -0.09 | 0.20 | -0.01 | | 0.19 | -0.30 |
| **WC/TA** | -0.13 | 0.40 | -0.20 | 0.19 | | -0.12 |
| **Log(TA)** | 0.23 | -0.13 | -0.11 | -0.30 | -0.12 | |

*Notes*: E-score is the environmental score as part of the ESG score. Cash/TA is the ratio of cash to total assets. LTD/TA is the ratio of long-term debt to total assets. EBIT/TA is the earning before interest and taxes to total assets. WC/TA is the ratio of working capital to total assets. Log(TA) is the logarithm of firm total assets.

FIGURE 1 - *Evolution of Environmental Score*




*Note*: This chart shows the mean of the E-score over the period 2002-2019.

The dataset also captures key financial characteristics of borrowing firms. On average, the cash-to-total-assets ratio (Cash/TA) is 7.6%, while the long-term debt-to-total-assets ratio (LTD/TA) is 23.8%. Profitability, measured as earnings before interest and taxes to total assets (EBIT/TA), averages 7.6%, and the working capital-to-total-assets ratio (WC/TA) averages 8.5%. As indicated by the descriptive statistics for the logarithm of total assets, the sample primarily includes large corporations.

## 4. Empirical specification

To examine how environmental performance relates to credit allocation, we estimate the following baseline specification:

$$Ln(lending)_{l,f,t} = \alpha_{s,t} + \beta E - score_{f,t-1} + \gamma X_{t-1} + \varepsilon_{l,f,t} \quad (1)$$

where the dependent variable is the logarithm of the loan amount for loan *l* granted to firm *f* at time *t*. The main explanatory variable is the firm's environmental score (E-score), lagged by one period to mitigate concerns related to simultaneity and reverse causality. $X_{t-1}$ denotes a vector of firm-level control variables, also lagged. In particular, we control for: (i) the ratio of cash to total assets (Cash/TA), (ii) the ratio of long-term debt to total assets (LTD/TA); (iii) the ratio of earnings before interest and taxes to total assets (EBIT/TA); (iv) the ratio of working capital to total assets (WC/TA) and; (v) the logarithm of firm total assets. Standard errors are clustered at the firm level to account for serial correlation in lending outcomes within firms over time[3].

Our empirical strategy exploits cross-sectional variation in environmental performance across firms within narrowly defined sector-x-year cluster. To isolate this variation, we include

[3] Although the estimated association between lending and environmental score could be driven by corporate credit ratings, the latter are not included among the baseline controls because consistent ratings are not available for a sufficiently broad share of firms in our international sample over the full 2002-2019 period. Restricting the analysis to rated firms would therefore substantially reduce the sample and, importantly, select it toward larger and more frequently rated corporations. We nevertheless recognize that credit ratings summarize dimensions of underlying creditworthiness that may also be correlated with environmental performance and access to credit. To mitigate this concern, our specifications control for several firm-level determinants of credit risk and borrowing capacity, including leverage, liquidity, profitability, working capital and firm size, all lagged by one period; specifications with firm fixed effects additionally absorb time-invariant differences in borrower quality. These controls cannot fully substitute for a forward-looking credit rating, however, and we therefore interpret the estimated coefficients as conditional associations rather than as fully isolating a causal effect of environmental performance from all dimensions of creditworthiness.


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sector-by-year fixed effects based on 4-digit SIC codes (281 sectors), which absorb common shocks to credit demand and supply affecting firms operating in the same sector at a given point in time. This specification ensures that identification comes from comparing firms with different environmental scores within the same sector and year, thereby alleviating concerns that our results are driven by sectoral trends (e.g., greener sectors receiving more credit). In additional specifications, we further strengthen the identification by including firm fixed effects, which absorb time-invariant unobserved heterogeneity across firms. Therefore, in this setting, the identification relies on within-firm variation over time in environmental scores. We include loan-type and loan purpose fixed effects. The former controls for heterogeneity in contract characteristics (e.g., term loans vs credit lines), ensuring that results are not driven by differences in loan structure. The latter absorbs systematic differences in borrowing needs across loan purposes (e.g., acquisitions, refinancing, working capital). This is important because loan size may vary substantially depending on the intended use of funds. Including these fixed effects ensures that the estimated relationship between environmental performance and loan volumes is not driven by differences in the composition of borrowing purposes across firms with different environmental scores. At the loan-level, we also control for loan maturity to account for the possibility that loan maturity affects lending allocation.

To assess potential multicollinearity, we report pairwise correlations (Table 2) and compute variance inflation factors (VIF). The results indicate low correlation among regressors, and the VIF values are close to one (average VIF = 1.15), suggesting that multicollinearity is not a concern in our specifications.

Taken together, these specifications allow us to disentangle the relationship between environmental performance and credit allocation from confounding factors related to firm characteristics, sectoral dynamics, and loan characteristics.

