

The Unbalanced Development of Inward FDI in Henan Province

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1. Introduction

Since China's reform and opening up, inward FDI¹⁾ in China has developed rapidly in the past thirty years. With the development of the FDI, much research has started to discuss the reasons attracting FDI in different regions (Chadee et al., 2003, Chunlay, 2003, Ali and Guo, 2005, Boermans et al., 2009, Xu et al., 2009). However, most of the scholarly papers focus on the coastal areas of China or take large areas as the research object (Laijun et al., 2008, Anjing Qi1, 2011, Chunlay, 2003, Liu et al., 2012). When speaking of Henan, it is generally believed that Henan has been just a gigantic agricultural province. So there is no universal research article on the status of FDI in Henan. In fact, development of FDI in Henan is also quite conspicuous. This paper will summarize and sort out the data of development of FDI in Henan and provides basic information and analysis for further research in the future. This paper expounds respectively the unbalanced development of FDI in different periods, industrial distribution, the mode of investment, original countries and investment regional distribution.

2. Literature review

There are limited studies of the distribution disparity of FDI in various regions. Most of the literatures focus on the location choice of FDI and the factors of FDI. The empirical study of FDI location began in the 60s of the last century. Wheeler and Mody (1992), by defining functions, found that agglomeration economies and market size determined the location choice of American companies in developing countries. Coughlin and Segev (2000), from the perspective of maximizing corporate profits, con-

1) The term "FDI" in the following refers to inward FDI

siders that regional area, per capita income, industrial agglomeration, labor market conditions and taxation are the determinants of FDI attraction in the United States.

Chinese scholars began to study the location of FDI in the 90s of the last century. Lu (1997), Canfei (1999) suggests that FDI has the characteristics of centralized and coastal distribution in China, and the distribution of FDI is a serious imbalance in the structure of space; provincial differences are obvious. Wei (2003) found that after joining the WTO, foreign investment in China did not spread to the central and western regions, but further concentrated in the coastal areas. Wang Xuhui (2006) analyzed the location change and the characteristics of FDI, considered that FDI was highly concentrated in the eastern region, and there was a serious imbalance in the distribution of FDI in the eastern, central and western provinces. Scholars have gradually increased the interests on the location choice of FDI in China, but the scope of most of the literature is the whole region or big region of China. So far, there are very few studies on regional differences of FDI in smaller regions or in the central and Western Provinces. The research on the measurement and change trend of regional differences in FDI is insufficient.

3. Trends and Unique Characteristics of inward FDI Flows to Henan Province

3.1 Research site: Henan province

Henan Province is situated in the Middle East of China and the middle and lower reaches of the Yellow River. The province is located between latitude $31^{\circ} 23' - 36^{\circ} 22'$ and longitude $110^{\circ} 21' - 116^{\circ} 39'E$, in the junction of coastal areas and central and Western regions, which is the middle ground for China's economic development from the east to the west. The province covers a total area of 167,000 square kilometers and occupies the 17th place in China's provinces, accounting for 1.73 percent of the whole area of the country (See Figure 1).

At the end of 2015, the total population of the province was 107.22 million, with a permanent

Figure 1 The map of Henan Province

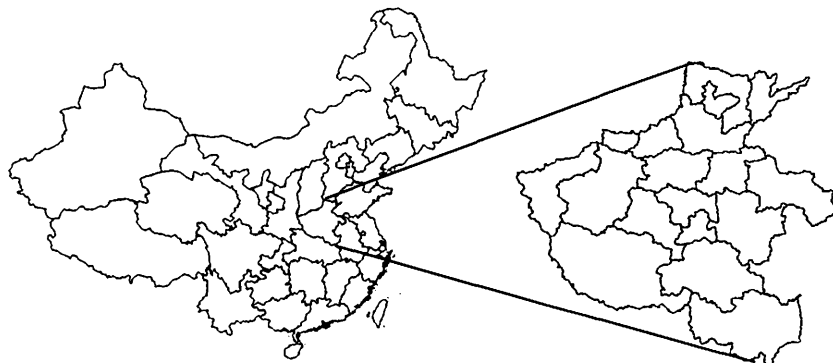
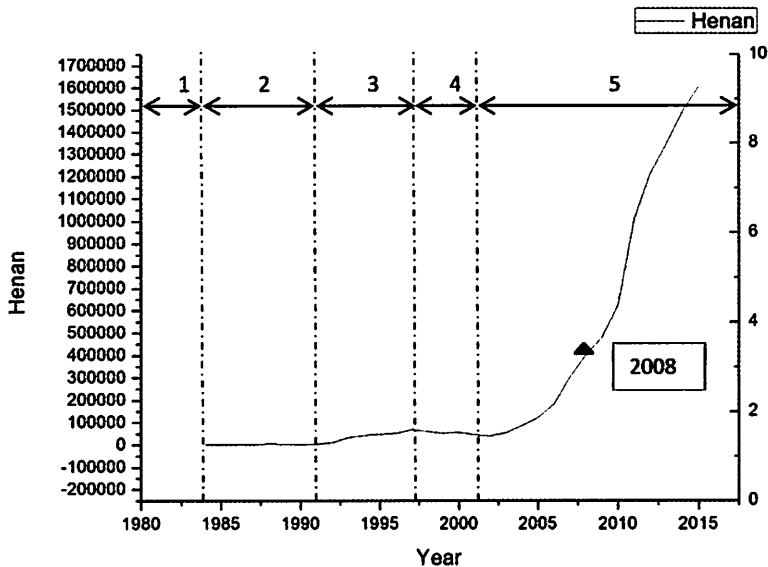


Figure 2 Inward FDI of Henan Province from 1980-2015



Unit of value: US \$10000
Note: 1. FDI flow used here is the actual amount of investment in place, rather than the amount agree-
ment signed in the contract. 2. The official statistics for FDI in Henan province started from 1985.

population of 94.8 million. In 2015, the total GDP of the province was 37010.25 billion Yuan, an increase of 8.3 percent over the previous year.

