Driving Mechanism of Special Zone development and establishment of STATA Economic Radiation Model: A case study of Xiongan Special Zone

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Abstract—The Xiong'an Special Zone has become a model of high-quality development in China in just four years. The state attaches great importance to the construction of the special zone with high standards and high quality. An in-depth understanding of the driving mechanism of the construction of the special zone can provide reference and suggestions for the future construction and development of Xiong'an Special Zone, as well as help guide the construction of the special economic zones of other state-level new areas in China. This paper obtains five factors for the development of Xiong'an Special Zone through the consolidation of relevant literature and materials, selects the foreign London New City and Tokyo New City and the domestic Binhai New District and Pudong New District and Xiong'an Special Zone to conduct the heterogeneity analysis of development, and establishes the Tobit model to reflect the economic effect of Xiong'an Special Zone at the initial stage of development, and draws the following conclusions: (1) for the development of special zone, we should pay attention to the integration of industry and city; (2) the government should not interfere too much in the development process of the special zone, and it needs to rely on capital factors to adjust itself; (3) in order to meet the requirements of population admission and talent training, the construction of supporting facilities needs to be constantly improved; (4) the analysis of the results of the development of the special zone needs to be compared from multiple dimensions and angles, rather than relying solely on GDP.

Keywords-economy of special zone; economic development; internal and external driving mechanism; heterogeneity analysis; Xiong'an Special Zone

1. INTRODUCTION

The establishment of Xiong'an Special Zone is a major decision made to deepen the coordinated development of the Beijing-Tianjin-Hebei region by the Party's collective central leadership, and it is a millennium project, a national event. The state-level special zone is a comprehensive functional area approved by The State Council, which is based on the special functional areas of relevant administrative regions and undertakes the strategic tasks of major

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development and reform and opening up [1]. Exploring the development status and development influence mechanism of successful state-level new areas can provide a reference for the coordinated development of new urbanization construction and management in other regions of China.

Based on this, this paper studies the driving mechanism and heterogeneity analysis of the special zone development through the comparative analysis of London New City, Tokyo New City and Binhai New District and Pudong New District in China, by means of literature research and Tobit model. The five driving mechanisms of the development of the special zone and the trend of long-term economic development level inside and outside the special zone are obtained. Through these conclusions, this paper clarified the general situation of Xiong'an Special Zone, combined with the construction experience of four special zones at home and abroad. Also, it provided references and suggestions for the future construction and development of the Xiong'an Special Zone.

The structure of the text is as follows: In the first part, a brief introduction is made to the geographical location of Xiong'an Special Zone and the construction achievements at the present stage, and a brief description of the source of data in the paper; In the second and third part, the mechanism driving the development of Xiong'an Special Zone is expounded from five perspectives, and the revelation and suggestions for the construction of Xiong'an Special Zone are obtained through a comparative analysis of the structure of London New City, Tokyo New City, Pudong New District and Binhai New District; In the fourth part, Tobit model is established to analyze the impact of the economic development of Xiong'an Special Zone and its surrounding areas from the perspective of GDP; The fifth part, through the analysis, draws the conclusion, and carries on the full-text summary.

TABLE 1. DESCRIPTIVE STATISTICS OF DATA BY REGION (UNIT: 100 MILLION YUAN)

Place	Mean	SD	Variance	Skewness	*Kurtosis*
Xionxian	80.47	-13.03	169.7	-0.02	2.13
Rongcheng	54.77	-4.3	18.52	-0.56	2.12
Anxin	61.2	-7.6	57.81	0.78	2.68
Beijing	6454.16	-1916.95	3674683	0.24	2
Tianjing	3583.37	-757.21	573369.7	-0.14	2.53
Hebei	7530.61	-1542.62	2379677	-0.42	2.8

2 OVERVIEW OF Xiong'an Special Zone IN CHINA

2.1 Data source of Xiong'an Special Zone

The data sources of this paper are mainly divided into three parts, corresponding to the order in which this paper appears:

- The third part of this paper refers to or labeling the data source in the analysis of the development of the Xiong'an Special Zone.;
- In section 2 of the third part, analysis of the heterogeneity of the development of new areas at home and abroad and Xiong'an Special Zone, the GDP data of Pudong New District from the

