



# The Belt and Road Initiative and the Trade Credit Supply of Chinese Enterprises

Xiaoshan Huang, Yunxi Wang\*

The Accounting School, Nanfang College Guangzhou, Guangzhou, China

huangxsh@nfu.edu.cn, \*wangyx@nfu.edu.cn

**Abstract.** Implemented the Belt and Road Initiative as a quasi-natural experiment, this article examines the impact of the Belt and Road initiative on the trade credit supply of Chinese enterprises using the DID method. Based on the data of Chinese A-share listed companies from 2011 to 2017, the study finds that the implementation of the Belt and Road initiative has reduced the level of trade credit supply for Chinese enterprises. Further research finds that the implementation of the Belt and Road initiative has significantly reduced the trade credit supply level of private enterprises and large enterprises. The test based on industrial heterogeneity shows that the implementation of the Belt and Road initiative has strongly reduced the level of trade credit supply in the manufacturing industry and emerging industries. The economic consequences test presents that the Belt and Road initiative is capable to effectively alleviate the crowding-out effect of the trade credit supply on corporate investment. This article provides a timely feedback on the economic effects of the Belt and Road initiative, meanwhile serves as a supplement and further development of the product quality assurance theory by trade credit.

**Keywords:** the Belt and Road Initiative; trade credit supply; Quasi-natural Experiment; Differences-in-Differences (DID); industry characteristics; crowding-out effect on investment.

## 1 Introduction

Since entering the “new normal”, Chinese economy simultaneously deals with the slowdown in economic growth, makes difficult structural adjustments, and absorbs the effects of previous economic stimulus policies which continues to increase the downward pressure on the economy. The overcapacity problem in certain industries are increasingly prominent. Chinese enterprises face a severely competitive environment with market saturation and inventory pressure. Overcapacity leads to the use of trade credit more frequent. As an important part of working capital decision and corporate strategic decision, trade credit decision will directly affect the efficiency of capital utilization or result in operational risks (Zhang et al., 2024)<sup>[1]</sup>. Therefore, it is highly valuable to explore the influencing factors of trade credit supply. Most of the existing literature conducts research from the micro-level such as internal factors of

© The Author(s) 2024

Y. K. Wong Eric et al. (eds.), *Proceedings of the 2024 4th International Conference on Business Administration and Data Science (BADs 2024)*, Advances in Computer Science Research 119,

[https://doi.org/10.2991/978-94-6463-632-1\\_4](https://doi.org/10.2991/978-94-6463-632-1_4)

enterprises, and finds that enterprise growth (Lu and Yang, 2011)<sup>[2]</sup>, corporate strategy (Chu, 2021)<sup>[3]</sup>, foreign investment entry (Yan et al., 2023)<sup>[4]</sup> and etc. will have an important impact on trade credit supply. In recent years, scholars began to look for the impact of the external environment on the enterprises' decision-making of trade credit supply. Current studies verified that including new regulatory policy and macroeconomic, the external environment indeed have an indispensable impact on trade credit supply decisions (Chen and Wu, 2024; Zhang and Liu, 2023; Yang et al., 2023)<sup>[5-7]</sup>.

As a driving force for the development of Chinese economy, the "go global" strategy has played a positive role in upgrading industrial structures and alleviating the overcapacity (Zhang et al., 2024)<sup>[1]</sup>. In order to further develop the "go global" strategy, the Belt and Road initiative has emerged as a new model which is different from those traditional regional cooperation systems. The Belt and Road Initiative aims to jointly promote the economic growth of various countries by building a bridge between China and the countries along the ancient Silk Road. Therefore, the Belt and Road initiative starts from increasing the connectivity among various countries. One of its main priorities is the infrastructure, including transportation, communications and energy, while the other taking into account various fields, such as trade, investment and finance. Infrastructure and communication tools will greatly narrow the space-and-time distance between countries along the Belt and Road, which strongly improves trade facilitation. Wang et al. (2019)<sup>[8]</sup> showed that the implementation of the Belt and Road initiative improved the transportation facilities, resulted in improving the efficiency of commodity transportation and reducing the cost of commodity transportation, which is ultimately conducive to improve the performance level of enterprises. Since the Belt and Road initiative was put forward, more and more Chinese enterprises took this opportunity to implement the "go global" strategy and perform trades and investments in countries and regions along the Belt and Road. Du and Zhang (2018)<sup>[9]</sup> found that after the implementation of the Belt and Road Initiative, Chinese enterprises significantly increased their outbound investment. The Belt and Road initiative is based on the background of overcapacity and high inventory difficulties faced by Chinese enterprises, so that its impact on the trade credit supply provides crucial research value. However, across existing studies, relatively few studies focused on this theme. Since its significance on Chinese foreign trade and economic development, the Belt and Road initiative is necessary to further explore. Investigating its impact on the trade credit supply of Chinese enterprises will not only contribute to assess the economic effects of the Belt and Road initiative more comprehensively, but also provide practical suggestions for the further promotion of the Belt and Road initiative in the future.

Therefore, based on the data of China A-share listed companies in 2011-2017, this paper takes the implementation of the Belt and Road initiative as a quasi-natural experiment and studies its impact on the decision of trade credit supply of Chinese enterprises using DID method. The contribution of this paper mainly includes: (1) to extend the research realm of trade credit supply. Current studies examined the motivation of providing trade credit from the micro level of companies (Lu and Yang, 2011; Chu, 2021)<sup>[2-3]</sup>, but paid less attention to the changes of the trade credit supply level of companies under the influence of macroeconomic. This paper attends to connect macro policy changes and micro enterprise behavior, using the Belt and Road initia-

tive as an external impact, systematically examines the interaction between the macro policy and micro enterprise behavior. This study not only helps to clarify the mechanism provided by the macro policy on trade credit supply decision, also indicate empirical evidences of how the Belt and Road initiative supports economic growth in micro perspective. (2) Using the DID method, this paper overcome the possible sample-selection bias, also evaluate the micro-economic effect brought by the Belt and Road initiative more objectively. (3) Through multi-dimensional heterogeneity analysis, this study provides a more in-depth investigation of how the Belt and Road initiative affect trade credit supply with various individual characteristics and industry characteristics, which offer an empirical analytical framework for better guiding and supporting enterprises to participate in the construction of Belt and Road.