3.2 The Stages of inward FDI Development

The scale of FDI in China has expanded recently, which has a great influence on the development of China’s economy (Chenghao, 2016, Peiqian and Yansun, 2007). As a large economic province in Central China, Henan has stepped up its foreign trade policy support, and has made remarkable achievements in attracting overseas investment (Shoulong, 2012). According to the changes in FDI, the development process of FDI in Henan province can be divided into the following stages (See Figure 2):

The first stage: the initial stage (1979-1984)

In 1979, China promulgated the first law for the use of foreign investment, namely the law of the People’s Republic of China on Sino-foreign equity joint ventures. Due to the restriction of policies, the investment was limited to the four special economic zones (Shenzhen, Zhuhai, Xiamen and Shantou), and the way of utilizing foreign capital was mainly borrowing. In 1983, the initial FDI project in Henan province was “Luo Yi color printing center,” which marked the beginning of attracting FDI in Henan Province. The actual amount of foreign capital used for the project was US \$ 50,000²⁾.

2) <http://www.henan.gov.cn/ztzl/system/2008/12/24/010111982.shtml>

The second stage: slow development stage (1985-1991)

At this stage, China published a series of laws and regulations to improve the country's macro investment environment. China issued the "on the encouragement of FDI" in 1986", "The guiding to foreign investment direction" in 1987 and "The Sino-foreign cooperative enterprise law". In 1987, Henan attracted US \$4.67 million dollars (Bureau, 1988). China adopted three modes of foreign investment enterprises, namely, wholly foreign-owned enterprises, Sino-foreign joint ventures and Chinese-foreign cooperative enterprises. In 1987, Henan, firstly, took the mode of wholly foreign-owned and attracted US \$ 310,000. To 1991, the actual investment amounted to US \$37.91 million, of which US \$32.14 million was absorbed by the mode of joint venture enterprises, and US \$2.83 million was absorbed by the mode of Chinese-foreign cooperative enterprises (Bureau, 1992). The amount of investments in 1990, and 1991 was hit by the some political incident. The actual use of foreign capital scale at this stage was increasing (See Table 1). China's policy of attracting foreign investment had a tendency to apply in the coastal areas and special economic zones. So FDI was mostly centered in the eastern coastal areas of China. As an inland province of central China, Henan had a very small amount of FDI.

The third stage: steady growth stage (1992-1997)

In 1992, Deng Xiaoping proposed Chinese's economic reform policy in the "Southern tour speech." China agreed to establish a socialist market economic system. Foreign investors began large-scale direct investment in China. In 1994, Henan provincial government performed the measures for encouraging the investment in Henan and the measures for the financial management of loans from the World Bank. In order to attract FDI, Henan made serious efforts to develop infrastructure. Zhengzhou and Luoyang established state-level industrial open zones to boost high-tech industries. To 1992, the actual utilization of foreign investment stood at US\$106.91 million (Bureau, 2016). In 1997, the province's foreign capital utilization reached US \$647.35 million, more than 6 times than the size of investment in 1992 (Bureau, 2016) (See Table 2). At this stage, the scale of the use of FDI, although there was still a gap with east-

Table 1 The actual utilization of FDI in China from 1985-1991

Unit of value: US \$10000

Year	New Agreement Signed		Actually used Investment
	Number of projects (unit)	Value	
1985	29	6870	565
1986	14	2724	605
1987	31	12562	467
1988	38	1986	6436
1989	36	1681	4266
1990	50	2107	1049
1991	154	12716	3791

Source: Henan statistical yearbook, 2016

Table 2 The actual utilization of FDI in China from 1992-1997

Unit of value: US \$10000

Year	New Agreement Signed		Actually used Investment
	Number of projects (unit)	Value	
1992	1053	88327	10691
1993	1727	157768	34197
1994	1011	79168	42488
1995	815	86748	47981
1996	478	92166	52566
1997	423	86799	64735

Source: Henan statistical yearbook, 2016

Table 3 The actual utilization of FDI in China from 1998-2001

Unit of value: US \$10000

Year	New Agreement Signed		Actually used Investment
	Number of projects (unit)	Value	
1998	353	57333	61794
1999	264	61832	49527
2000	237	69921	53999
2001	224	62188	35861

Source: Henan statistical yearbook, 2016

ern China, the substantial scale had been steadily increasing (See Figure 2).

The fourth stage: declining stage (1998-2001)

In 1997, the financial crisis took place in Asia, which resulted in the extensive depression of the world economy, China faced problems such as deflation and insufficient effective demand (Foster, 2009). The deterioration of the overall economic environment caused profound impact on investment. To 1998, the actual utilization amounted to US \$617.94 million, the amount of investments decreased by nearly US \$30 million compared with 1997 years (See Table 3). In 2001, the province attracted merely US \$358.61 million (Bureau, 2016). The scale of FDI in Henan fell to only the actual amount of the province's utilization in 1993 (Bureau, 2016) (See Table 2). At this stage, the total FDI showed a downward trend (See Figure 2).

The fifth stage: the rapid growth stage (up to now)

In 2001, China joined the WTO, and the investment environment was enhanced. Henan province further expanded ways to attract investment. In 2004, Henan launched intermediary, online, academic ways and assemble teams to go abroad to call in foreign investment. In that year, the actual utilization of investment amounted to US \$ 873.67 million. Actual utilization increased by 56% compared with 2003 (Bureau, 2016). To 2015, the actual utilization amounted to US \$16.86 billion, about 39 times

Table 4 The actual utilization of FDI in China from 2002-2015

Unit of value: US \$10000

Year	New Agreement Signed		Actually Used Investment
	Number of projects (unit)	Value	
2002	290	101964	45165
2003	324	182560	56149
2004	478	205383	87367
2005	472	235176	122960
2006	497	336788	184526
2007	516	483538	306162
2008	364	604146	403266
2009	274	492055	479858
2010	362	578385	624670
2011	355	767752	1008209
2012	363	1172936	1211777
2013	344	1154233	1345659
2014	328	1183590	1492688
2015	272	737323	1608637