Statistical Yearbook of Shanghai Pudong New District, and that of Binhai New District is from the Statistical Yearbook of Tianjin Binhai New District;

- The fourth part of the empirical analysis of the economic growth of Xiong'an Special Zone, Beijing's quarterly GDP data comes from the official website of Beijing Bureau of Statistics, quarterly data for Tianjin comes from the Tianjin Bureau of Statistics, data for Hebei province comes from the official website of Hebei Bureau of Statistics. The Rongcheng's annual GDP data of 2018 and 2019 are derived from the Annual Yearbook of Rongcheng County Bureau of Statistics, the Anxing's annual GDP data of 2017 and 2018 are from Baoding Yearbook, and data for other regions by year are from the Hebei Economic Yearbook.

The mean standard deviation, skewness and kurtosis of the collected GDP data of each region are described in **Table 1**. Among them, the top three are county-level areas. Overall, Xiongxian county has the best economic level. The second and fifth rows act as municipal areas, and the last acts as provincial areas.

2.2 Overview of Xiong'an Special Zone

Xiong'an Special Zone is located in the central part of Hebei Province, in the hinterland of Beijing, Tianjin and Baoding. It includes Xiongxian, Rongcheng and Anxin counties and some surrounding areas. The initial area is about 100 square kilometers, the medium-term development area is about 200 square kilometers, and the long-term control area is about 2,000 square kilometers. At present, the Xiong'an Special Zone is in the early stage of construction, which is of great significance in promoting and coordinating the economic development of the surrounding areas, realizing the agglomeration of innovation factors, the cultivation of talent factors, the deepening of capital factors and the modernization of industrial development.

The special zone insists on constructing infrastructure first, first underground, then above ground, and the synchronous construction of the real city and digital city. One hundred twenty-five key projects have been launched and implemented, with an investment of 203.5 billion yuan [2].

3. DRIVING MECHANISM AND HETEROGENEITY ANALYSIS OF THE DEVELOPMENT OF XIONGAN SPECIAL ZONE

3.1 Driving mechanism

The driving mechanism for the development of Xiong'an Special Zone is based on top-level design. The Xiong'an Special Zone's regional positioning and industrial development are guided by top-level planning. The top design plays a primary role in driving the industrial transfer and optimization of production factors in integrating industry and city. At the same time, combined with the blockchain and other high and new technologies, it accelerates the digital city construction, and jointly promotes the rapid and healthy development of state-level new areas. The driving mechanism analysis diagram of the Xiong'an Special Zone is shown in **Figure 1.**

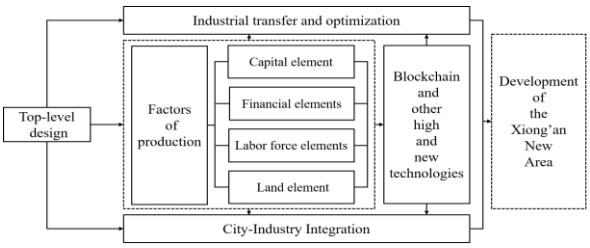


FIGURE1. THE DRIVING MECHANISM FOR THE DEVELOPMENT OF THE XIONG'AN NEW AREA

1) Top-level design, full support

The National Development and Reform Commission of the People's Government of Hebei Province has formulated the master plan for Xiong'an Special Zone in Hebei (2018 to 2035), which sets a clear direction for the special zone in its overall construction. In the State Council's reply to the plan, it clearly mentioned the problems that need to be paid attention to in all aspects of the construction and development of the new area. The primary roles of Xiong'an Special Zone are to remove non-capital functions from Beijing, explore a new mode of optimized development in densely populated areas, adjust and optimize the urban layout and spatial structure of the Beijing-Tianjin-Hebei region, and foster a new engine of innovation-driven development [3]. Under each aspect, specific suggestions are pointed out, providing the framework support and overall direction for the development of the new district in industry-city integration, industry undertaking and labor force.