## 2 Literature Review

### (1) The economic effects of the Belt and Road initiative

To promote the transformation of industrial structure, alleviate the overcapacity issue etc., in September 2013, Xi Jinping, general secretary of the Central Committee of the Communist Party of China (CPC), presented the initiative of the Silk Road Economic Belt and the 21st Century Maritime Silk Road, which aim to build a bridge of cooperation between China and countries along the China, and remove technical and various obstacles in international trade, reduce transaction costs, finally to achieve the goal of mutual benefit (Zhang et al., 2024)<sup>[1]</sup>. The construction of the Belt and Road, mainly focuses on the construction of infrastructure, including transportation, communications and energy facilities, so as to promote the interconnection of infrastructures among various countries. The connectivity of infrastructure will greatly narrow the time and space between countries along the Belt and Road, which enhance the level of trade facilitation. Wang et al. (2019)<sup>[8]</sup> indicated that by improving the connectivity of infrastructure, the Belt and Road Initiative upgraded the degree of trade facilitation, which ultimately improved the performance level of enterprises. Meanwhile, the improvement of trade facilitation promoted the foreign direct investment of Chinese enterprises in countries participating in the Belt and Road Initiative (Wang and Lu, 2019a)<sup>[10]</sup>, which achieve scale economies effect. This means the product cost of enterprises participating in the Belt and Road Initiative will decrease to a large extent, while their profits will increase. By alleviating the financial constraints, it eventually has a positive effect on innovation of enterprises (Wang and Lu, 2019a)<sup>[10]</sup>, and finally improve the Total Factor Productivity (TFP) of enterprises (Wang and Lu, 2019b)<sup>[11]</sup>. In addition, some scholars discussed the influence of the Belt and Road Initiative on enterprises from the view of financing constraints. However, the conclusions are not unified. Wang and Chen (2020)<sup>[12]</sup> found that the Belt and Road Initiative alleviates the problem of underinvestment by reducing the degree of financing constraints of enterprises in the Belt and Road zone. However, Luo and Zeng (2020)<sup>[13]</sup> pointed out that the enterprises involved in the construction of the Belt and Road zone have not received effective financial support yet, therefore their level of financing constraints has increased.

## (2) the influencing factors of trade credit supply

Currently there are mainly two theories to explain the motivation of providing trade credit: one is alternative financing motivation theory, the other is operational motivation theory. The alternative financing motivation theory suggests since the upstream enterprises in the supply chain usually have information advantages compare to other capital providers, they are more willing to provide short-term funds to downstream enterprises facing financing constraints. The lower the cost of capital of enterprise, the more willing to provide capital in trade credit to clients with financing difficulties (Lu and Yang, 2011)<sup>[2]</sup>. However, along with deeper research, scholars found the phenomenon that the alternative financing motivation theory was not capable to explain. For example, Marotta (2005)<sup>[14]</sup> found that the credit allocation to the constrained Italian enterprise provided the same trade credit level as the Italian enterprise without constrains did. Even more, companies with high financing constraints or poor operating conditions still provides trade credit to their customers (Liu and Wang, 2023)<sup>[15]</sup>. Since then, scholars turned their focus to the second type of theoretical explanation. According to the theory of operational motivation, upstream enterprises provide trade credit mainly for operational purposes such as implementing price discrimination, reducing transaction costs and transmitting information of product quality. Among those purposes, the quality assurance hypothesis that upstream enterprises provide trade credit to ensure product quality has become the focus of scholars (Chen and Liu, 2019)<sup>[16]</sup>. In international trade, it is particularly important to provide trade credit as an assurance mechanism for product quality (Luo et al, 2023; Shu and Chen, 2024)<sup>[17-18]</sup>. From the view of overcoming moral hazard, because product quality has an important impact on the reputation of downstream enterprises, to ensure the products quality, downstream enterprises are committed to find suppliers that can provide higher product quality. Among three mechanisms to prevent supplier product fraud: delayed payment, inspection and the mixture of both, the delayed payment mechanism has proved to effectively improve the quality of products provided by suppliers (Shu and Chen, 2024)<sup>[18]</sup>. Therefore, in order to ensure the quality of received products, downstream enterprises will require suppliers to provide trade credit.

The Belt and Road Initiative is based on the background of overcapacity and high inventory issue faced by Chinese enterprises, therefore it has research value on its impact on the trade credit supply of Chinese enterprises. However, few studies focused on this area. To this end, this paper will systematically investigate the impact of the Belt and Road Initiative on the trade credit supply of Chinese enterprises. Does this impact differ between different types of enterprises or different types of industries? Can it effectively alleviate the “crowding-out effect” of trade credit on investments, and then promote the investment growth of enterprises supported by the Belt and Road Initiative? These are the questions shall be answered in this article.

### 3 Theoretical Analysis and Hypotheses Development

The Belt and Road Initiative aims to promote regional economic development and reduce transaction costs to achieve mutual accomplishments (Chen and Liu, 2019)<sup>[16]</sup>.