Source: Henan statistical yearbook, 2016

than that of 2002 (Bureau, 2016) (See Table 4). The biggest feature in this stage is that FDI is growing rapidly. There is worth noting a point time that is in 2008, the amount of investments continued to grow, but the growth rate slowed significantly during this year (See Figure 2). The amount of investments due to the 2008 financial crisis had been greatly affected, and the growth rate decreased. (Huang, 2012)

3.3 Distribution of inward FDI's sector

Sector distribution of FDI mainly refers to the industrial distribution of the actual investment in the whole province. Since 2003, the actual utilization of the investment in Henan was not just increased considerably in scale, but also expanded the scope of foreign investment from the primary industry and the second industry to the tertiary industry. The scale of FDI in the tertiary industry increased significantly. The amount of investments in the three industries continued to grow. However, the utilization level of FDI in the primary industry and the tertiary industry is relatively low. The utilization of FDI in the primary industry is less than 4% of the total amount of the province except in 2011, which does not match Henan's status as a major agricultural province (See Table 5). The actual utilization of FDI in Henan province mainly focuses on the second industry, which is chiefly manufacturing, the processing industry and labor-intensive projects (See Figure 3). Henan province is rich in human resources, which indicates that the labor cost is an important factor in attracting FDI (Wang, 2011). With the Carrefour, Metro, WAL-MART and other world's top 500 multinational enterprises stationed in Henan, the level of the actual utilization of the tertiary industry has likewise, been rapidly developed. The actual utilization

Table 5 Industrial sector distribution of FDI in Henan (1)

Unit of value: US \$10000

Year	Primary Industry	Secondary Industry	Tertiary Industry	Percentage of Primary Industry	Percentage of Secondary Industry	Percentage of Tertiary Industry
1993	303	7200	3719	2.70%	64.16%	33.14%
1994	266	29897	17514	0.56%	62.71%	36.73%
1995	258	31669	10561	0.61%	74.54%	24.86%
1996	492	39765	7724	1.03%	82.88%	16.10%
1997	—	—	—	—	—	—
1998	343	46290	14959	0.56%	75.16%	24.29%
1999	1036	38529	9962	2.09%	77.79%	20.11%
2000	568	49045	4386	1.05%	90.83%	8.12%
2001	626	29991	5244	1.75%	83.63%	14.62%
2002	677	37636	6354	1.52%	84.26%	14.23%
2003	1994	44969	7233	3.68%	82.97%	13.35%
2004	3175	64647	19418	3.64%	74.10%	22.26%
2005	2190	91602	29168	1.78%	74.50%	23.72%
2006	568	136631	44271	0.31%	75.29%	24.40%
2007	5637	220267	79159	1.85%	72.20%	25.95%
2008	2654	295790	104439	0.66%	73.42%	25.92%
2009	16935	327363	131153	3.56%	68.85%	27.58%
2010	24261	452222	143081	3.92%	72.99%	23.09%
2011	47254	712450	248175	4.69%	70.69%	24.62%
2012	41573	847606	322598	3.43%	69.95%	26.62%
2013	44277	962249	339133	3.29%	71.51%	25.20%
2014	49428	1159147	284113	3.31%	77.66%	19.03%
2015	51202	1246914	310521	3.18%	77.51%	19.30%

Source: Henan statistical yearbook from 1994 to 2016. Sorting out and calculating by author. Note 1: The data of FDI industry is not recorded in 1997

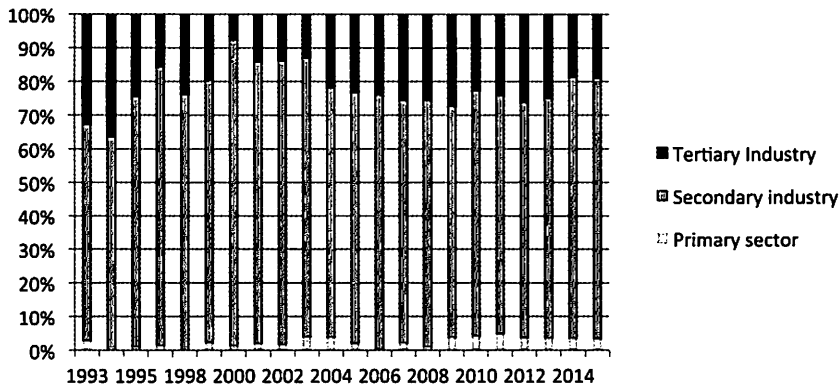
of FDI in the tertiary industry, mostly focused on real estate, wholesale and retail, transportation and other industries. In particular, the latter two developed rapidly after 2010. Investment in real estate suddenly declined after 2010 because of the country's macro-control policies, and then rose again (Zhang, 2015) (See Figure 4). As a whole, the FDI in Henan is centralized in the second industry and the tertiary industry, and the utilization level of FDI in the primary industry is lower (See Figure 4).

3.4 Entry Modes of FDI

Entry modes of FDI in Henan include three types: joint venture, wholly foreign-owned and. FDI flow in Henan has increased gradually basically through the two modes of wholly foreign-owned and joint venture, especially the mode of the wholly foreign-owned. Before 2004, the mode of FDI was mainly the contractual joint ventures and joint exploration, and then it was the wholly foreign-owned after 2004 (See Figure 5). In 1985, FDI flow taken by the mode of contractual joint ventures and joint exploration was US\$ 5.41 million, accounting for 95.75% of the total FDI in that year (Bureau, 1986).

