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# Lending relationships of firms for a just transition

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## **Abstract:**

This paper examines lending dynamics for firms aiming for a 'just transition.' Analyzing 37,426 firm-year observations from DealScan and Refinitiv's ESG transition data (2002-2021), we find that lenders offer lower interest rates to firms with prior relationships and strong ESG commitments, particularly environmental ones. While environmental factors receive favorable treatment, economic and governance transitions are less prioritized. Lenders tend to form more dispersed syndicates when supporting firms focused on ESG transitions, especially environmental ones. This research highlights the uneven focus within ESG transitions and emphasizes the underexamined area of governance, providing insights into lending relationships.

**Keywords:** ESG, just transition, interest rate, financing arrangement, sustainability

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## 1. Introduction

In recent years, the idea of 'just transition' has gained prominence to address climate change while maintaining social and economic stability. A 'just transition' is when no one is left behind, and benefits from the transition are fair and inclusive while balancing the trade-offs of social, environmental, and governance issues (PwC, 2020). Particularly in the financial sector, 'just transition' refers to a shift toward the green economy transition to prioritize the well-being of employees, localities, and the massive population via the bank lending mechanism (Neagu et al., 2024). In the latest article, two economists estimate that total investment in climate change policy amounts to \$650bn both in rich and poor countries.<sup>2</sup> Today's world catchphrase for climate change is to "turn billions into trillions" in the shape of your new Green Bank. On the global level, in retrospect, the World Bank individually delivered \$31.7bn record-breaking financing in climate change projects to assist nations with mitigation and adaptation.<sup>3</sup> At the same time over the past few decades, research on finance has focused on "shareholders' supremacy," ignoring other important aspects that can potentially impact other stakeholders such as employees, customers, suppliers, and communities. These aspects are environmental, social, and corporate governance (Sikka & Stittle, 2019; Tsang et al., 2023). In August 2019, the US chief executives met at the Business Roundtable and recognized that these important environmental, social, and corporate governance aspects have been overlooked. Considering financial institutions in particular, the University of Cambridge Institute for Sustainability Leadership's (CISL) Banking Environment

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<sup>2</sup> <https://www.economist.com/finance-and-economics/2023/02/23/what-would-the-perfect-climate-change-lender-look-like>

<sup>3</sup> <https://www.worldbank.org/en/news/feature/2023/07/10/what-you-need-to-know-about-world-bank-group-alignment-with-the-paris-agreement>

Initiative (BEI), in the Bank 2030 report, argues that financial institutions should internalize sustainability in their systems and processes.<sup>4</sup>

Given that bank loans are an important source of external finance for firms worldwide and lending relationships are important for a sustained source of finance for firms. These relationships also work as a medium for reducing the information asymmetry between lenders and borrowers because of durable and reusable information (Boot, 2000). Considering the importance of environmental, social, and governance for firms and the importance of the relationship between lenders and borrowers, a natural question arises as to how banks treat the environmental, social, and governance transition of firms in providing access to capital if they have interacted with each other in the past. We term these three transitions as a ‘just transition.’ Furthermore, it is necessary to consider whether banks provide a premium to firms that score highly in their ‘just transition’ scores (Bae et al., 2018; Zhang et al., 2022; among others) especially when they have prior relationships. Indeed, ‘just transition’ is an important aspect to consider during lending to ensure the implementation of firms’ agenda shared with employees, industry, and government.

Accordingly, environmental, social, and governance factors are the three pillars of corporate sustainability (Dahiya & Singh, 2020; Barkemeyer et al., 2014). Firms are ranked in different league tables based on their environmental, social, and governance scores; this score shows their commitment to the environmental, social, and governance transition (Wong et al., 2020). Therefore, environmental, social, and governance transition challenges are becoming ever more important to stakeholders; consequently, stakeholders require action from firms to meet the demands of corporate sustainability. To address this, firms have begun implementing policies

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<sup>4</sup> <https://www.cisl.cam.ac.uk/resources/sustainable-finance-publications/bank-2030-accelerating-the-transition-to-a-low-carbon-economy>

incorporating environmental, social, and governance transition concerns, including environmental externalities, employee well-being, social diversity, and inclusion. Hence, companies disclose environmental, social, and governance transition-related activities in their financial statements (Buallay et al., 2020). In the 1960s, investors who took social responsibility seriously began to exclude non-financial performance factors from their portfolios (Camilleri, 2020). Governance focuses on a firm's management, audits, executive compensation, the efficacy of internal controls, and protection of shareholder interests. These factors can influence strategic goals, operational execution, and the disclosure of sustainable business practices to key stakeholders. Furthermore, banks' business mainly relies on trust, and the trust in banks has been tarnished post-global financial crisis (Nandy and Lodh, 2012; Marie Lauesen, 2013; Hurley et al., 2014). Therefore, banks need to regain trust, which they can achieve by moving their focus from shareholder supremacy (Zingales, 2000) to stakeholder supremacy, including employees, suppliers, and customers, in their long-term objectives.

To address our research question, we use global syndicated loan data from the Thomson Reuters DealScan database and environmental, social, and governance transition scores data from the Thomson Reuters Refinitiv database. Our final sample comprises 37,426 firm-year observations from 2002 to 2021 around the globe. Our main results indicate that a borrower's environmental, social, and governance transition scores significantly impact firms' borrowing costs when firms have a prior relationship with the lender. Specifically, a borrower with a higher environmental, social, and governance transition can borrow cheaply from lenders as lenders value their stakeholder focus through a 'just transition' framework (Neagu et al., 2024). However, the lenders do not treat all the components of just transition equally; they charge the lowest interest rates if

borrowers' environmental transition is higher (Wellalage & Kumar, 2021; Zhang, 2021; among others).

Overall, our results provide empirical evidence that sustainability matters for lending relationships that can motivate borrowers to contribute toward a transition to net zero (Wellalage & Kumar, 2021). Notably, the 'just transition' mechanism is profitable; firms are charged lower interest rates if they care for the environment, are socially responsible, and abide by corporate governance rules.

Our study has several contributions to the existing literature on firms' sustainability, 'just transition', and lending mechanisms. First, this is the first study exploring the lending relationships of firms for a 'just transition.' We explore the three components of a 'just transition,' namely environmental transition, social transition, and governance transition. Specifically, we study whether lenders 'just transition' has any significant impact on the borrowing cost of firms if they have a prior relationship with lenders. Second, we explore if lenders treat each component of 'just transition' equally. Finally, we explore the information asymmetry between lenders and borrowers and explore what type of syndicate structure is formed by lead arrangers when it comes to lending to firms with a 'just transition.'

The rest of the paper is formatted as follows. In section 2, we discuss the relevant literature and develop our hypotheses. Section 3 explains the data and methodology of this study. Section 4 describes the main results. In section 5, we conclude our paper with some policy implications.

## **2. Literature review**

Incorporating environmental, social, and governance principles into a company's framework is crucial because doing so gives businesses the authority and means to take effective climate action and create a more sustainable, resilient future. Given the increased emphasis on sustainable finance

in recent years and the severity of environmental concerns, governments and companies have adopted investment steps to improve their environmental, social, and governance performance. Banks, in particular, are becoming critical sites for enhancing environmental, social, and governance performance as monitoring activities require significant expenditure, which must be financed. Recently, social responsibility has been regarded as a need rather than an option for any successful organization. As a result, environmental social governance data comprises a direct component that is now more financially significant for businesses.

### *2.1 Environmental, social, and governance with financial performance*

Environmental, social, and governance (ESG) is a vital concern in contemporary global business, one which is directly linked to company culture. Culture is one issue that is frequently overlooked while building an ESG strategy. If a company claims to care about ESG, it must show it by serving customers consistently through internal policies, practices, and culture. Amel (2017) states that, in the eyes of investors, ESG metrics are more helpful for assessing risk and less useful when gauging performance relative to the competition. As a result, he states that many businesses have taken the initiative to develop distinctive strategies that embed environmental and social concerns into their brands and operations. In a similar study, Friede et al. (2015) gathered evidence from approximately 2,200 empirical studies conducted between 1970 and the end of 2014. They discovered a positive business case for investing in ESG and thus concluded that about 90% of academic papers, or approximately 2,100 studies, show a positive link between ESG and financial performance. As a result, high-rated ESG companies were shown to outperform low-rated ESG stocks; however, this comparison was based on the impact of a one-time adjustment.