One of its main priorities is to build an infrastructure network, including transportation, communications and energy supply. This will greatly reduce the space-time distance of countries along the route, thus improving the efficiency of commodity transportation. For example, the construction of the Central Asia freight trains and the Chengdu-Europe Express trains directly connects Chinese goods to Central Asia, West Asia and European countries, reducing the cost of commodity transportation. On the one hand, the reduction of transportation costs will lead to the increase of trading volume between companies, which help to promote the cooperation level and information transmission between upstream enterprises and downstream enterprises, and ultimately alleviate the information asymmetry of product quality (Chen and Liu, 2019)<sup>[16]</sup>. From the perspective of signal transmission, the main purpose of upstream enterprises to provide trade credit is to guarantee product quality and deliver such information. Therefore, due to the implementation of the Belt and Road Initiative, customers get more information about product quality alleviating the information asymmetry, the motivation of upstream enterprises to provide trade credit to ensure product quality is weakened. Meanwhile, the increase in trading volume will promote long-term partnerships, thus prompting upstream enterprises to increase their relationship-specific investment. Relationship-specific investment, as an implicit incentive, will increase the cost when upstream enterprises lose their customers, which effectively motivate them to improve product quality (Davis and Hyndman, 2017)<sup>[19]</sup>. From the perspective of overcoming moral hazard, in order to ensure the the product quality, downstream enterprises are committed to finding suppliers who provide higher product quality. Therefore, when the implementation of the Belt and Road Initiative makes the relationship-specific investment increase, the demand of delayed payment that downstream enterprises to supervise upstream enterprises to provide high-quality products decreases. Based on this, the following hypothesis has been formulated.

H1: Compared with the enterprises not supported by the Belt and Road Initiative, the supply level of trade credit for the enterprises supported by the Belt and Road Initiative is reduced.

Although most state-owned enterprises involve in industries that are the lifeblood of the national economy, such as nuclear power, electric power, oil, communications and railway, which usually have more prominent identity and resource advantages, state-owned enterprises in countries along the Belt and Road route also have such advantages. As a result, domestic state-owned enterprises may not have a dominant position when exporting to countries along the Belt and Road route, hence the impact of the Belt and Road Initiative on the trade credit supply of such enterprises is strongly weakening. On the contrary, although there are bilateral cooperation agreements at different levels between China and countries and regions along the Belt and Road route, state-owned enterprises still have obvious trade barriers in international trade due to their certain political attributes. Therefore, the state-owned background is likely to face stricter censorship and restricted access (Yang et al., 2019)<sup>[20]</sup>. Relatively, non-state-owned enterprises usually face less scrutiny and restrictions in countries along the Belt and Road, because they are not involved in particular industries. Therefore, it is easier for non-state-owned enterprises to “go global” under the Belt and Road Initiative (Yuan et al., 2014)<sup>[21]</sup>. Therefore, compared with the state-owned en-

terprises, the trade credit supply of non-state-owned enterprises is more significantly affected by the Belt and Road Initiative. Based on this, the following hypothesis has been formulated.

H2: Compared with state-owned enterprises, the Belt and Road Initiative has a more significant impact on the trade credit supply of non-state-owned enterprises.

Enterprises of different sizes usually differ greatly in expanding export sales. Compared with large enterprises, small and medium-sized enterprises are usually difficult to cover both domestic and foreign markets due to their small output scale. The research of Li and Li (2020)<sup>[22]</sup> shows that large enterprises have competitive advantages of economies of scale, patents, brands and technologies. Therefore, it's much easier for large enterprises to "go out" than that for small and medium-sized enterprises. Wang and Lu (2019a)<sup>[10]</sup> also suggested that in the process of promoting the Belt and Road Initiative, due to strong market power and substantial capital and etc., large enterprises are easier to implement the "go out" strategy and quicker to achieve improvements in technological innovation. Therefore, this paper holds that, compared with the small and medium-sized enterprises, the trade credit supply decision of large enterprises is more significantly affected by the Belt and Road Initiative. Based on this, the following hypothesis is addressed:

H3: Compared with small and medium-sized enterprises, the Belt and Road Initiative has a more significant impact on the trade credit supply of large enterprises.

## 4 Research Design

### (1) Sample selection and data sources

Drawing on the research methods of Chen and Liu (2018)<sup>[23]</sup>, this paper applies the Belt and Road Initiative to formally propose this exogenous shock as a quasi-natural experiment. With the research period before and after the implementation of the Belt and Road Initiative, the data of China's A-share listed companies from 2011 to 2017 is applied in this paper, while eliminate this data set according to the following principles; (1) Financial and insurance companies; (2) ST and ST companies; (3) companies with asset-liability ratio less than zero or greater than or equal to 1 ; (4) excluding companies with missing key variables, finally yielded 13,453 company-year observations. To reduce the effect of outliers on the regression results, this article shrinks all continuous variables in the regression analysis by 1%. The financial data in this paper are mainly from the CSMAR database.

### (2) Model setting and variable definition

Although the Belt and Road Initiative is implemented nationwide, limited provinces and cities finally participate in and implement the Belt and Road Initiative due to location factors and etc. To examine the Initiative on the influence of Chinese enterprise trade credit supply decision, this paper divides the sample into an experimental group affected by the policy and a control group not affected by the policy, using a difference-in-difference model (DID) to compare the changes in trade credit supply levels between the experimental group and the control group before and after the im-

plementation of the Belt and Road Initiative, the specific model set as shown in model (1):

$$Credit_{i,t} = \alpha_0 + \alpha_1 Treated + \alpha_2 Treated * Post + \sum Controls + \varepsilon_{i,t} \quad (1)$$

In the model (1), the explained variable Credit represents the supply level of trade credit of enterprises. Drawing on the practice of Zhang and Wang (2019)<sup>[24]</sup>, this paper measures the supply level of trade credit by the proportion of net account receivables to total assets (Credit1) and the proportion of net account receivables to operating income (Credit2) (replaced with net trade credit NetCredit for robustness test). The dummy variable Treated indicates whether the company is a key province or city listed in the Vision and Action issued by the National Development and Reform Commission. If the company is a key province or city listed in Vision and Action, Treated =1, otherwise Treated =0.<sup>①</sup> Meanwhile, the dummy variable Year is set, which according to the practice of previous literature, the year of policy impact is set in 2014, hence the implementation year of the Belt and Road Initiative (2014) and the following years is 1, and that of other years is 0.<sup>②</sup> In addition, according to the “Industry Classification Guidelines for Listed Enterprises” revised by the China Securities Regulatory Commission in 2012, this paper sets the dummy variables of industries (the manufacturing industry is set by the two-bit code) to control the influence of industry factors.  $\alpha_2$  is the key coefficient of this paper, if the implementation of the Belt and Road Initiative significantly reduces the supply level of trade credit supply, the coefficient should be significantly negative. Drawing on previous literature, this paper also selected a series of control variables (Controls), the specific variables as shown in Table 1.

