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THE IMPACT OF CLIMATE CHANGE SENTIMENT ON TRADE CREDIT LEVEL: EVIDENCE FROM ASIAN FIRMS

TÁC ĐỘNG CỦA TÂM LÝ VỀ BIẾN ĐỔI KHÍ HẬU ĐẾN MỨC ĐỘ TIẾP CẬN TÍN DỤNG THƯƠNG MẠI: MINH CHỨNG TỪ CÁC CÔNG TY CHÂU Á

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Abstract - This study investigates the profound impact of managerial sentiment regarding climate change on a firm's ability to secure trade credit. Utilizing an extensive empirical dataset comprising 927 publicly listed firms across 30 Asian countries over the period from 2002 to 2023, our findings demonstrate that climate-related management perspectives play a pivotal role in shaping external financing opportunities. Specifically, firms whose corporate communications reflect a proactive and positive tone toward climate-related issues are granted significantly higher levels of trade credit by their suppliers. These results suggest that positive managerial climate sentiment serves as a powerful signaling mechanism, enhancing a firm's perceived trustworthiness, operational resilience, and long-term sustainability prospects in the eyes of key trade partners.

Key words - Managerial sentiment; climate change; trade credit

Tóm tắt - Nghiên cứu này đi sâu vào tìm hiểu tác động của tâm lý và góc nhìn từ cấp quản lý đối với biến đổi khí hậu đến khả năng tiếp cận tín dụng thương mại của doanh nghiệp. Thông qua việc phân tích bộ dữ liệu thực nghiệm gồm 927 doanh nghiệp thuộc 30 quốc gia châu Á trong giai đoạn từ năm 2002 đến năm 2023, kết quả cho thấy quan điểm của ban lãnh đạo về biến đổi khí hậu có ảnh hưởng sâu sắc đến mức độ tín dụng thương mại mà họ nhận được. Cụ thể, những doanh nghiệp thể hiện thái độ tích cực, chủ động đối với các vấn đề môi trường thường xây dựng được niềm tin tốt hơn, từ đó thu hút hạn mức tín dụng ưu đãi hơn từ phía các nhà cung cấp. Kết quả này chứng minh rằng góc nhìn tích cực của nhà quản lý hoạt động như một tín hiệu phát đi hiệu quả, giúp nâng cao uy tín thương hiệu và làm gia tăng kỳ vọng của các đối tác về triển vọng phát triển bền vững của doanh nghiệp trong tương lai.

Từ khóa - Tâm lý nhà quản lý; biến đổi khí hậu; tín dụng thương mại

1. Introduction

Climate change has emerged as one of concerns for firms, investors, and policymakers, influencing economic activity through both tangible risks and forward-looking expectations. An expanding body of literature examines how climate-related risks affect asset prices, corporate investment, and financial stability [1], [2], [3]. However, comparatively limited attention has been given to the role of managerial climate change sentiment, which is the way firms' managers perceive and internalize the challenges and advantages of climate change, in shaping corporate financial decisions. This gap is notable, as prior research in behavioral corporate finance demonstrates that managerial beliefs, rather than objective fundamentals alone, often play a decisive role in determining firm behavior [4], [5]. Building on this insight, this paper argues that managerial climate sentiment constitutes an important determinant of trade credit, a key yet relatively underexplored component of corporate finance.

Recent studies have begun to look at the impacts of climate change-related risks on informal financing channels. For instance, Nguyen et al. [6] examine forward-looking climate exposure among U.S. firms and find that firms with greater exposure to climate threats exhibit a stronger reliance on trade credit. Their findings suggest that as climate risk intensifies, traditional lenders, such as banks, tighten lending standards, increase borrowing costs, and restrict access to institutional financing, thereby promoting the use of trade credit as a compensatory financing mechanism.

