Proceedings of ICFTBA 2025 Symposium: Financial Framework's Role in Economics and Management of Human-Centered Development
DOI: 10.54254/2754-1169/2025.GL29182

The Study on the Financialization of Export-Oriented Manufacturing Enterprises under the Impact of Green Trade Barriers

Zhaotian Yin

School of Economics, Lanzhou University, Lanzhou, China
yinzht2023@lzu.edu.cn

Abstract. With the globalization of Green Trade Barriers (GTBs) and the continuous tightening of green technical standards, exploring the impact of GTBs on the financialization of China's export-oriented manufacturing enterprises and its underlying mechanism has become a critical research focus.This research selects Chinese A-share listed export-oriented manufacturing enterprises covering the period from 2009 to 2024 as its research samples. It incorporates multi-source datasets—specifically the WTO Environmental Database, CSMAR Database, and annual reports of listed companies—and adopts a two-way fixed effects model along with a mediation effect model to carry out empirical analysis. The results show that: (1) GTBs significantly increase the level of corporate financialization, which supports Hypothesis H1; (2) GTBs elevate firms' short-term financialization by reducing the current asset ratio, thereby verifying Hypothesis H2. A set of robustness tests—for instance, sensitivity analysis of fixed effect specifications, replacement of industry fixed effects, adjustment of clustered standard errors, and modification of variable functional forms—further confirm the reliability of the baseline conclusions. Theoretically, this study enriches the research framework linking international trade policy, environmental regulation, and corporate financialization, addressing the gap in existing studies that mostly focus on macroeconomic fluctuations or general trade policy uncertainty. Practically, it provides insights for export-oriented manufacturing enterprises to balance short-term financialization and core business development, and suggests policymakers introduce measures to alleviate enterprises' compliance pressures and prevent the "hollowing-out" of the real economy. Limitations include a sample restricted to A-share listed enterprises; future research may expand the sample scope and explore firm heterogeneity.

Keywords: Green Trade Barriers , Export-Oriented Manufacturing Enterprises, Corporate Financialization, Current Asset Ratio, Two-Way Fixed Effects Model

1. Introduction

Against the backdrop of the growing severity of global climate change and the in - depth dissemination of the concept of sustainable development, green development has not only emerged as a global consensus but also become a strategic focus for nations worldwide. Correspondingly,

DOI: 10.54254/2754-1169/2025.GL29182

Green Trade Barriers (GTB) have thus evolved into a core issue and a new - type regulatory tool in the field of international trade. Against this backdrop, countries around the world have formulated stringent environmental standards and added green market access requirements, which have driven a continuous rise in the intensity of environmental regulation in international trade, thereby forming a systematic constraint on traditional trade models.

As the globe’s biggest export economy, China’s manufacturing industry focused on exports stands as a pillar in its national economic system. In 2024, China's total export volume reached 25.45 trillion yuan, among which manufacturing exports accounted for as high as 98.9%. The international competitiveness of this sector is directly linked to macroeconomic stability and the process of industrial upgrading. However, the emergence of GTB has posed a significant impact on China's export - oriented manufacturing industry: on the one hand, the elevation of environmental standards in importing countries has directly increased the compliance costs of enterprises; on the other hand, the concealment and flexibility of technical barriers have made them a major obstacle restricting exports.

Against this context, the *2025 Government Work Report of the State Council* explicitly proposed to "proactively respond to green trade barriers" in 2025. This proposal not only responds to the practical urgency of current industrial development but also provides clear guidance for policy practice. Facing the global trends of the normalization of new - type green rules and the gradual tightening of green technical standards, a systematic assessment of the economic consequences of GTB is not only a key prerequisite for addressing the dual pressures and promoting the green and sustainable development of industrial and supply chains but also a strategic requirement for China to enhance the international competitiveness of its industries and realize high - level opening - up in the restructuring of the global value chain [1].

Currently, the impact of GTB on China's manufacturing export enterprises has already become apparent, which is highly aligned with the core issues of China's economic work and policy focus this year. The series of measures clarified at the meeting of the Political Bureau of the Communist Party of China (CPC) Central Committee held on July 30, 2025, have provided a systematic approach to addressing this challenge. The meeting underscored the requirement to expand opening-up at a high level, stabilize the foundational aspects of foreign trade and foreign investment, offer aid to foreign trade enterprises heavily affected by shocks, strengthen financial support measures, promote the integrated development of domestic and foreign trade, adjust and improve the export tax rebate policy, and build pilot free trade zones and other opening-up platforms with high standards.