**Table 1.** Variable definition table

Variable properties	Variable name	variable symbol	variable-definition
Explained variable	Trade credit supply	Credit1	Credit1= Net accounts receivable / total assets
		Credit2	Credit2= Net accounts receivable / operating income
Primary explanatory variables	Belt and Road dummy variables of key provinces	Treated	If the company is located in the key provinces or cities listed in the Vision and Action issued by the National Development and Reform Commission (see Table 1), the Policy value is 1, otherwise it is 0
	Belt and Road The initiative proposes dummy variables	Post	1 in 2014 and after, and 0 before 2014
Controlled variable	Company size	Size	The logarithm of total assets at the end of the period
	Asset-liability ratio	Lev	Total ending liabilities divided by total assets at the end
	Board size	Board	The logarithm of the number of board members

	Return on assets	Roa	Return on assets = net income / total assets
	Management compensation level	Totalsal	The logarithm of the total annual salary of directors, supervisors, and senior executives
	The largest shareholder shareholding ratio	Top1	The largest shareholder shareholding ratio
	Bank borrowing	Bank	Bank loan = (long-term loan + short-term loan) / total assets
	Growth	Growth	Revenue growth rate
	Operating cash flow	Cfo	Net cash flow from operating activities divided by total assets at the end of the previous period
	Book-to-market ratio	BM	The ratio of total assets to market value
	Listing years	Age	The Log of listing years
	Liquidity	Liq	Current assets divided by total assets
	Type of audit firm	Big4	Dummy variable, for big four values 1, otherwise 0
	Year	Year	Annual dummy variable
	Industry	Industry	Industry dummy variables

## 5 Analysis of Empirical Results

### (1) Descriptive statistics

Table 2 shows the descriptive statistics for the main variables. Displayed in Table 2, The mean value of Treated in the sample enterprises was 0.5190, which indicates that 51.9% of the listed companies are registered in key provinces of “the Belt and Road”; with a mean Lev of 0.4491, showing that the sample companies had high leverage levels during the period from 2011 to 2017; the average proportion of bank loans (Loan) and net receivables to total assets (Credit1) was 0.1579 and 0.1101, respectively, indicating that trade credit is the channel of informal financing for enterprises.

**Table 2.** Descriptive statistics of the main variables

variable	observed value	mean	standard error	least value	crest value
Credit1	13453	0.1101	0.1002	0.0001	0.4498
Credit2	13453	0.2306	0.2324	0.0002	1.1519
Treated	13453	0.5190	0.4997	0.0000	1.0000
Size	13453	22.1899	1.2952	19.7263	26.0591
Lev	13453	0.4491	0.2117	0.0479	0.8899
Cash	13453	0.1627	0.1310	0.0100	0.6447
Growth	13453	0.1930	0.4867	-0.5457	3.2730
Top1	13453	0.3489	0.1501	0.0877	0.7489
Roa	13453	0.0358	0.0482	-0.1435	0.1825
Manshr	13453	0.1162	0.1921	0.0000	0.6739
Board	13453	2.1496	0.1976	1.6094	2.7081



Cfo	13453	0.0380	0.0704	-0.1788	0.2339
Salary	13453	15.1714	0.7259	13.4000	17.1442
Big4	13453	0.0566	0.2310	0.0000	1.0000
Listage	13453	2.2102	0.7240	0.6931	3.1781
Loan	13453	0.1579	0.1372	0.0000	0.5589
Tangible	13453	0.3881	0.1846	0.0264	0.8196

## (2) Analysis of regression results

## 1. The Belt and Road Initiative and trade credit supply

Table 3 reports the regression results of the Belt and Road Initiative and trade credit supply. The explained variable of columns (1) and (2) is Credit1; the explained variable of columns (3) and (4) is Credit2, a fixed-effect model is applied. The regression results in column (1) and column (3) indicate that the implementation of the Belt and Road Initiative has significantly reduced the supply level of trade credit of Chinese enterprises. The regression results in columns (2) and (4) show that the regression coefficient of Treated \* Post remain significantly negative after controlling the inherent difference between the companies from the provinces included in the key provinces of the Belt and Road Initiative and those from provinces not included. The regression results in Table 3 state that after the implementation of the Belt and Road Initiative, the trade credit provided by Chinese enterprises has decreased significantly. This indicates that after the implementation of the Belt and Road Initiative, the motivation of enterprises to provide trade credit to ensure product quality has decreased. Therefore, the supply level of trade credit is reduced. The hypothesis 1 presented in this paper is supported.