Nevertheless, while such exposure-based measures capture the physical and regulatory dimensions of climate risk, they do not account for the tone or qualitative framing of climate-related discourse. A substantial literature in behavioral corporate finance shows that managerial beliefs can systematically deviate from fundamentals and influence corporate policies, including financing and contracting decisions [4], [5]. Extending this perspective to the climate context implies that trade credit decisions may depend not only on observable risk exposure but also on how managers interpret and communicate those risks. In other words, suppliers may respond not merely to the presence of climate-related engagement, but also to the sentiment with which such issues are conveyed.

This distinction is particularly relevant in the context of trade credit, which functions through informal, trust-based agreements that are distinct from the rigid structures of institutional banking. Suppliers typically use their informational advantages born from repeatedly interactions and soft signals to evaluate buyers' creditworthiness and resilience [7], [8]. Moreover, trade credit is often extended strategically to sustain long-term business relationships and secure future sales. Within this setting, managerial communication about climate change

may serve as an informative signal: expressions of concern or uncertainty may indicate vulnerability, whereas a more optimistic tone may signal preparedness and growth potential. Consequently, such subjective interpretations may impact on the credit-granting behavior of suppliers.

To bridge this gap, this study investigates the impacts of managerial sentiment regarding climate change on a firm's utilization of trade credit. Using a sample of 5,716 firm-year observations from 927 firms across 30 Asian countries over the period 2002–2023 and employing a measure of managerial climate sentiment derived from analyst–management interactions [9], we document that more positive climate sentiment is associated with increased trade credit. Specifically, a more optimistic tone in earnings calls is linked to greater supplier credit provision, suggesting that suppliers incorporate forward-looking managerial sentiment into their financing decisions. We argue that managerial climate sentiment functions as a signaling mechanism, shaping perceptions of trustworthiness and future prospects. Firms that convey a positive outlook on climate-related issues may be perceived as better positioned for future growth, thereby encouraging suppliers to extend more favorable credit terms in anticipation of continued business opportunities.

This study makes three primary contributions. First, in terms of measurement, it introduces a text-based managerial climate sentiment- derived from the tone of climate-related discussion in earning calls as a novel determinant of trade credit, which has traditionally relied on hard balance-sheet fundamentals or realized risk exposure. Second, with respect to mechanism, we identify a distinct signaling channel: whereas prior work such as Nguyen et al. [6] links realized, physical climate exposure to trade credit, we show that suppliers respond to the forward-looking sentiment with which managers frame climate issues, treating an optimistic tone as soft information about a buyer's resilience and growth prospects. Third, regarding the research setting, we shift the focus on Asian firms, where the effects of climate sentiment are likely to be particularly pronounced. Asian economies are among the most vulnerable to climate change, facing significant exposure to floods, typhoons, and rising temperatures. Intergovernmental Panel on Climate Change [10] asserts that environmental risks directly affect firm operations and increase uncertainty regarding future cash flows. This heightened exposure amplifies the salience of climate-related concerns for managers, suggesting that managerial climate sentiment may play a more influential role in shaping financial decisions in this region.

2. Literature review and theoretical framework

2.1. Literature review

A significant strand of literature examines how macroeconomic shocks and monetary policies influence trade credit. Nilsen [11] studies the impact of monetary contractions and finds that firms lacking a formal bond rating tend to scale up their reliance on supplier credit as a substitute during periods of bank credit tightening. Love et al. [12] examine the impacts of financial crises in emerging markets, documenting that while trade credit briefly spikes at the peak of a crisis, financially vulnerable firms with high short-term liability subsequently drastically reduce the trade credit they extend to their customers. During the 2007-2008 global financial crisis, Garcia-Appendini and Montoriol-Garriga [13] show that non-financial firms which are financially stronger stepped in to provide substantial trade credit to their customers when bank credit was scarce. Furthermore, D'Mello and Toscano [14] study the effects of economic policy uncertainty (EPU), finding that uncertainty regarding taxes, government spending, and regulations leads to a significant decline in accounts payable, accounts receivable, and net credit, as firms prioritize supply chain stability.