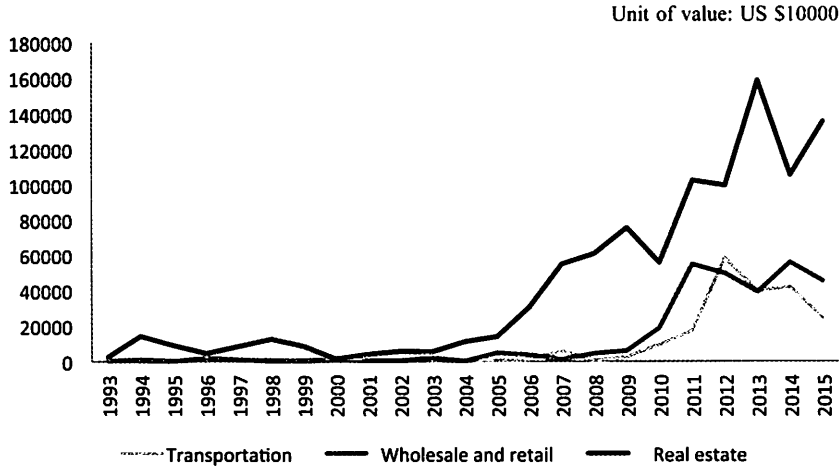
In 2004, the amount was US\$ 360.71 million, accounting for 41.29%, and for the first time less

Figure 3 Percentage of sector distribution in Henan from 1993-2015



Source: Henan statistical yearbook from 1994 to 2016. Sorting out and calculating by author.
Note: 1. The official statistics of FDI industry began from 1993
2. The data on FDI industry are not recorded in 1997.

Figure 4 FDI in Transportation, Real Estate and Wholesale and Retailing in the Tertiary Industry from 1993 To 2015

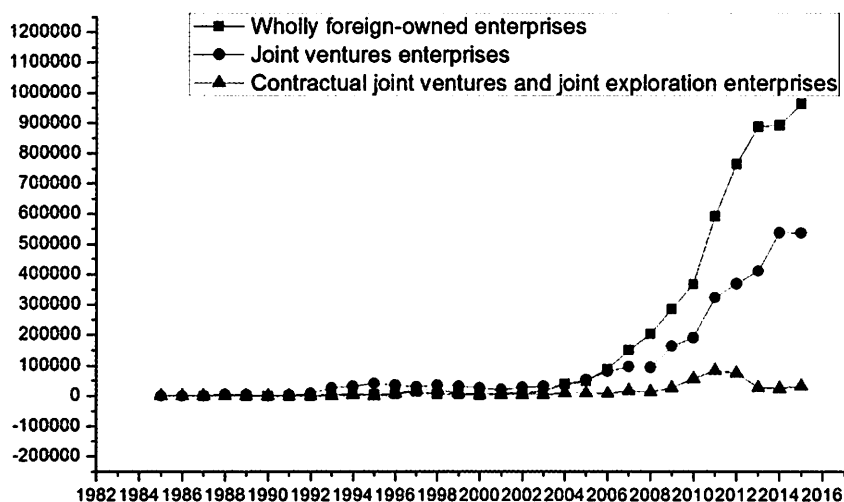


Unit of value: US \$10000
Source: Henan statistical yearbook from 1994 to 2016. Sorting out and calculating by author.
Note: 1. The official statistics of FDI industry began from 1993
2. The data on FDI industry are not recorded in 1997.

than the mode of wholly foreign-owned (Bureau, 2005). After 2005, FDI flow absorbed by the mode of joint ventures continued to grow, reaching US\$ 5.37 billion at the end of 2015, with an annual growth rate of 42% (Bureau, 2011). However, as it can be observed from Figure 5, FDI flow absorbed by the mode of the joint venture is still lower than the amount of the mode of wholly foreign-owned. And in 1987, Henan Province began to use the mode of wholly foreign-owned for the first time (Bureau, 1988). FDI flow absorbed by the mode of wholly foreign-owned was US\$ 310,000, and accounted for only 0.86% of the total amount of FDI utilized in the entire province in that year (Bureau, 1988). By the end of 2003, the total amount of FDI utilized by the mode of wholly foreign-owned was US\$ 166.28 mil-

Figure 5 The entry mode of foreign direct investment in Henan from 1984-2015

Unit of value: US \$10000



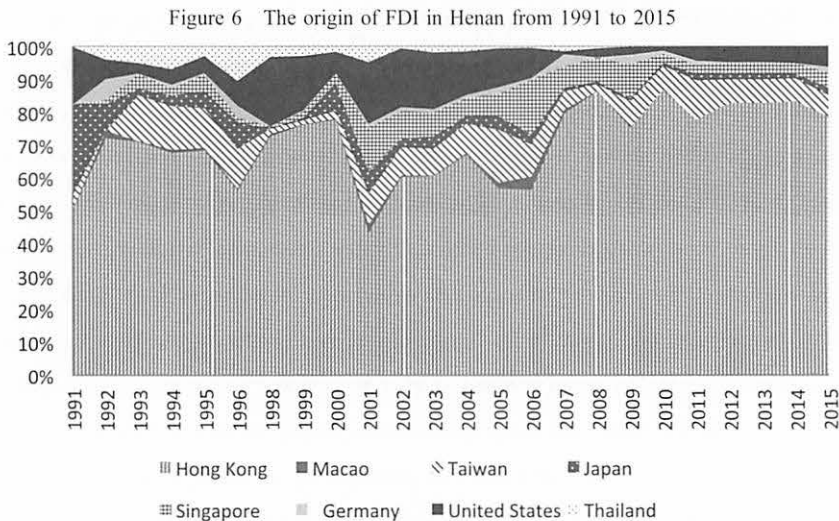
Source: Henan statistical yearbook from 1994 to 2016. Sorting out and calculating by author.

Note 1: The data of FDI industry is not recorded in 1997

lion, which accounted for 29.96% of the total amount of FDI (Bureau, 2004). In 2015, FDI flow absorbed by the wholly foreign-owned reached US\$ 9.63 billion, accounting for 62.8 % of the total FDI in that year, which is more than the total absorption of FDI through the other two modes and occupy the dominant position (Bureau, 2011). There were several reasons for the rapid increase of wholly foreign-owned from 1985 to 2015: ① When a multinational corporation makes a direct investment in an area, it usually adopts a joint venture to understand the market of the host country and reduce the uncertain risk of the investment. When multinational companies are familiar with the situation, in order to expand their profits, most began to use the mode of wholly foreign-owned; ② Before 2001, when China had not yet joined the WTO, the Henan provincial government restricted many multinational corporations to operate the wholly foreign-owned enterprise because of various considerations. For example, the government wanted to learn more technology, management experience. However, with the gradual commitment of China's WTO accession and the need for further reform and opening up in Henan Province, Henan provincial government began to encourage and support the mode of wholly foreign-owned (Xiaorong Chen, 2007). Thus, political factors are significant factors affecting the FDI in Henan province. In addition, it can be seen from the Figure 5 that FDI flow absorbed by the mode of contractual joint ventures and joint exploration had been increasing, and it was the main ways in the early stage, but after 1993, it became far lower than the wholly foreign-owned and the joint venture. FDI in Henan province is mainly absorbed by the mode of wholly foreign-owned, followed by the mode of the joint venture and the least absorbed by the mode of contractual joint ventures and joint exploration.

