

# The Influence of Digital Economy on the Inflow of Foreign Direct Investment

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**Abstract:** Based on the perspective of human capital and environmental regulation, the comprehensive evaluation index and environmental regulation intensity of digital economy are obtained by entropy method and comprehensive index method. Based on the panel data of prefecture-level cities from 2011 to 2018, the influence of China digital economy on foreign direct investment inflow is analyzed. The results show that the digital economy positively affects the inflow of human capital and foreign direct investment; The total effect of digital economy on FDI inflow can be divided into direct effect and intermediary effect. The direct effect of digital economy on FDI inflow is significantly positive, and human capital is the intermediary variable between digital economy and FDI inflow, and its intermediary effect is significantly negative. Environmental regulation negatively affects the inflow of foreign direct investment, and its regulatory role significantly inhibits the positive impact of digital economy on the inflow of foreign direct investment. Therefore, on the one hand, it is necessary to accelerate the high-quality development of the digital economy and actively and effectively introduce foreign capital; On the other hand, the government should implement environmental regulation policies according to local conditions, give full play to the "compensation effect" of environmental regulation, and actively introduce foreign capital inflows.

**Keywords:** Digital economy; Environmental regulation; Human capital; foreign direct investment (FDI).

## 1. Introduction

Since the reform and opening up, the scale of China's actual utilization of foreign investment has been expanding. Even under the influence of the COVID-19 epidemic in the last two years, the amount of China's actual utilization of foreign investment has remained on the rise. The inflow of foreign capital can not only solve the shortage of funds in China, but also promote the technological reform of enterprises and reduce production costs. Therefore, the high-quality development of China's economy cannot be achieved without the introduction of foreign capital. At the same time, China's digital economy is developing rapidly. In 2020, the scale of China's digital economy has reached 39.2 trillion yuan, and it still maintains a growth rate of 9.7% even in the context of the epidemic impacting the global economy. So in the context of the rapid development of digital economy, has it effectively attracted foreign direct investment? This has gradually become the focus of attention of scholars. However, with the gradual deepening of opening to the outside world and the long-term implementation of the extensive economic growth model, China's environmental problems have become increasingly serious, and "green mountains and green hills, but also Jinshan Yinshan" has become a key issue facing China in the new era. At present, China has also adopted corresponding environmental regulation policies for environmental problems, so whether and how environmental regulation affects the inflow of foreign direct investment has become the focus of attention at this stage.

This paper will use the panel data model of prefecture-level cities from 2011 to 2018 to investigate the influence of digital economy on foreign capital inflow from the perspectives of human capital and environmental regulation, and then further explore the influence mechanism of digital economy on foreign capital inflow. The marginal contribution of this paper: First, this paper examines the influence of digital economy on

foreign direct investment inflow from the panel data of prefecture-level cities, which on the one hand makes up for the shortage of provincial level, and on the other hand supplements the research on the influence of digital economy on foreign direct investment. Secondly, from the perspective of human capital and environmental regulation, this paper further investigates the influence of digital economy on foreign capital inflow, and provides theoretical basis for realizing a win-win situation of economy and environment under the new development pattern.

## 2. Theoretical Analysis and Research Hypothesis

### 2.1. The theoretical analysis of the impact of digital economy on foreign direct investment

Nowadays, the digital economy is developing rapidly, and gradually permeates all fields. Big data platform and artificial intelligence provide considerable convenience for enterprises, and further promote the structural innovation and upgrading of enterprises, change the previous extensive production mode, reduce the production cost of enterprises and improve the quality of human capital. The specific theoretical analysis is mainly in the following two aspects.

#### 2.1.1. Digital economy improves the allocation efficiency of production factors and reduces costs.

Coase(1937) believes that all transactions in the market will generate costs, which is called transaction costs, and the factors that cause higher transaction costs mainly include information asymmetry, incomplete information and bounded rationality [1]. At the present stage of development, the rapid development of digital economy has obviously improved the transparency and information symmetry of the market, improved the allocation efficiency of production factors such

as labor, capital and technology, reduced the transaction cost of foreign direct investment, and significantly improved the willingness of foreign investment to enter. At the same time, Li Hao and Huang Fanhua (2021) pointed out that our government strongly encouraged "internet plus government affairs" and greatly simplified the procedures, thus improving the efficiency of foreign-funded enterprises and further facilitating the introduction of foreign-funded enterprises [2]. Therefore, this paper puts forward the following assumptions:

H1: The digital economy has promoted the inflow of foreign direct investment.