## 5. Results

Table 3 reports the baseline results from estimating equation (1), examining how firms' environmental performance is associated with the allocation of credit in the syndicated loan market. The table presents eight specifications that progressively incorporate more demanding fixed effects and firm-level controls. Columns (1)–(4) include the environmental score without additional firm controls, while varying the fixed effects structure: sector fixed

effects (column 1), sector-by-year fixed effects (column 2), firm fixed effects (column 3), and firm plus loan-type fixed effects (column 4). Columns (5)–(8) augment these specifications by including time-varying firm characteristics, maintaining the same sequence of fixed effects[4].

Across all specifications, we find a positive and statistically significant relationship between firms' environmental performance and loan volumes. This indicates that firms with higher environmental scores receive larger loans, consistent with a reallocation of credit toward environmentally stronger firms. In terms of magnitude, the estimates suggest that a one percentage point increase in a firm's environmental score is associated with an increase in loan volumes ranging from approximately 0.26% to 1.04%, depending on the specification. For example, in column (1), which includes sector fixed effects, the coefficient implies an increase of about 0.72%, while in the most demanding specification (column 8), which includes firm and loan-type fixed effects as well as firm controls, the effect remains positive and statistically significant at around 0.26%.

Importantly, the relationship remains robust when introducing increasingly granular fixed effects. The inclusion of sector-by-year fixed effects (column 2) ensures that identification comes from comparing firms with different environmental scores within the same sector and year, thereby controlling for sector-specific demand and supply conditions. The inclusion of firm fixed effects (columns 3 and 4, and 7 and 8) further strengthens the analysis by exploiting within-firm variation over time, showing that improvements in a firm's environmental performance are associated with increases in its borrowing.

Taken together, these results indicate that the positive association between environmental performance and credit allocation is not driven by sectoral composition, time-invariant firm characteristics, or loan structure.

Regarding control variables, the results are generally consistent with expectations but not central to our analysis. The ratio of long-term debt to total assets (LTD/TA) is positively associated with loan volumes in some specifications, suggesting that more leveraged firms tend to borrow more. Other controls, such as cash holdings (Cash/TA), working capital (WC/TA),

[4] The number of observations varies across specifications due to the inclusion of increasingly granular fixed effects. In particular, sector-by-year fixed effects absorb cells with a single observation, leading to a reduction in sample size. This is a standard feature of high-dimensional fixed effects models. Importantly, our results are robust across specifications and are not driven by changes in the sample composition.


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and profitability (EBIT/TA), are not consistently significant across specifications. The significance of the coefficient on firm size (log total assets) varies depending on the fixed effects included. In specifications without firm fixed effects, it captures cross-sectional differences across firms, while in specifications with firm fixed effects it reflects within-firm variation over time. These two sources of variation capture different economic relationships and are therefore not directly comparable.

Overall, the results provide consistent evidence that firms with stronger environmental performance obtain greater access to credit in syndicated loan markets, highlighting the role of environmental characteristics in shaping the allocation of external finance[5].

### *5.1 Environmental Performance and Credit Allocation around the Paris Agreement*

In the baseline analysis, we document a positive relationship between firms' environmental performance and loan volumes. In this section, we examine whether this relationship changes following the Paris Agreement. To this end, we estimate a specification that exploits cross-sectional variation in firms' environmental performance as a source of differential exposure to the Paris Agreement. Specifically, we consider the following interaction model:

$$Ln(lending)_{l,f,t} = \alpha_{s,t} + \beta E - score_{f,t-1}\ x\ Post_t + \gamma X_{t-1} + \varepsilon_{l,f,t} \qquad (2)$$

where $Post_t$ is a dummy variable equal to one for the period following the Paris Agreement (from 2016 onwards), and zero otherwise. Relative to the baseline, we restrict the sample period from 2010 to 2019 to focus on a symmetric window around the policy event[6]. All other variables are defined as in equation (1).

This specification can be interpreted as a difference-in-differences design with continuous treatment intensity, where firms with higher environmental scores are more exposed to the shift toward sustainable finance associated with the Paris Agreement. Equivalently, the model captures a change in the slope of the relationship between environmental performance and

[5] To relate our findings to the existing literature, which has primarily focused on loan pricing, we estimate analogous regressions using loan spreads as the dependent variable. Consistent with prior evidence, we find that firms with higher environmental scores face lower borrowing costs.

[6] The sample period is intentionally shorter for this exercise. According to Roberts and Whited (2013) the change in the treatment group should be concentrated around the onset of the treatment. Moving away leads to unobservable confounding factors to affect the treatment variable, potentially leading to omitted variable biases.

loan volumes after 2015. Identification therefore relies on a parallel slope assumption – namely, that in the absence of the Paris Agreement, the relationship between environmental performance and credit allocation would have evolved smoothly over time. The key coefficient of interest here is $\beta$ which captures whether the relationship between environmental performance and loan volumes strengthens in the post-2015 period.