2)The driving effect of factors of production

a) Capital factors: global introduction and circulation

Capital attraction and a combination of internal and external resources are two of the important capabilities for the sustainable development of a new area. As of April 22, 2021, there were 4,060 local enterprises in Xiong'an Special Zone, and 3,568 enterprises from Beijing's investment sources, which account for 87.88%. This reflects Xiong'an Special Zone’s ability to attract investment and the development potential as an innovative industrial district.

Pudong New District is a major Chinese market that gathers global financial factors. As of 2021, there are 1,808 listed stocks, the total share capital reached 42259.41 million shares, and aggregate market value reached 434197.89 billion yuan. By the end of October 2020, there were 1,105 banking institutions in Pudong New Area. Binhai New District takes traditional industries as the starting point of development. In order to alleviate the problem of monolithic industrial structure, in recent years, the processing industries of bio-medical, electronic technology and new materials have been gradually introduced. However, due to the short development cycle, the economic value of these industries is not very ideal. From the comparison of regional development history, it can be seen that the introduction and circulation of capital is the life root of the new district's sustainable innovation and development.

b) Financial elements: new characteristic finance

Green finance has been highlighted in Xiong'an Special Zone. The ecological and industrial

structure of the special zone should meet the basic requirements of coordinated ecological and economic development of the Beijing-Tianjin-Hebei region. In the early, middle and late stages of the construction, the financial sector participated in financing, planning and investment project construction and provided follow-up services[4]. To build a green, ecological and livable new city, Xiong'an Special Zone must follow the general path of respecting ecology and green development.

c) Labor factor: Sustainable development

High-tech talents are indispensable for the development of high-tech industries in Xiong'an Special Zone in the future.

First of all, we can attract foreign talents to meet the needs of the construction and development of the new district. Xiong'an Special Zone held two large-scale campus job fairs in late 2018 and spring 2019, receiving 12,059 resumes from applicants with an average age of 25 and mainly living in Beijing, Tianjin, Hebei and Shandong provinces. This shows Xiong'an Special Zone is more attractive to talents from surrounding provinces and municipalities [5]

d) Land elements: the old city is transformed into the new area

The old city renovation plan will improve the overall appearance of Xiong'an Special Zone, and provide support for industry-city integration, industrial transfer and optimization from the aspect of hardware, and the undertaking and development of high and new technologies, so as to promote the development of Xiong'an Special Zone. On the one hand, it will build modern buildings, undertake high-tech enterprises and projects, and attract young talents with a youthful attitude. On the other hand, the traditional style and living customs are retained through the transformation of the original buildings, and the quality of living is improved. So that Xiong'an Special Zone in the modernization simultaneously has a unique character of the new area[6].

3) Industrial transfer and optimization, combining tradition and innovation

The integration of industry and city is one of the main ways to realize the sustainable development of the special zone and the close connection between it and the comprehensive service area of the city[7]. In Pudong New District, construction is set at the beginning of the development of the city "fusion" concept, in leading the country hard nuclear industry in the development of high quality at the same time the attention of all sorts of form a complete set of functions in the area of balanced growth, the development of high-quality education resources, attracting the Tsinghua University and Peking University and scientific research in colleges and universities set up research and improve regional living facilities. As a representative region of traditional industries in northern China, Binhai New District closely focuses on the function of "one base and three zones". The construction of Xiong'an Special Zone should adhere to the rigid constraint condition of resource and environmental carrying capacity, coordinate the three major spaces of production, living and ecology, and achieve the double objectives of high-tech industrial park and livable city [8].

The industrial restructuring of Xiong'an Special Zone has inherent unity and correlation with the "relocation" of Beijing's "big city disease". Industrial relocation is an important means to relieve Beijing's non-capital functions and realize the coordinated development of Beijing-Tianjin-Hebei region. Some traditional industries have been formed in the three counties

involved in Xiong'an Special Zone, such as the plastic products industry in Xiong'an County, etc. Attention must be paid to the combination of traditional manufacturing and high and new technology in the industrial optimization and adjustment[9].