### **2.1.2. The indirect impact of digital economy on foreign direct investment.**

Digital economy can enhance human capital. Yu Donghua and Li Jie (2019) believe that industrial digitalization improves the quality of workers and promotes the accumulation of high-quality human capital [3]; Li Mengna and Zhou Yunbo (2022) found that with the continuous development of industrial digitalization, especially artificial intelligence, it first played a positive role in promoting the application of advanced human capital in the industry, but when the industrial structure digitalization reached a certain level, it turned into an inhibitory role [4]; Xia Jiechang, Xu Ziyang and Yao Zhanqi (2022) believe that the rapid development of digital economy has promoted technological revolution and innovation, promoted product quality upgrading, and increased social demand for high-tech talents, so digital economy can enhance human capital [5]. Furthermore, there is a close relationship between human capital and foreign direct investment. The increase in the proportion of higher education personnel will increase the quality of the labor force, thus improving productivity, promoting the flow of production factors and increasing the inflow of foreign direct investment. Therefore, this paper puts forward the following assumptions:

H2: Human capital has a mediating effect on the influence of digital economy on foreign direct investment.

## **2.2. The theoretical analysis of the impact of environmental regulation on foreign direct investment**

Early scholars at home and abroad mainly focused on the research and analysis of the influence of environmental regulation on comparative advantage in international trade, and mainly came to two different views: the pollution paradise hypothesis and the Porter hypothesis, which resulted in two theoretical analyses: the offset effect and the compensation effect.

### **2.2.1. Offset effect**

Walter & Ugelow (1979) and Copeland & Taylor (1994) put forward the "pollution paradise hypothesis", arguing that environmental regulation will increase the production cost of enterprises, which is not conducive to improving their comparative advantage in international trade [6-7]. On the one hand, for domestic enterprises, in order to meet the requirements of environmental regulations, it is necessary to increase the cost of pollution control, which will increase the production cost, and in order to reduce the production cost, it will also reduce the technology research and development expenses accordingly, reduce the production efficiency, reduce the production scale, and reduce its comparative advantage in the international arena, thus inhibiting the inflow of foreign capital; On the other hand, for foreign-funded

enterprises, stricter environmental regulations mean higher production costs and less profits, and countries with looser environmental regulations will tend to choose based on rational people. Therefore, strict environmental regulations have a certain "offset effect" on foreign capital inflows.

### **2.2.2. Compensation effect**

Porter and van der Linder(1995) put forward "Porter Hypothesis", arguing that the moderate implementation of environmental regulation will promote enterprises to carry out technological innovation, improve productivity and reduce production costs through innovation effect, and its "compensation effect" is greater than "offset effect", thus improving its international comparative advantage [8]. Generally speaking, when the environmental regulations faced by enterprises are strengthened, in order to match the indicators required by environmental regulations, enterprises will be stimulated to carry out technological innovation independently, rationally use resources and actively develop corresponding green products. On the one hand, the cost of environmental pollution control of enterprises will be reduced, on the other hand, the production efficiency of enterprises will be improved and the production scale will be expanded, thus promoting the inflow of FDI. This is the "compensation effect" of environmental regulations.

Because China's environmental regulation policy is still in the stage of continuous improvement, its offset effect is still greater than compensation effect, which has a negative impact on the inflow of foreign direct investment. Therefore, this paper puts forward the following assumptions.

H3: Environmental regulations have a negative impact on foreign direct investment.

## **2.3. The theoretical analysis of the regulatory effect of environmental regulation**

With the rapid development of digital economy, in order to realize "green mountains and green hills" and "Jinshan Yinshan" under the new development concept, environmental regulation and digital economy will be used simultaneously when introducing foreign direct investment. On the one hand, due to the "compensation effect" of environmental regulation, the digital economy will realize resource conservation, rationally distribute production factors, improve technological green innovation, promote green transformation and upgrading of high-energy-consuming and high-pollution industries, improve international competitiveness and enhance the willingness of foreign capital inflow under the guidance of environmental regulation; On the other hand, due to the "offset effect" of environmental regulation, the increased production cost of digital economy under the constraint of environmental regulation may exceed its own reduced production cost, thus inhibiting the inflow of foreign capital; Therefore, environmental regulation has a regulatory effect on the influence of digital economy on foreign capital inflow, and the positive and negative of the regulatory effect depends on the "offset effect" of environmental regulation. This paper puts forward the following assumptions:

H4: Environmental regulation has a moderating effect on the influence of digital economy on foreign capital inflow.