**Table 3.** The Belt and Road Initiative and Trade Credit Supply

	(1)	(2)	(3)	(4)
	Credit1	Credit1	Credit2	Credit2
Treated	-0.0022 (-1.1686)	-0.0095 (-1.1454)	-0.0057 (-1.3543)	-0.0355 (-1.2705)
Treated*Post	-0.0044* (-1.6964)	-0.0059*** (-3.1947)	-0.0171*** (-2.8335)	-0.0140*** (-2.9230)
Size	-0.0180*** (-19.8785)	-0.0174*** (-6.7327)	-0.0127*** (-6.4157)	0.0242*** (4.0979)
Lev	0.1435*** (20.5812)	0.0626*** (5.3967)	0.0047 (0.3326)	-0.0440* (-1.7253)
Cash	-0.1626*** (-24.6228)	-0.0918*** (-11.9785)	-0.2831*** (-16.6238)	-0.1582*** (-8.3538)
Growth	0.0018 (1.0970)	0.0043*** (3.7931)	-0.0093** (-2.4904)	-0.0290*** (-8.1412)
Top1	0.0143*** (2.9142)	0.0275* (1.9274)	-0.0575*** (-5.1730)	0.0007 (0.0215)
Roa	0.2145*** (10.9544)	0.1386*** (7.6008)	-0.3222*** (-6.6713)	-0.2271*** (-4.6808)
Manshr	0.0168***	0.0190	0.0702***	0.0398

	(3.5871)	(1.5549)	(5.9946)	(1.4212)
Board	0.0035	-0.0028	-0.0181**	-0.0273*
	(1.0186)	(-0.5164)	(-2.0887)	(-1.7004)
Cfo	-0.1709***	-0.0806***	-0.4668***	-0.1656***
	(-14.5267)	(-8.6977)	(-17.2043)	(-6.6214)
Salary	0.0110***	0.0051***	-0.0061**	-0.0151***
	(9.4484)	(2.5946)	(-2.2028)	(-3.1991)
Big4	0.0024	-0.0083	-0.0129**	-0.0195
	(0.7855)	(-1.3063)	(-2.1516)	(-1.2995)
Listage	-0.0176***	0.0025	-0.0467***	0.0108
	(-12.3529)	(0.6363)	(-14.7242)	(1.1219)
Loan	-0.0753***	-0.0377***	0.0063	0.0148
	(-8.9641)	(-3.1478)	(0.3540)	(0.5334)
Tangible	-0.1384***	-0.0643***	-0.3269***	-0.1794***
	(-27.3924)	(-7.2568)	(-26.5538)	(-8.5331)
Constant	0.3362***	0.3938***	0.8051***	0.0146
	(17.3074)	(6.3029)	(18.5822)	(0.1067)
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
FE	NO	Yes	NO	Yes
N	13453	13453	13453	13453
Adj.R2	0.432	0.140	0.427	0.157

Note: \*\*\*, \*\*, \* are significant at the 1%, 5%, and 10% levels, respectively, with the t value in parentheses.

### 2.The Belt and Road Initiative and trade credit supply: an analysis based on the nature of property rights

Table 4 reports the regression results of the impact of the Belt and Road Initiative on the supply level of trade credit for enterprises with different natures of property rights. The results point out that the regression coefficient of the interaction term Treated \* Post of the non-state-owned enterprise group is significantly negative, while the interaction term Treated \* Post of the state-owned enterprise group is not significant. This shows that compared with state-owned enterprises, non-state-owned enterprises are more likely to be involved and “go global” under the Belt and Road Initiative. Therefore, the implementation of the Belt and Road Initiative has a significant impact on the trade credit supply of non-state-owned enterprises.

**Table 4.** The Belt and Road Initiative and Trade Credit Supply: Analysis based on the nature of property rights

	(1)	(2)	(3)	(4)
	Credit1	Credit1	Credit2	Credit2
	Non-state-owned enterprises	state-owned enterprises	Non-state-owned enterprises	state-owned enterprises
Treated	-0.0014	-0.0040	-0.0192***	0.0062
	(-0.5405)	(-1.4423)	(-3.1126)	(1.1307)
Treated*Post	-0.0074**	0.0011	-0.0218**	-0.0085

	(-2.1269)	(0.2758)	(-2.5708)	(-1.0865)
Controls	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	8103	5350	8103	5350
Adj.R2	0.409	0.454	0.410	0.408

Note: \*\*\*, \*\*, \* are significant at the 1%, 5%, and 10% levels, respectively, with the t value in parentheses.

3.The Belt and Road Initiative and trade credit supply level: an analysis based on company size

Table 5 reports the regression results of how the Belt and Road Initiative impacts the trade credit supply level of enterprises in different sizes.<sup>③</sup> According to the regression results, the Treated\*Post regression coefficient of the large enterprise group is significantly negative at 5% and 1% level, while the Treated\*Post coefficient of the small and medium enterprise group is negative but not significant. This indicates that under the Belt and Road Initiative, compared with small and medium-sized enterprises, large enterprises are more likely to “go out” due to economies of scale, strong market power and adequate funds, along with reducing the supply level of trade credit more quickly. It is worth noting that under the policy guidance of the Belt and Road Initiative, the problems of SMEs have not been alleviated. For a long time, the long receivables turnover cycle of small, medium and micro enterprises has been the blocking point and pain point in the China's economic micro-circulation. “Accounts receivable” are not the assets that SMEs use to maintain simple reproduction. Without other funds, the reproduction scale of SMEs will fall eventually. In the long run, it jeopardizes the Chinese domestic economic cycle and results difficult to improve the economic efficiency. Therefore, when the relevant government departments carry out the Belt and Road construction, the policies formulated should not only take into account the large enterprises, but also enhance the support for small and medium-sized enterprises.

**Table 5.** The Belt and Road Initiative: Analysis based on company size

	(1)	(2)	(3)	(4)
	Credit1	Credit1	Credit2	Credit2
	large-lot producer	medium and small-sized enterprises	large-lot producer	medium and small-sized enterprises
Treated	0.0013 (0.5153)	-0.0061** (-2.3194)	0.0021 (0.3750)	-0.0149** (-2.3215)
Treated*Post	-0.0079** (-2.2111)	-0.0011 (-0.2983)	-0.0213*** (-2.7802)	-0.0147 (-1.5798)
Controls	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	6640	6813	6640	6813
Adj.R2	0.415	0.465	0.406	0.458

Note: \*\*\*, \*\*, \* are significant at the 1%, 5%, and 10% levels, respectively, with the t value in parentheses.