4) Blockchain and other high and new technologies to accelerate the construction of urban digitalization

Xiong'an Special Zone is making extensive use of blockchain technology to pave the way for a digital and information-based city. Xiong'an Special Zone has gathered a large number of high-quality enterprises in the blockchain field, such as ICBC Technology, China Citic Bank, Tencent, Baidu and so on. In terms of project approval, the project approval blockchain system of Xiong'an Special Zone is the first endogenous blockchain government application in China. The special zone has vigorously promoted the government service mode of "one-window acceptance, one-time completion, one-network communication and one-second approval", and implemented such services as "one-seal management and approval", "one-day completion" and "electronic process". Some universities, scientific research institutions and innovative industries in Beijing have been gradually transferred to Xiong'an Special Zone under the guidance of "distributing capital functions". At present, in Xiong'an, more than 80% of key projects are paid through the blockchain information system of engineering construction capital, with the cumulative payment amount of more than 10 billion yuan and more than 1,200 service enterprises [10-12].

3.2 Heterogeneity analysis of the development of New Areas and Xiongan Special Zone at home and abroad

1) Analysis of the construction of London New City -- from dispersal strategy to growth principle

In the middle and late 1970s, most of the population and industries were moved out of the main city due to the long-term dispersal policy adopted in London, and the inner city of London gradually showed a shrinking trend, resulting in the political, economic and social status of the main city. Therefore, in the new round of new city planning, the government of London shifted the focus of urban construction to the promotion of the status of the inner central city and the renewal of facilities. Since then, London New City mainly serves as an auxiliary role for the central city, emphasizing the sustainable development, efficient growth, improvement and convenience of urban functions and facility renewal of the main city [13]. Table 2 shows the nine major new cities established in the early stage of London New City.

Both London New City and Xiong'an Special Zone are designed to relieve the over-sized population and over-concentrated industrial functions. The main idea of the spatial distribution of both is to disperse the non-functional functions of the capital to the special zone, which is relatively far away. The difference involves two aspects. First, London's political and economic system as capital was weakened in the early stage of the development of London New City, which led to the shrinkage of London. In the later stage, the strategy was changed to focus on the development of London as a leading and advanced capital. As a new industrial park in the capital area, the distribution of non-capital functions in Xiongan SAR is not exaggerated. Secondly, from the analysis of the development process of London New City, it can be concluded that when administrative forces excessively invoke government resources to carry out large-scale "city building movement", there will be more new district problems similar to

London. The expansion of the Xiong'an Special Zone has gradually solved the problem of "big city disease" through government planning, supervision and guidance, market regulation of the flow of factors, improvement of the quality of economic development and improvement of urban functions.

TABLE 2. COMPARISON OF DATA BETWEEN NINE MAJOR NEW CITIES IN LONDON AND XIONG'AN NEW AREA

New town/ Project	Instruction time	Distance from the center of the mother city /km	Planned population size/thousand	Planned land size /km^2
Steven Nach	1946	50	60	25.3
Crowley	1947	52	50	24
Hummel Hampstead	1947	42	60	23.9
Harrow	1947	37	60	25.9
Hatfield	1948	32	25	9.5
Waring garden city	1948	32.2	50	17.5
Bethesden	1949	48	50	31.7
Blacknell	1949	48	25	13.4
Milton Keynes	1968	72	250	89
(The average of London New City)	—	45	66	27.6
Xiong'an New Area	2017	120	2000	2000(preliminary)

Note: The data for New City of London is from The journal Urban Planning, No. 12, 2003, pp. 78-81, Michael Bruton, Sheila. The Development and Construction of New Cities in England by Bruton, Yu Li and Lingqian

2) Analysis of the construction of Tokyo New City -- Some non-capital functions have been successfully dispersed, resulting in an imbalance between jobs and housing

The Japanese government formulated the Capital Area in 1956, in which Tsukuba Science and Technology New City, which is positioned as a "brain city", is an important representative of new city construction in Japan. First, the new city construction process introduces universities, drives the introduction of talents and industries, preliminarily realizes the concentration of population and other factors and resources, and integrates the new city with the main city through the rail transit network. However, due to the lack of top-level design and long-term planning, the problems of industrial agglomeration and the imbalance between housing and employment in Tokyo have not been effectively solved.