## **3. Model and Data**

### **3.1. Model**

This paper uses the panel data model of China's prefecture-

level cities from 2011 to 2018 to examine the influence of digital economy on foreign direct investment from the perspective of human capital and environmental regulation. This paper establishes a structural model to study whether digital economy affects foreign direct investment through human capital:

$$\ln Hum_{it} = \alpha_0 + \alpha_1 \ln Digital_{it} + \alpha_2 \ln ER_{it} + \alpha_3 \ln X_{it} + \varepsilon_{it} \quad (1)$$

$$\ln FDI_{it} = \beta_0 + \beta_1 \ln Digital_{it} + \beta_2 \ln Hum_{it} + \beta_3 \ln ER_{it} + \beta_4 \ln X_{it} + \varepsilon_{it} \quad (2)$$

In addition, due to the need to analyze the regulatory role of environmental regulation in the digital economy to foreign direct investment, this paper will further add the interactive term of environmental regulation and digital economy ( $\ln ER * \ln Digital$ ) to model (2). In the above formula, the explained variable is foreign direct investment (FDI), the core explanatory variable is digital economy (Digital), the intermediary variable is human capital (Hum), the regulatory variable is environmental regulation (ER), and X is the vector of control variable, specifically, the financial level of the city (Fin), the population size of the city (PP), the intensity of scientific and technological investment (SC), etc., which is a random disturbance term, and I is the region.  $\varepsilon$

### 3.2. Variable Selection

Explained variable: foreign direct investment (FDI). Foreign direct investment is measured by the actual use of foreign investment in various regions.

Core explanatory variable: digital economy (Digital). Because some city-level data are difficult to obtain, this paper mainly refers to the indicators of Zhao Tao, Zhang Zhi and Liang Shangkun (2020) to measure the digital economy (see Table 1)[9]. At the same time, this paper uses entropy method

to standardize the variables, and then uses entropy weight method to calculate the weights to get the comprehensive evaluation index of digital economy in various regions.

Intermediate variable. Human capital (Hum). It is measured by the proportion of students in ordinary colleges and universities in each region to the local resident population.

Regulatory variable: environmental regulation (ER). There are many methods to measure environmental regulation. In this paper, the comprehensive index method is mainly used to measure the intensity of environmental regulation, mainly referring to the comprehensive index method of Ye Qin, Ceng Gang, Dai Xiaoxie and others (2018). Based on the emissions of waste water, sulfur dioxide and smoke dust, a comprehensive measurement system is constructed from the perspectives of waste water and waste gas [10].

Control variables: (1) the level of urban financial development (Fin). This indicator uses the proportion of the total deposits of various financial institutions to the regional GDP to measure the financial scale. (2) Science and technology investment intensity (SC). This paper uses the proportion of science and technology expenditure and regional GDP to represent. (3) Urban population size (PP). It is expressed by the population density of each region.

### 3.3. Description of data sources

The data in this paper come from National Bureau of Statistics, Statistical Yearbook of China, Statistical Yearbook of China City, Statistical Yearbook of China Science and Technology, Statistical Yearbook of China Environment, Ministry of Commerce of various prefecture-level cities and statistical bulletins. The digital inclusive finance index comes from Digital Financial Center of Peking University, and the missing data in a certain year are supplemented by interpolation.

**Table 1.** Comprehensive development level of urban digital economy in China

Primary index	Secondary index	Three-level index	proportion	Indicator attribute
Comprehensive development index of digital economy	Internet penetration	Internet users per 100 people	17.40%	+
	Number of internet-related employees	Proportion of computer service and software employees	16.92%	+
		Per capita telecommunications business volume	16.84%	+
	Internet related output	Per capita postal service	12.53%	+
		Number of mobile internet users	Number of mobile phone users per 100 people	18.25%
	Inclusive development of digital finance	Digital inclusive finance index	18.06%	+

## 4. Empirical Results and Analysis

### 4.1. Benchmark regression

Table 2 shows the results of benchmark regression. From Model 1, we can see that the estimation coefficient of digital economy is significantly positive (0.501) and the estimation coefficient of environmental regulation is significantly negative (-0.149), which shows that digital economy has a positive impact on foreign direct investment and proves that