At firm level, bargaining power and product quality are also major determinants of trade credit. Fabbri and Klapper [15] study the bargaining power of Chinese firms and find that suppliers with weak bargaining power are more likely to extend trade credit, offer a larger share of goods on credit, and allow longer payment periods. Conversely, they find that important customers often extend their payment periods beyond the agreed terms and generate overdue payments. Long et al. [16] investigate the product quality guarantee theory, concluding that smaller firms lack an established reputation, and firms producing high-tech goods whose quality takes a long time to verify, extend significantly more trade credit. Ng et al. [17] provide supporting evidence that suppliers use varied credit terms as contractual ways to manage the risks of asymmetric information about product quality and buyer creditworthiness. The position of a firm within its broader production network is also a factor that can affect trade credit. Gofman and Wu [18] conduct a supply-chain-based analysis and find a strong "upstreamness effect." They demonstrate that firms located further upstream (further away from the final consumer goods sector) borrow more from their suppliers, extend more credit to their buyers, and maintain a higher net position. They also find that firms in more central or highly profitable supply chains often act as net liquidity providers.

In addition, social trust and corporate social responsibility (CSR) have emerged as vital informal drivers of trade credit. Wu et al. [19] study regional social trust in China, finding that firms located in regions with high social trust both receive and extend more trade credit, and process payments more quickly, effectively mitigating weak legal institutions. Levine et al. [20] expand on this globally, showing that country-level social trust helps firms access trade credit during systemic banking crises when formal lending channels collapse. Zhang et al. [21] discover that supplier reward CSR-active firms with more trade credit, viewing their social commitments as a guarantee of trustworthiness, seeking to share in the customer's future growth, and rely on CSR as an "insurance-like" protection against the diffusion of negative economic shocks. Xu et al. [22] study U.S. firms and document that higher overall CSR scores significantly

increase a firm's level of trade credit by reducing information asymmetry and signaling ethical behavior. However, Shou et al. [23] document a U-shaped relationship between CSR performance and trade credit level among Chinese small and medium-sized enterprise in manufacturing sector, noting that the signaling efficacy of CSR is negatively moderated by a firm's financial slack and overall size.

More recently, researchers have turned to the impact of environmental risks on informal financing. Nguyen et al. [6] investigate forward-looking climate change exposure in U.S. firms and document that firms exposed to high climate risk rely significantly more on trade credit.

The current literature lacks comprehensive empirical investigations into whether an optimistic climate sentiment systematically increases trade credit provision by signaling future growth, or if a negative sentiment restricts credit access. Furthermore, because suppliers often act as "liquidity insurers" to protect their supply networks, they may process this soft information asymmetrically, rewarding optimism while absorbing the short-term risks of a buyer's pessimistic climate outlook. Addressing this specific gap would illuminate how informal supply chain financing mechanisms respond to the evolving, strategic narratives of climate change adaptation.

2.2. Theoretical background

The theoretical background of how managerial sentiment impacts a firm's access to trade credit is rooted in several interconnected financial and economic theories.

According to Wu et al. [19] and Liu et al. [24], unlike formal bank loans, trade credit is an implicit, informal financing contract that typically lacks collateral, guarantees from third parties, or strict legal enforcement mechanisms. Because of this informal nature, the provision of trade credit relies heavily on mutual trust and relationship-building between the buyer and the supplier. In this context, managerial sentiment acts as a crucial piece of "soft information" that shapes trust. A positive, confident tone from a firm's management fosters confidence in the buyer's reliability and operational stability, which helps mitigate the supplier's concerns about potential default risk.

According to signaling theory, buyers must transmit credible signals to prove their quality and alleviate the supplier's perceived risk [17]. Similar to how investments in Corporate Social Responsibility (CSR) function as a signal of a firm's creditworthiness and ethical reliability to suppliers, an optimistic and forward-looking managerial sentiment acts as a powerful signal [21], [22]. It demonstrates that the firm is resilient, strategically well-positioned, and capable of meeting its future financial obligations.