Against the global trend of the normalization of green trade barriers (GTB) and the continuous tightening of green technology standards, while China has been taking measures such as expanding high-level opening-up and optimizing trade systems to stabilize the fundamentals of foreign trade and foreign investment, and to reduce burdens and empower export-oriented manufacturing enterprises, these enterprises have exhibited two distinctly different financialization paths in response to shocks: "shifting from real sectors to virtual sectors" and "pursuing green development for value gains". This gives rise to the core research questions of this study: Whether and how do green trade barriers affect the financialization level of export-oriented manufacturing enterprises? Does such financialization signify the risk of hollowing-out of the real economy, or a strategic opportunity to advance green transformation?

This research selects Chinese A-share listed manufacturing export enterprises spanning 2009 to 2024 as its research samples, draws on multi-source data—including the CSMAR Database, annual reports of listed companies, and the WTO Environment Database—and builds a two-way fixed

DOI: 10.54254/2754-1169/2025.GL29182

effects model together with a mediation effect model to conduct a systematic analysis of how green trade barriers affect corporate financialization and its acting mechanism.

2. Literature review

As a type of trade restriction system constructed by developed economies with environmental protection as the core orientation, the impact of green trade barriers on export enterprises has long been a core research topic in the fields of international economics and environmental policy [2]. In terms of the connection between corporate environmental behavior and technological innovation, some studies have pointed out that green trade barriers can significantly improve enterprises' green technological innovation capabilities and environmental performance through the "reverse coercion mechanism" [3], which in turn helps reduce the intensity of corporate pollutant emissions and enhance resource utilization efficiency [4,5]. At the same time, while inhibiting the inflow of foreign capital with high environmental costs, such policies also objectively enhance the international competitiveness and industrial dominance of local manufacturing industries [3].

On the other hand, other studies have argued that while promoting enterprises to expand investment in green technological transformation, green trade barriers may create a "crowding-out effect" on R&D resources required for green innovation, strengthen enterprises' dependence on imported technologies, and ultimately restrict enterprises' independent innovation capabilities, forming what is known in academic circles as the "technological dependence lock-in effect" [6]. For enterprises with insufficient environmental technology reserves and facing strong capital constraints, green trade barriers may even trigger a trade diversion effect, forcing such enterprises to withdraw from the markets of countries implementing the barriers [7]. It can thus be seen that green trade barriers exhibit a significant dual-effect characteristic between stimulating enterprises' green transformation and imposing resource redistribution pressures on enterprises.

At the level of the transmission mechanism, existing studies have confirmed that Trade Policy Uncertainty (TPU) is one of the key factors affecting corporate financialization(Ma., 2024) [8]. Empirical studies on Chinese listed non-financial enterprises show that there is a significant positive correlation between TPU and the level of corporate financialization [9]. Specifically, under the constraint of green trade barriers, enterprises are required to continuously invest substantial funds in green technological innovation R&D and the green transformation of production processes to meet the increasingly stringent environmental standards of importing countries [10,11]. This mandatory environmental protection investment will significantly increase enterprises' operating costs and capital expenditures, thereby altering the allocation structure and efficiency of enterprises' existing financial resources. For instance, existing studies have pointed out that green innovation activities are characterized by high risk, high uncertainty, and long cycles, and their implementation requires continuous and large-scale capital support [12].

Moreover, corporate financialization may additionally impose a notable "crowding-out effect" on green innovation [13]: when enterprises channel excessive capital into financial assets (e.g., securities investment, entrusted wealth management) to pursue short-term financial gains, the volume of resources flowing into the real economy will decline correspondingly. Specifically, it will crowd out capital input into green technological innovation and environmental governance, ultimately hampering the progress of enterprises' green transformation.