Columns (1)-(4) of Table 4 report the results. Across all specifications, the interaction term between E-score and the post-Paris Agreement indicator is positive and statistically significant. The estimates suggest that a one percentage point increase in a firm's environmental score is associated with an additional increase in loan volumes of between 0.70% and 1.10% in the post-2015 period, relative to the pre-period. This finding indicates that the association between environmental performance and credit allocation becomes stronger following the Paris Agreement.

To further investigate the dynamics of this relationship, columns (5)-(8) report a specification in which we interact the environmental score with year dummies. This allows us to trace the evolution of the relationship between environmental performance and loan volumes over time. The estimated coefficients show no systematic pattern in the pre-2015 period, as confirmed by the joint test of pre-trends, which fails to reject the null of no differential relationship across firms prior to the Paris Agreement. By contrast, the coefficients become positive and economically larger in the post-2015 period, particularly from 2017 onwards. This is also visually displayed by Figure 2 which plots the estimated effect coming from column 6 of Table 4. This pattern suggests that the strengthening of the relationship between environmental performance and credit allocation emerges after the Paris Agreement, rather than reflecting pre-existing trends.

Taken together, these results indicate that environmental performance becomes more strongly associated with firms' access to credit following the Paris Agreement. While this analysis does not rely on a binary treatment–control comparison and should therefore not be interpreted as establishing a fully causal effect, it provides consistent evidence that the role of environmental performance in credit allocation has increased in the period following this


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major global policy milestone[7].

TABLE 3 - *Environmental Performance and Credit Allocation*

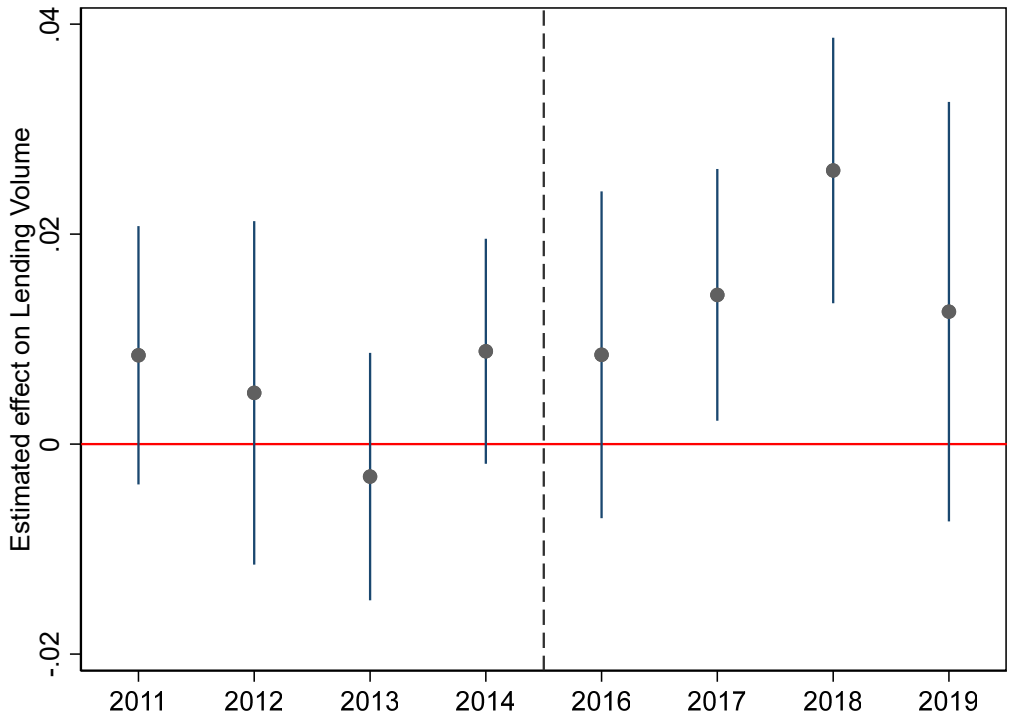
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| VARIABLES | Lending | Lending | Lending | Lending | Lending | Lending | Lending | Lending |
| E-score | 0.0072*** | 0.0065*** | 0.0074*** | 0.0055*** | 0.0086*** | 0.0104*** | 0.0035** | 0.0026* |
| | (0.001) | (0.002) | (0.002) | (0.001) | (0.001) | (0.002) | (0.002) | (0.001) |
| Cash/TA | | | | | -0.8616* | -0.6723 | 0.1682 | 0.0681 |
| | | | | | (0.506) | (0.636) | (0.702) | (0.656) |
| LTD/TA | | | | | 0.9821*** | 1.2442*** | -0.1515 | -0.2653 |
| | | | | | (0.243) | (0.298) | (0.395) | (0.373) |
| EBIT/TA | | | | | -0.1728 | -0.5384 | 0.6652 | 0.7782 |
| | | | | | (0.630) | (0.718) | (0.654) | (0.610) |
| WC/TA | | | | | 0.2572 | 0.2539 | 0.0125 | -0.0854 |
| | | | | | (0.259) | (0.337) | (0.421) | (0.394) |
| Log(TA) | | | | | 0.0319 | 0.0301 | 0.4036*** | 0.3819*** |
| | | | | | (0.026) | (0.032) | (0.076) | (0.073) |
| Maturity | 0.0005 | 0.0008 | 0.0015* | 0.0034*** | -0.0002 | 0.0001 | 0.0008 | 0.0027*** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Observations | 6,514 | 5,943 | 6,301 | 6,300 | 5,129 | 4,598 | 4,956 | 4,955 |
| N.Firms | 1,072 | 964 | 849 | 849 | 887 | 789 | 706 | 706 |
| Sector FE | Yes | No | No | No | Yes | No | No | No |
| Sector x Year FE | No | Yes | No | No | No | Yes | No | No |
| Company FE | No | No | Yes | Yes | No | No | Yes | Yes |
| Loan Type FE | No | No | No | Yes | No | No | No | Yes |
| Loan Purpose FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

