

# *Study on the Impact of Public Opinion in the Host Country on China's Foreign Direct Investment*

**Zhao Yingli**

*Anhui University of Finance and Economics, Bengbu, China  
13195433195@163.com*

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**Abstract:** This article uses Python technology. Based on 2005-2020, China's direct investment data from 113 countries and data on China's public opinion use PPML. It is estimated to explore the impact of the host's public opinion on China's direct investment. The empirical results show that the attention of the host country's public opinion on China can significantly promote China's foreign direct investment, and the role of countries in non-"Belt and Road" countries and the signing of bilateral investment agreements is more obvious. In my country, we must play the role of traditional media and new media, change the way of breaking through discourse, and strengthen the connection with countries around the world through various channels, promote the communication of the people's hearts, and let the host truly feel the global governance concept of co-construction and sharing in China.

## **1. Introduction**

The report of the 20th National Congress of the Communist Party of China pointed out that "telling China's story well and spreading China's voice well" is an important task of strengthening China's international communication capacity building at present, and it is also an important guarantee for creating a good environment for international economic cooperation, and foreign direct investment is one of the most important contents of international economic cooperation. According to the Statistical Bulletin of China's OFDI in 2021, by 2021, China's OFDI flow has ranked among the top three in the world for ten consecutive years and accounted for more than 10% of the global share for six consecutive years. However, under the influence of political motives, economic interests and ideology, mainstream media in some Western countries have made misleading reports on the objective facts of Chinese enterprises' OFDI, which has created many difficulties and obstacles to normal economic, trade and investment cooperation. So, in this context, will the public opinion reported by the host of the host country affect the direct investment of Chinese companies' foreign direct investment? What effect will it have? Based on this, this article uses panel data at 113 national levels from 2005-2020, combined with the theory of communication, journalism, and foreign investment related theory to conduct an empirical analysis of the relationship between the public opinion and Chinese foreign direct investment. The research on these issues not only helps to explore the international communication capacity building path that is in line with China's national conditions and serving the country's open strategy, but also has important theoretical value and practical significance for effectively promoting my country to more comprehensive and more open -quality

openness.

The marginal contribution of this article is: First, it analyzes the innovativeness of this perspective. There are insufficient research on the inherent mechanism of the influence of public opinion on public opinion. This article further analyzes how to effectively resolve the impact of public opinion on investment in the context of Western dominance of public opinion by using communication, journalism, and international investment theory. Second, the innovation of the analysis method. The GDELT database used in this article is the world's largest news database, covering most of the world's news reports. Therefore, it can be more comprehensive and the overall impact of public opinion on international investment. In addition, this article improves public opinion indicators, so that the indicators can be compared in a longer period of time, which is conducive to the overall analysis.

## **2. Literature review and theoretical analysis**

### **2.1 About the influencing factors of China's foreign direct investment**

After World War II, developed economies such as Europe and the United States accelerated the process of OFDI, and a group of large multinational companies rose rapidly, which inspired the academic circle to deeply study the internal motivation of enterprises to carry out OFDI. The existing literature expounds the influencing factors of OFDI from the economic environment of host country and home country. From the perspective of the economic environment of the host country, in addition to the four major investment motivations (Dunning (1988)<sup>[1]</sup>, the pros and cons of the host country system have also had a significant impact on direct investment in enterprises. For example, companies are more inclined to invest in the host country of Tanaka and Iwaisako (2014)<sup>[2]</sup> and good corruption control levels (2019)<sup>[3]</sup>. From the perspective of the economic environment of the mother country, the economic influence of the mother country is the core driving force of foreign direct investment (You Miao and Wang Liangong, 2019)<sup>[4]</sup>, and the uncertainty of the economic policy of the mother country will inhibit the direct investment of the enterprise (Chen Yinmo et al, 2019)<sup>[5]</sup>.