3.5 Sources of FDI by Country³⁾

By the end of 2015, cities in Henan already formed a friendship city relationship with 46 cities, including the United States, France, Japan, Canada, Russia, South Korea and Italy. With the improvement of the investment environment in Central China and Henan Province, more and more countries and regions came to Henan. Since 1980s, investors are mainly from Hong Kong, Macao and Taiwan. Investment from Hong Kong occupies a major part (See Figure 6). Since 2009, Macau no longer invested in Henan. In addition, the United States, Japan, Germany and Singapore and other developed countries also invested in Henan, but the scale of investment is not as large as that from Hong Kong. The overall situation can be seen from the Figure 6. Most of the origins of FDI in Henan are from the three regions of Hong Kong, Macao and Taiwan, especially in Hong Kong, which is mainly because the investors in the three regions have a natural connection in blood, language, culture and so on with Henan province. And the economic relationship has been very close in history. Secondly, the investments are from Japan, Singapore, and Germany, the United States, South Korea and other developed countries. To 2015, the total amount of FDI in Henan reached US \$16.09 billion. Only Hong Kong's direct investment in Henan was US \$10.15 billion, accounting for 63.1% of the total amount of investment. And all the developed countries, together, invested only \$2.5 billion in Henan, purely 14.8% of the total amount of investment. The origins of FDI in Henan are relatively centralized, which could bring some problems with the stability of attracting investment in Henan province.



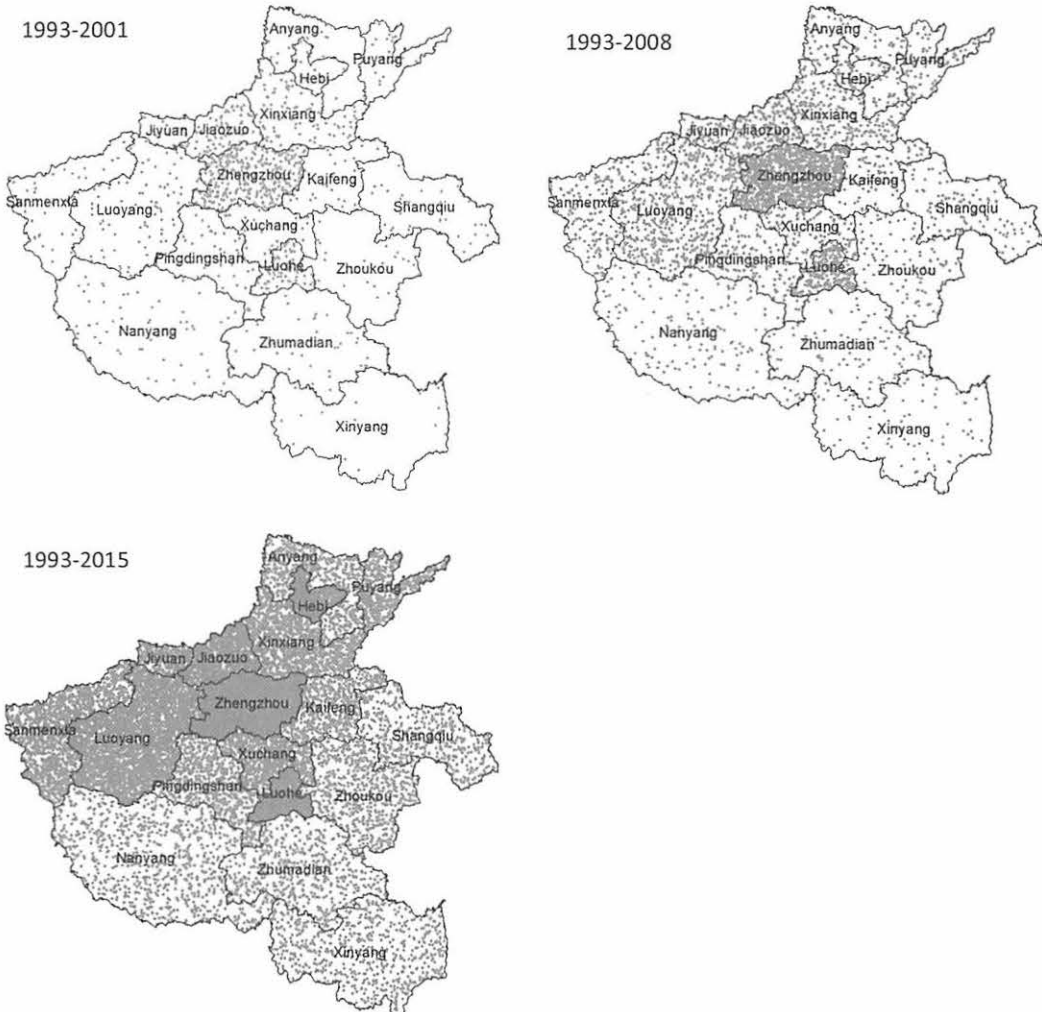
Source: Henan statistical yearbook from 1994 to 2016

3) The source of the foreign investment refers to other countries or regions (including Hong Kong, Taiwan and Macau)