H1 in the previous article is valid. Environmental regulation has a negative impact on foreign direct investment, which proves the establishment of H3 in the previous article. In order to further control the missing variables, the level of urban financial development is added to model 2, the intensity of scientific and technological investment is added to model 3, and the size of urban population is added to model 4. From model 4, we can see that the digital economy and environmental regulation still pass the remarkable level of 1%. The level of urban financial development has a significant

negative effect on the inflow of foreign direct investment, which is consistent with the results of Yang Youcai, Niu Xiaotong and Geng Lulu (2021). The intensity of science and technology investment significantly promotes the inflow of

foreign direct investment, while the size of urban population promotes the inflow of foreign direct investment but not significantly [11].

**Table 2. Benchmark Regression Results**

variable	Lnfdi (foreign direct investment)			
	Model 1	Model 2	Model 3	Model 4
Lndigital (digital economy)	0.501*** (3.41)	0.581*** (4.02)	0.556*** (3.93)	0.556*** (3.92)
Lner (Environmental Regulation)	-0.149*** (-5.82)	-0.104*** (-4.06)	-0.079*** (-3.13)	-0.079*** (-3.12)
Lnf (level of financial development)		-1.457*** (-8.86)	-1.240*** (-7.61)	-1.238*** (-7.54)
Lnsc (input intensity of science and technology)			0.426*** (8.98)	0.425*** (8.96)
Lnpp (population density)				0.061 (0.12)
constant term	10.850*** (26.97)	11.340*** (28.46)	14.040*** (28.50)	13.688*** (4.71)
Urban fixation	YES	YES	YES	YES
Fixed year	YES	YES	YES	YES
observed value	2,216	2,216	2,216	2,216
Number of cities	277	277	277	277

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1, and the standard errors are in brackets.

## 4.2. Analysis of intermediary effect

As can be seen from Table 3, in the case of human capital as an intermediary variable, the total effect of digital economy on foreign direct investment is 0.556 (the estimation coefficient of digital economy in model 7 is 0.556), the direct effect of digital economy on foreign direct investment is 0.587 (the estimation coefficient of digital economy in model 6 is 0.587), and the indirect effect of digital economy on foreign direct investment is -0.031 (0.126 \* -0.26). From the test results, we can see that the digital economy has

significantly improved human capital, which is consistent with the previous description, but human capital has inhibited foreign direct investment. This is mainly in line with the views of Yuan Zixin, Yin Chengming and Xiao Guangen (2019). Labor cost and human capital accumulation complement each other. Although the increase of human capital improves productivity, it also means higher labor cost. When the increase of labor cost, that is, investment cost, exceeds the marginal effect of production capacity, it will inhibit the inflow of foreign direct investment [12].

**Table 3. Test results of human capital as intermediary variable**

variable	Lnhum (human capital)	Lnfdi (foreign direct investment)	Lnfdi (foreign direct investment)
	(Model 5)	(Model 6)	(Model 7)
Lndigital (digital economy)	0.126*** (2.70)	0.587*** (4.15)	0.556*** (3.92)
Lner (Environmental Regulation)	0.008 (0.91)	-0.077*** (-3.06)	-0.079*** (-3.12)
Lnf (level of financial development)	-0.085 (-1.57)	-1.259*** (-7.68)	-1.238*** (-7.54)
Lnsc (input intensity of science and technology)	-0.046*** (-2.93)	0.414*** (8.73)	0.425*** (8.96)
Lnpp (population density)	-0.086 (-0.53)	0.039 (0.08)	0.061 (0.12)
Lnhum (human capital)		-0.247*** (-3.59)	
constant term	-4.135*** (-4.32)	12.665*** (4.35)	13.688*** (4.71)
Urban fixation	YES	YES	YES
Fixed year	YES	YES	YES
observed value	2,216	2,216	2,216
Number of cities	277	277	277

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1, and the standard errors are in brackets.