Furthermore, ESG is a superior financial indicator that encourages businesses to contribute to environmental stewardship while enhancing employee engagement and productivity. Individuals who have a sense of inclusion and community feel valued for their contributions to the overall goals of their firm. Giese et al. (2019) studied the effects of ESG factors on stock prices, risk, and performance. They found that companies with higher ESG and MSCI scores had lower capital costs, less variable profitability, and lower market risk than companies with lower ESG and MSCI scores. In addition, Fama and French (2007) studied a simple framework for determining how investors' preferences for green enterprises impact projected profits. They agree that prices diverge from traditional risk and return models' usual expectations when measures for at least some investors contain factors other than future spending. Significantly, ESG supports businesses in implementing sustainability into their operations to attract top talent, which is part of corporate culture before investors anticipate the company's efforts.

Tarmuji et al. (2016) studied the impact of ESG practices on economic performance in Singapore and Malaysia. The study demonstrated that ESG ensures that employees can openly share their sustainability issues and ideas, outline what their suggestions mean to their company, and participate in achieving goals. Saharti et al. (2024) This study investigates the influence of geopolitical conflicts on firms' environmental, social, and governance (ESG) performance across 79 countries from 2002 to 2021, utilizing fixed effects regression analysis. It concludes that geopolitical conflicts significantly lower ESG performance, particularly in developed countries, underscoring the profound impact of such conflicts on corporate sustainability and governance practices.

While there have been several global financial crises and related mitigating regulatory measures over the past few decades, the financial crisis experienced in 2008 and 2009 was regarded as the



most severe regarding negative societal implications (Stiglitz, 2010). It led to the demise of one of the biggest, oldest, and most successful investment banking firms. Following the global financial crisis of 2008 and 2009, a broad range of stakeholders began to question financial markets' role in global sustainability, notably regarding social and environmental concerns. As a result, financial stakeholders began to research the impacts of ESG on the cost of capital, ultimately finding that companies with better ESG ratings have access to cheaper sources of debt and credit and a lower cost of equity capital.

For instance, Chava (2011) analyzed 5,879 credit facilities extended to 1,341 businesses in the United States and found that those with various environmental issues are subject to substantially higher interest rates. Conversely, firms with better ecological management receive lower loan interest rates. Schneider (2011) agrees that subpar environmental performance substantially threatens future compliance and cleaning expenses. If these costs are too high, polluting businesses may be unable to continue making regular debt payments.

## *2.2 Sustainable Lending*

Sustainable growth relies heavily on the banking industry, a cornerstone of the financial system. Since sustainability has become a major movement in the financial sector, it is incumbent upon investors to make responsible and sustainable investments by considering governance and environmental concerns. Nizam et al. (2019) argue that studies into the banking industry should also be honed in on social responsibility concerns, primarily examining the link between banks' financial performance and incorporating social responsibility concepts into their management processes and systems. Simpsons and Kohers (2002) agree that banks' bottom lines improved significantly after adopting socially responsible procedures. However, Esteban-Sánchez et al.

(2017) researched a sample of 154 banks from 22 countries between 2005 and 2010 that adopted social responsibility principles and found contradictory results, rejecting the positive relationship between the adoption of these principles and the financial performance of banks. Nonetheless, Simpsons and Kohers (2002) state that ESG investments are made because the management of a bank believes that doing business sustainably and responsibly leads to above-average earnings.

Lastly, a nation's ESG governance structure may enhance the quality of a country's profits by increasing the level of company monitoring and reducing the amount of earnings management (Zehri & Zgarni, 2020). Forcadell and Aracil (2017) assert that social responsibility is a strategy that can assist financial institutions in repairing the damage done to their reputations due to the financial crisis of 2008. In place of one-way communication and other conventional methods of legitimization, banks must provide sufficient information on the positive interactions they have had with various stakeholders. Esteban-Sanchez et al. (2017) agree that there is a correlation between a corporation's level of financial performance and the quality of its governance.

Scholars have recently explored the potential effects of sustainable lending on stockholder wealth in the lending sector. Companies are under increasing pressure from stakeholders to be cautious in their approach to ESG issues. In response to rising customer demand, businesses have incorporated environmental externalities, employee well-being, and social diversity and inclusion into their company policies. According to Cai and He (2014), investors would be disappointed if the financial stability of firms funded by banks worsened due to a lack of ESG integration within bank operations and financing. Because banks' lending operations contribute considerably to environmental degradation, it is critical to understand how ESG concerns influence bank lending, particularly during times of crisis. In finance, there is a modest but growing corpus of research exploring how capital providers and financial contracts affect organizations' ESG practices. While

much has been written about stock and bond financing, little is known about banks and loan contracts' role in the ever-changing ESG finance landscape.

First, the expansion of ESG financing has allowed for the development of green project finance lending, which supplements the market for green bonds and general-purpose loans related to the borrower's ESG performance defined by a broad range of indicators. Among borrowers in the United States and Western Europe, ESG-linked loans have become more popular in recent years as the market for ESG loans has expanded to include a wider range of sectors. Berlin et al. (2020) analyzed a large sample of loan agreements. Their research showed that relationship lenders are more likely to have rolling credit facilities than term loans, which allows for more flexible contracting around obligations with easily traceable and enforceable clauses.

Second, according to a survey by Brodback et al. (2018), investors who believe they can have a positive social or environmental impact are more likely to value social responsibility. Third, Berlin et al. (2020) argue that borrowers who have loans with divided control rights are nonetheless subject to the restrictions of financial covenants. Finally, Kim et al. (2022) agree that ESG lending is driven partly by increased demand from creditors; ESG loan borrowers can potentially raise financing while maintaining lower spreads because good ESG profiles can protect firms against downside risks. This protection thus translates into lower spreads at issuance. In addition, these agreements provide revolving credit lenders with the exclusive authority to renegotiate with the borrower, including waiving or changing the financial covenants, without first engaging the term lenders. ESG-linked loans are particularly common in nations with civil law origins because economic outcomes are frequently based on rules and regulations that define stakeholder-oriented interventions rather than market discretion.

Additionally, Danisman and Tarazi (2022) claim that the long-term viability of the businesses sponsored by banks may be negatively impacted if banks do not include ESG concerns in their operations and funding. The researchers discovered that certain members of the environmental lobby and banks' critics harbor skepticism regarding banks' true motivations. Jung et al. (2018) also state that there is mounting evidence that financial institutions consider carbon risk when making lending decisions, notably through credit risk evaluation criteria and financing costs. Herbohn et al. (2019) agree that there are options for funding programs that are socially and environmentally responsible through savings accounts.

In addition, Friede et al. (2015) analyzed more than 2,000 empirical studies on ESG disclosures and business performance, indicating that more than 90% of the studies show a positive association between ESG and performance. Cai and He (2014) conducted analogous research using data from 1992 to 2011 and argued that there was a positive relationship between corporate environmental responsibility and long-run stock returns. Scholtens (2009) also argues that if a corporation is open about its ESG procedures, investors are more confident in the corporation's ability to outperform competitors in a mature market. Li et al. (2018) agree that a corporation is more likely to increase its ESG disclosures to meet investor demands. Similarly, Cheng et al. (2014) concur that ESG has been shown to provide firms with superior returns by lowering their cost of equity and cost of capital, improving valuation, and providing more forgiving borrowing terms. Saharti et al. (2024) analyzed 374 scholarly articles on syndicated loans, identifying their evolution, key influencers, and research trends. However, the literature review revealed a lack of exploration of ESG and syndicated loans.

Eliwa et al. (2019) examined a sample of companies from 15 EU member states. They found that banks offer businesses that record their activities related to ESG discounts. Crifo et al. (2017) argue

that countries with well-developed ESG reporting systems have lower average borrowing costs and yield spreads. Mohammad and Wasiuzzaman (2021) state that companies with narrower yield spreads have an advantage in comparison with their competitors as they experience fewer issuance risks and lower financing costs. Sherwood and Pollard (2018) also agree that financial institutions adopting an ESG stance might see higher returns while reducing risk.

Cai and He (2014) discovered that ESG disclosures boost trust and improve firms' potential to outperform their competitors in a highly competitive, developed market, prompting enterprises to participate in more ESG disclosures to meet market expectations proactively. However, Baldini et al. (2016) argue that country-specific factors such as governance, labor, and economy significantly affect firms' ESG disclosures. Therefore, stock markets react positively to public announcements of ESG-linked loan issuance only when KPI disclosure quality is high.

Kim et al. (2022) examined the period between January 2016 and September 2021 using data from Refinitiv DealScan. According to their research, ESG lending activity has skyrocketed in recent years, from \$6 billion in 2016 to an expected \$322 billion in 2021, accounting for a significant portion of the global loan market and outnumbering the global green bond and sustainability-linked bond markets in terms of size. The authors discovered that ESG loans would potentially account for more than 12% of global bank lending in 2021. The total ESG financing activity was \$289 billion from January to September 2021, with ESG-linked loans accounting for 90% of the total. Therefore, because of the expansion of these general-purpose loans, the reach of ESG financing has widened to include other enterprises beyond utilities, which continue to receive the majority of green loan and bond funding.