## 6 Further Research

### (1) Industry heterogeneity test

1. The Belt and Road Initiative and trade credit supply: an analysis based on the manufacturing industry

Manufacturing industry has always been the “locomotive” of Chinese economic development, contributing significantly to Chinese economic growth. However, Chinese economy enters a new normal stage while overcapacity is a widespread phenomenon in the domestic manufacturing industry. The Belt and Road Initiative is based on the current background of overcapacity and high inventory faced by Chinese enterprises, aiming to improve trade relations by establishing cooperation mechanisms with countries and regions along the Belt and Road. The implementation of the Belt and Road Initiative has created favorable conditions for Chinese products to “go global”. In terms of export industries, manufacturing is in dominant position, while non-manufacturing industries are mostly distributed in the tertiary industry and usually do not have an export advantage. Therefore, this paper predicts that the impact of the implementation of the Belt and Road Initiative on the manufacturing industry is more significant. To this end, this paper groups the sample companies by manufacturing and non-manufacturing. Table 6 reports the specific regression results. In columns (1) and (3), the interact coefficient Treated \* Post is significantly negative at the 1% level, meaning that the Belt And Road Initiative has a significant negative effect on the trade credit supply level of manufacturing enterprises; in columns (2) and (4), the interaction term of Treated \* Post has failed the significance test. This implies that compared with non-manufacturing enterprises, the trade credit supply level of manufacturing enterprises is more significantly affected by the Belt and Road Initiative. Therefore, governments at all levels should continue to vigorously support the construction of the Belt and Road and constantly improve the bilateral cooperation with countries and regions along the Belt and Road, providing a good international trade environment for manufacturing enterprises to better implement the “going out” strategy then alleviate the problem of overcapacity. In addition, governments should optimize the export structure when implanting the Belt and Road Initiative, and introduce corresponding policies to improve the competitiveness of non-manufacturing enterprises.

**Table 6.** The Belt and Road Initiative and Trade Credit Supply: Analysis based on manufacturing industry

	(1)	(2)	(3)	(4)
	Credit1	Credit1	Credit2	Credit2
	manufacturing industry	non-manufacturing industry	manufacturing industry	non-manufacturing industry
Treated	-0.0015 (-0.6876)	-0.0017 (-0.5086)	-0.0043 (-0.8132)	-0.0075 (-1.0610)
Treated*Post	-0.0095*** (-3.0202)	0.0033 (0.7362)	-0.0253*** (-3.3665)	-0.0043 (-0.4279)
Controls	Yes	Yes	Yes	Yes

Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	8528	4925	8528	4925
Adj.R2	0.402	0.419	0.431	0.385

Note: \*\*\*, \*\*, \* are significant at the 1%, 5%, and 10% levels, respectively, with the t value in parentheses.

## 2. The Belt and Road Initiative and trade credit supply: analysis based on emerging competitive industries

The report to the 19th CPC National Congress stressed that to effectively promote the economic growth mode transformation, developing emerging industries was in priority. In this context, based on Chinese industrial advantages and the actual situation of countries along the Belt and Road, MOFCOM has clearly defined the key industries for outbound investment and cooperation under the Belt and Road Initiative.<sup>④</sup> As the key industries of the Belt and Road outbound investment and cooperation, emerging competitive industries also attract much attention and support in the construction of the Belt and Road Initiative. Hence, this paper suggests that the implementation of the Belt and Road Initiative cause more notable effect for emerging competitive industries. In this connection, the sample companies are divided into enterprises from emerging competitive industries and enterprises from other industries and tested respectively. Table 7 reports the regression results of the group test.<sup>⑤</sup> The regression results show that the Belt and Road Initiative has a more significant impact on the trade credit supply of enterprises in emerging competitive industries, and the regression results verify the expectations of this paper.

**Table 7.** The Belt and Road Initiative and Trade Credit Supply: Analysis based on emerging competitive industries

	(1)	(2)	(3)	(4)
	Credit1	Credit1	Credit2	Credit2
	Emerging competitive industries	Non-emerging competitive industries	Emerging competitive industries	Non-emerging competitive industries
Treated	-0.0060* (-1.6902)	0.0014 (0.6418)	-0.0170* (-1.8974)	-0.0014 (-0.2959)
Treated*Post	-0.0117** (-2.3555)	-0.0020 (-0.6515)	-0.0296** (-2.3171)	-0.0121* (-1.7714)
Controls	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	4036	9417	4036	9417
Adj.R2	0.359	0.388	0.316	0.380

Note: \*\*\*, \*\*, \* are significant at the 1%, 5%, and 10% levels, respectively, with the t value in parentheses.

### (2) Economic consequence test

Since enterprises need to consume their resources to provide trade credit, therefore trade credit supply form a “crowding out effect” on enterprise investment. In other words, there is a “crowding out effect” between enterprise capital expenditure and trade credit supply (Zhong et al., 2022)<sup>[25]</sup>. Whether the Belt and Road Initiative

effectively alleviate the “crowding out effect” of trade credit supply on enterprise investment, and further promote the growth of enterprise investment is in discussion. To that this assumption, the model (2) is constructed:

$$Icf_{i,t} = \beta_0 + \beta_1 Treated + \beta_2 Treated * Post + \beta_3 Cr * Treated * Post + \sum Controls + \varepsilon \quad (2)$$

In model (2), the explained variable Icf indicates the level of enterprise investment. This paper defines enterprise investment  $Icf = (\text{cash paid for purchasing fixed assets, intangible assets and other long-term assets in } t \text{ period}) / (t-1) \text{ period total assets}$ . For better understanding, this paper transforms the number of trade credit supply level into opposite number ( $Cr = -\text{Credit}$ ). The larger the Cr value is, the lower the supply level of trade credit provided by certain enterprise. Remaining variables are defined consistently with model (1).

Table 8 reports the regression results of model (2). The regression results reveal that the regression coefficient  $Cr * Treated * Post$  is positive at the 1% significance level. This suggests that the implementation of the Belt and Road Initiative effectively alleviate the “crowding out effect” of trade credit supply on enterprise investment, so as to promote the growth of the investment of relevant enterprises. Therefore, enterprises should better improve their financial policies following the Initiative, seize the possible investment opportunities in the future, and reduce the “crowding out effect” of trade credit supply on enterprise investment.