The similarities between Tokyo New City and Xiong'an Special Zone are similar in positioning and functions. There are two differences as follows. First, Tokyo New District first introduces talents by moving into universities, and Xiong'an Special Zone first presents high-tech by moving into industrial parks. Second, the establishment of Tokyo New City has largely alleviated the function "overload" problem of big cities. However, due to the limitations of traffic and design planning, a large number of enterprises and institutions gather in the main urban area, the separation of population, employment and housing, and the lack of urban infrastructure and supporting facilities. Through the construction of four vertical and three horizontal "expressway networks in Xiong'an Special Zone, the external backbone network has been fully formed[14], which has played an excellent hardware foundation function for the later construction and development of Xiong'an.

3) Development heterogeneity of Pudong, Binhai New District and Xiong'an Special Zone

a) Economic development level

From the perspective of GDP growth in its early years, Pudong New District developed rapidly in its early years. Its GDP increased by 308.5624% in just three years after its establishment in 1992. Binhai New District saw an increase of 92.10589% from 2006 to 2009, and Xiong'an Special Zone saw an increase of 122.4639% from 2017 to 2020. In terms of its driving effect on GDP, Pudong New District accounted for about 0.013% of the national GDP in the early stage of development, and Binhai New District and Xiong'an Special Zone accounted for about 0.020% of the national GDP. The GDP of Binhai New District accounted for about 1.002% of the national GDP, and that of Xiong'an Special Zone accounted for about 0.19%[15]. The GDP growth rate of Xiong'an Special Zone in the second cycle was as high as 79.9 in the early days of its establishment, but it slowed down significantly later, while Pudong New District maintained a high level and Binhai New District was almost 20%, which was the most stable. From the above analysis, the role of the Xiong'an Special Zone in driving national GDP is weaker than the other two state-level new areas, and the initial growth rate is not very stable.

b) Population agglomeration scale:

As of the end of June 2017, the Xiong'an Special Zone had a 1.0471 million permanent population, with a long-term planned population of 2 million to 2.5 million. Xiong'an Special Zone will attract more permanent residents supported by high and new technologies and an improved public service system when its construction is improved. Pudong New District attracted a large number of people due to the higher overall economic development level of the area, and shows the characteristics that population transfer from the city center to the surrounding areas.

c) Expansion of construction land:

As an important carrier of the economic development of the new area, the expansion of the construction land scale is an important indicator used to assess the quality of planned development. The recent construction land planning of Pudong New District is mainly based on the reduction strategy to keep the construction area below 805km² and optimize the industrial structure[16]. In recent years, Binhai New District has been reasonably controlling the total amount of construction land. In 2020, the scale of construction land was 1,298.76 km², 45.18km² less than that in 2014. From the development trend of construction land, the regional development has gradually shifted from expansion strategy to internal filling development. According to the requirement of 10,000 people per square kilometer in the planned construction area of Xiong'an Special Zone[17], land use should be used in an economical and intensive manner, and land use control should be implemented [18].

TABLE 3. PROPORTION AND GROWTH RATE OF INITIAL GDP IN CHINA

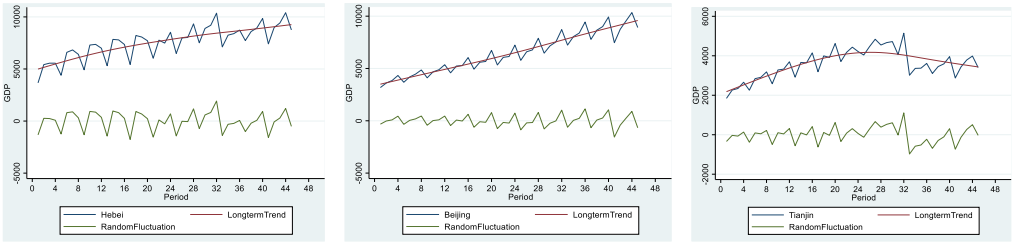
Early establishment (year X)	GDP of Xiongan New Area (100 million yuan)	The GDP of Xiongan New Area accounts for	Pudong New Area	The GDP of Pudong New Area accounts for	Binhai New Area	The GDP of Binhai New Area accounts for	GDP growth rate -- Xiongan	GDP growth rate -- Pudong	GDP growth rate -- Binhai