### *2.3 Hypotheses development*

The relationship between environmental, social, and governance (ESG) factors and borrowing costs has gained increasing importance for lenders and borrowers. Using debt financing is a standard method used by businesses to raise funds. It involves borrowing money from a lender with an agreement to repay the amount borrowed, plus interest, over a specified period. Debt financing can provide access to capital that may not otherwise be available, but it also comes with the obligation to make regular payments and the potential risks of default. Previous studies have focused more on the bonds side (Jang, 2020) and (Peixin, 2020); both authors study the effect of ESG scores on bond pricing. We examine how environmental, social, and governance from the perspective of a just transition. We explore how lenders treat firms based on different environmental, social, and governance transition levels. In addition, we test whether lenders provide preferential treatment to companies with high environmental, social, and governance transition scores. We also explore the prior relationships with borrowers' lenders and if that impacts spread cost.

Regarding the different environmental, social, and governance aspects, a borrower's environmental score significantly impacts interest rates more than its social or governance scores. We test whether borrowers with a higher ESG score get better treatment and lower interest rates charged. To the best of our knowledge, this is the first study that explores the impact of ESG performance on firms' cost of capital. One paper by Chava (2014) presents the impact of environmental concerns on firms' cost of capital. Our study differs from this paper and contributes to the literature in the following ways. First, Chava's (2014) work only investigates the environmental factor of ESG.

In contrast, we study all three factors of ESG, in addition to the composite index of ESG. Second, we use the prior relationship of the lender and the borrower as a proxy for reducing information

asymmetry and investigate if prior relationships of firms provide additional premiums in terms of cheap access to capital. Third, we address the impact of reducing information asymmetry on ESG factors and the ESG index. This leads us to the following hypothesis.

**H1:** The *JUST\_TRANSITION* does not have any impact on the borrowing costs of firms if they have a prior relationship with the lenders.

**H2:** The lenders do not provide preferential treatment to firms with high *ENV\_TRANSITION*.

**H3:** The *ALL\_TRANSITION* does not have any impact on the borrowing cost of firms.

**H4:** The lead arrangers form a concentrated syndicate for firms with higher *JUST\_TRANSITION* scores.

### **3. Data and Methodology**

#### *3.1. Sample*

Our data comes from diverse sources. First, data on the spread is based on the Thomson Reuters DealScan database. Second, data on just transition comes from Refinitiv ESG score. Third, data on control variables was collected from DealScan and Compustat Global databases. We start with a total number of DealScan non-missing data with 194,749 observations and 132,429 Refinitiv ESG non-missing data, as shown in Table 1. We drop 55,273 observations during the matching process and 38,356 observations while matching control variables from Compustat. Finally, we exclude countries with less than 100 observations. After applying these exclusion criteria, our final sample consists of 37,426 firm-year observations from 32 countries covering Jan 2022 – Dec 2021. Next, we provide a year-wise distribution of our main dependent and explanatory variables. As we can see in Table 2, the variables are almost uniformly distributed across years. Finally, we provide a country-wise distribution of our main dependent and explanatory variables in Table 3. As we can

see, the Anglo-Saxon countries dominate our sample both for the dependent and explanatory, with the USA comprising the most observations in our data. The USA accounts for about 17% of the total observations. This is in line with the concentration of many corporates based in the USA.

**[Insert Tables 1-3 Here]**

### *3.2. Spread measurement*

In this study, we collect syndicated loan data from DealScan, a portal that delivers up-to-date data on global corporate loans. It provides access to the Loan Pricing Corporation's database, which contains information on loans, high-yield bonds, private placements, and hybrid financing arrangements (Fang et al., 2022). In addition, the database houses information regarding the borrower, the lender, the purpose of the loan, principal and interest payments, any fees linked with the loan, any covenants attached to the loan, and the borrower's financial situation (Shin 2021).

Many studies rely on the DealScan database from Thomson Reuters Loan Pricing Corporation, widely considered to house the most comprehensive information on the syndicated loan market (Fang et al., 2022; Shin et al., 2021; Xu & La, 2017). In a study by Fang et al. (2022), they stress that the DealScan database was vital for attaining detailed information on loan transactions worldwide. For example, they discovered an alarming and pervasive decline in aggregate loan issuances using the Thomson Reuters LPC DealScan database, which includes detailed global loan tranche records. Similarly, Shin (2021) retrieved loan information from the LPC DealScan database between 2009 and 2018. He found that most loans in the DealScan database are syndicated and contain information on loan features such as yield spreads, maturity, facility amount, purpose, kind, and other contract parameters. We define *SPREAD* as the logarithm of the amount the borrower pays in basis points over LIBOR for each dollar drawn down.



### 3.3 Just-transition measurement

Academics rely extensively on Refinitiv ESG scores as a critical data source when obtaining environmental and social governance data (Agnese et al., 2023; Baker, 2022; Saharti et al., 2024; among others). We also extract environmental, social, and governance transition scores from Thomson Reuters Refinitiv, which includes environmental, economic, social, and governance scores, which all measure the quality of the businesses and their business practice concerning just transition. Refinitiv ESG gathers data on firm-level ESG factors over 4,000 global companies on 250 objective indicators (Saharti et al., 2024). In our study, we use environmental (*ENV\_TRANSITION*), social (*SOC\_TRANSITION*), and governance (*GOV\_TRANSITION*) pillars as our key independent variables. All these pillars have scores from 0 (gray) to 100 (green).

### 3.4 Econometric model

We examine how variation in the *JUST\_TRANSITION* affects the *SPREAD* for firms, the syndicate structure formed by the lenders, and whether the effect is consistent with the information asymmetry hypotheses outlined above. We estimate the following two models:

$$\begin{aligned} SPREAD_{i,t} = & \beta_0 + \beta_1 JUST\_TRANSITION_{i,t} + \beta_2 JUST\_TRANSITION \times RELATIONSHIP_{i,t} + \\ & \beta_3 PUBLIC_{i,t} + \beta_4 MATURITY_{i,t} + \beta_5 DEAL\_AMT_{i,t} + \beta_6 SALES_{i,t} + \beta_7 DEBT_{i,t} + \beta_8 SIZE_{i,t} + \\ & \sum_{k=1}^3 \gamma_k Loan\_Type + \sum_{k=1}^{10} \gamma_k Loan\_Purpose + \sum_{k=1}^{20} \gamma_k Year + \sum_{k=1}^{21} \gamma_k Industry + \\ & \sum_{k=1}^{32} \gamma_k Country + \varepsilon_{i,t} \quad (1) \end{aligned}$$

The left-hand-side variable in the equation above is *SPREAD* on the loans a lender offers. The key right-hand-side variable of interest is *JUST\_TRANSITION*. For our main independent variable (*JUST\_TRANSITION*), we add three ESG pillars individually in our regression (*ENV\_TRANSITION*, *SOC\_TRANSITION*, and *GOV\_TRANSITION*). The critical coefficient of

interest is  $\beta_1$ , or how increased *JUST\_TRANSITION* affects spread, which measures the differential coefficient and therefore measures the impact of loan pricing. In other words,  $\beta_1$  evaluates if the increase in the *just transition* score affects the loan pricing. The control variables are *PUBLIC*, *MATURITY*, *DEAL\_AMT*, *SALES*, *DEBT*, and *SIZE*. We add fixed effects like *Loan\_Type*, *Loan\_Purpose*, *Year*, *Industry*, and *Country*. The detailed definitions and data sources of all regression variables are provided in the Appendix.

## 4. Results

### 4.1 Descriptive Statistics

Table 4 provides the summary statistics on the dependent, our main variables of interest, interaction terms, and the control variables. The table reports the number of observations (N), mean, standard deviation (SD), minimum (Min), first quartile (Q1), median, third quartile (Q3), and maximum (Max) of all the variables. *SPREAD*, our main dependent variable, has a mean of 4.632 with a very low standard deviation. This is why the median of the *SPREAD* is very close to the mean, i.e., 4.787. Next, Table 4 provides the summary statistics for our main variables of interest and their interaction terms. We note that *ENV\_TRANSITION* has the highest mean value of 0.752 compared to the other *JUST\_TRANSITION* components. However, *SOC\_TRANSITION* is very close to the *ENV\_TRANSITION*, which is 0.743. *GOV\_TRANSITION* has the lowest score, which is only 0.498. The SD of all the components is very low, indicating low variation across the components. Another important variable in an econometric setting is *RELATIONSHIP*, which is a dummy. It shows that about 42% of the loan deals have lenders and borrowers with whom they have interacted in the syndicated loan market. Our interaction terms of *JUST\_TRANSITION* components also exhibit similar mean, median, and other values. Finally, we provide summary

statistics on all the control variables used in our econometric model. The mean values of all of our control variables are within the normal range, with some variation across observations.