Asymmetric information theory emphasizes that suppliers possess a distinct "informational advantage" over traditional financial intermediaries like banks [17], [25]. Because suppliers interact frequently with buyers and monitor their day-to-day input purchases, they are uniquely equipped to gather and decode "soft information", e.g. the tone, sentiment, and strategic outlook of the buyer's management. While banks primarily rely on hard financial metrics and formal risk models, suppliers can dynamically adjust credit terms based on that soft information extracted from the buyer.

From a strategic standpoint, offering trade credit is a strategic operational tool designed to stimulate product demand, generate repeat sales, and lock in enduring customer relationships [21]. Suppliers have a vested interest in the long-term success of their customers. When a firm projects positive sentiment, it signals strong potential for future growth. Suppliers, motivated by the desire to secure a share of those future business opportunities and expand their own sales, respond favorably by extending more generous trade credit terms to these optimistic buyers.

Therefore, we hypothesize that:

H1. Firms with positive sentiments can obtain higher levels of trade credit.

However, Supply chain theories highlight the strong interdependence between trading partners. A negative shock or bankruptcy of a key customer can directly threaten the supplier's own survival and destroy relationship-specific investments [26]. Because of this mutual dependence, suppliers often act as liquidity insurers, demonstrating a willingness to grant financial concessions and support customers through temporary distress to protect their future profit streams. That is negative sentiment does not necessarily trigger an immediate reduction in credit. Suppliers are willing to absorb short-term risks and maintain credit lines even when the buyer expresses concern or pessimism, fulfilling their role as a liquidity insurer.

Therefore, we hypothesize that:

H2. Negative climate sentiment can also lead to an increase in trade credit.

3. Methodology and data

3.1. Methodology

Following previous literature [15], [27], [28], this study employs a panel data regression model to investigate the impact of firms' sentiment regarding climate change risk on their access to trade credit. The regression model is presented as follows:

$$Trade\ credit_{i,t} = \beta_0 + \beta_1 Sentiment_{i,t-1} + \sum \gamma_k\ Control_{i,t-1} + \alpha_i + \delta_t + \varepsilon_{i,t} \quad (1)$$

where i and t refer to firm and year index. $Trade\ credit_{i,t}$ is firm's trade credit level. $Sentiment_{i,t-1}$ measure the positive/negative sentiment that appeared in firm's earnings call transcript. Following the previous literature on trade credit, such as [26], [27], [29], we choose our set of control variables, $Control_{i,t}$, that includes firm size, fixed assets ratio, cash ratio, Z-score, sale growth rate, leverage ratio, firm age and return on assets ratio. Following previous literatre, the regression is also controlled for firm and year fixed effects, α_i and δ_t [30]-[33].

All variables are described in Table 1.

Table 1. *Variable description*

TRADE CREDIT	Accounts payable/Purchases (%)
PosSENTIMENT	The frequency of climate change-related bigrams that appear in the same sentence as positive tone words and then dividing this count by the total number of bigrams in the earnings call transcript.
NegSENTIMENT	The frequency of climate change-related bigrams that appear in the same sentence as negative tone words and then dividing this count by the total number of bigrams in the earnings call transcript.
SIZE	Firm size measured as natural logarithm of total assets
FIXED ASSETS	Net property, plant, and equipment/Total assets
CASH	Cash and equivalents/Total assets
Z_SCORE	Firm's probability of financial distress and bankruptcy risk *Z_Score* = (0.012×working capital + 0.014×retained earnings + 0.033×earnings before interest and taxes + 0.999×sales)/total assets + 0.006×(market value of equity/book value of debt).
GROWTH	Sale growth rate measured as natural logarithm of current year sales/ previous year sales
LEVERAGE	Total debt / Total assets.
FIRM AGE	Difference between the current year and the first year the firm's stock data are available on COMPUSTAT.
ROA	Return on assets measured as net income/total assets

3.2. Data

The data is collected from COMPUSTAT database, except for PS (which is replaced by OS in a latter robustness test) is provided by Sautner et al. [9] via https://osf.io/fd6jq/. Following conventional practices, we drop all missing data observations and apply a 1% winsorization to all variables. The final data set comprises 5,716 firm-year observations, covering 927 unique firms across 30 Asian countries from 2002 to 2023.