3.6 Location distribution of inward FDI

There are eighteen city-level executive division units and 159 county-level executive division units in Henan Province. The FDI flow from 1993 to 2001, 2008, 2015 in 18 cities of Henan province is respectively calculated on the map in proportion, which can be very intuitive to see the dynamic changes of FDI in time and space (See Figure 7). From 1993 to 2001, although FDI flow was relatively small, it has been preliminarily found that the areas that absorb FDI was mainly centered in Zhengzhou. To 2008, the development of FDI spread basically around the Zhengzhou. To 2015, it formed a big-city group with Zhengzhou as the center, surrounded by Jiaozuo, Luohe, Luoyang, Jiyuan, Xinxiang and Sanmenxia. In the “plan of the comprehensive construction of a well-off society in Henan Province”, according to the all-encompassing measure of economical society, natural resources, considering the regional division, the geographical division, historical inheritance, the similar economic development

Figure 7 Distribution of FDI flow in Henan Province during 1993-2001, 1993-2008, 1993-2015



mode, the layout of productive forces, the division of labor forces and dynamic changes of FDI space-time, Henan can be divided into three economic zones: Central Plains Urban Agglomeration Economic Zone, Northern Economic Zone, Southern and Huang Huai Economic Zone (See Figure 8). Zhengzhou, Luoyang, Pingdingshan, Xinxiang, Jiaozuo, Xuchang, Luohe, Sanmenxia, Hebi and Jiyuan constitute Central Plains Urban Agglomeration Economic Zone. Anyang and Puyang are in Northern Economic Zone. Nanyang, Shangqiu, Xinyang, Zhoukou, Kaifeng and Zhumadian belong to the southern and Huang Huai Economic Zone. The cities with the largest FDI flow in Henan are concentrated in the Central Plains city group. There are noticeable diversities in FDI among these three zones. The imbalance of the distribution will widen the economic gap, and it does not contribute to the coordinated development of regional economy. According to Denning's eclectic theory and related research at present, the main factors influencing the location choice of FDI are: cost, market, agglomeration, policy and geographical location. Zhengzhou and Luoyang, both cities with the most actual utilization of FDI, are also the cities with the highest economic developmental level in Henan. Zhengzhou occupies a leading position in Henan in terms of city size, infrastructure level and openness. In addition, Zhengzhou has state economic and technological development zones, state high-tech industrial open areas, national export processing zones and national bonded areas. The government is inclined to use foreign capital and give a lot of preferential policies to Zhengzhou. The main floating population in Henan flows into Zhengzhou, which also brings cost advantage and market advantage to Zhengzhou. Therefore, Zhengzhou has the largest amount of foreign investment in Henan.

Figure 8 Three Economic Zones of FDI in Henan Province



4. Empirical analysis

4.1 Data

The data used in this study are from the Chinese Statistical Yearbook (1994-2016) during the period from 1993 to 2015.

4.2 Indicator selection

There are many statistical methods and metrics for the differences, but the trends are always the same. Most of the existing studies have adopted the coefficient of variation, Gini coefficient to study the income gap. This paper intends to use the above indicators and Inward FDI Performance Index to measure the degree of difference in the use of FDI.

4.2.1 Coefficient of variation

The coefficient of variation indicates the ratio between the standard deviation and the mean value of the sample. The equation is specified as follows:

$$CV = SD / \bar{X} \quad (1)$$

CV and SD refer to the coefficient of variation and standard deviation. The greater the coefficient of variation means the greater the difference between the FDI in different regions, and the smaller the result will be the opposite. If $CV = 0$, there will be no difference in FDI.

4.2.2 Gini coefficient

The Gini coefficient is put forward based on Lorenz curve, Atkinson (1970) and Sen (1973) expanded and improved this theory. At present, it has been widely used in the literature about economic development and income inequality. This paper will use Gini coefficient to analyze the difference degree of FDI in different regions. According to the needs of the study, the Gini coefficient is chosen as the follows:

$$G = \frac{N}{N+1} - \frac{2}{N^2 \left(\frac{1}{N} \sum_{i=1}^N X_i \right)} \sum_{i=1}^N (N+1-i) X_i \quad (2)$$

Where N refers to the number of regions in the whole region; $\frac{1}{N} \sum_{i=1}^N X_i$ refers to the average FDI of the whole region; i ($i = 1, \dots, N$) refer to the regional unit. According to the formula (2), the FDI is sorted from high to low, which can make the regions of large amount of FDI have smaller impact and the regions of small amounts of FDI have bigger impact in the calculation of the weight. 0-1 is the range of

Gini coefficient. When G equals 0, it represents absolute equality and there is no difference among cities. The greater the G represents the higher the difference of FDI among the regions.

4.2.3 Inward FDI Performance Index

Location entropy is a commonly used index in regional economics and economic geography, which is used to measure the importance of a particular industry in a region. Mattila and Thompson (1955) first put forward the calculation method of location quotient. Haggett (1981) developed the theory further. It was then developed to measure the performance of FDI. The index, initially used for country-level analysis, was introduced by UNCTAD to evaluate how successful countries are, when considering the size of their economy, in attracting FDI. The performance index of FDI reflects the relative success of a country in attracting FDI (Salike, 2016). The equation is specified as follows:

$$Q_i = (X_i / \sum_{i=1}^N X_i) / (GDP_i / \sum_{i=1}^N GDP_i)$$
 (3)

Where

- Qi = The ith region location entropy;
- Xi = The FDI flow used in ith region;
- $\sum_{i=1}^N X_i$ = FDI flow in the whole region;
- GDPi = Gross regional product of ith region of Henan Province;
- $\sum_{i=1}^N GDP_i$ = GDP of Henan Province.