DOI: 10.54254/2754-1169/2025.GL29182

3. Hypotheses development

Specifically, against the backdrop of the continuous rise in environmental regulation intensity, enterprises are required to meet the environmental protection requirements of importing countries throughout the entire product lifecycle to break through green trade barriers (GTBs). This results in large-volume environmental protection investments, thus contributing to the upgrading and transformation of the national industrial structure [14]. Such investments are characterized by long payback periods, high sunk costs, and strong irreversibility. When coupled with the rigid increase in compliance costs driven by the upgrading of environmental requirements—including immediate expenditures such as the purchase of green production equipment, R&D of cleaner production technologies, and third-party environmental testing and certification—enterprises face a simultaneous surge in compliance costs and marginal costs. This exposes them to the risks of rising commodity prices or declining output, ultimately exacerbating operational risks.

Faced with potential profit shrinkage, enterprises may boost the allocation of financial assets to ease capital strain. Nevertheless, export manufacturing enterprises—whose core business centers on physical production—cannot achieve full financialization. Instead, they tend to revert to their core operations after a transition period that relies on the short-term "reservoir effect" (namely, utilizing financial assets as a temporary buffer to address capital shortages). As a result, these enterprises demonstrate the trait of short-term financialization. On this basis, the following hypothesis is put forward:

H1: Green trade barriers significantly increase the level of corporate financialization.

Further analyzing from the perspective of the transmission mechanism, the immediate payment demand for environmental compliance gives rise to a "crowding-out effect" or "investment substitution effect" on corporate working capital, along with heightened environmental pressure. The timeliness and mandatory nature of expenditures on green equipment and technology R&D [15] force enterprises to activate liquidity reserve mechanisms, prioritizing the use of highly liquid assets such as cash pools and short-term commercial papers. This leads to a significant decline in the proportion of current assets to total assets—current assets originally allocated to operational activities (e.g., raw material procurement and accounts receivable turnover) are "liquidated" and diverted to non-productive expenditures, thinning the thickness of the liquidity buffer.

In this context, short-term financial instruments have become the preferred choice for asset allocation, as they simultaneously possess three attributes: "low risk," "high liquidity," and "profitability." Their counterparty credit risk is controllable, their liquidity efficiency in the secondary market is high, and their investment returns can partially offset the capital costs of environmental protection investments through the "financial expense offset effect"—collectively driving a structural increase in the level of short-term financialization [16]. Essentially, this is an inevitable result of enterprises' dynamic adjustment of capital structure under liquidity constraints and cost pressures. Thus, the following hypothesis is put forward:

H2: Green trade barriers increase the level of corporate short-term financialization by reducing the ratio of corporate current assets.

4. Study design

4.1. Sample selection and data sources

Specifically, the data sources include three parts:

DOI: 10.54254/2754-1169/2025.GL29182

First among them is the WTO Environmental Database. This database systematically collects and organizes annual notifications of trade measures related to the environment, which are submitted by all member economies to the World Trade Organization. Since 2009, the WTO Environmental Database has provided detailed classification tables of environment-related technical barriers to trade (TBTs), covering elements such as the notifying country/region, notification year, International Classification for Standards (ICS) codes or Harmonized System (HS) codes of affected industries, scope and targets of application, notification keywords, measure types, and implementation objectives. Second is the China Stock Market & Accounting Research (CSMAR) Database. This study draws on data from the CSMAR Database, which covers information related to financial assets of listed export-oriented manufacturing enterprises, along with total import and export volume, total export volume, and total import volume. Considering that the Memorandum on Information Disclosure of the Small and Medium Enterprise Board first specified mandatory disclosure requirements for performance forecasts of the Small and Medium Enterprise Board in 2009, and that the mandatory disclosure system for listed companies has been in force since that year, the sample period is set to start in 2009. Third is the National Database of Enterprises with Export Qualifications. Matching between green trade barrier data and listed company data is accomplished through unique credit codes; for enterprises that cannot be matched, their export qualification and status as export-oriented manufacturing enterprises are verified by checking for the presence of overseas export revenue in their annual reports.

4.2. Main variables

4.2.1. Core dependent variable:corporate financialization

Corporate financialization is conceptualized as the behavioral tendency of non-financial enterprises to curtail investments in the real economy and expand the allocation of financial assets. Following the research paradigm of Demir [17], this study uses the ratio of corporate financial assets to total assets as the dependent variable to assess the level of corporate financialization (denoted as Fin). Specifically, under the broad definition, the range of financial asset allocation encompasses 8 accounting items: trading financial assets, derivative financial assets, short-term investments, accrued interest receivable, dividends receivable, available-for-sale financial assets, held-to-maturity investments, and investment properties.