### **2.2 About the impact of public opinion on international investment**

The term public opinion was first proposed by Rousseau in "Social Contract theory". Walter Lippmann first demonstrated public opinion as a core concept. Researchers on the economic impact on public opinion came from international trade and international impact, investment and other fields. In the field of international trade, Li Gang and Meng Lijun (2019)<sup>[6]</sup> have studied the impact of the US public opinion environment on import trade and export trade based on the expansion of trade gravitational models (Meng Lijun and Li Gang, 2021)<sup>[7]</sup>. As the main source of public information, it has a role that cannot be ignored on public expectations, so it may have an impact on macroeconomic fluctuations (Zheng Tingguo, 2023)<sup>[8]</sup>. Media reports will not only increase the possibility of being reversed by corporate governance behavior (Dyck et al., 2008)<sup>[9]</sup>, it will also reduce information asymmetry, reduce the cost of corporate equity capital, and increase the number of foreign companies entering (Kulchina E., 2014)<sup>[10]</sup>. Bao (2019)<sup>[11]</sup> believes the threat of competition has a great impact on the investment decisions of multinational companies.

### **2.3 Related review of GDELT database**

Research reports based on GDELT databases have gradually increased. Some scholars use the database to analyze the intensity and influence of conflict (Levin N et al., 2018)<sup>[12]</sup>, social situation and risk (Ma Mingqing et al., 2019)<sup>[13]</sup>, regional integration (Liu Yi et al., 2019)<sup>[14]</sup>, structural distribution characteristics of social emotions, social emotions, and social emotions. And the

evolution mechanism (Gong Weigang and Zhu Meng, 2023)<sup>[15]</sup>. Some scholars also used the database to analyze bilateral relations. For example, Pascal Abb and Georg Struver (2015)<sup>[16]</sup> used the GDELT database to measure the relationship between China and ASEAN countries, and Chi Zhipei and Hou Na (2019)<sup>[17]</sup> used the database to measure the Sino-US relationship.

In summary, existing literature has provided an important research foundation for this article, but there are still the following shortcomings: First of all, there are many literature based on the economic impact of international trade research, and the literature based on international investment is not rich, especially for Public opinion affects the inherent mechanism of investment. Secondly, there are already literatures that usually directly select the data of the public opinion index for research after 2015, which greatly reduces the time period of the research it is to analyze the economic impact of public opinion as a whole.

From this we propose the research assumptions of this article 1 and assumption 2.

Research hypothesis 1: The more positive foreign media tone the tone of China's report, the more conducive to China's foreign direct investment.

Research hypothesis 2: The higher the foreign media's public opinion in China, the more news reports, the more conducive to China's foreign direct investment.

### 3. Model settings and data description

#### 3.1 Model setting

$$mil_{it} = \exp(\alpha_0 + \alpha_1 avgtone_{ict} + \alpha_2 X_{it} + u_i + v_t + \varepsilon_{1it}) \quad (1)$$

$$mil_{it} = \exp(\beta_0 + \beta_1 lnart_{ict} + \beta_2 X_{it} + u_i + v_t + \varepsilon_{2it}) \quad (2)$$

Among them,  $avgtone_{ict}$  and  $lnart_{ict}$  respectively represent the degree of public opinion praise and criticism and public opinion attention on China in the  $t$  year of  $i$  country.  $mil_{it}$  indicates the amount of China's foreign direct investment to the  $i$  country in the  $t$  year,  $X_{it}$  represents a series of control variables,  $u_i$  is a regional fixed effect. Fixed effect,  $v_t$  is the year fixed effect,  $\varepsilon$  represents random disturbance items. Because the explained variables are non-negative and there are a large amount of zero value. Therefore, we refer to the method of Silva & Tenreyro (2006)<sup>[18]</sup>, and use Poisson pseudo-maximum likelihood estimation (PPML) method to estimate.