Because the panel is unbalanced, the number of firm-year observations (5,716) is well below the 20,394 cells that a fully balanced panel of 927 firms over 2002–2023 would imply. This gap reflects the structure of the data because of several reasons. First, the climate-sentiment measure can be constructed only for firm-years in which an English-language earnings-call transcript is available; such coverage is sparse for many Asian firms, particularly in the earlier part of the sample period and among smaller firms. Second, listwise deletion of observations with missing control variables and 1 % winsorization further reduce the sample. Importantly, because COMPUSTAT retains firms that subsequently delisted, and because entry and exit are staggered rather than conditioned on survival to the end of the sample, the panel is not restricted to surviving firms, which limits concerns about survivorship bias.

Table 2 summary statistics of all key variables. The mean value of trade credit is nearly 10 %, suggesting that, on average, accounts payable constitute 10 % of the purchases. The standard deviation of climate change sentiment is 1.019, reflecting a moderate variation in how firms express climate-related sentiment.

Table 2. *Descriptive statistics*

Variable	Mean	Standard deviation	Min	Max	25th	50th	75th
TRADE CREDIT	9.786	8.207	0.248	42.77	3.869	7.616	13.44
PosSENTIMENT	0.478	1.019	0	6.151	0	0.0648	0.452
NegSENTIMENT	-0.263	0.604	-3.827	0	-0.242	0	0
SIZE	11.98	2.847	4.569	18.35	10.12	12.00	13.91
FIXED ASSETS	5.200	4.409	0.176	21.93	2.050	3.964	6.958
CASH	15.90	12.71	0.720	65.91	6.845	12.47	21.26
Z_SCORE	1.065	1.227	0.117	10.03	0.549	0.813	1.151
GROWTH	7.189	20.26	-64.95	78.64	-1.803	6.225	16.21
LEVERAGE	24.18	16.58	0.0647	68.45	10.12	23.08	35.85
FIRM AGE	2.853	0.462	1.386	3.555	2.565	2.944	3.178
ROA	4.703	7.372	-25.04	26.58	1.556	4.181	8.105

4. Results

4.1. Main results

The baseline regression results of positive tone of climate change are reported in Table 3. In addition to the main proxy for the trade credit as mentioned above (Column 1), we employs two different measures of trade credit, namely accounts payable to total debt ratio (Column 2) and accounts payable growth rate (Column 3). The coefficient of PosSENTIMENT is positive and statistically significant at the 5 % level in three columns. Firms expressing a more optimistic climate tone thus receive more trade credit from their suppliers. The effect is also shown economically significant. The effect is also economically meaningful, not merely statistically detectable, and it is easiest to read in two complementary ways. Because TRADE CREDIT is expressed in percentage points (accounts payable scaled by purchases), the coefficient has a direct level interpretation: a one-standard-deviation increase in climate sentiment (1.019 units) raises the trade-credit ratio by about $0.144 \times 1.019 \approx 0.15$ percentage points. Relative to the sample mean of 9.79 %, this represents roughly a 1.5 % increase in trade credit for the average firm. The same effect can be expressed in standardized ("beta") form by scaling the coefficient by the ratio of the two standard deviations (1.019 / 8.207): a one-standard-deviation rise in sentiment moves trade credit by about 0.018 of its own standard deviation - that is, by roughly 1.8 % of one standard deviation. Although modest in magnitude, an effect of this size is economically notable, given that climate sentiment is only one of many determinants of supplier financing and that it operates purely through the qualitative tone of managerial communication rather than through hard financial fundamentals. The adjusted R-squared of 0.904 in Column 1 is high but does not indicate overfitting. The fit is driven almost entirely by the firm and year fixed effects, which absorb the large, persistent firm-specific component of trade-credit policy-a firm's payables ratio is highly stable over time - together with common year-to-year variation. The coefficient on PosSENTIMENT is identified only from within-firm, within-year deviations in tone, so the explanatory power of the fixed effects is distinct from the marginal contribution of the sentiment variable, whose standardized effect is small. In addition, overfitting is a concern when the number of free

parameters is large relative to the sample; here the estimation sample (4,480 observations) far exceeds the number of estimated slope coefficients, and the high R-squared simply reflects the well-documented persistence of trade credit once unobserved heterogeneity is netted out. Consistent with this interpretation, the robustness specifications that use alternative dependent variables (Column 2 and 3) produce much lower adjusted R-squared values (0.643 and approximately 0.05), confirming that the high fit is specific to the levels specification's fixed-effect structure rather than a generic artifact of the regressors.