1	101.14	0.01%	101.49	0.38%	1983.63	0.92%	/	/	/
2	182	0.02%	164	0.46%	2414.26	0.91%	79.95%	61.59%	20.50%
3	215	0.02%	291.2	0.60%	3349.99	1.07%	18.13%	77.56%	23.10%
4	225	0.02%	414.65	0.68%	3810.67	1.12%	4.65%	42.39%	23.50%

TABLE 4. THE PERMANENT RESIDENT POPULATION OF THE PUDONG NEW AREA AND BINHAI NEW AREA (UNIT: TEN THOUSAND)

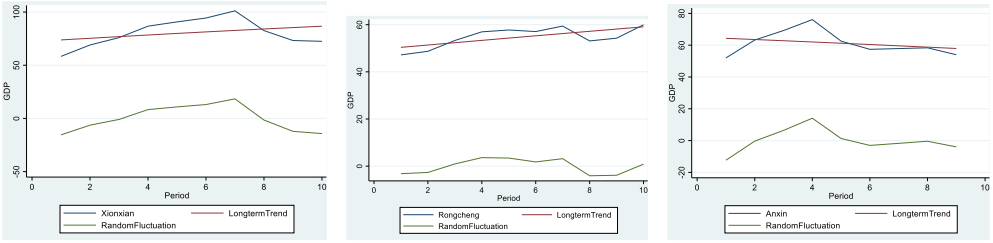
Year / Name	2012	2013	2014	2015	2016	2017	2018	2019
Pudong New area	526.39	540.9	545.12	547.49	550.1	552.84	555.02	556.7
Binghai new area	263.62	278.72	289.43	297.01	299.42	298.42	298.34	299.86

Notes: The above data was collected from a website named "statistics yearbook sharing platforms", https://www.yearbookchina.com/



(a) (b) (c)

FIGURE 2. GDP CHANGES OF HEBEI, BEIJING AND TIANJIN AFTER H-P FILTERING



(a) (b) (c)

FIGURE 3. CHANGES OF GDP IN XIONGXIAN COUNTY, RONGCHENG AND ANXIN AFTER H-P FILTERING

TABLE 5. REGRESSION RESULTS OF XIONGXIAN, RONGCHENG AND ANXIN

Regression type	Tobit			OLS			WLS		
Area	Xiongxian	Rongcheng	Anxin	Xiongxian	Rongcheng	Anxin	Xiongxian	Rongcheng	Anxin
period	1.435	0.967	-0.801	1.435	0.967	-0.801	1.435	0.967	-0.801
intercept	72.571	49.456	65.199	72.571	49.456	65.199	72.571	49.456	65.199
Std	0.015	0.003	0.005	0.017	0.003	0.005	0.019	0.003	0.006
Long-term trends	Y	Y	Y	Y	Y	Y	Y	Y	Y
Short-term disturbances	N	N	N	N	N	N	N	N	N
F-test	68.5	95.2	72.86	7546.01	>99999	22955.4	5516.62	81450.03	16763.25

TABLE 6. REGRESSION RESULTS OF HEBEI, BEIJING AND TIANJIN

Regression type	Tobit			OLS			WLS		
Area	Beijing	Tianjin	Hebei	Beijing	Tianjing	Heibei	Beijing	Tianjing	Hebei
period	139.2	26.998	92.501	139.195	26.998	92.501	139.195	26.998	92.501
intercept	3252.68	2962.402	5403.08	3252.68	2962.4	5403.08	3252.682	2962.402	5403.083
Std	0.714	4.904	2.37	0.731	5.017	2.425	0.731	5.874	3.007
Long-term trends	Y	Y	Y	Y	Y	Y	Y	Y	Y
Short-term disturbances	N	N	N	N	N	N	N	N	N
F-test	303.25	23.17	159.78	36274.4	28.96	1455.09	36274.38	21.12	946.37

Internal talent analysis:

From the perspective of internal talents, Shanghai has rich educational resources and a high educational level. There are altogether 64 universities in Shanghai. In addition, Pudong New District has a developed economy and relaxed and active cultural atmosphere, which attracts a large number of talents to settle down Binhai New District mainly attracts young talents such as college students from the surrounding areas of Beijing, Tianjin and Hebei, as well as local college students who return to their hometowns after completing their studies. Currently, Xiong'an Special Zone absorbs talents by holding job fairs[19].