**[Insert Table 4 Here]**

#### 4.2 *Correlation*

Table 5 provides correlation and the statistical significance among all the explanatory variables. Almost all of our explanatory variables show very little correlation and are statistically significant except the correlation between *SALE* and *DEBT*, which correlates to 0.928. We exclude *DEBT* from our model in unreported results, and our results remain robust. *SIZE* also shows a moderate correlation with *SALE* and *DEBT* with 0.572 and 0.549. We do not think these correlations are concerning for our analysis.

**[Insert Table 5 Here]**

#### 4.3 *Impact of JUST\_TRANSITION of firms on their borrowing cost*

In Table 6, we start with the baseline results with the first component of *JUST\_TRANSITION* and regress *ENV\_TRANSITION* of firms on the *SPREAD* offered to borrowers. We find the negative and statistically significant impact of *ENV\_TRANSITION* on the *SPREAD* offered to borrowers in column 1 of Table 6. We also find a negative and statistically significant impact of *SOC\_TRANSITION* and *GOV\_TRANSITION* in columns 2 and 3 of Table 6. However, their economic impact is much lower than the impact of *ENV\_TRANSITION*. The results demonstrate that the lenders do not consider all the components of *JUST\_TRANSITION* equally and prefer *ENV\_TRANSITION* over the other two components of *JUST\_TRANSITION*. The lenders exhibit this preference in the form or provide lower loan *SPREAD* to borrowers that do better in the *ENV\_TRANSITION* scores.

**[Insert Table 6 Here]**

Next, we test our first hypothesis and the literature's suggestion that information asymmetry is reduced if a borrower has taken a loan previously from the same lender, and lenders tend to provide cheaper loans to such borrowers (Sufi, 2007; Bharath et al., 2011) and results are reported in Table 7. We test if this is the case for borrowers with different components of *JUST\_TRANSITION*. We devise a *RELATIONSHIP* dummy equal to 1 if a borrower has taken a loan from the same lender. We present results in Table 8 and show that our *RELATIONSHIP* dummy shows a negative and statistically significant relationship, indicating that the lenders provide cheaper loans to borrowers whom they already know because of reduced information asymmetry between them. Next, we interact with the *RELATIONSHIP* dummy with each component of *JUST\_TRANSITION* and find that lenders provide even cheaper loans to borrowers for all the components. Consistent with our earlier results, the economic significance of *ENV\_TRANSITION* is the highest compared to *SOC\_TRANSITION* and *GOV\_TRANSITION*. Therefore, we reject our first hypothesis that the *JUST\_TRANSITION* does not have any impact on the borrowing costs of firms if they have a prior relationship with the lenders. Here again, we see lenders do not see all the transition similarly and provide cheaper loans to borrowers who have exhibited better *ENV\_TRANSITION*. Our control variables' economic and statistical significance are intuitive and in line with the literature (Goss and Roberts, 2011; Chava, 2014; Becchetti and Manfredonia, 2022). Our second hypothesis is also tested in the same table. We reject our second hypothesis that lenders do not provide any preferential treatment to borrowers with higher *ENV\_TRANSITION* and show that there are differences in how lenders treat transition. The lenders provide a lower spread of loans to firms with the highest *ENV\_TRANSITION* followed by *SOC\_TRANSITION* and *GOV\_TRANSITION*. The results are stronger if borrowers have a prior relationship with the lender or not. This shows

that lenders prefer *ENV\_TRANSITION* over other transitions and their preference increases further if they have a prior relationship with the borrower. In other words, the information reduction plays a positive role and borrowers get cheaper loans from lenders.

**[Insert Table 7 Here]**

Next, we test our third hypothesis, whether *ECO\_TRANSITION* and *ALL\_TRANSITION* have any impact on the borrower cost of firms. Here, we find a very interesting result that the borrowers do not consider an *ECO\_TRANSITION* a *JUST\_TRANSITION* and provide expensive loans to borrowers with higher *ECO\_TRANSITION*. However, this relationship reverses if borrowers have taken prior loans from the same lender. This result provides clear evidence that lenders only treat *ENV\_TRANSITION*, *SOC\_TRANSITION*, and *GOV\_TRANSITION* as a *JUST\_TRANSITION* while lending to borrowers and do not consider *ECO\_TRANSITION* as a reliable measure to be considered for a *JUST\_TRANSITION*. However, this positive impact disappears when the borrowers have a prior relationship with the lenders. This shows lenders prefer relationship lending and provide cheaper loans to borrowers with who they have interacted in the past and have reduced information asymmetry. Finally, we finally negative and statistically significant relationship when we club all the components of *JUST\_TRANSITION* together as *ALL\_TRANSITION*. This relationship is economically stronger if the borrower has a prior relationship with the lender. Therefore, we partially reject our third hypothesis and conclude that lenders only consider *ALL\_TRANSITION* as a *JUST\_TRANSITION* and provide cheaper loans to borrowers with such a transition. Our results align with previous literature on debt financing that high ESG scores could help lower the cost. (Jang, 2020) states that bond issuers of relative firms may be able to lower the cost of funding with ESG scores, and ESG scores complement credit ratings in assessing credit quality. Furthermore, ESG scores provide bond investors with additional downward protection by

reducing the credit risks associated with small firms. A study by Chava (2014) tested the second source of debt financing using loans and found similar results.

**[Insert Table 8 Here]**

Next, we perform a sub-sample analysis based on relationship strength. We follow Bharath et al. (2011) in devising the relationship proxies but we divide the sample based on the mean of the  $REL(Amount)$  and  $REL(Number)$ . We do the same for another relationship proxy of  $REL(Number)$ . We define the two proxies as follows:

$$\begin{aligned} &REL(Amount) \\ &= \frac{\text{Amount of loans by bank } m \text{ to borrower } i \text{ in the last 5 years (\$)}}{\text{Total amount of loans by borrower } i \text{ in the last 5 years (\$)}} \end{aligned} \quad (2)$$

This is calculated for each of the lead banks and the highest value across all the lead banks. Similarly, we do the following for the number of loans.

$$\begin{aligned} &REL(Number) \\ &= \frac{\text{Number of loans by bank } m \text{ to borrower } i \text{ in the last 5 years (\$)}}{\text{Total number of loans by borrower } i \text{ in the last 5 years (\$)}} \end{aligned} \quad (3)$$

In the upper panel of Table 9, we present results on  $REL(amount)$  divided into two subsamples. The relationship strength is weak if the  $REL(Amount) < \text{Mean}$  and the relationship strength is strong if the  $REL(Amount) > \text{Mean}$ . On the left-hand side, our sample constitutes those loan deals if the  $REL(amount)$  is lower than the mean for which the amount of loans by bank  $m$  to borrower  $i$  in the last 5 years in \$ amount. On the right-hand side, our sample constitutes those loan deals for which the  $REL(amount)$  is higher than the mean of the amount of loans by bank  $m$  to borrower  $i$  in the last 5 years in \$ amount. The rationale of doing this is to split the sample into weak relationships and strong relationships. If a borrower  $i$  has taken a loan from a bank  $m$  less than the mean of the loans during the past five years in \$ terms, it shows their relationship is weak.

However, If a borrower  $i$  has taken a loan from a bank  $m$  more than the mean of the loans during the past five years in \$ terms, it shows their relationship is strong. Our results show that if the relationship is weak, we find a negative and significant relationship only for *ENV\_TRANSITION*. This shows that the main focus of lenders is on *ENV\_TRANSITION* and they provide cheaper loans only to borrowers with *ENV\_TRANSITION*. Similar to what we see in Table 8, the relationship is positive for *ECO\_TRANSITION*. Comparatively, if the relationship between a borrower and a bank is strong as measured by our proxy on the top right-hand side panel of Table 9, we find negative and significant relationships for all of the transitions except for *ECO\_TRANSITION*, where the relationship is insignificant. This shows that the strength of the relationship is very important when it comes to providing preferential treatment to borrowers with different aspects of transition. However, as we saw before, the magnitude is the highest for *ENV\_TRANSITION* again indicating that the bank's main focus is the *ENV\_TRANSITION* of firms.

In the lower panel of Table 9, we repeat the same analysis as in the upper panel but with the REL(number) proxy. We get very similar results. For our weak relationship proxy on the lower left-hand side, we find a negative and statistically significant relationship only for *ENV\_TRANSITION*. For our strong relationship proxy on the lower right-hand side of Table 9, we find a negative and statistically significant relationship for all the transition factors except for the *ECO\_TRANSITION*. However, the magnitude is the highest for *SOC\_TRANSITION* here. Overall, we find that the strength of the relationship between borrowers and lenders is important and banks do not treat all the transitions equally.