*Note*: Lending is the logarithm of the syndicated loan amount. E-score is the environmental score as part of the ESG score. Cash/TA is the ratio of cash to total assets. LTD/TA is the ratio of long-term debt to total assets. EBIT/TA is the earning before interest and taxes to total assets. WC/TA is the ratio of working capital to total assets. Log(TA) is the logarithm of firm total assets. Standard errors are clustered at the firm-level.

[7] We further explore heterogeneity by estimating a triple interaction between the environmental score, the post-2015 indicator, and a dummy for European firms. While the coefficients are generally positive, they are not statistically significant, suggesting that the strengthening of the relationship between environmental performance and credit allocation does not differ systematically between European and non-European firms.


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FIGURE 2 - *Dynamic Plot before and after the Paris Agreement*




*Note*: This chart plots the estimated interaction term coefficients from Table 3 (column 6). The base group is represented by 2015 (dashed line). Confidence intervals are reported at the 95% level.

TABLE 4 - *Environmental Performance and Credit Allocation around the Paris Agreement*

| | Dummy COP21 | | | | Dynamic yearly dummies | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| VARIABLES | Lending | Lending | Lending | Lending | Lending | Lending | Lending | Lending |
| E-score | 0.0053** | 0.0075*** | 0.0073*** | 0.0069*** | 0.0029 | 0.0034 | 0.0033 | 0.0024 |
| | (0.002) | (0.003) | (0.003) | (0.003) | (0.004) | (0.005) | (0.005) | (0.005) |
| E-score x 2011 | | | | | 0.0055 | 0.0085 | 0.0081 | 0.0099 |
| | | | | | (0.005) | (0.006) | (0.006) | (0.006) |
| E-score x 2012 | | | | | 0.0018 | 0.0049 | 0.0051 | 0.0059 |
| | | | | | (0.006) | (0.008) | (0.008) | (0.008) |
| E-score x 2013 | | | | | -0.0017 | -0.0031 | -0.0028 | -0.0018 |
| | | | | | (0.005) | (0.006) | (0.006) | (0.006) |