#### 3.2 Main indicators and data descriptions

##### 3.2.1 Explained variables

The explanation variable in this article is China's foreign direct investment, and its data comes from China's global investment tracking database. The database records in detail the overseas investment projects of more than 100 million US dollars since 2005, including the name of the company, the host country, the investment industry, and the amount of investment. The database has the advantages of more real and reliable data. Because the project information recorded is an investment project that has been confirmed, it effectively avoids the problem of virtual investment in some enterprises using overseas offshore centers in the name of foreign investment.

##### 3.2.2 Core explanation variable

This article draws on the public opinion indicators constructed by Cheng Yingying and other (2021)<sup>[19]</sup>, which divides international public opinion into two aspects: public opinion and the attention of public opinion. Among them, public opinion attention reflects the "quantity" of international public opinion. The number of reports is measured, the greater the amount of reporting

shows that the more concerned about the movement of China; on one aspect of public opinion and degradation reflecting the "quality" of international public opinion, the average value of the tone index of the China News reporting in China in the annual media of one country is measured. The more positive the public opinion reported in China. Due to the different measurement standards around 2015, the public opinion derogation index is different from 2015, so we conduct standardized processing before empirical analysis.

### 3.2.3 Control variable

GDP (Ingdp): This article draws on the methods of Jiang Jiangang and Zhang Jianhong (2020)<sup>[20]</sup> to use GDP to characterize the market size of a country.

Economic benefits (gdprate): This article draws on the methods of Jia Yucheng and Zhang Cheng (2019)<sup>[21]</sup> to measure the GDP growth rate. The higher the growth rate, the higher the growth rate of the host country itself, and it can increase the demand for direct investment in China's foreign countries.

Industrial Structure (Insecindu): This article draws on the method of Liu Min et al. (2020)<sup>[22]</sup>, using the value -added of the second industry to measure the industrial structure.

Natural endowment (Insource): This article draws on the method of Jia Yucheng and Zhang Cheng (2019)<sup>[21]</sup> to measure the total amount of natural resources (the percentage of GDP).

Foreign-funded attraction (FDI): This article draws on the method of Tang Ling et al. (2022)<sup>[23]</sup>, using the proportion of FDI to GDP to measure the attraction of foreign capital.

### 3.2.4 Data processing and sample selection

The method of processing the explanation of the variable public opinion index in this article is as follows: first use Python to crawl the data from 2005-2020 in the GDELT database (of which 2000-2005 is updated once a year, January 2006-March 2013 is updated every month, 2013 4 It is updated once a day in 2020), and then import the Navicat software input command for query. In this article, the data is selected with the Actor1CountryCode and the Actor2countryCode field to screen the data, and use Numarticles and Avgtone fields to represent the public opinion and the public opinion derogation index. As we use the data of the year, the public opinion index we get through weighted the average annual value of the annual value of the annual value of the annual value of the annual value of the annual value. This article is filled with the missing valuable value by using a linear interpolation method, and the panel data at the national level of 113 countries from 2005-2020 will be selected for empirical analysis.

## 4. Variable descriptive statistics

Table 1: From 2005 to 2020 Sample countries to derogate and focus on public opinion in China

year	Avgtone	Numarticles	year	Avgtone	Numarticles
2005	6.408	1091.274	2013	2.464	15661.170
2006	6.501	2390.681	2014	2.570	26794.640
2007	6.193	3601.929	2015	-0.254	39771.810
2008	5.688	4256.009	2016	-0.825	46280.280
2009	5.823	10187.180	2017	-0.470	34782.700
2010	6.117	12177.850	2018	-0.595	36900.170
2011	5.948	12548.870	2019	-0.890	36874.360
2012	5.155	16551.560	2020	-1.751	36874.360

Before conducting empirical analysis, this article first analyzes the news reporting of China in 113 countries as an important realistic background for empirical analysis as later.