**[Insert Table 9 Here]**

#### 4.4. Endogeneity Concerns

We mitigate endogeneity concerns at two levels. First, we test if there are any selection issues at the firm level when their choice of sustainable initiatives is not completely random. Previous literature on ESG shows that firms' sustainability initiatives are affected by their industry peer sustainability policies (Gull et al., 2022; Saeed et al., 2024; among others). In a recent study, Saeed et al. (2024) stress that peer environmental policies positively impact the firms' environmental initiatives in the same industry. In another study, Gull et al. (2022) present that industry peer and geographic peer environmental performance are linked with the individual firm's green policies. We use the 2SLS (two-stage least square) regression method to address this potential endogeneity concern.

In Table 10, we show the results of the 2SLS model to address the issue of reverse causality or omitted variable bias in models 1, 3, and 5 present results with first-stage regression models. Following the arguments, we use two instruments (industry and geographic peers) (Gull et al., 2022). These models show that the industry and geographic peers positively influence the firms' overall transition (Environmental, Social, and Governance). Further, Models 2, 4, and 6 use these instrumented values for independent variables. The second stage results corroborate our main findings by showing the just transition influence on the overall financing. The Sargan p-value (over-identification test) of more than 0.1 confirms our instruments' validity, thus confirming that endogeneity had not driven our results.

**[Insert Table 10 Here]**

Further to address the endogeneity concern of potential selection bias, we use the propensity score matching (PSM) technique in Table 11. Following the corporate finance and ESG literature (Saeed et al, 2024; Sarang et al., 2024), we construct the matched sample based on the key independent variable. In the initial investigation, our *RELATIONSHIP* variable shows that 42% of our sample



firms have a prior relationship with the banks. The purpose of matching is to create a sample with the same portion of treatment and control group. To apply PSM, we consider *RELATIONSHIP* variable as our dependent variable on the control variable in the Model. While matching, we use the caliper matching with 0.001 radius, one-to-one nearest neighbor, and without replacement (15,704 treated and 15,704 control observations). Model 1 shows the Probit regression results with dummy dependent. Moving forward, the next six columns show the matched sample results. Predictably, the PSM-matched results are aligned with our main findings and present a negative association between Just transition and financing arrangements.

**[Insert Table 11 Here]**

#### *4.5 Additional Results*

Sufi (2007) shows that information asymmetry between lenders and borrowers influences the syndicate structure. Lead arrangers tend to form a concentrated syndicate and keep a higher share of the syndicate loan if they want to signal higher monitoring commitment to the participants in a loan deal. However, if the information asymmetry is reduced, the lead arrangers do not need to use a higher share of the loan as a signalling device that can form diffused syndicates, meaning they keep a lower share of the loan syndicate. To test our sixth hypothesis and explore the relationship explained above, we explore if lead arrangers keep a higher share of the loan for borrowers with higher components of *JUST\_TRANSITION*. We use two proxies to test this hypothesis and report results in Table 12. We use the share of the loan held by the lead arranger and the Herfindahl-Hirschman Index (HHI) of the share held by the lead arrangers. The results are provided in Table 11. We show that the lead arrangers do not need to provide any signal of higher commitment to

monitoring participants, keep a lower share of the syndicate, and form a diffused syndicate for all the components of *JUST\_TRANSITION*.

Similarly, our results on the borrower cost of firms show that *ENV\_TRANSITION* of firms acts as more credible and leads arrangers from the most diffused syndicate for borrowers with the highest *ENV\_TRANSITION*. In other words, the lead arrangers keep the least share of the syndicate for borrowers with the highest *ENV\_TRANSITION*. Next comes the *SOC\_TRANSITION*, and the lead arrangers form the least diffused syndicated for *GOV\_TRANSITION*. We find very similar results when we use HHI as our dependent variable.

**[Insert Table 12 Here]**

## 5. Conclusion

Firms are implementing several sustainable activities to cater to the stakeholder demand, leading to a *JUST\_TRANSITION*. Among these activities is the importance of financing arrangements of firms for a *JUST\_TRANSITION*. Corporate loans are a primary source of external finance for firms, but no research has been performed on the financing arrangement of firms for a *JUST\_TRANSITION* (Agenes & Giacomini, 2023; Neagu et al., 2023; Tsang et al., 2023). In this paper, we explore if firms' *ENV\_TRANSITION*, *SOC\_TRANSITION*, and *GOV\_TRANSITION* have any impact on their borrowing cost. We further explore whether lenders treat all these transitions equally and provide firms with cheaper loans. We use a global sample of corporate loans and Refinitiv ESG scores to answer the above-mentioned questions. We provide evidence that lenders charge significantly lower interest rates to those firms that score highly in *ENV\_TRANSITION*, *SOC\_TRANSITION*, and *GOV\_TRANSITION*, with particularly lower interest rates to those firms with high *ENV\_TRANSITION*. Our study suggests a strong indication that the higher the *JUST\_TRANSITION*, the better the deal borrowers receive in terms of lower

*SPREAD* on their loans. However, lenders do not consider each component of *JUST\_TRANSITION* equal, as they prefer *ENV\_TRANSITION* more than *SOC\_TRANSITION* and *SOC\_TRANSITION* more than *GOV\_TRANSITION* when it comes to charging interest rates. In addition, we show prior relationship of borrowing with the same lender reduces information asymmetry, and lenders charge even lower interest rates from such borrowers.

Similarly, they provide the cheapest loans to borrowers with higher *ENV\_TRANSITION* compared to *SOC\_TRANSITION* and *GOV\_TRANSITION*. Next, we also provide evidence that the lenders do not consider *ECO\_TRANSITION* as part of a *JUST\_TRANSITION* as they charge more interest rates from borrowers with high *ECO\_TRANSITION*. However, this relationship reverses if the borrowers have a prior loan with the same lender. Finally, we show that the lead arrangers form a diffused syndicate for borrowers with high *JUST\_TRANSITION* and the most diffused syndicate for borrowers with *ENV\_TRANSITION*. This relationship strengthens for borrowers with prior relationships with the same lead arrangers.

This study provides practical implications for investors, corporate boards, and regulators. It is recommended that people in positions of authority in government and regulatory bodies provide additional aid in raising awareness among all stakeholders and encouraging businesses to work on environmental, social, and managerial transition. The empirical statistics show that actions that increase firms' sustainability can lead borrowers to receive better deals, particularly if the focus is on *ENV\_TRANSITION*. Furthermore, socially responsible investors widely acknowledged that efforts centered on sustainability are critical for the survival of businesses and the preservation of ecosystems and contribute to the advancement of social justice and the sustainable economic growth of nations.

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## Appendix: Variable definitions

<i>Variable</i>	<i>Definition</i>	<i>Source</i>
<b><u>Dependent:</u></b>		
<i>SPREAD</i>	The logarithm of the amount the borrower pays in basis points over LIBOR in a loan deal.	DealScan
<b><u>Independent:</u></b>		
<i>ENV_TRANSITION</i>	ESG environmental dimension score from 0 to 100.	Refinitiv ESG
<i>SOC_TRANSITION</i>	ESG social dimension score from 0 to 100.	Same
<i>GOV_TRANSITION</i>	ESG governance dimension score from 0 to 100.	Same
<i>ECO_TRANSITION</i>	ESG economic dimension score from 0 to 100.	Same
<i>ALL_TRANSITION</i>	ESG all dimensions score from 0 to 100.	Same
<i>RELATIONSHIP</i>	An indicator variable that equals one if the borrowing is repeated from the same lead arranger.	DealScan
<b><u>Interaction Term:</u></b>		
<i>ENV×RELATIONSHIP</i>	The two-way interaction term for <i>ENV_TRANSITION</i> and <i>RELATIONSHIP</i> .	-
<i>SOC×RELATIONSHIP</i>	The two-way interaction term for <i>SOC_TRANSITION</i> and <i>RELATIONSHIP</i> .	-
<i>GOV×RELATIONSHIP</i>	The two-way interaction term for <i>GOV_TRANSITION</i> and <i>RELATIONSHIP</i> .	-
<i>ECO×RELATIONSHIP</i>	The two-way interaction term for <i>ECO_TRANSITION</i> and <i>RELATIONSHIP</i> .	-
<i>ALL×RELATIONSHIP</i>	The two-way interaction term for <i>ALL_TRANSITION</i> and <i>RELATIONSHIP</i> .	-
<b><u>Control:</u></b>		
<i>PUBLIC</i>	A dummy variable that equals one if the firm does not have a record rating at the time of the loan.	DealScan
<i>MATURITY</i>	The tenor is in months between the tranche active date and the tranche maturity date.	DealScan
<i>DEAL_AMT</i>	The logarithm of the deal amount of the loan.	DealScan
<i>SALES</i>	The logarithm of sales during the year after the loan year.	Compustat Global
<i>DEBT</i>	The logarithm of total debt during the year after the loan year.	Same
<i>SIZE</i>	The logarithm of total assets during the year after the loan year.	Same
<i>NUM_LEAD</i>	Number of lead arrangers in a loan deal.	DealScan
<b><u>Others:</u></b>		
<i>LENDER_SHARE</i>	The share held by a lead arranger in a loan deal.	DealScan
<i>HHI</i>	Hirschman Herfindahl index of the share held by lead arrangers in a loan deal.	DealScan
<b>Note:</b> This table shows the variables definitions and data sources.		