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TABLE 4 - *continued*

| | Dummy COP21 | | | | Dynamic yearly dummies | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| VARIABLES | Lending | Lending | Lending | Lending | Lending | Lending | Lending | Lending |
| E-score x 2014 | | | | | 0.0053 | 0.0089 | 0.0087 | 0.0075 |
| | | | | | (0.004) | (0.005) | (0.005) | (0.005) |
| E-score x 2016 | | | | | 0.0057 | 0.0085 | 0.0094 | 0.0115 |
| | | | | | (0.006) | (0.008) | (0.008) | (0.007) |
| E-score x 2017 | | | | | 0.0051 | 0.0142** | 0.0142** | 0.0100 |
| | | | | | (0.005) | (0.006) | (0.006) | (0.006) |
| E-score x 2018 | | | | | 0.0166*** | 0.0261*** | 0.0262*** | 0.0255*** |
| | | | | | (0.005) | (0.006) | (0.007) | (0.006) |
| E-score x 2019 | | | | | 0.0134** | 0.0126 | 0.0131 | 0.0153* |
| | | | | | (0.006) | (0.010) | (0.010) | (0.009) |
| E-score x Post | 0.0070** | 0.0106*** | 0.0110*** | 0.0102*** | | | | |
| | (0.003) | (0.004) | (0.004) | (0.004) | | | | |
| Cash/TA | | 0.0208 | -0.0340 | -0.0009 | | -0.0055 | -0.0656 | -0.0398 |
| | | (0.714) | (0.710) | (0.678) | | (0.705) | (0.700) | (0.668) |
| LTD/TA | | 1.6455*** | 1.7121*** | 1.4180*** | | 1.6019*** | 1.6676*** | 1.3844*** |
| | | (0.331) | (0.327) | (0.327) | | (0.327) | (0.324) | (0.323) |
| EBIT/TA | | 0.3637 | 0.3229 | 0.5512 | | 0.3895 | 0.3424 | 0.5722 |
| | | (0.838) | (0.854) | (0.824) | | (0.850) | (0.864) | (0.834) |
| WC/TA | | -0.1347 | -0.0575 | -0.2373 | | -0.1432 | -0.0692 | -0.2533 |
| | | (0.362) | (0.371) | (0.351) | | (0.367) | (0.375) | (0.356) |
| Log(TA) | | 0.0119 | 0.0155 | 0.0112 | | 0.0132 | 0.0170 | 0.0119 |
| | | (0.032) | (0.032) | (0.030) | | (0.032) | (0.032) | (0.030) |
| Maturity | | | -0.0017 | 0.0004 | | | -0.0016 | 0.0005 |
| | | | (0.001) | (0.001) | | | (0.001) | (0.001) |
| Observations | 3,713 | 2,895 | 2,876 | 2,876 | 3,713 | 2,895 | 2,876 | 2,876 |
| N.Firms | 825 | 675 | 674 | 674 | 825 | 675 | 674 | 674 |
| Sector x year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Loan type FE | No | No | No | Yes | No | No | No | Yes |
| Joint coeff pre-2015 | | | | | 0.010 | 0.019 | 0.019 | 0.021 |
| P-values | | | | | 0.496 | 0.342 | 0.342 | 0.292 |

*Notes*: Lending is the logarithm of the syndicated loan amount. E-score is the environmental score as part of the ESG score. Post is a dummy variable equal to 1 from 2015, and 0 otherwise. Cash/TA is the ratio of cash to total assets. LTD/TA is the ratio of long-term debt to total assets. EBIT/TA is the earning before interest and taxes to total assets. WC/TA is the ratio of working capital to total assets. Log(TA) is the logarithm of firm total assets. Standard errors are clustered at the firm-level.

### *5.2 Robustness Checks*

As a first robustness check, we augment the baseline specification by including firms' social (S-score) and governance (G-score) alongside the environmental score. This allows us to assess whether the relationship between environmental performance and loan volumes is driven by broader ESG characteristics rather than by the environmental dimension *per se*. The results, reported in Table 5, confirm the robustness of our baseline findings. The coefficient on the environmental score remains positive and statistically significant across all specifications. By contrast, the governance score is not statistically significant in any specification, while the social score is significant only in a subset of regressions. Overall, these findings suggest that the environmental dimension plays a distinct and quantitatively more important role in explaining variation in loan volumes.

As a second robustness check, we modify the clustering of standard errors. Since the environmental score varies both across firms and over time, residuals may exhibit correlation along both dimensions. We therefore implement two-way clustering at the borrower and year level. The results, reported in Table 6, remain quantitatively and qualitatively unchanged, confirming that our findings are not driven by the choice of clustering structure.


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TABLE 5 - *Controlling for Social and Governance Scores*

| VARIABLES | (1) Lending | (2) Lending | (3) Lending | (4) Lending |
|---|---|---|---|---|
| E-score | 0.0049*** | 0.0051* | 0.0036* | 0.0034** |
| | (0.002) | (0.003) | (0.002) | (0.002) |
| S-score | 0.0061*** | 0.0057* | -0.0012 | -0.0010 |
| | (0.002) | (0.003) | (0.002) | (0.002) |
| G-score | 0.0008 | 0.0020 | 0.0020 | 0.0010 |
| | (0.002) | (0.002) | (0.002) | (0.002) |
| Cash/TA | -0.5502 | -0.4326 | 0.5249 | 0.5101 |
| | (0.547) | (0.658) | (0.720) | (0.685) |
| LTD/TA | 1.0651*** | 1.2423*** | 0.0347 | -0.0364 |
| | (0.247) | (0.331) | (0.385) | (0.363) |
| EBIT/TA | -0.0002 | -0.4142 | 1.1258 | 1.1227* |
| | (0.622) | (0.740) | (0.702) | (0.656) |
| WC/TA | 0.2090 | 0.1690 | 0.2180 | 0.0037 |
| | (0.269) | (0.369) | (0.427) | (0.399) |
| Log(TA) | 0.0004 | 0.0018 | 0.3400*** | 0.3361*** |
| | (0.026) | (0.031) | (0.076) | (0.072) |
| Maturity | -0.0032*** | -0.0028** | -0.0024* | -0.0008 |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Constant | 19.1306*** | 18.9827*** | 16.0358*** | 16.0643*** |
| | (0.284) | (0.344) | (0.748) | (0.714) |
| Observations | 5,132 | 4,602 | 4,959 | 4,958 |
| Sector FE | Yes | No | No | No |
| Sector x Year FE | No | Yes | No | No |
| Company FE | No | No | Yes | Yes |
| Loan Type FE | No | No | No | Yes |