Table 1 reports that 113 countries from 2005 to 2020 are derogatory and public opinion on public opinion. It can be seen from Table 1 that the average value index of the public opinion of the samples of the samples was significantly reduced in 2013, and the "fault" phenomenon appeared, especially the annual average value of the index in 2015 became negative. In addition, let's look at the public opinion attention index. From Table 1, it can be seen that since the outbreak of the financial crisis in 2008, the average annual value of public opinion in China has continued to rise, especially after 2013, the average annual value of the index has increased significantly.

For descriptive statistics of the remaining variables, see Table 2.

Table 2: Description statistics of variables

variable	N	mean	sd	min	max	resource
million	1808	698.8	2592	0	53510	China Global Investment Tracker
zAvg	1808	0.0700	0.990	-1.980	2.620	GDELT
lnsnum	1808	7.940	1.990	0.690	14.28	GDELT
lngdp	1808	24.80	2.120	19.98	30.45	WDI
gdprate	1808	3.430	4.800	-33.49	43.48	WDI
Insecindu	1808	3.240	0.410	1.520	4.310	WDI
FDI	1808	5.700	19.12	-57.53	449.1	WDI
Insourc	1808	1.570	1.150	0	4.190	WDI

## 5. Empirical analysis

### 5.1 The reference regression results

Table 3: The reference regression results

	zavg		lnsnum	
	(1)	(2)	(3)	(4)
zAvg	-1.916***	-0.316		
	(-4.06)	(-0.77)		
lnsnum			0.694***	0.520***
			(13.65)	(4.70)
lngdp		0.676***		0.322***
		(10.15)		(3.37)
Insourc		0.402**		0.240*
		(2.51)		(1.73)
gdprate		0.077***		0.071***
		(2.92)		(2.89)
Insecindu		-0.936**		-0.166
		(-2.20)		(-0.45)
FDI		0.030**		0.036***
		(2.57)		(3.18)
_cons	6.293***	-8.764***	0.355	-6.604***
	(31.32)	(-5.16)	(0.66)	(-4.15)
N	1808	1808	1808	1808
r2_p	0.286	0.498	0.496	0.538
Control	no	yes	no	yes
Year Fix	yes	yes	yes	yes
Region Fix	yes	yes	yes	yes

Note: 1. The value in parentheses is T statistics; 2. \*, \*\* and \*\*\* represent the significant level of 10%, 5%, and 1%, respectively.

This article finds that the critical value of the variable variance factor is far less than 5, showing that the model does not have serious multiple common linear problems. Below is the reference result of this article:

In Table 3, the first two columns and the latter columns are the result of the return of public opinion and the attention of public opinion. Among them, column (1) and (3) columns are the result of no control variables. Column (2) and (4) columns are the result of adding control variables, and all regression is the clustering class at the national level under the national level ongoing. From the table, we can see that the results of the return of public opinion in various countries after joining the control variable are not significant, indicating that the public opinion of the host country has no significant impact on my country's foreign direct investment, which means that the research assumptions of this article 1 It may not be established. From the latter two columns of the table, we can find that the public opinion attention of the host country can significantly improve the level of China's OFDI regardless of whether the control variables are added or not, which means that the increase in the number of news reports on China by various countries will help expand China's influence and facilitate China's OFDI. Therefore, hypothesis 2 of this paper is valid.

## 5.2 Stability test

Replace the model. Since the explained variable direct investment is an discontinuous value, we consider using the TOBIT model to make estimates again. The model is as follows:

$$\lnmil_{it} = \alpha_0 + \alpha_1 \text{avgtone}_{ict} + \alpha_2 X_{it} + u_i + v_t + \varepsilon_{1it} \quad (3)$$

$$\lnmil_{it} = \beta_0 + \beta_1 \lnart_{ict} + \beta_2 X_{it} + u_i + v_t + \varepsilon_{2it} \quad (4)$$