**Table 1: Sample selection**

Description	No. of firm-year observations
Total number of DealScan non-missing data	194,749
Total number of Refinitiv ESG non-missing data	132,429
Drop in the merging process.	(55,273)
Missing data for control variables	(38356)
Exclude countries with less than 100 observations	(1,374)
Final Sample	37,426

**Note:** This table shows the sample selection criteria.

**Table 2: Year wise sample distribution**

<i>Year</i>	<b>SPREAD</b>		<b>JUST TRANSITION</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
2002	2,680	7.16%	2,581	7.18%
2003	2,621	7.00%	2,515	7.00%
2004	3,197	8.54%	3,071	8.54%
2005	3,756	10.04%	3,621	10.07%
2006	2,376	6.35%	2,274	6.33%
2007	2,668	7.13%	2,571	7.15%
2008	1,761	4.71%	1,670	4.65%
2009	1,355	3.62%	1,291	3.59%
2010	2,515	6.72%	2,434	6.77%
2011	1,897	5.07%	1,822	5.07%
2012	1,487	3.97%	1,409	3.92%
2013	1,816	4.85%	1,751	4.87%
2014	1,625	4.34%	1,542	4.29%
2015	1,937	5.18%	1,871	5.20%
2016	781	2.09%	743	2.07%
2017	1,041	2.78%	1,010	2.81%
2018	1,117	2.98%	1,079	3.00%
2019	971	2.59%	935	2.60%
2020	945	2.52%	913	2.54%
2021	880	2.35%	847	2.36%
Total	37,426	100.00%	35,950	100.00%

**Note:** This table shows the year-wise sample distribution for both main dependent and independent variables.

**Table 3: Country wise sample distribution**

No.	Country	SPREAD		JUST TRANSITION	
		N	%	N	%
1	<i>Australia</i>	4,143	11.07%	4,035	11.22%
2	<i>Belgium</i>	177	0.47%	169	0.47%
3	<i>Brazil</i>	239	0.64%	224	0.62%
4	<i>Cayman Islands</i>	301	0.80%	286	0.80%
5	<i>China</i>	1,009	2.70%	942	2.62%
6	<i>Denmark</i>	230	0.61%	224	0.62%
7	<i>Finland</i>	109	0.29%	105	0.29%
8	<i>France</i>	1,694	4.53%	1,646	4.58%
9	<i>Germany</i>	3,217	8.60%	3,128	8.70%
10	<i>Greece</i>	102	0.27%	94	0.26%
11	<i>Hong Kong</i>	2,266	6.05%	2,146	5.97%
12	<i>India</i>	2,808	7.50%	2,684	7.47%
13	<i>Indonesia</i>	234	0.63%	221	0.61%
14	<i>Ireland</i>	167	0.45%	157	0.44%
15	<i>Italy</i>	1,342	3.59%	1,304	3.63%
16	<i>Japan</i>	2,040	5.45%	1,950	5.42%
17	<i>Netherlands</i>	481	1.29%	461	1.28%
18	<i>Norway</i>	174	0.46%	167	0.46%
19	<i>Philippines</i>	376	1.00%	363	1.01%
20	<i>Poland</i>	248	0.66%	244	0.68%
21	<i>Russian Federation</i>	822	2.20%	803	2.23%
22	<i>Singapore</i>	391	1.04%	374	1.04%
23	<i>South Africa</i>	226	0.60%	213	0.59%
24	<i>South Korea</i>	769	2.05%	715	1.99%
25	<i>Spain</i>	434	1.16%	427	1.19%
26	<i>Sweden</i>	373	1.00%	363	1.01%
27	<i>Switzerland</i>	286	0.76%	278	0.77%
28	<i>Taiwan</i>	2,475	6.61%	2,312	6.43%
29	<i>United Arab Emir</i>	111	0.30%	106	0.29%
30	<i>United Kingdom</i>	3,587	9.58%	3,488	9.70%
31	<i>United States</i>	6,232	16.65%	5,974	16.62%
32	<i>Virgin Islands</i>	363	0.97%	347	0.97%
	Total	37,426	100.00%	35,950	100.00%

**Note:** This table shows the country-wise sample distribution for both main dependent and independent variables.

**Table 4: Summary statistics**

<i>Variables</i>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Q1</b>	<b>Median</b>	<b>Q3</b>	<b>Max</b>
<b><u>Dependent:</u></b>								
<i>SPREAD</i>	37,426	4.632	0.948	0.000	4.007	4.787	5.347	7.244
<b><u>Independent:</u></b>								
<i>ENV_TRANSITION</i>	35,950	0.752	0.223	0.088	0.647	0.862	0.906	0.970
<i>SOC_TRANSITION</i>	35,950	0.743	0.214	0.018	0.618	0.816	0.901	0.987
<i>GOV_TRANSITION</i>	35,950	0.498	0.291	0.009	0.227	0.475	0.803	0.982
<i>ECO_TRANSITION</i>	35,950	0.573	0.293	0.009	0.332	0.626	0.849	0.990
<i>ALL_TRANSITION</i>	35,950	0.705	0.232	0.026	0.614	0.775	0.876	0.983
<i>RELATIONSHIP</i>	37,426	0.420	0.494	0.000	0.000	0.000	1.000	1.000
<b><u>Interaction Term:</u></b>								
<i>ENV×RELATIONSHIP</i>	37,426	0.327	0.407	0.000	0.000	0.000	0.839	0.970
<i>SOC×RELATIONSHIP</i>	37,426	0.319	0.399	0.000	0.000	0.000	0.795	0.976
<i>GOV×RELATIONSHIP</i>	37,426	0.211	0.314	0.000	0.000	0.000	0.343	0.982
<i>ECO×RELATIONSHIP</i>	37,426	0.237	0.338	0.000	0.000	0.000	0.471	0.990
<i>ALL×RELATIONSHIP</i>	37,426	0.302	0.382	0.000	0.000	0.000	0.719	0.975
<b><u>Control:</u></b>								
<i>PUBLIC</i>	37,426	0.364	0.481	0.000	0.000	0.000	1.000	1.000
<i>MATURITY</i>	37,426	3.829	0.644	0.693	3.584	4.094	4.094	6.586
<i>DEAL_AMT</i>	37,426	7.278	1.703	2.156	6.109	7.166	8.292	14.790
<i>SALES</i>	37,426	10.737	3.121	2.303	8.523	10.012	13.151	17.932
<i>DEBT</i>	37,426	8.421	3.793	-3.194	5.919	7.723	11.405	16.318
<i>SIZE</i>	37,426	11.420	3.131	3.572	9.023	10.876	13.616	18.949
<i>NUM_LEAD</i>	37,426	32.216	51.146	1.000	5.000	14.000	36.000	323.000
<b><u>Others:</u></b>								
<i>LENDER_SHARE</i>	15,579	9.438	11.725	0.005	3.600	6.150	10.526	100.000
<i>HHI</i>	15,579	943.398	1812.023	39.000	156.000	600.000	1800.000	10000.000