*Notes*: Lending is the logarithm of the syndicated loan amount. E-score is the environmental score as part of the ESG score. S-score is the social score as part of the ESG score. G-score is the governance score as part of the ESG score. Cash/TA is the ratio of cash to total assets. LTD/TA is the ratio of long-term debt to total assets. EBIT/TA is the earning before interest and taxes to total assets. WC/TA is the ratio of working capital to total assets. Log(TA) is the logarithm of firm total assets. Standard errors are clustered at the firm-level.

TABLE 6 - *Alternative Clustering of Standard Errors*

| VARIABLES | (1) Lending | (2) Lending | (3) Lending | (4) Lending | (5) Lending | (6) Lending | (7) Lending | (8) Lending |
|---|---|---|---|---|---|---|---|---|
| E-score | 0.0072*** | 0.0065*** | 0.0074*** | 0.0055*** | 0.0086*** | 0.0104*** | 0.0035** | 0.0026* |
| | (0.002) | (0.002) | (0.002) | (0.001) | (0.001) | (0.002) | (0.002) | (0.001) |
| Cash/TA | | | | | -0.8616 | -0.6723 | 0.1682 | 0.0681 |
| | | | | | (0.579) | (0.650) | (0.696) | (0.613) |
| LTD/TA | | | | | 0.9821*** | 1.2442*** | -0.1515 | -0.2653 |
| | | | | | (0.319) | (0.342) | (0.452) | (0.399) |
| EBIT/TA | | | | | -0.1728 | -0.5384 | 0.6652 | 0.7782 |
| | | | | | (0.701) | (0.741) | (0.613) | (0.561) |
| WC/TA | | | | | 0.2572 | 0.2539 | 0.0125 | -0.0854 |
| | | | | | (0.360) | (0.448) | (0.424) | (0.409) |
| Log(TA) | | | | | 0.0319 | 0.0301 | 0.4036*** | 0.3819*** |
| | | | | | (0.028) | (0.030) | (0.079) | (0.081) |
| Maturity | 0.0005 | 0.0008 | 0.0015 | 0.0034*** | -0.0002 | 0.0001 | 0.0008 | 0.0027** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Observations | 6,514 | 5,943 | 6,301 | 6,300 | 5,129 | 4,598 | 4,956 | 4,955 |
| Sector FE | Yes | No | No | No | Yes | No | No | No |
| Sector x Year FE | No | Yes | No | No | No | Yes | No | No |
| Company FE | No | No | Yes | Yes | No | No | Yes | Yes |
| Loan Type FE | No | No | No | Yes | No | No | No | Yes |
| Loan Purpose FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

*Notes*: Lending is the logarithm of the syndicated loan amount. E-score is the environmental score as part of the ESG score. S-score is the social score as part of the ESG score. G-score is the governance score as part of the ESG score. Cash/TA is the ratio of cash to total assets. LTD/TA is the ratio of long-term debt to total assets. EBIT/TA is the earning before interest and taxes to total assets. WC/TA is the ratio of working capital to total assets. Log(TA) is the logarithm of firm total assets. Standard errors are two-way clustered at the firm and year level.


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## 6. Conclusion

This paper studies how firms' environmental performance shapes their access to credit, using granular syndicated loan data over the period 2002-2019. By focusing on the allocation of credit across firms, our analysis provides new evidence on the role of environmental performance in corporate financing conditions.

We document a robust positive relationship between firms' environmental scores and loan volumes. A one percentage point increase in a firm's environmental score is associated with an increase in syndicated loan volumes of economically meaningful magnitude. This result holds across a wide range of specifications, including those with high-dimensional fixed effects and rich firm-level controls. Importantly, the findings indicate that environmental performance is reflected not only in the pricing of credit – as documented in the existing literature – but also in its allocation, with environmentally stronger firms receiving more credit.

We further show that this relationship strengthens following the Paris Agreement. Using a change-in-slope framework, we find that the sensitivity of loan volumes to environmental performance increases in the post-2015 period. Event-time evidence supports the validity of this interpretation, showing no differential pre-trends and a gradual strengthening of the relationship after the policy milestone. These findings suggest that global climate agreements can reinforce the role of environmental performance in shaping firms' financing conditions.

Our results contribute to the literature on sustainable finance and corporate financing by highlighting a quantity channel through which environmental performance affects access to credit. While prior work has emphasized the pricing of environmental risks, our findings show that environmental performance also influences the allocation of credit across firms, thereby shaping real financing constraints.