4.2.2. Core independent variable: green trade barriers

This study employs the logarithm of the lagged one period of the annual number of notifications on environment-related technical trade barriers (TBTs) in the industry to which listed companies belong as the proxy variable for green trade barriers.One of the primary considerations for selecting this measurement method lies in the significant policy lag inherent in the implementation of green trade barriers [18]. Since enterprises require an adaptation cycle to respond to policy shocks, and the decision-making mechanisms of listed manufacturing firms are characterized by prudence, there is often a time lag in the response of their financialization behavior to green trade barriers. Therefore, the use of a lagged one-period indicator enables a more accurate capture of the actual impact effect.The WTO Environmental Database systematically integrates notification regulations concerning environment-related technical trade barriers, covering technical standards in fields such as pollution emission, energy conservation, and environmental protection. This database can effectively represent the core connotation of green trade barriers. Among the notifications, those

DOI: 10.54254/2754-1169/2025.GL29182

categorized as "technical regulations and norms" account for 92.75% of the total; the remaining include technical restrictive measures such as "certification requirements" and "conformity assessment procedures." All these measures reflect mandatory requirements for the green technology level of products involved in international trade

4.3. Model design

To examine the impact mechanism of green trade barriers (GTBs) on corporate financialization, this study draws on the research paradigm of Qing et al [19]. and constructs the following econometric model:

$$Fin_{it} = \alpha_0 + \alpha_1 lnGTB_{i,t-1} + \alpha_2 \sum Control_{it} + \mu_i + \nu_t + \varepsilon_{it} \quad (1)$$

Where: Fin_{it} denotes the financialization level of firm i in year t; α_0 represents the constant term; α_1 measures the average change magnitude of the firm's financialization level when the intensity of green trade barriers (GTBs) changes by 1%; $lnGTB_{i,t-1}$ is the core explanatory variable (i.e., green trade barriers), referring to the logarithm of the number of GTBs encountered by firm i in year t-1; "Control" stands for control variables; μ_i denotes firm fixed effects; υ_t represents year fixed effects; and ε_{it} is the random error term. α_1 is the core coefficient to be estimated in this study. If α_1 is significantly positive, it indicates that after the firm is subjected to the impact of GTBs, its financialization level tends to exhibit a significant upward trend.

Table 1. Definition table of variables

Variable Type	Variable Name	Variable Symbol	Variable Definition
Dependent Variable	Corporate Financialization	Fin	Financial Assets / Total Assets
Independent Variable	Green Trade Barriers	GTB	Logarithm of the Number of Green Trade Barriers
Control Variables	Cash Flow	cashflow	Net cash flow from operating activities disclosed in the cash flow statement
	Number of Directors	Dongshi	Logarithm of the number of directors
	Financial Leverage	Fuzhai	Total Liabilities / Total Assets
	Profitability	profit	Return on Assets (ROA) (Net Profit / Total Assets)
	Macroeconomic Growth Rate	Index	Annual GDP Growth Rate
	Relative Export Ratio	sgnyea	Export Volume / (Export Volume + Import Volume)
	Tobin's Q	tq1	(Total Stock Market Value + Book Value of Debt) / Book Value of Total Assets
	Firm Listing Age	ListingAge	Number of years the firm has been listed
Mediating Variables	Current Asset Ratio	Flua10	Current Capital / Total Assets

DOI: 10.54254/2754-1169/2025.GL29182

5. Empirical tests and analysis of results

5.1. Correlation test

For the baseline regression, corporate financialization—in particular total financialization (Fin, i.e., the proportion of financial assets to total assets)—is regarded as the core variable of interest, while the lagged one-period logarithm of green trade barriers (L.lnGTB) is adopted as the core explanatory variable. It builds a two-way fixed effects model that integrates both firm fixed effects and time fixed effects, so as to systematically investigate the impact of green trade barrier policy shocks on corporate financialization behavior.