Table 3. *Main regression results of positive sentiment*

Variable	(1) *TRADE CREDIT*	(2) *TRADE CREDIT*	(3) *TRADE CREDIT*
PosSENTIMENT	0.144**	39.647***	2.456**
	[2.275]	[2.598]	[2.024]
SIZE	0.006	-77.998	-11.092***
	[0.319]	[-1.468]	[-3.773]
FIXED ASSETS	-0.011	-4.732	0.352
	[-1.183]	[-0.706]	[1.094]
CASH	-0.011	7.875**	0.520***
	[-1.183]	[2.283]	[3.574]
Z_SCORE	0.072	434.848***	-0.266
	[1.246]	[5.074]	[-0.286]
GROWTH	0.006*	-0.436	-0.103**
	[1.828]	[-0.615]	[-1.993]
LEVERAGE	-0.014*	-1.790	0.200*
	[-1.926]	[-0.903]	[1.682]
FIRM AGE	1.184*	-362.914*	-8.700
	[1.920]	[-1.915]	[-0.946]
ROA	-0.033***	-6.579	0.383**
	[-2.642]	[-1.239]	[2.049]
Constant	13.067***	1,802.240**	154.823***
	[3.962]	[2.183]	[3.749]
Observations	4,480	4,480	4,480
Firm FE	YES	YES	YES
Year FE	YES	YES	YES
Adj. R-squared	0.904	0.643	0.0499

*Values in brackets represent t-statistics. *, **, and *** denote statistical significance at the 10 %, 5 % and 1 % levels, respectively.*

Beyond the sentiment variable, the control coefficients are consistent with established trade-credit theory and reinforce the economic interpretation. The negative and significant coefficient on SIZE indicates that larger firms obtain relatively less supplier credit, consistent with the view that large firms enjoy better access to formal bank and bond financing and therefore rely less on trade credit as a substitute. The negative coefficient on LEVERAGE points in the same direction: more indebted buyers are perceived as riskier counterparties and are extended less credit. The positive coefficient on GROWTH suggests that suppliers extend more credit to expanding firms in order to capture future sales, while the negative ROA coefficient is consistent with more profitable firms having less need to lean on supplier financing. Put together, these patterns indicate that suppliers behave as informed, forward-looking lenders, and that climate sentiment enters this calculus as an additional piece of soft information about a buyer's prospects rather than as a mechanical accounting relationship.

As we also propose a hypothesis about the effect of negative sentiment. The baseline regression results of negative tone of climate change are reported in Table 4. Similar to the positive sentiment section, three column represent three measures for trade credit. The coefficient of NegSENTIMENT is positive and statistically significant at the 5 % level in only Column 1. This does not robustly conclude in a robust tone that negative climate sentiment can lead to an increase in trade credit.