**Note:** This table shows the summary statistics of all variables used in our analysis.

**Table 5: Correlation matrix**

<i>Variables</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
<i>(1) SPREAD</i>	1.000															
<i>(2) ENV_TRANSITION</i>	-0.293*	1.000														
<i>(3) SOC_TRANSITION</i>	-0.165*	0.667*	1.000													
<i>(4) GOV_TRANSITION</i>	0.084*	0.202*	0.221*	1.000												
<i>(5) ECO_TRANSITION</i>	-0.051*	0.307*	0.464*	0.006	1.000											
<i>(6) ALL_TRANSITION</i>	-0.135*	0.755*	0.810*	0.521*	0.656*	1.000										
<i>(7) RELATIONSHIP</i>	-0.157*	0.105*	0.072*	0.014*	-0.025*	0.054*	1.000									
<i>(8) PUBLIC</i>	0.201*	-0.112*	-0.130*	-0.110*	-0.047*	-0.154*	-0.194*	1.000								
<i>(9) MATURITY</i>	0.204*	-0.076*	-0.093*	0.027*	-0.083*	-0.072*	-0.091*	0.148*	1.000							
<i>(10) DEAL_AMT</i>	-0.251*	0.153*	0.059*	-0.170*	0.064*	0.048*	0.137*	-0.183*	-0.022*	1.000						
<i>(11) SALE</i>	-0.284*	0.286*	0.141*	-0.377*	0.070*	0.044*	0.104*	-0.120*	-0.159*	0.231*	1.000					
<i>(12) DEBT</i>	-0.304*	0.271*	0.084*	-0.367*	-0.012	-0.012	0.115*	-0.154*	-0.141*	0.235*	0.928*	1.000				
<i>(13) SIZE</i>	-0.293*	0.268*	0.122*	-0.381*	0.037*	0.017*	0.111*	-0.150*	-0.150*	0.268*	0.572*	0.549*	1.000			
<i>(14) NUM_LEAD</i>	0.087*	-0.024*	0.007	0.123*	-0.137*	0.004	-0.023*	-0.109*	0.028*	0.150*	-0.228*	-0.214*	-0.202*	1.000		
<i>(15) LENDER_SHARE</i>	0.125*	-0.127*	-0.078*	-0.048*	-0.020	-0.092*	-0.019	0.153*	0.001	-0.160*	-0.050*	-0.061*	-0.064*	-0.131*	1.000	
<i>(16) HHI</i>	0.082*	-0.083*	-0.049*	-0.005	-0.020	-0.048*	-0.002	0.045*	-0.002	-0.032*	-0.036*	-0.038*	-0.036*	-0.044*	0.783*	1.000

**Note:** This table shows the correlation matrix between all variables used in our analysis. \* significant at 1%

**Table 6: Impact of just transition of borrowers on their loan spread**

<i>VARIABLES</i>	<b>SPREAD</b>		
	(1)	(2)	(3)
<i>ENV_TRANSITION</i>	-0.377*** (-3.31)		
<i>SOC_TRANSITION</i>		-0.176*** (-9.35)	
<i>GOV_TRANSITION</i>			-0.111*** (-6.70)
<i>PUBLIC</i>	0.151*** (2.62)	0.146*** (17.22)	0.138*** (16.13)
<i>MATURITY</i>	0.179*** (5.24)	0.180*** (30.47)	0.177*** (30.07)
<i>DEAL_AMT</i>	-0.088*** (-4.21)	-0.091*** (-35.47)	-0.090*** (-35.13)
<i>SALES</i>	-0.050 (-1.20)	-0.055*** (-10.12)	-0.058*** (-10.84)
<i>DEBT</i>	-0.036 (-1.57)	-0.042*** (-13.33)	-0.039*** (-12.53)
<i>SIZE</i>	-0.001 (-0.02)	0.003 (0.48)	-0.003 (-0.45)
<i>NUM_LEAD</i>	0.000** (2.24)	0.000** (2.16)	0.000 (1.62)
Constant	5.758*** (16.62)	5.638*** (18.12)	5.641*** (17.19)
Observations	37,426	37,426	37,426
Loan Type	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes
Country Effect	Yes	Yes	Yes
Adj R2	0.548	0.543	0.543

**Note:** This table shows the impact of just transition of borrowers on their loan spread. \*, \*\* and \*\*\* refer to statistical significance at 10%, 5%, and 1%, respectively.

**Table 7: Impact of just transition of borrowers on their loan spread with prior relationship**

<i>VARIABLES</i>	<i>SPREAD</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>ENV_TRANSITION</i>	-0.371*** (-3.26)			-0.344*** (-3.05)		
<i>SOC_TRANSITION</i>		-0.173*** (-9.20)			-0.141*** (-7.35)	
<i>GOV_TRANSITION</i>			-0.108*** (-6.53)			-0.089*** (-5.10)
<i>RELATIONSHIP</i>	-0.049** (-2.13)	-0.054*** (-7.46)	-0.054*** (-7.43)			
<i>ENV×RELATIONSHIP</i>				-0.479*** (-2.62)		
<i>SOC×RELATIONSHIP</i>					-0.382*** (-8.90)	
<i>GOV×RELATIONSHIP</i>						-0.352*** (-4.26)
<i>PUBLIC</i>	0.144** (2.51)	0.139*** (16.23)	0.131*** (15.21)	0.143** (2.49)	0.138*** (16.25)	0.135*** (15.73)
<i>MATURITY</i>	0.177*** (5.20)	0.177*** (30.04)	0.175*** (29.66)	0.176*** (5.18)	0.176*** (29.90)	0.177*** (29.91)
<i>DEAL_AMT</i>	-0.086*** (-4.30)	-0.089*** (-35.64)	-0.089*** (-35.41)	-0.086*** (-4.31)	-0.089*** (-35.62)	-0.089*** (-35.71)
<i>SALES</i>	-0.050 (-1.20)	-0.054*** (-10.02)	-0.058*** (-10.74)	-0.049 (-1.18)	-0.054*** (-9.92)	-0.058*** (-10.76)
<i>DEBT</i>	-0.036 (-1.56)	-0.041*** (-13.22)	-0.039*** (-12.42)	-0.036 (-1.55)	-0.041*** (-13.20)	-0.039*** (-12.50)
<i>SIZE</i>	-0.001 (-0.03)	0.003 (0.43)	-0.003 (-0.48)	-0.002 (-0.04)	0.002 (0.36)	-0.003 (-0.46)
Constant	5.757*** (16.56)	5.637*** (18.40)	5.636*** (17.51)	5.735*** (16.54)	5.612*** (17.90)	5.631*** (17.28)
Observations	37,426	37,426	37,426	37,426	37,426	37,426
Loan Type	Yes	Yes	Yes	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes	Yes	Yes	Yes
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes
Adj R2	0.548	0.544	0.543	0.548	0.544	0.543

**Note:** This table shows the impact of just transition of borrowers on their loan spread with prior relationship. \*, \*\* and \*\*\* refer to statistical significance at 10%, 5%, and 1%, respectively.

**Table 8: Impact on the spread of borrowers with economic transition and all transition**

<i>VARIABLES</i>	<i>SPREAD</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>ECO_TRANSITION</i>	0.119*** (8.31)		0.115*** (8.05)		0.144*** (9.67)	
<i>ALL_TRANSITION</i>		-0.138*** (-7.89)		-0.136*** (-7.79)		-0.110*** (-6.18)
<i>RELATIONSHIP</i>			-0.053*** (-7.34)	-0.054*** (-7.52)		
<i>ECO×RELATIONSHIP</i>					-0.066*** (-5.96)	
<i>ALL×RELATIONSHIP</i>						-0.274*** (-7.68)
<i>PUBLIC</i>	0.140*** (16.40)	0.144*** (17.02)	0.133*** (15.48)	0.137*** (16.06)	0.136*** (15.90)	0.138*** (16.23)
<i>MATURITY</i>	0.178*** (30.19)	0.179*** (30.32)	0.176*** (29.79)	0.176*** (29.91)	0.176*** (29.83)	0.176*** (29.89)
<i>DEAL_AMT</i>	-0.090*** (-36.07)	-0.089*** (-35.46)	-0.089*** (-35.70)	-0.088*** (-35.10)	-0.090*** (-35.86)	-0.088*** (-35.22)
<i>SALES</i>	-0.065*** (-12.08)	-0.056*** (-10.28)	-0.064*** (-11.93)	-0.055*** (-10.16)	-0.065*** (-12.04)	-0.055*** (-10.10)
<i>DEBT</i>	-0.036*** (-11.34)	-0.041*** (-13.19)	-0.035*** (-11.24)	-0.041*** (-13.05)	-0.036*** (-11.34)	-0.041*** (-13.09)
<i>SIZE</i>	0.001 (0.15)	0.001 (0.18)	0.001 (0.10)	0.001 (0.13)	0.001 (0.19)	0.001 (0.11)
Constant	5.539*** (17.60)	5.626*** (18.27)	5.534*** (17.58)	5.619*** (18.22)	5.517*** (17.15)	5.600*** (17.81)
Observations	37,426	37,426	37,426	37,426	37,426	37,426
Loan Type	Yes	Yes	Yes	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes	Yes	Yes	Yes
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes
Adj R2	0.543	0.543	0.544	0.544	0.543	0.544

**Note:** This table shows the impact of the spread of borrowers with economic transition and all transitions. \*, \*\* and \*\*\* refer to statistical significance at 10%, 5%, and 1%, respectively.