## 4.3. Regulatory Effect

As can be seen from Model 10 in Table 4, the cross-product term of digital economy and environmental regulation has passed the significant test of 1%, indicating that H4 is

established. At the same time, the coefficient of interaction term is significantly negative, which shows that environmental regulation has inhibited the positive effect of digital economy on foreign direct investment, which shows

that the offset effect of environmental regulation has affected the promotion of foreign direct investment by digital economy, and the environmental regulation policy is not perfect enough

to give full play to the compensation effect of environmental regulation to improve innovation ability and attract foreign investment

**Table 4. Regulatory Effect and Heterogeneity Test Results**

variable	Lnfdi (foreign direct investment)			
	Model 9	Model 10 (National)	key city	Peripheral cities
Lndigital (digital economy)	0.587*** (4.15)	0.408*** (2.61)	0.875** (2.33)	0.336* (1.78)
Lner (Environmental Regulation)	-0.077*** (-3.06)	-0.219*** (-3.68)	-0.094 (-0.75)	-0.251*** (-3.57)
Lnerd (Environmental Regulation * Digital Economy)		-0.072***	-0.019	-0.082**
Lnf (level of financial development)	-1.259*** (-7.68)	-1.239*** (-7.56)	-1.063*** (-3.11)	-1.292*** (-6.76)
Lnsc (input intensity of science and technology)	0.414*** (8.73)	0.404*** (8.51)	0.442*** (3.95)	0.398*** (7.53)
Lnpp (population density)	0.039 (0.08)	0.047 (0.10)	-0.174 (-0.19)	0.170 (0.29)
Lnhum (human capital)	-0.247*** (-3.59)	-0.243*** (-3.52)	-0.088 (-0.34)	-0.240*** (-3.30)
constant term	12.665*** (4.35)	12.222*** (4.20)	16.904*** (3.01)	10.809*** (3.09)
Urban fixation	YES	YES	YES	YES
Fixed year	YES	YES	YES	YES
observed value	2,216	2,216	536	1,680
Number of cities	277	277	67	210

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1, and the standard error is in brackets.

#### 4.4. Robustness test

In this paper, the explained variable is replaced by the ratio of foreign direct investment to regional GDP (utilization rate

of foreign investment), and the regression results are shown in Table 5. The results show that the direction and significance of the regression coefficient of the core explanatory variables have not changed, so it has certain robustness.

**Table 5. Robustness test results**

variable	Lnfdi1 (utilization ratio of foreign investment)					
	(1)	(2)	(3)	(4)	(5)	(6)
Lndigital (digital economy)	0.413*** (2.89)	0.451*** (3.16)	0.428*** (3.05)	0.429*** (3.06)	0.458*** (3.26)	0.330** (2.12)
Lner (Environmental Regulation)	- 0.102*** (-4.11)	-0.081*** (-3.20)	-0.058** (-2.34)	-0.059** (-2.36)	-0.057** (-2.30)	-0.158*** (-2.69)
Lnerd (Environmental Regulation * Digital Economy)						-0.051* (-1.90)
Lnf (level of financial development)		-0.687*** (-4.23)	-0.492*** (-3.05)	-0.503*** (-3.09)	-0.522*** (-3.22)	-0.508*** (-3.13)
Lnsc (science and technology input and expenditure)			0.384*** (8.18)	0.385*** (8.20)	0.375*** (7.98)	0.368*** (7.81)
Lnpp (population density)				-0.256 (-0.52)	-0.275 (-0.56)	-0.270 (-0.55)
Lnhum (human capital)					-0.229*** (-3.36)	-0.226*** (-3.31)
constant term	- 5.538*** (-14.16)	-5.307*** (-13.49)	-2.872*** (-5.88)	-1.389 (-0.48)	-2.337 (-0.81)	-2.653 (-0.92)
Urban fixation	YES	YES	YES	YES	YES	YES
Fixed year	YES	YES	YES	YES	YES	YES
observed value	2,216	2,216	2,216	2,216	2,216	2,216
Number of cities	277	277	277	277	277	277

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1, and the standard error is in brackets.

#### 4.5. Heterogeneity test

As can be seen from Table 4, digital economy can promote foreign direct investment in both central cities and peripheral cities, but the marginal effect of digital economy in peripheral cities is lower than that in central cities. The reason is that the digital economy mainly empowers urban development with information technology. Although the local governments in central cities and peripheral cities have different resource allocation capabilities, the rapid development of the digital economy has enhanced government management and efficiency, thus having a positive impact on the inflow of foreign direct investment. But at the same time, there is a big gap between peripheral cities and central cities in terms of infrastructure and economic development, which makes the digital economy play a stronger role in promoting central cities than peripheral cities. At the same time, it can be seen from the table that the negative impact of environmental regulation intensity is not significant in the central city, but significant in the peripheral cities, and the negative impact of environmental regulation in the central city is less than that in the peripheral cities, indicating that the offset effect of environmental regulation in the central city is less than that in the peripheral cities.