Table 4. *Main regression results of negative sentiment*

Variable	(1) *TRADE CREDIT*	(2) *TRADE CREDIT*	(3) *TRADE CREDIT*
NegSENTIMENT	0.198**	5.552	1.264
	[2.143]	[0.240]	[0.936]
SIZE	-0.547**	-82.724	-11.426***
	[-2.195]	[-1.551]	[-3.885]
FIXED ASSETS	0.006	-4.852	0.345
	[0.310]	[-0.723]	[1.072]
CASH	-0.011	7.837**	0.518***
	[-1.197]	[2.273]	[3.560]
Z_SCORE	0.074	435.045***	-0.249
	[1.274]	[5.077]	[-0.267]
GROWTH	0.006*	-0.422	-0.103**
	[1.813]	[-0.593]	[-1.978]
LEVERAGE	-0.013*	-1.775	0.203*
	[-1.869]	[-0.896]	[1.713]
FIRM AGE	1.103*	-371.096**	-9.473
	[1.781]	[-1.963]	[-1.028]
ROA	-0.032**	-6.371	0.398**
	[-2.545]	[-1.203]	[2.130]
Constant	13.710***	1,901.888**	162.450***
	[4.163]	[2.297]	[3.952]
Observations	4,480	4,480	4,480
Firm FE	YES	YES	YES
Year FE	YES	YES	YES
Adj. R-squared	0.903	0.643	0.0486

*Values in brackets represent t-statistics. *, **, and *** denote statistical significance at the 10 %, 5 % and 1 % levels, respectively.*

Put in the Asian research setting, why should suppliers reward optimistic climate sentiment, and would the strength of this response be uniform across Asia? The mechanism rests on the informal, trust-based nature of trade credit: lacking the collateral and legal enforcement of bank loans, suppliers price soft information, and a credible optimistic tone signals resilience and continued demand for their goods. Crucially, the value of such soft signals is likely to depend on the institutional environment, which varies widely across the 30 Asian economies in our sample. In markets with weaker creditor protection, contract enforcement, and disclosure infrastructure, hard, verifiable information is scarcer and costlier to obtain, so suppliers rely

more heavily on relational and tone-based signals - a pattern consistent with evidence that social trust substitutes for weak legal institutions in supporting trade credit [19], [20]. The positive average effect we document is therefore plausibly stronger in less institutionally developed markets, where managerial sentiment fills a larger information gap, and weaker where robust disclosure and enforcement give suppliers better hard-information alternatives.

4.2. Robustness tests

In the first robustness test, the overall sentiment (OS) is used as the independent variable. The overall sentiment is calculated by assigning a value of +1 to climate change bigrams that occur in the same sentence as positive tone words and -1 to those accompanied by negative tone words, summing these values, and dividing the result by the total number of bigrams in the earnings call transcript. Three columns in Table 5 represent the regression of three different measures of trade credit. The estimated coefficients on overall sentiment in Table 5 are positive and statistically significant, suggesting that more optimistic climate-related discourse is associated with higher levels of trade credit.

Table 5. *Using overall sentiment as independent variable*

Variable	(1) *TRADE CREDIT*	(2) *TRADE CREDIT*	(3) *TRADE CREDIT*
OverallSENTIMENT	0.251***	42.366**	2.499**
	[3.775]	[2.483]	[2.181]
SIZE	-0.521**	-79.611	-11.200***
	[-2.091]	[-1.497]	[-3.801]
FIXED ASSETS	0.006	-4.852	0.345
	[0.310]	[-0.723]	[1.072]
CASH	-0.011	7.880**	0.520***
	[-1.170]	[2.285]	[3.577]
Z_SCORE	0.073	435.044***	-0.254
	[1.262]	[5.076]	[-0.273]
GROWTH	0.005*	-0.461	-0.104**
	[1.769]	[-0.651]	[-2.021]
LEVERAGE	-0.013*	-1.679	0.207*
	[-1.841]	[-0.849]	[1.737]
FIRM AGE	1.156*	-370.243*	-9.152
	[1.876]	[-1.953]	[-0.998]
ROA	-0.033***	-6.430	0.393**
	[-2.614]	[-1.216]	[2.102]
Constant	13.139***	1,849.591**	157.885***
	[3.999]	[2.234]	[3.836]
Observations	4,480	4,480	4,480
Firm FE	YES	YES	YES
Year FE	YES	YES	YES
Adj. R-squared	0.904	0.643	0.0497

*Values in brackets represent t-statistics. *, **, and *** denote statistical significance at the 10 %, 5 % and 1 % levels, respectively.*

In the second robustness test, we consider adding industry-year fixed effects to control specific macroeconomic shocks. Three columns in Table 6 represent the regression of three different measures of trade credit.