From the regression results regarding the total financialization dimension, the coefficient of green trade barriers is significantly positive at the 1% statistical significance level, which suggests that green trade barriers with a one-period lag have had a significant positive effect on enterprises' overall financial asset allocation.Against the backdrop of rising policy uncertainty, firms have initially adopted strategies to hedge operational risks by increasing holdings of financial assets. This finding is consistent with existing research conclusions on firms' "asset reallocation" under external environmental uncertainty shocks, reflecting the common logic of firms using financial assets to cope with operational uncertainty. However, unlike most existing studies that focus on the impact of macroeconomic fluctuations or institutional policy uncertainty on corporate financialization, this paper further reveals that external shocks from green trade barriers—characterized by the dual attributes of "environmental regulation + trade restriction"—can also significantly induce adjustments in firms' financial asset allocation, which remains a gap in current research.

The baseline regression results not only verify the core proposition that green trade barriers significantly drive firms' short-term financialization through the "reservoir effect" but also, through an analysis of differences in financialization structure, reveal the risk trade-off mechanism of firms in the face of policy uncertainty. This verifies Hypothesis H0.

Table 2. Baseline regression table

	Fin	Fin
L.lnGTB	0.0033**	0.0035**
	(0.0015)	(0.0015)
ListingAge		0.0014**
		(0.0005)
fuzhai		-0.0000***
		(0.0000)
profit		-0.0000***
		(0.0000)
index		-0.0035***
		(0.0008)
Dongshi		0.0001
		(0.0001)
tq1		0.0000***
		(0.0000)
cashflow		-0.0000

DOI: 10.54254/2754-1169/2025.GL29182

		(0.0000)
sgnyea		0.0636
		(0.1567)
_cons	0.0341***	0.4051**
	(0.0055)	(0.1485)
Control Variables	No	Yes
Firm Fixed Effects	Yes	Yes
Time Fixed Effects	Yes	Yes
N	14627	14627
Adjusted R-squared	0.5702	0.5731
F-statistic	44.8421	36.3959

Note: *** p < 0.01, ** p < 0.05, * p < 0.10; the values in parentheses are clustered robust standard errors clustered at the firm level. The same applies to the following tables.

5.2. Robustness test

To guarantee the robustness and credibility of the baseline regression findings, this study carries out multi-faceted tests to eliminate the impact of model setting, sample handling, and variable measurement approaches on the estimation outcomes. The specific operations are as follows:

First, a sensitivity test for fixed effect setting is conducted. Two comparative models are built: one that "only includes firm fixed effects" and another that "integrates both firm fixed effects and time fixed effects". The former independently analyzes cross-sectional effects by separating firm-specific heterogeneity, whereas the latter acts as a reference compared with the two-way fixed effect setting of the baseline model—intended to confirm the potential impact of time trend factors on the core conclusions. If, under both settings, the coefficient of lagged one-period green trade barriers (GTBs) on short-term financialization remains significantly positive at the 1% level, with consistent signs and directions of marginal effects, this shows that the conclusions are not influenced by the inclusion of time fixed effects.

Second, a test for replacing industry fixed effects is implemented. Firm-level fixed effects in the baseline model are substituted with fixed effects based on the 2012 Industry Classification issued by the China Securities Regulatory Commission (CSRC). If the coefficient of the core explanatory variable remains stable and significant under this new classification standard, it further validates the robustness of the findings related to the impact of GTBs.

Third, a test for adjusting clustered standard errors is performed. Standard errors clustered at the firm level in the baseline model are replaced with those clustered at the industry level. Considering that the policy impact of GTBs has industry relevance, clustering at the industry level can effectively mitigate the residual correlation issue arising from common shocks experienced by firms within the same industry. If the statistical significance of the core coefficient after adjustment aligns with the baseline results, this proves that the conclusions are not affected by the standard error estimation method.

Fourth, a robustness test for the functional form of the explained variable is carried out. The proxy indicator for the core explanatory variable (GTBs) is altered from "lagged one-period logarithmic number of notifications" to "lagged one-period original number of notifications". By avoiding potential information loss resulting from logarithmic transformation, this test investigates whether the core conclusions rely on the specific measurement form of the variable. If the positive

DOI: 10.54254/2754-1169/2025.GL29182

impact of L.GTB on Fin1 (short-term financial investment) remains statistically significant under the original value setting, it indicates that the conclusions are not disrupted by the choice of the variable's functional form.

The above series of tests form complementary verification from four dimensions: model specification, industry classification, statistical methods, and variable measurement. Throughout these tests, the positive effect of GTBs on firms' overall and short-term financialization remains consistently robust, further confirming the reliability and generalizability of the baseline conclusions.