4.3 Result

4.3.1 Analysis based on coefficient of variation

During 1994-2015, the coefficient of variation among different regions of Henan province did not fluctuate widely, basically in a relatively stable state. It has been maintained by a high level since 1994 and fluctuated around the 1.23 average line. The coefficient reached the highest point in 1999 and 2008 (See Table 6). It began to decline from 2009 and decreased slightly, which indicates that although there was a little change of FDI in Henan province. The coefficient of variation is still maintained at a higher

Table 6 Coefficient of variation of FDI among different cities in Henan Province

Index:		Coefficient of variation									
Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
Estimate	1.30	1.38	1.34	1.59	1.58	1.67	1.10	0.92	0.77	1.06	
Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Estimate	1.05	1.02	1.29	1.42	1.53	1.42	1.30	1.27	1.15	1.01	
Year	2014	2015									
Estimate	0.99	0.96									

Calculated by the author

Table 7 Gini coefficient of FDI in Henan

Index:		Gini coefficients									
Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
Estimate	0.51	0.55	0.54	0.51	0.64	0.66	0.52	0.45	0.35	0.43	
Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Estimate	0.42	0.41	0.48	0.54	0.58	0.53	0.51	0.48	0.44	0.41	
Year	2014	2015									
Estimate	0.40	0.39									

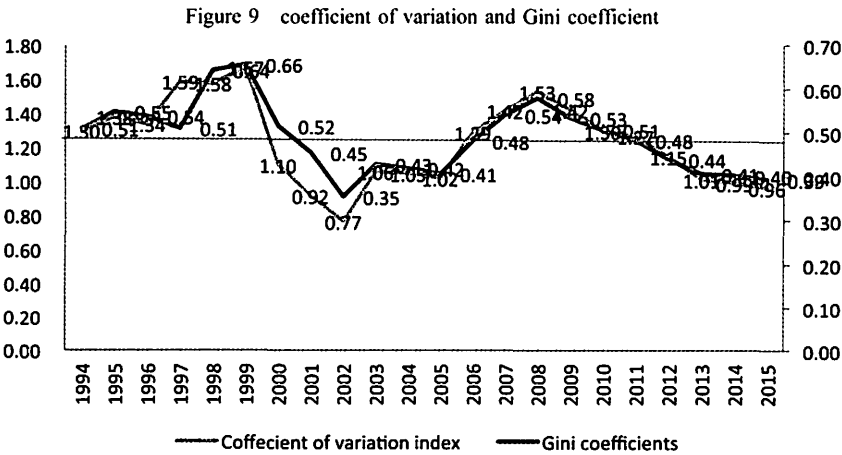
Calculated by the author

position. (See Figure 8). It can be said that regional differences of FDI had not been significantly improved.

4.3.2 Analysis based on Gini coefficients

According to the relevant United Nations organizations on the division of the standard section of the Gini coefficient, the Gini coefficient can be divided into four categories: if $G<0.3$, the difference is not obvious; if $0.3<G<0.5$, the difference is reasonable; if $0.5<G<0.8$, the difference is very big and if $G>0.8$, the difference has reached a serious level.

From 1994 to 2000, the Gini coefficient of FDI was in the range of 0.5-0.8, which indicates that the differences of FDI among cities in Henan Province are a little large. The coefficient of Gini was at the level of 0.3-0.5 during 2001-2006, then reached the highest level of 0.59 in 2008. From 2009, the coefficient decreases gradually. All this indicates that regional differences are shrinking. Although the coefficient of some years is in a reasonable range, the cumulative difference is still relatively high. The trend lines of coefficient of variation and Gini’s coefficient are basically in the same (See Figure 9).



4.3.3 Analysis based on Inward FDI Performance Index

Inward FDI Performance Index reflects the regional comparative advantage of FDI. If FDI matches its relative share in GDP, then the performance index is equal to 1. The index is greater than 1; it indicates that the FDI in this region is larger than the expected value of FDI according to its GDP scale. That is, the regions attract more FDI than its GDP scale. If the calculated index is less than 1, it indicates that the FDI in this region is less than the expected value of FDI according to its GDP scale. This may be due to poor investment environment, small-market size or policy restrictions (Liu, 2006)

Table 8 shows the Inward FDI Performance Index among cities in Henan Province during the past 1994-2015 years. Obviously, for many years, Central Plains Urban Agglomeration Economic Zone, led by Zhengzhou and Luoyang, is the most attractive for foreign investors, with an index of much higher than 1. Among them, Luohe always maintains the dominant position. In 2000, the index was 5.02, even in the lowest year, reaching 1.17 in 1997. Xinxiang, Jiaozuo and Jiyuan, the index is always up and down, which indicates that the FDI performances of these regions are unstable. Such as Jiyuan, the index reached 3.34 in 1997 and fell to 0.42 in 1999. The foreign investment performance index of Pingdingshan, Xuchang and the other cities in the northern and southern Huang Huai economic zones are basically less than 1. These cities are in the backward position. With the shift from Central Plains Urban Agglomeration Economic Zone to other northern and southern parts of the province, the performance of FDI is getting weaker and weaker. However, in the northern economic zone, southern and Huang Huai economic zone, the index has improved over the years, especially the growth rate, and the performance of FDI had increased in these regions.

5. Conclusion

In this paper, the official data are collated and analyzed to show the current situation of FDI in Henan Province. The paper demonstrates respectively the characteristics of different stages of FDI development, the industrial distribution of FDI in Henan Province, the management mode of FDI and the distribution of origin countries and regions.

After the reform and opening up policy, Henan FDI has been developing rapidly because of the change of political and economic environment. But there are a few twists and turns in the process. The central government ignored the Central Plains region, and did not give very effective policy support. FDI in Henan has been developing slowly for quite a long time. It was also hit by several economic crises. The Asian economic crisis in 1997 led to a reduction in the amount of investments in the following years. China's accession to the World Trade Organization (WTO) in 2001 resulted in a sharp increase in investment. However, in the global financial crisis of 2008, the rate of growth began to slow down. So Henan's inward FDI is largely influenced by external political and economic environment. FDI in He-