**Table 8.** Test of economic consequences

	(1)	(2)
	Icf	Icf
	Cr1	Cr2
Treated	0.0014 (0.8008)	0.0013 (0.7919)
Treated*Post	0.0097*** (3.9369)	0.0052** (2.1226)
Cr*Treated*Post	0.0751*** (7.7393)	0.0154*** (3.0766)
Controls	Yes	Yes
Industry	Yes	Yes
Year	Yes	Yes
N	13341	13341
Adj.R2	0.215	0.213

Note: \*\*\*, \*\*, \* are significant at the 1%, 5%, and 10% levels, respectively, with the t value in parentheses.

#### (4) Robustness test

To ensure the reliability of the research conclusions, this paper conducts five robustness tests. (1) Parallel Trend Test: The assumption underlying the difference-in-differences method is that the treatment and control groups have parallel trends prior to the exogenous shock. This paper replaces the Post dummy variable with Be-

fore3, Before2, Before1, Current, Post1, Post2, and Post3, representing the three years before, two years before, one year before, the current year, one year after, two years after, and three years after the implementation of the Belt and Road Initiative, respectively. The results indicate that the difference-in-differences model satisfies the parallel trend assumption. (2) Placebo Test: Improvements in the business operating environment over time may also lead to a decline in the level of trade credit supply. To rule out this possibility, this paper conducts a placebo test by constructing a fictitious initiative year. The regression results show the interaction terms of Post and Treated for the false initiative year indicate no significant impacts, which means the conclusions remain robust. (3) Replacement of Proxy Variables: This paper substitutes the net trade credit supply (NetCredit, defined as net accounts receivable minus accounts payable, standardized by divided by total assets) for Credit and re-runs the regression. The conclusions remain unchanged. (4) Controlling Macroeconomic Systematic Factors: To eliminate interference from macroeconomic systematic factors, this paper further controls for the economic scale of each province (using the logarithm of GDP) in the regression based on Model (1). The results indicate that the conclusions remain robust after controlling for systematic changes in the macroeconomic environment. (5) Exclusion of Sample Observations from the Pilot Year: Since the Belt and Road Initiative was first proposed in September 2013, businesses may have already been influenced by the Initiative's policies by the end of 2013. Therefore, this paper excludes the sample observations from 2013 and re-runs the regression, with the conclusions still remaining robust. (The robustness test results are not displayed in this section due to space limitations but are available upon request from the author.)

## 7 Conclusion

In the steady progress of the Belt and Road Initiative, whether Chinese enterprises are capable to grasp the opportunities of internalization and then ease the overcapacity problem has become an important issue of concern from all sectors of society. To this end, this paper takes the decision of trade credit supply as a starting point, using the data of Chinese A-share listed companies in 2011-2017, applying the implementation of the Belt and One Initiative as an exogenous shock event in a quasi natural experiment. The DID method is applied to systematically investigate the impact of the implementation of the Belt and Road Initiative on the trade credit supply decision of Chinese enterprises. The analysis results demonstrate that: (1) the implementation of the Belt and Road Initiative significantly reduces the trade credit supply level of Chinese enterprises. (2) the group test based on the characteristics of enterprises shows that the implementation of the Belt and Road Initiative significantly reduces the trade credit supply level of non-state-owned enterprises and large enterprises. (3) Group test based on industry characteristics indicates that the implementation of the Belt and Road Initiative has significantly reduced the trade credit supply level of the manufacturing industry and emerging competitive industries. (4) The test of economic consequences suggests that Belt and Road Initiative effectively alleviate the “crowding-out effect” of

trade credit supply on enterprise investment, so as to promote the investment growth of enterprises supported by the Belt and Road Initiative.

Based on the research results of this paper, the following suggestions are put forward: (1) the implementation of the Belt and Road Initiative has played a positive role in promoting the transformation and upgrading of industrial structure and alleviating overcapacity. Domestic enterprises should actively grasp the opportunities brought by the Belt and Road Initiative, make use of a series of favorable policies provided by local governments, actively explore the overseas market, reduce the “crowding-out effect” of trade credit supply on enterprise investment, so as to promote the investment growth of these enterprises. (2) The government should also consider state-owned enterprises to have more market freedom when promoting the Belt and Road Initiative. While state-owned enterprises should give full play to their advantages in resource endowment, actively expand overseas market layout in order to accelerate the resolution of overcapacity. (3) The long turnover cycle of receivables of small and medium enterprises has always been a blocking point and pain point in micro-circulation of Chinese economy for a long time. Yet under the policy guidance of the Belt and Road Initiative, the problems of SMEs have not been alleviated. In the long run, it is difficult for domestic economy to achieve better economic efficiency. Therefore, when the relevant government departments formulating policies for the Belt and Road Initiative, they should not only take large enterprises into consideration, but also bring more support for SMEs. (4) When the relevant government departments initiate policies, it is necessary to optimize the export structure and regard the corresponding policies to improving the competitiveness of non-manufacturing enterprises.

## Note

① The provinces and cities involved in the Belt and Road Initiative are subject to the Vision and Action for Promoting the Silk Road Economic Belt and the 21st Century Maritime Silk Road jointly issued by the National Development and Reform Commission (hereinafter referred to as the Vision and Action), covering 18 provinces, autonomous regions and municipalities. Among them, the Silk Road Economic Belt includes 13 provinces, autonomous regions and municipalities, including Xinjiang, Chongqing, Shaanxi, Gansu, Ningxia, Qinghai, Inner Mongolia, Heilongjiang, Jilin, Liaoning, Guangxi, Yunnan and Tibet, and the 21st Century Maritime Silk Road includes five provinces and municipalities, namely Shanghai, Fujian, Guangdong, Zhejiang and Hainan.