Table 6. *Adding industry-year fixed effect*

Variable	(1) *TRADE CREDIT*	(2) *TRADE CREDIT*	(3) *TRADE CREDIT*
PosSENTIMENT	0.438***	57.172***	0.963
	[3.619]	[4.225]	[1.286]
SIZE	0.069*	2.429	-0.246
	[1.671]	[0.452]	[-1.002]
FIXED ASSETS	-0.249***	4.033	0.274
	[-9.122]	[1.024]	[1.556]
CASH	-0.126***	5.553***	0.402***
	[-12.201]	[2.887]	[5.473]
Z_SCORE	1.542***	781.490***	-0.841
	[7.865]	[12.314]	[-1.411]
GROWTH	0.007	-1.272*	0.067
	[1.005]	[-1.661]	[1.491]
LEVERAGE	-0.032***	-6.017***	0.046
	[-3.847]	[-5.204]	[0.993]
FIRM AGE	-1.797***	-11.418	-4.337***
	[-6.396]	[-0.310]	[-2.851]
ROA	-0.068***	-8.640***	0.294**
	[-3.721]	[-2.804]	[2.548]
Constant	16.478***	-435.554***	17.549***
	[17.147]	[-2.937]	[3.466]
Observations	4,567	4,567	4,567
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Adj. R-squared	0.160	0.462	0.0538

*Values in brackets represent t-statistics. *, **, and *** denote statistical significance at the 10 %, 5 % and 1 % levels, respectively.*

5. Conclusion

Employing a sample of Asian firms from 2002 to 2023, we provide strong evidence that managerial climate change sentiment plays a significant role in shaping firms' access to trade credit. Specifically, firms that convey a more positive tone regarding climate-related issues benefit from increased supplier support in the form of greater trade credit provision. These findings imply that managerial climate sentiment functions as a signaling mechanism, shaping perceptions of trustworthiness and future prospects. Our findings remain after several robust checks.

Our findings have important implications for three groups of actors in Asia. For firms (the buyers), how managers communicate about climate - not only what they disclose, but the tone they convey in earnings calls and public statements - has a tangible payoff: a credible, forward-looking climate narrative can ease working-capital constraints by unlocking more generous supplier financing, an effect that is especially valuable for firms in climate-exposed Asian sectors with limited access to formal credit. For credit providers, the findings show that the tone of a buyer's climate communication is informative soft information that they already implicitly price; suppliers can make this explicit by incorporating structured analysis of buyers' climate disclosures into their credit-risk assessment and customer-screening processes, while guarding against "cheap talk" by cross-checking optimistic narratives against hard fundamentals. For policymakers and regulators, the results underscore the value of standardized, credible, and

comparable climate-disclosure requirements across the region: clearer reporting reduces information asymmetry, limits the risk that supply-chain credit is allocated on the basis of sentiment rather than fundamentals.

Several limitations should be identified and pave the way for future research. The most important concerns causal identification. Although our specification includes firm, industry and year fixed effects and lags all explanatory variables by one year, the relationship between climate sentiment and trade credit may still be subject to endogeneity. Reverse causality is plausible: firms that already enjoy ample supplier financing, and the operating slack it provides, may find it easier to adopt an optimistic climate tone, so causation could run partly from credit to sentiment rather than solely from sentiment to credit. Omitted-variable bias is a related concern, as unobserved, time-varying firm characteristics could jointly drive both a positive climate tone and greater creditworthiness. Measurement error in the text-based sentiment proxy may also attenuate or distort the estimates. The fixed effects and lag structure mitigate, but do not eliminate, these concerns. Future work could strengthen identification using instrumental-variable strategies, plausibly exogenous shocks to climate salience (for example, the staggered introduction of climate-disclosure regulations or large local climate events). In addition, although our firm and year fixed effects absorb time-invariant cross-country differences and isolate the average within-firm effect, this heterogeneity suggests a natural extension: interacting climate sentiment with country-level measures of institutional quality to test whether the sentiment–credit channel is indeed amplified where formal institutions are weaker.

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