We can replace explanatory variables. We use the GDELT Database Index Agold to replace the explanation of the variables of public opinion. This indicator ranges from -10 to 10. The lower the score of public opinion, the more negative the incident. We use the ratio of the number of news reports in China to China to replace another explanation of the attention of variable public opinion on the ratio of the number of news reports of China each year. The advantage of this is that it can eliminate the impact of the time trend of public opinion attention index and make the results more stable. The model is as follows:

$$mil_{it} = \exp(\alpha_0 + \alpha_1 \text{agold}_{ict} + \alpha_2 X_{it} + u_i + v_t + \varepsilon_{1it}) \quad (5)$$

$$mil_{it} = \exp(\beta_0 + \beta_1 \lnnum_{ict} + \beta_2 X_{it} + u_i + v_t + \varepsilon_{2it}) \quad (6)$$

The first two columns in Table 4 are the result of using the TOBIT model to estimate. We can clearly see that the host country's attitude towards China will not have a significant impact on China's foreign direct investment, and the attention of the host country can still significantly promote China to China. China's outward investment, from the latter two columns, it can be seen that in addition to the effects of timely factors, my country's foreign direct investment level has improved significantly under the increase in the number of reports in various countries, but the variables are still not significant after replacing the agold index. Therefore, it can be shown that the assumption 1 proposed earlier is not established, and the assumption 2 is established, and the results are very stable.

Table 4: Stability test

	(1)	(2)	(3)	(4)
	Tobit	Tobit	agold	Innum
zAvg	0.543			
	(0.69)			
Innum		0.942***		
		(11.46)		
agold			-0.075	
			(-0.73)	
Innum				0.516***
				(5.21)
Ingdp	1.443***	0.794***	0.674***	0.304***
	(8.31)	(7.48)	(8.43)	(3.38)
Insource	0.720***	0.630***	0.409**	0.238*
	(3.83)	(3.57)	(2.55)	(1.73)
gdprate	0.122*	0.113*	0.077***	0.062**
	(1.95)	(1.96)	(2.91)	(2.54)
Insecindu	-1.406	-0.591	-0.943**	-0.027
	(-1.45)	(-0.66)	(-2.18)	(-0.07)
FDI	0.045**	0.051***	0.030**	0.036***
	(2.42)	(3.21)	(2.57)	(3.20)
N	1808	1808	1808	1808
control	yes	yes	yes	yes
Year fix	yes	yes	yes	yes
Region fix	yes	yes	yes	yes

### 5.3 Endogenous treatment

Table 5: Endogenous treatment

	(1)	(2)	(3)	(4)
	One step	Two step	One step	Two step
visit	0.142***			
	(11.236)			
L.Innum			0.710***	
			(41.079)	
Innum		1.491***		0.674***
		(5.537)		(6.939)
Ingdp	0.559***	-0.111	0.196***	0.434***
	(37.116)	(-0.642)	(13.014)	(5.821)
Insource	0.019	0.258***	0.007	0.252***
	(0.639)	(2.806)	(0.321)	(2.719)
gdprate	-0.009	0.047**	-0.005	0.046**
	(-1.404)	(2.355)	(-1.085)	(2.299)
Insecindu	-0.400***	-0.189	-0.167***	-0.595***
	(-5.329)	(-0.716)	(-2.930)	(-2.577)
FDI	-0.005*	0.031***	-0.002	0.030***
	(-1.661)	(3.537)	(-1.079)	(3.468)
Constant	-7.438***	-4.633*	-1.999***	-12.209***
	(-19.569)	(-1.869)	(-6.724)	(-9.693)
Observations	1,808	1,808	1,695	1,695
R-squared	0.768	0.237	0.870	0.314
Year fix	yes	yes	yes	yes
Region fix	yes	yes	yes	yes

As an international economic activity, foreign direct investment may also affect the public opinion of the host country for China, so the two variables may have endogenous problems with mutual causality. Therefore, we use tool variables to select two variables of bilateral visits and two variables of public opinion. The following is the result of the two-stage tool variable test. We can find from Table 5 that the number of bilateral visits and the lagging of public opinion attention have passed the corresponding test.