Table 8 Inward FDI Performance Index in Henan Province

Year	Zheng-zhou	Luohe	San-menxia	Xinxiang	Jiaozuo	Hebi	Jiyuan	Luoyang	Anyang	Puyang	Kaifeng	Ping-dingshan	Xuchang	Nanyang	Shangqiu	Xinyang	Zhoukou	Zhu-madian
1994	2.07	2.62	0.48	1.50	0.87	0.88	0.00	2.01	0.28	0.46	1.19	0.53	0.21	0.51	0.98	0.33	0.16	0.96
1995	2.44	1.37	0.76	1.50	0.57	0.78	0.49	1.89	0.52	0.52	1.47	0.49	0.38	0.54	1.02	0.54	0.16	0.10
1996	2.61	2.98	0.99	1.26	0.76	0.63	0.51	1.27	0.68	0.69	0.96	0.54	0.48	0.48	0.75	0.20	0.18	0.17
1997	2.52	1.17	2.20	0.57	0.84	0.86	3.34	0.93	0.04	0.69	0.15	0.63	0.53	0.84	0.52	0.21	0.57	1.44
1998	2.77	2.88	1.22	1.19	1.74	0.35	0.52	0.36	0.06	0.09	0.13	0.22	0.13	1.05	0.44	0.16	0.32	1.57
1999	2.93	3.95		1.69	2.45	0.52	0.42	0.05	0.27	1.03	0.07	1.18	0.35	0.28	0.28	0.11	0.33	0.20
2000	1.67	5.02	1.15	2.21	0.62	0.33	1.02	0.37	0.09	1.21	0.64	2.09	0.82	0.20	0.33	0.49	0.32	0.74
2001	1.34	3.92	1.68	2.15	2.64	1.34	2.70	0.28	0.68	0.33	0.79	0.58	1.51	0.23	0.54	0.56	0.27	0.13
2002	1.36	2.47	1.55	1.51	1.87	1.69	2.34	0.48	0.38	2.01	0.54	0.79	0.79	0.73	0.72	0.69	0.40	0.33
2003	1.79	2.96	2.42	1.50	1.07	1.28	2.33	0.18	1.07	0.98	0.65	0.91	0.23	0.60	0.48	0.63	0.62	0.39
2004	1.79	2.51	2.20	1.00	1.39	0.93	1.60	1.00	0.41	0.92	0.55	0.75	0.64	0.43	0.50	0.78	0.48	0.59
2005	1.74	2.05	1.85	0.95	1.38	1.40	1.42	0.89	0.44	0.83	0.49	0.67	0.61	0.39	1.42	0.57	0.66	0.54
2006	2.07	1.70	2.28	1.06	1.18	1.22	1.05	1.08	0.50	0.69	0.45	0.58	0.62	0.38	0.32	0.53	0.60	0.52
2007	1.98	1.92	1.77	0.79	0.91	0.99	0.89	1.96	0.45	0.56	0.46	0.54	0.51	0.30	0.29	0.42	0.45	0.42
2008	2.11	1.97	1.62	1.09	0.25	1.40	0.82	2.12	0.44	0.08	0.43	0.53	0.50	0.32	0.35	0.41	0.49	0.40
2009	2.02	1.74	1.53	1.06	0.75	1.70	0.90	1.89	0.42	0.45	0.40	0.50	0.67	0.31	0.29	0.43	0.45	0.39
2010	1.75	1.77	1.70	1.03	0.86	1.95	0.85	1.93	0.42	0.43	0.52	0.47	0.60	0.38	0.34	0.57	0.48	0.44
2011	1.68	1.54	1.65	0.96	0.91	1.94	1.11	1.77	0.47	0.47	0.59	0.56	0.61	0.42	0.35	0.62	0.56	0.48
2012	1.51	1.91	1.62	0.96	0.94	1.97	1.11	1.64	0.49	0.79	0.74	0.61	0.63	0.44	0.43	0.61	0.57	0.48
2013	1.30	1.98	1.74	1.01	0.94	2.17	1.18	1.71	0.55	0.83	0.78	0.70	0.68	0.49	0.43	0.65	0.60	0.50
2014	1.26	1.98	1.82	1.07	0.93	2.31	1.38	1.73	0.56	0.92	0.82	0.53	0.68	0.51	0.43	0.64	0.58	0.49
2015	1.21	2.00	1.87	1.11	0.95	2.49	1.50	1.70	0.61	1.00	0.85	0.56	0.73	0.46	0.44	0.61	0.54	0.47

	Central Plains Urban Agglomeration Economic Zone
	Northern Economic Zone
	Southern and Huang Huai Economic Zone

Note: Made by the author. The numbers marked are greater than 1.

nan province is principally focused on the second industry and the tertiary industry. The second industry accounted for the majority of the investment. The attraction of FDI in the tertiary industry in Henan has also shown an upward trend lately. However, the investment in the primary industry is relatively small and the inability of the primary industry to absorb FDI is not in line with Henan's status as the largest agricultural province in China. As for the principal modes of investment, FDI in Henan mainly uses the mode of wholly foreign-owned and the joint venture. Especially, the mode of wholly foreign-owned has become the core way of utilizing foreign capital in Henan after China's entry into WTO. FDI in Henan generally comes from three regions: Hong Kong, Macao and Taiwan. Developed countries and other regions have made less investment compared with these three regions. The distribution of FDI in various cities of Henan is very uneven, and Luoyang and Zhengzhou account for most of the investment. The unbalanced distribution also leads to the uncoordinated development of Henan's economy.

Another main purpose of this paper is to measure and analyze the degree of imbalance of FDI in different regions. This paper uses the data provided by China's official statistical yearbook of Henan Province. The Gini coefficient, the coefficient of variation and Inward FDI Performance Index are used to measure the uneven distribution of foreign capital. From 1993 to 2015, the distribution of foreign capital in Henan Province has been serious. Although conditions have improved in recent years, regional differences still remain, which is closely related to the geographical characteristics of distinctive areas. Central Plains Urban Agglomeration Economic Zone with Zhengzhou as the center has more labor force, larger market scale, more convenient transportation, and even more preferential policy support, which led to an impressive amount of investment in this region.

The unbalanced development of FDI in Henan is the first to be clear in this paper. Not only is the change in different stages of the development process, but also the distribution of FDI in the industry, the origin of investment and geographical distribution. The author considers that there is still room for further exploration in the future. First of all, what are the factors resulting in uneven development in distinct periods? Moreover, what regional factors lead to the distinctive distribution of industry? what regional factors cause the uneven distribution of FDI in different areas This is the future research work to do.

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