Table 3. Robustness test table

	Fin				
	Without Time Fixed Effects	With Time Fixed Effects	Industry Fixed Effects	Change of Clustering Level	Non-logarithmic Treatment
L.lnGTB	0.0073***	0.0035**	0.0081**	0.0035*	
	(0.0011)	(0.0015)	(0.0025)	(0.0021)	
L.GTB					0.0017**
					(0.0005)
Control Variables	YES	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	YES	YES
Time Fixed Effects	YES	YES	NO	YES	YES
Industry Fixed Effects	NO	NO	YES	NO	NO
N	14627	14627	14627	14627	14627
Adjusted R-squared	0.5657	0.5730	0.0902	0.5725	0.5730
F-statistic	59.7114	36.3952	54.7346	5.9597	36.3809

5.3. Mechanism analysis

The timeliness and mandatory nature of environmental compliance expenditures force firms to prioritize using highly liquid assets to alleviate short-term financing constraints and meet immediate payment needs. Empirical results show that the regression coefficient of lagged one-period green trade barriers (GTBs) on the current asset ratio is -0.0075, significantly negative at the 5% level—confirming the "liquidation and diversion" of firms' current assets. In other words, under policy shocks, firms must use liquidity reserves originally for operations to cover compliance expenditures; this not only weakens their liquidity buffer for daily operations but also further fuels the need to compensate for the opportunity cost of capital.

Existing studies indicate that under external shocks, firms tend to use short-term financial instruments to hedge against operating cash flow volatility. This study's finding is highly consistent with this conclusion: short-term financial assets, characterized by "low credit risk, high market liquidity, and low return volatility," become firms' preferred choice for balancing "payment flexibility" and "capital appreciation." However, unlike existing literature focusing on macro

DOI: 10.54254/2754-1169/2025.GL29182

uncertainty or general institutional shocks, this study emphasizes that GTBs have dual characteristics of "high-timeliness expenditure + mandatory constraints." This uniqueness directly amplifies firms' liquidity strain, making them more inclined to rely on short-term financialization to fill capital gaps. In the long term, however, firm decisions depend on multiple factors, making it impossible to definitively explain long-term financialization behavior—thus verifying Hypothesis H2.

Table 4. Mechanism analysis table

	Current Asset Ratio
L.lnGTB	-0.0075**
	(0.0025)
N	14627
Control Variables	YES
Firm Fixed Effects	YES
Time Fixed Effects	YES
Adjusted R-squared	0.7707
F-statistic	37.0565

6. Conclusion

Under the scenario of the global normalization of green trade barriers (GTBs) and the ongoing tightening of green technical standards, this study centers on investigating the influence of GTBs on the financialization of China's export-oriented manufacturing enterprises and its intrinsic mechanism. It selects Chinese A-share listed export-oriented manufacturing enterprises spanning 2009 to 2024 as its research samples, incorporates multi-source data such as the WTO Environmental Database, CSMAR Database, and annual reports of listed companies, and employs a two-way fixed effects model and a mediation effect model to conduct empirical analysis.

The empirical findings indicate that GTBs notably raise the level of corporate financialization, thereby supporting Hypothesis H1; meanwhile, GTBs boost the level of corporate short-term financialization by lowering enterprises' current asset ratio, which validates Hypothesis H2. A suite of robustness tests—including sensitivity analysis of fixed effect specifications, replacement of industry fixed effects, adjustment of clustered standard errors, and modification of variable functional forms—further affirms the reliability of the baseline conclusions.

Theoretically, this study enriches the research framework connecting international trade policy, environmental regulation, and corporate financialization by emphasizing the dual attributes of GTBs ("environmental regulation + trade restriction") as a unique driver of corporate financialization, filling the gap in existing research that mostly centers on macroeconomic fluctuations or general trade policy uncertainty. Practically, it offers insights for export-oriented manufacturing enterprises to balance short-term financialization (serving as a temporary capital buffer) and the development of core businesses, while stressing the necessity for policymakers to introduce measures like expanding green financing support and optimizing export tax rebates for green products—aimed at easing enterprises' compliance pressures and curbing the "hollowing-out" of the real economy.