② The Belt and Road Initiative was first proposed in September 2013, and enterprises may already have been affected by late 2013. For robustness reasons, this paper removes the 2013 sample observations and retest the benchmark model in the robustness test section.

③ In this paper, the size of enterprises is divided by the median of the natural log of total assets (Size). Those larger than the median are defined as large enterprises, and those smaller than the median are defined as small and medium-sized enterprises.



④ The key industries of the Belt and Road overseas investment and cooperation include transportation infrastructure, power engineering construction, information and communication engineering and services, agriculture and high-tech innovation industries and other emerging competitive industries.

⑤ This article defines A01, C27, C35, C37, C38, C39, D44, G, I, and M as emerging competitive industries according to the industry classification code of China Securities Regulatory Commission (2012). It should be noted that in the regression test, agriculture, forestry, animal husbandry, fishery (A), manufacturing (C), and electricity, gas and water production and supply (D) are divided by two-digit codes.

## Reference

1. Zhang Qi, Wu Chaopeng, Li Ao, et al. A Study on the Impact of the Belt and Road Initiative on Cross-Border M&A Performance: A Quasi-Natural Experiment Based on National Top-Level Strategy [J]. *Journal of Management Science*, 2024, 27(5): 93-121.
2. Lu Zhengfei, Yang Deming. Commercial credit: alternative financing, or a seller's market?[J]. *Managing the World*, 2011 (4).
3. Chu Youwei. Corporate Strategy and Trade Credit Supply Decisions [J]. *Accounting and Economic Research*, 2021, 35(6): 73-89.
4. Yan Jie, Zhou Mao, Li Yunong, et al. Foreign Capital Entry, Market Uncertainty, and Commercial Credit Supply of Local Enterprises [J]. *China Industrial Economics*, 2023, (12): 153-170.
5. Chen Shenglan, Wu Yiming. New Asset Management Regulations and Corporate Trade Credit Supply [J]. *Finance and Trade Research*, 2024, 35(1): 98-110.
6. Zhang Xiaoyan, Liu Yun. Economic Policy Uncertainty, Trade Credit, and High-Quality Corporate Development [J]. *Finance and Accounting Monthly*, 2023, 44(24): 39-46.
7. Yang Lianxing, Li Wei, Wang Qiushuo. Tax Incentives, Supply Chain Transmission, and Commercial Credit: A Quasi-Natural Experiment Based on the VAT Refund Policy [J]. *Economic Research*, 2023, 58(12): 41-58.
8. Wang Xiaoqin, Wang Lei, Qin Fei. Whether the “Belt and Road” initiative can improve the corporate performance level [J]. *Finance*, 2019 (3).
9. Du J., and Zhang Y., 2018. Does One Belt One Road Initiative Promote Chinese Overseas Direct Investment. *China Economic Review*, Vol. 47: 189-205.
10. Wang Guijun, Lu Xiaoxiao. Can the Belt and Road initiative promote innovation in Chinese enterprises?[J]. *Financial Research*, 2019a (1).
11. Wang Guijun, Lu Xiaoxiao. The “Belt and Road” initiative and Chinese enterprise upgrade [J]. *Industrial Economy of China*, 2019b (3).
12. Wang Xin, Chen Shuo. Belt and Road Initiative and investment efficiency of Chinese enterprises [J]. *Financial Economics Research*, 2020 (1).
13. Luo Changchang, Zeng Shuai. The impact of “going global” on corporate financing constraints —— Based on the evidence of quasi-natural experiments of the Belt and Road Initiative [J]. *Financial Research*, 2020 (10).
14. Marotta G., 2005. Is Trade Credit More Expensive Than Bank Loans? Evidence from Italian Firm-level Data *Applied Economics*, Vol.37: 403-416.
15. Liu Guangqiang, Wang Shenghua . Digital transformation and trade credit provision: Evidence from China [J]. *Research in International Business and Finance*, 2023(1).

16. Chen Shenglan, Liu Xiaoling. China intercity high-speed railway and trade credit Supply-Research based on quasi-natural Experiment [J]. *Financial Research*, 2019 (10).
17. Luo C, Wei D, He F. Corporate ESG performance and trade credit financing:evidence from China[J]. *International Review of Economics &Finance*, 2023(85):337-351.
18. Shu Wei, Chen Ying. A Study on Digital Transformation and Corporate Commercial Credit Financing Behavior [J]. *Accounting Research*, 2024(1): 79-93.
19. Davis A.M., and Hyndman K., 2017. An Experimental Investigation of Managing Quality through Monetary and Relational Incentives *Management Science*, Vol.64, No.5: 2345-2365.
20. Yang Bao, Huang Zijun, Wei Jiajun. Belt and Road. Financial characteristics and corporate value [J]. *Accounting and Communications*, 2019 (33).
21. Yuan Qigang, Zhu Xuechang, Shang Hui. Empirical analysis of export, innovation affecting the self-generating ability of private enterprises —— Based on the perspective of financing constraints [J]. *International Business: Journal of University of International Business and Economics*, 2014 (5).
22. Li Jianjun, Li Juncheng. The “Belt and Road” initiative, the enhancement effect and heterogeneity of corporate credit financing [J]. *The World Economy*, 2020 (2).
23. Chen Shenglan, Liu Xiaoling. Economic Policy Uncertainty and Corporate Trade Credit Supply [J]. *Financial Research*, 2018(5).
24. Zhang Huili, Wang Kaiyan. Does industry competition affect the provision of commercial credit for enterprises?—— Empirical evidence from China's A-share capital market [J]. *Journal of the Central University of Finance and Economics*, 2019 (2).
25. Zhong Kai, Liang Peng, Dong Xiaodan, et al. Digital Inclusive Finance and the Reallocation of Trade Credit [J]. *China Industrial Economics*, 2022, (1): 170-188.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