### 5. Conclusions and Policy Implications

In this paper, the comprehensive evaluation index and environmental regulation intensity of digital economy are obtained by entropy method and comprehensive index method, and the influence of digital economy on foreign direct investment in China from the perspective of human capital and environmental regulation is analyzed by using fixed panel data model, and the mechanism is analyzed. Finally, the robustness test and heterogeneity test are provided. The specific conclusions are as follows:

The total effect of digital economy has promoted the inflow of foreign direct investment. The digital economy has significantly promoted the inflow of foreign direct investment (Table 2), especially in central cities (Table 4). In the analysis of heterogeneity, the digital economy has also significantly promoted the inflow of foreign capital in peripheral cities (0.336), but its promotion is far lower than that in central cities (0.875). This study holds that the rapid development of digital economy has reduced the production cost of enterprises, improved the production efficiency of enterprises and significantly promoted the inflow of foreign capital. But at the same time, because of the great difference in infrastructure and development level between peripheral cities and central cities, the central cities play a greater role in promoting utility.

Digital economy improves human capital, but its indirect effect is negative. Human capital plays a negative mediating role in the influence of digital economy on FDI inflow (Table 3), in which digital economy significantly improves human capital (0.126), and the direct effect of digital economy on FDI inflow is positive (0.587), but the indirect effect on FDI inflow by improving human capital is negative (-0.031). This study holds that the rapid development of digital economy requires the active interaction of more educated talents, and the increase of human capital will improve production efficiency, but at the same time, because higher human capital means higher labor costs, when marginal labor costs are greater than marginal productivity, the inflow of foreign

capital will be suppressed.

Environmental regulation has a significant regulatory role. Environmental regulation significantly inhibits the inflow of foreign direct investment (Table 2), and has a significant regulatory role in the influence of digital economy on foreign direct investment inflow (Table 4), and its regulatory role inhibits the positive effect of digital economy on foreign direct investment inflow (-0.072); This study holds that the current environmental regulation policy is not perfect, and the "compensation effect" of environmental regulation has not been well exerted, which makes the "offset effect" still greater than the "compensation effect", thus inhibiting the inflow of foreign capital, and also because the "offset effect" inhibits the promotion of digital economy to foreign capital inflow to some extent.

Based on the above research conclusions, this paper mainly puts forward three policy suggestions, as follows:

First, further accelerate the development of digital economy, constantly improve the policy system of digital economy development, and actively promote the digital transformation and upgrading of the real economy. At the same time, enterprises should continuously increase investment in information technology in the production process, and actively use the Internet and big data to build an opening platform and information sharing platform, so as to attract more foreign direct investment inflows. At the same time, the impact of the development of digital economy on the inflow of foreign direct investment is heterogeneous in cities, and the promotion effect on peripheral cities is small. Therefore, corresponding economic policies should be implemented according to local conditions. For peripheral cities, we should pay more attention to improving urban infrastructure, improving the convenience of transportation, and actively stimulating the advantages of latecomers, so as to promote the inflow of foreign direct investment; For central cities, on the basis of continuously improving the inflow of foreign capital, we should focus on the quality of attracting foreign capital and continuously introduce high-quality foreign capital.

Second, we should vigorously introduce high-tech talents and increase investment in all kinds of human capital to improve the overall level of human capital development. The government should implement corresponding preferential policies and attach importance to local education to attract and retain talents, which can promote the growth of local technical talents, optimize the talent structure and increase the possibility of giving full play to talents, so as to develop the technological advantages of local labor [13]. At the same time, we should introduce corresponding high-tech talents according to the local development level, improve the mechanism of talent flow, and make human capital match the wage level, so as to give full play to the technological advantages of human capital and promote the inflow of foreign direct investment.

Third, constantly improve environmental regulation policies and implement differentiated environmental regulation policies according to local conditions. The government should implement appropriate environmental regulation standards according to the local development level, infrastructure and trade conditions, stimulate the transformation and upgrading of industrial structure by improving the environment for scientific and technological innovation, and encourage enterprises to carry out

independent research and development innovation by issuing environmental subsidies and R&D subsidies, so as to give full play to the "compensation effect" of environmental regulation and fully release the promotion effect of environmental regulation on foreign direct investment.

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