**Table 9: Sub-sample on the basis of relationship strength**

VARIABLES	REL(Amount)<Mean					REL(Amount)>Mean				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>Panel A: Subsample with REL(Amount)</b>										
<i>ENV_SCORE</i>	-0.025** (-2.12)					-0.197*** (-4.23)				
<i>SOC_SCORE</i>		-0.233 (-0.92)					-0.105*** (-3.10)			
<i>GOV_SCORE</i>			-0.201 (-0.95)					-0.169*** (-3.49)		
<i>ECO_SCORE</i>				0.225*** (7.46)						-0.008 (-0.22)
<i>ALL_SCORE</i>					-0.133 (-0.57)					-0.115** (-2.57)
Constant	6.789*** (12.49)	6.521*** (12.29)	6.505*** (12.76)	6.420*** (40.10)	6.452*** (12.47)	5.565*** (34.22)	5.441*** (33.43)	5.600*** (33.68)	5.447*** (33.83)	5.522*** (33.86)
Observations	8,529	8,529	8,529	8,529	8,529	7,175	7,175	7,175	7,175	7,175
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan Type	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj R2	0.619	0.614	0.614	0.615	0.613	0.570	0.568	0.569	0.568	0.569
VARIABLES	REL(Number)<Mean					REL(Number)>Mean				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>Panel A: Subsample with REL(Number)</b>										
<i>ENV_SCORE</i>	-0.618** (-2.06)					-0.238*** (-5.12)				
<i>SOC_SCORE</i>		-0.224 (-0.87)					-0.316** (-2.34)			
<i>GOV_SCORE</i>			-0.202 (-0.92)					-0.255*** (-5.24)		
<i>ECO_SCORE</i>				0.238*** (7.78)						0.002 (0.05)
<i>ALL_SCORE</i>					-0.112 (-0.48)					-0.144*** (-3.23)
Constant	6.751*** (12.46)	6.467*** (12.23)	6.464*** (12.65)	6.383*** (39.58)	6.401*** (12.32)	5.632*** (34.52)	5.478*** (33.42)	5.731*** (34.26)	5.487*** (33.91)	5.589*** (34.08)
Observations	8,480	8,480	8,480	8,480	8,480	7,224	7,224	7,224	7,224	7,224
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan Type	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj R2	0.610	0.605	0.605	0.606	0.604	0.561	0.559	0.561	0.559	0.559

**Note:** This table shows the results with sub-sample on the basis of relationship strength. \*, \*\* and \*\*\* refer to statistical significance at 10%, 5%, and 1%, respectively.

**Table 10: Endogeneity concerns**

<i>VARIABLES</i>	1st-stage (1)	2nd-stage (2)	1st-stage (3)	2nd-stage (4)	1st-stage (5)	2nd-stage (6)
<i>ENV_TRANSITION</i>		-0.362*** (-13.95)				
<i>ENV_IND</i>	0.762*** (124.56)					
<i>ENV_GEO</i>	0.604*** (81.50)					
<i>SOC_TRANSITION</i>				-0.114*** (-4.34)		
<i>SOC_IND</i>			0.791*** (139.06)			
<i>SOC_GEO</i>			0.595*** (85.55)			
<i>GOV_TRANSITION</i>						-0.197*** (-8.77)
<i>GOV_IND</i>					0.767*** (135.76)	
<i>GOV_GEO</i>					0.764*** (106.45)	
Constant	-0.339*** (-24.52)	5.758*** (19.43)	-0.375*** (-28.91)	5.614*** (17.27)	-0.544*** (-36.36)	5.710*** (17.28)
Observations	37,426	37,426	37,426	37,426	37,426	37,426
Control	Yes	Yes	Yes	Yes	Yes	Yes
Loan Type	Yes	Yes	Yes	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes	Yes	Yes	Yes
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes
Adj R2	0.650	0.547	0.673	0.543	0.785	0.542
Sargan_p		0.17		0.11		0.21

**Note:** This table shows the results with the two-stage least square (2SLS) method. \*, \*\* and \*\*\* refer to statistical significance at 10%, 5%, and 1%, respectively.

Table 11: Propensity score matching

<i>VARIABLES</i>	<u>Probit</u>	<u>PSM</u>					
	<u>Relationship</u>	<u>Spread</u>					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>ENV_SCORE</i>		-0.421*** (-3.07)			-0.387*** (-2.84)		
<i>SOC_SCORE</i>			-0.185*** (-8.63)			-0.145*** (-6.58)	
<i>GOV_SCORE</i>				-0.191*** (-9.94)			-0.166*** (-8.16)
<i>RELATIONSHIP</i>		-0.055** (-2.42)	-0.059*** (-7.92)	-0.058*** (-7.76)			
<i>ENV×RELATIONSHIP</i>					-0.076*** (-2.61)		
<i>SOC×RELATIONSHIP</i>						-0.085*** (-8.85)	
<i>GOV×RELATIONSHIP</i>							-0.054*** (-4.25)
<i>PUBLIC</i>	-0.394*** (-22.193)	0.176*** (2.64)	0.167*** (17.03)	0.156*** (15.73)	0.176*** (2.64)	0.168*** (17.08)	0.159*** (16.07)
<i>MATURITY</i>	-0.121*** (-9.948)	0.187*** (5.22)	0.187*** (29.15)	0.184*** (28.61)	0.187*** (5.21)	0.187*** (29.04)	0.185*** (28.84)
<i>DEAL_AMT</i>	0.046*** (8.816)	-0.094*** (-4.45)	-0.097*** (-33.72)	-0.096*** (-33.42)	-0.095*** (-4.46)	-0.097*** (-33.75)	-0.096*** (-33.63)
<i>SALES</i>	0.042*** (3.768)	-0.057 (-1.15)	-0.062*** (-10.17)	-0.064*** (-10.63)	-0.056 (-1.15)	-0.061*** (-10.06)	-0.064*** (-10.67)
<i>DEBT</i>	0.021*** (3.236)	-0.032 (-1.20)	-0.039*** (-11.10)	-0.036*** (-10.19)	-0.032 (-1.21)	-0.039*** (-11.12)	-0.036*** (-10.28)
<i>SIZE</i>	-0.019 (-1.474)	-0.006 (-0.11)	0.000 (0.07)	-0.009 (-1.30)	-0.006 (-0.12)	0.000 (0.01)	-0.009 (-1.23)
Constant	-1.773*** (-13.269)	6.035*** (15.80)	5.871*** (79.02)	5.907*** (79.15)	6.005*** (15.73)	5.838*** (78.51)	5.893*** (78.86)
Observations	37,407	31,408	31,408	31,408	31,408	31,408	31,408
Loan Type	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo/Adj R2	0.110	0.553	0.548	0.548	0.553	0.548	0.548
Chi2	5586						

**Note:** This table shows the results with the propensity score matching (PSM) technique. \*, \*\* and \*\*\* refer to statistical significance at 10%, 5%, and 1%, respectively.

**Table 12: Impact of just transition of borrowers on the syndicate structure**

VARIABLES	LENDER_SHARE			HHI		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>ENV_TRANSITION</i>	-4.301*** (-3.21)			-513.794*** (-3.11)		
<i>SOC_TRANSITION</i>		-2.328* (-1.78)			-341.165** (-2.11)	
<i>GOV_TRANSITION</i>			-1.754* (-1.85)			-34.510 (-0.20)
<i>PUBLIC</i>	1.683*** (2.73)	1.691*** (2.76)	1.601** (2.57)	49.906 (0.76)	49.077 (0.75)	55.534 (0.85)
<i>MATURITY</i>	-0.200 (-0.52)	-0.173 (-0.46)	-0.223 (-0.57)	-36.035 (-0.63)	-32.424 (-0.57)	-35.489 (-0.61)
<i>DEAL_AMT</i>	-1.290*** (-6.28)	-1.299*** (-6.17)	-1.284*** (-5.93)	-40.131* (-1.86)	-41.787* (-1.80)	-38.392* (-1.83)
<i>SALES</i>	0.023 (0.06)	-0.022 (-0.05)	-0.130 (-0.32)	-41.729 (-0.86)	-43.498 (-0.87)	-62.807 (-1.21)
<i>DEBT</i>	-0.044 (-0.17)	-0.077 (-0.29)	-0.060 (-0.22)	13.232 (0.38)	7.879 (0.22)	14.576 (0.40)
<i>SIZE</i>	-0.397 (-0.81)	-0.366 (-0.74)	-0.376 (-0.76)	-19.783 (-0.26)	-16.929 (-0.22)	-13.060 (-0.17)
Constant	29.005*** (7.79)	27.343*** (7.50)	27.594*** (7.27)	2,146.890*** (4.18)	1,977.536*** (3.91)	1,845.795*** (3.47)
Observations	15,579	15,579	15,579	15,579	15,579	15,579
Loan Type	Yes	Yes	Yes	Yes	Yes	Yes
Loan Purpose	Yes	Yes	Yes	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes	Yes	Yes	Yes
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes
Adj R2	0.132	0.129	0.129	0.0425	0.0405	0.0391

**Note:** This table shows the impact of just transition of borrowers on the syndicate structure. \*, \*\* and \*\*\* refer to statistical significance at 10%, 5%, and 1%, respectively.