## 5.4 Heterogeneity analysis

Although the attention of the host country's public opinion will significantly promote China's foreign direct investment, we want to further know whether there will be differences in the countries that sign the "Belt and Road" and the countries that sign bilateral investment agreement? The following Table 6 is the result of our classification and regression:

Table 6: Heterogeneity analysis

	(1)	(2)	(3)	(4)
	BRI=1	BRI=0	BIT=1	BIT=0
lnsnum	0.212**	0.640**	0.564***	0.069
	(2.48)	(2.57)	(4.66)	(0.31)
lngdp	0.410***	0.266	0.248**	0.926***
	(5.02)	(0.92)	(2.42)	(3.79)
lnsource	0.215*	-0.225	0.156	-0.436
	(1.85)	(-0.81)	(1.03)	(-0.63)
gdprate	0.048**	0.045	0.071***	0.085*
	(1.96)	(0.79)	(2.82)	(1.86)
lnsecindu	-0.241	0.480	0.118	0.814
	(-0.84)	(0.73)	(0.24)	(1.01)
FDI	0.031**	0.033*	0.042***	0.061**
	(2.57)	(1.95)	(3.11)	(2.23)
_cons	-5.914***	-7.627	-6.030***	-20.482***
	(-3.40)	(-1.62)	(-3.14)	(-4.03)
N	1376	432	1477	331
r2_p	0.298	0.646	0.457	0.841
Year fix	yes	yes	yes	yes
Country fix	yes	yes	yes	yes

It can be seen from Table 6 that the increase of public opinion attention on China in non-" Belt and Road "countries and the increase of public opinion attention on China in countries that have signed bilateral investment treaties can significantly promote the level of China's OFDI, possibly because bilateral investment treaties can protect investment property rights and fair and preferential treatment of foreign investment, so that enterprises can be better protected. This can promote China's foreign direct investment.

## 6. Conclusion and policy recommendations

Using a sample of 113 countries from 2005 to 2020, this paper examines the influence of host country public opinion on China's OFDI both theoretically and empirically. The results show that the host country's opinion on China does not have a significant impact on China's OFDI, and the increase of host country's opinion on China can effectively promote the level of China's OFDI, and the result is still stable after changing the model and changing the explanatory variables. At the same time, the public attention of non-Belt and Road countries to China is more conducive to promoting China's OFDI than that of Belt and Road countries. The news attention of countries that have signed bilateral

investment treaties with China has a more obvious effect on the promotion of China's OFDI than that of countries that have not signed bilateral investment treaties.

The research of this paper has important practical significance, and its policy implications are as follows: First, give play to the role of traditional media and new media. International communication power is not the influence of the media in its own country, but the ability to go out and influence other countries and even the world. This allows our new and traditional media to better understand international audience needs, adapt to local conditions, and build credibility with solid and balanced coverage.

Second, we can change the way we break through discourse containment. The "transformation of old and new kinetic energy" in the field of international communication takes time, and the construction of a new discourse system is not a day's work. We should focus on the future, show empathy, conduct effective dialogue with the Western world, respond to each other with an attitude of listening and understanding, humbly accept the reasonableness of each other's criticisms, and then clarify and refute them by stating facts and reasons to express our own attitudes and views. This way of retreating into advancing is a kind of wisdom integrating China and foreign countries, and can show China's great power feelings and national demeanor.

Third, we can build contacts with other countries through multiple channels. This paper shows that signing bilateral investment treaties can promote Chinese enterprises' foreign direct investment. Therefore, in the process of further opening up, China should constantly explore bilateral and multilateral cooperation mechanisms and promote the establishment of new cooperation rules and agreements. At the same time, while strengthening economic cooperation with the "Belt and Road" countries, we should also constantly seek win-win cooperation with non-signatory countries, promote people-to-people communication, and let the host country truly feel China's global governance concept of extensive consultation, joint contribution and shared benefits.

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