From a policy perspective, these results suggest that climate-related policies and disclosure frameworks may influence not only how risks are priced, but also how financial resources are allocated across firms. By strengthening the link between environmental performance and access to credit, such policies can contribute to redirecting financial flows toward more sustainable activities.

An important extension for future research is to examine whether the relationship

documented in this paper has changed under the more explicit climate-related prudential frameworks introduced after the end of our sample. In the euro area, the ECB's 2020 Guide on climate-related and environmental risks sets supervisory expectations for banks to integrate climate and environmental risks into business strategy, governance, risk management and disclosure, with subsequent supervisory exercises progressively embedding these risks in the SREP, ICAAP and stress-testing frameworks (ECB, 2020). In the United Kingdom, the Prudential Regulation Authority similarly sets supervisory expectations for banks to adopt a strategic approach to managing the financial risks from climate change (PRA, 2019). These developments may increase the relevance of borrowers' environmental characteristics for banks' credit decisions. Extending the analysis beyond 2020 would therefore provide a useful setting to assess whether more explicit prudential attention to climate-related financial risks has further strengthened the association between corporate environmental performance and credit allocation.

Some limitations of our analysis point to directions for future research. First, our empirical design does not allow us to fully isolate credit supply from demand, and therefore our results should be interpreted as reflecting equilibrium credit outcomes. Second, we rely on a single provider of environmental scores and cannot assess the robustness of our findings to alternative ESG metrics, an issue that has received increasing attention in the literature. Third, we do not observe the underlying components of the environmental score (e.g., emissions, resource use, or environmental innovation), which prevents us from identifying the specific channels driving the results.


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# APPENDIX

## APPENDIX A. CONSTRUCTION OF THE REFINITIV ENVIRONMENTAL SCORE

The environmental score (E-score) used in the analysis is the Environmental Pillar Score provided by Refinitiv[8]. Refinitiv constructs the score from publicly reported, verifiable company information and organizes the environmental dimension into three categories: resource use, emissions and environmental innovation. The resource-use category captures a firm's performance and capacity to reduce its use of materials, energy and water and to improve the environmental efficiency of its supply chain. The emissions category captures a firm's commitment and effectiveness in reducing environmental emissions generated by its production and operating processes. The innovation category captures a firm's capacity to reduce environmental costs and burdens through environmental technologies and processes and through the development of environmentally oriented products.

The underlying environmental indicators include both quantitative and qualitative information. Refinitiv applies a percentile-rank methodology to the underlying data, taking account of the direction of each indicator (for example, lower emissions are treated as better environmental performance) and the relevance of individual indicators to the firm's industry. Environmental and social measures are benchmarked relative to firms in the same Refinitiv Business Classification (TRBC) industry group. The category scores are then combined using industry-sensitive materiality weights to obtain the Environmental Pillar Score, reported on a 0–100 scale, with higher values indicating stronger environmental performance relative to the relevant peer group. Because the score is a composite, relative measure, a higher E-score should be interpreted as a stronger overall environmental performance as captured by Refinitiv rather than as a direct measure of any single environmental outcome such as carbon emissions.

This construction is useful for our international setting because it provides a standardized measure that can be compared across firms and over time while accounting for industry-specific materiality. At the same time, it has limitations. The score partly depends on corporate

[8] See: https://www.lseg.com/content/dam/data-analytics/en_us/documents/methodology/lseg-esg-scores-methodology.pdf

disclosure and on Refinitiv's aggregation methodology, and ESG ratings can differ across providers. Moreover, our data contain the aggregate Environmental Pillar Score but not the underlying category scores or individual environmental indicators. We therefore cannot determine whether the lending relationship documented in the paper is driven primarily by emissions, resource use or environmental innovation. This limitation also motivates our cautious interpretation of the E-score as a broad measure of corporate environmental performance.


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TABLE A1 - *Number and Percentage of Loans by Country of Syndication*