This study also has limitations: for instance, the sample is restricted to A-share listed enterprises (failing to fully cover non-listed small and medium-sized enterprises), and the exploration of firm heterogeneity is inadequate. Future research may expand the sample scope, carry out heterogeneous

DOI: 10.54254/2754-1169/2025.GL29182

analysis, and investigate the long-term impact of GTB-driven financialization on enterprises' green transformation. Overall, this study provides systematic empirical evidence for understanding the relationship between GTBs and the financialization of export-oriented manufacturing enterprises, and offers theoretical and practical references for advancing the sustainable development of China's export-oriented manufacturing industry in the context of global green trade.

References

[1] Wang, L., & Hsu, H. H. (2025). The industry-education integration of logistics transportation in supply chain management under "Dual Carbon Target". Asia Pacific Economic and Management Review, 2(3).
[2] Gao, X. (2024). Research on the influence of green trade barriers on China's export and its coping strategies. Frontiers in Business, Economics and Management, 15(1), 54–57.
[3] Liu, Z., Zhang, M., Li, Q., & others. (2023). The impact of green trade barriers on agricultural green total factor productivity: Evidence from China and OECD countries. Economic Analysis and Policy, 78, 319–331.
[4] Roh, T., Noh, J., Oh, Y., & Park, K.-S. (2022). Structural relationships of a firm's green strategies for environmental performance: The roles of green supply chain management and green marketing innovation. Journal of Cleaner Production, 356, 131877.
[5] Wu, H., Deng, H., & Gao, X. (2024). Impact of digital technology innovation on carbon intensity: Evidence from China's manufacturing A-share listed enterprises. Environmental Science and Pollution Research, 31(28), 41084–41106.
[6] Ni, Y. (2024). Green trade barriers in the context of globalization: Legal challenges and countermeasures. Journal of Education, Humanities and Social Sciences, 39, 68–76.
[7] Flaaen, A., Hortaçsu, A., & Tintelnot, F. (2020). The production relocation and price effects of US trade policy: The case of washing machines. American Economic Review, 110(7), 2103–2127.
[8] Ma, A. (2024). The role of management characteristics in trade frictions and corporate financialization. Finance Research Letters, 65, 105505.
[9] Si, D.-K., Zhuang, J., Ge, X., & Yu, Y. (2024). The nexus between trade policy uncertainty and corporate financialization: Evidence from China. China Economic Review, 84, 102113.
[10] Yang, Z., Liu, P., & Luo, L. (2024). How does environmental regulation affect corporate green innovation: A comparative study between voluntary and mandatory environmental regulations. Journal of Comparative Policy Analysis: Research and Practice, 26(2), 130–158.
[11] Han, F., Mao, X., Yu, X., & Yang, L. (2024). Government environmental protection subsidies and corporate green innovation: Evidence from Chinese microenterprises. Journal of Innovation & Knowledge, 9(1), 100458.
[12] Xia, B. (2024). Corporate financialization and green innovation. Journal of Innovation and Development, 6(2), 9–15.
[13] Tao, L., Chen, L., & Li, K. (2021). Corporate financialization, financing constraints, and environmental investment. Sustainability, 13(24), 14040.
[14] Zhang, X., Gao, Y., Cao, M., & Zhang, Z. (2025). Assessing the dual bonus of environmental information disclosure in China: New evidence from the double machine learning model. Emerging Markets Finance and Trade, 61(13), 4231–4246.
[15] Huang, Z., Li, X., & Chen, S. (2021). Financial speculation or capital investment? Evidence from relationship between corporate financialization and green technology innovation. Frontiers in Environmental Science, 8, 1–12.
[16] Guan, Y., & Wei, Q. (2024). Financial cycles and corporate financialization levels—Evidence from the cultural industry enterprises. Finance Research Letters, 67, 105793.
[17] Demir, F. (2009). Financial liberalization, private investment and portfolio choice: Financialization of real sectors in emerging markets. Journal of Development Economics, 88(2), 314–324.
[18] Lu, T., & Xu, Q. (2024). Are the green TBTs a stimulus or a trap for enterprises' green technology development? China Finance and Economic Review, 13(2), 26–45.
[19] Qing, L., Li, P., Dagestani, A. A., Woo, C., & Zhong, K. (2024). Does climate change exposure impact on corporate finance and energy performance? Unraveling the moderating role of CEOs' green experience. Journal of Cleaner Production, 461, 142653.