| Country | N | % | Country | N | % |
|---|---|---|---|---|---|
| Angola | 1 | 0.02 | New Zealand | 10 | 0.15 |
| Argentina | 9 | 0.14 | Norway | 42 | 0.64 |
| Australia | 406 | 6.15 | Oman | 5 | 0.08 |
| Austria | 22 | 0.33 | Peru | 3 | 0.05 |
| Bahrain | 2 | 0.03 | Philippines | 14 | 0.21 |
| Belarus | 5 | 0.08 | Poland | 21 | 0.32 |
| Belgium | 46 | 0.70 | Portugal | 9 | 0.14 |
| Bermuda | 6 | 0.09 | Qatar | 7 | 0.11 |
| Bolivia | 2 | 0.03 | Romania | 3 | 0.05 |
| Brazil | 1 | 0.02 | Russia | 132 | 2.00 |
| Bulgaria | 7 | 0.11 | Saudi Arabia | 5 | 0.08 |
| Canada | 83 | 1.26 | Singapore | 113 | 1.71 |
| Chile | 3 | 0.05 | Slovakia | 6 | 0.09 |
| China | 40 | 0.61 | South Africa | 26 | 0.39 |
| Colombia | 4 | 0.06 | Spain | 177 | 2.68 |
| Cyprus | 4 | 0.06 | Sweden | 47 | 0.71 |
| Czech Republic | 3 | 0.05 | Switzerland | 104 | 1.57 |
| Denmark | 23 | 0.35 | Taiwan | 395 | 5.98 |
| Egypt | 1 | 0.02 | Thailand | 2 | 0.03 |
| Finland | 37 | 0.56 | Turkey | 249 | 3.77 |
| France | 351 | 5.31 | USA | 1,786 | 27.03 |
| Germany | 363 | 5.50 | Uganda | 4 | 0.06 |
| Ghana | 2 | 0.03 | Ukraine | 7 | 0.11 |
| Greece | 8 | 0.12 | UAE | 7 | 0.11 |
| Hong Kong | 531 | 8.04 | UK | 516 | 7.81 |
| Hungary | 23 | 0.35 | Vietnam | 4 | 0.06 |
| India | 223 | 3.38 | | | |
| Indonesia | 41 | 0.62 | | | |
| Ireland | 15 | 0.23 | | | |

Table A1 - *continued*

| Country | N | % | Country | N | % |
|---|---|---|---|---|---|
| Israel | 9 | 0.14 | | | |
| Italy | 81 | 1.23 | | | |
| Jamaica | 1 | 0.02 | | | |
| Japan | 310 | 4.69 | | | |
| Kazakhstan | 3 | 0.05 | | | |
| South Korea | 93 | 1.41 | | | |
| Kuwait | 1 | 0.02 | | | |
| Liberia | 1 | 0.02 | | | |
| Luxembourg | 16 | 0.24 | | | |
| Macau | 33 | 0.50 | | | |
| Malaysia | 8 | 0.12 | | | |
| Mauritius | 1 | 0.02 | | | |
| Mexico | 7 | 0.11 | | | |
| Namibia | 3 | 0.05 | | | |
| Netherlands | 83 | 1.26 | | | |


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TABLE A2 - *Number and Percentage of Loans by firm Headquarter*

| Country | N | % | Country | N | % |
|---|---|---|---|---|---|
| Australia | 461 | 6.98 | Taiwan | 351 | 5.31 |
| Austria | 26 | 0.39 | Thailand | 4 | 0.06 |
| Bahrain | 2 | 0.03 | Turkey | 257 | 3.89 |
| Belgium | 56 | 0.85 | Ukraine | 4 | 0.06 |
| Bermuda | 20 | 0.30 | UAE | 15 | 0.23 |
| Canada | 123 | 1.86 | UK | 608 | 9.20 |
| China | 155 | 2.35 | USA | 1,408 | 21.31 |
| Czech Republic | 1 | 0.02 | | | |
| Denmark | 33 | 0.50 | | | |
| Finland | 45 | 0.68 | | | |
| France | 414 | 6.27 | | | |
| Germany | 441 | 6.68 | | | |
| Greece | 12 | 0.18 | | | |
| Guernsey | 5 | 0.08 | | | |
| Hong Kong | 299 | 4.53 | | | |
| Hungary | 11 | 0.17 | | | |
| India | 244 | 3.69 | | | |
| Indonesia | 37 | 0.56 | | | |
| Ireland | 16 | 0.24 | | | |
| Isle of Man | 10 | 0.15 | | | |
| Israel | 11 | 0.17 | | | |
| Italy | 96 | 1.45 | | | |
| Japan | 436 | 6.60 | | | |
| Jersey | 4 | 0.06 | | | |
| South Korea | 110 | 1.67 | | | |
| Kuwait | 1 | 0.02 | | | |
| Luxembourg | 25 | 0.38 | | | |
| Macau | 3 | 0.05 | | | |
| Malaysia | 19 | 0.29 | | | |

Table A2 - *continued*

| Country | N | % | Country | N | % |
|---|---|---|---|---|---|
| Netherlands | 70 | 1.06 | | | |
| New Zealand | 9 | 0.14 | | | |
| Norway | 40 | 0.61 | | | |
| Oman | 4 | 0.06 | | | |
| Philippines | 14 | 0.21 | | | |
| Poland | 14 | 0.21 | | | |
| Portugal | 4 | 0.06 | | | |
| Qatar | 7 | 0.11 | | | |
| Russia | 137 | 2.07 | | | |
| Saudi Arabia | 7 | 0.11 | | | |
| Singapore | 80 | 1.21 | | | |
| South Africa | 21 | 0.32 | | | |
| Spain | 186 | 2.82 | | | |
| Sweden | 54 | 0.82 | | | |
| Switzerland | 196 | 2.97 | | | |


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