4. EMPIRICAL ANALYSIS OF ECONOMIC GROWTH IN XIONG'AN NEW AREA

4.1 Model setting of Economic driving effect

In order to show the economy-facilitated effects brought by the establishment of Xiong'an Special Zone, the Tobit model was used as an analysis tool to conduct a regression analysis of the long-term trend of regional GDP. The measure model settings are as follows:

$$I=Ti-S.$$

Where, I: regional GDP value under long-term trend; Ti: the original value at the ith period; S: influence value of short-term fluctuations.

OLS and WLS models were used to aided analysis. About 100km from Beijing and Tianjin, the Xiong'an Special Zone covers Hebei's Xiongxian, Rongcheng and Anxin counties and some surrounding areas. The regional GDP values of Tianjin, Beijing and Hebei province were selected as indicators to analyze external effect. These three counties were selected as indicators to analyze the internal effect. The former takes a quarter as a cycle, while the latter takes a year as a cycle.

Firstly, the variable data was processed by an HP filter to eliminate the fluctuating influence value in the original data. The vertical axis represents the value of regional GDP, and the horizontal axis represents the number of periods. **Figure 2 (a), (b)** and **(c)** respectively showed the CHANGE trend of GDP in Hebei, Beijing and Tianjin, and **Figure 3 (a)**, **(b)** and **(c)** respectively showed the change trend of GDP in Xiongxian, Rongcheng and Anxin. The analysis results of HP filter processing are as follows: The economy in the whole region of Hebei presents a long-term trend of growth, and the economic growth rate slows down slightly after the 29th period (2017). Beijing has the fastest growth rate. After the 29th period, the

economic level of Tianjin decreased slightly. During the initial construction period, the economic development of the Beijing area has achieved some economic growth, but it may not bring the economic growth of all surrounding areas. On the other hand, the results demonstrated that Xiongxian and Rongcheng have a long-term upward trend, and Anxin has a downward trend. From the 8th (2017) and 9th (2018) periods, the new district construction may cause local economic decline and local economic rise for the regions divided into the new district, which may be related to the order of construction in each county[20].

4.2 Empirical results of Economic driving effect

The results are shown in **Table 5** and **Table** 6. The operating results of all regions pass the F-test, indicating that the special zone's construction time is correlated with the economic level. Tobit regression results show that the radiation effect of the new area to Xiongxian, Rongcheng and Anxin at the initial stage of construction is 1.435, 0.967 and -0.801 million yuan/year. Among them, the core parameter (period) of Anxin is negative, indicating that the economic level of Anxin has decreased during the development of the new district, which may be caused by the fact that the construction of the new district is in the initial stage and various resources are inclined to local areas. The initial construction of the new area brought 13.9195, 26.998 and 9.250.1 billion yuan/quarter of radiation effects to Beijing, Tianjin and Hebei. These results are all positive, indicating that the construction of the special zone will promote the economic development of these areas in the long run, regardless of short-term fluctuations.

5. CONCLUSION AND DISCUSSION

Four conclusions can be drawn from the study of the driving mechanism and development heterogeneity of Xiong'an Special Zone:

- The integration of industry and city is the main way to realize the sustainable development of the special zone.
- Excessive government guidance in the early stage of development will weaken the political.
- It should not ignore that the optimization of supporting facilities and attracting high-tech talents.
- Only considering GDP, the construction of the Special Zone has a positive effect on the economic development of Beijing and Tianjin in the long term. However, it may not promote the improvement of all interior counties and cities in the short term.

Based on our research, the following policy recommendations are given:

- While improving the attraction of factors, capital attraction needs to be combined with internal and external resources. Policy formulation should focus on encouraging the development of a green financial system. Traditional and innovative industries should be combined to gradually raise their level and avoid phasing out all traditional industries.
- Make clear the auxiliary function positioning of Xiong'an Special Zone as a new type of industrial park in the Capital region. Special Zone mainly relies on the market to drive its

development in the early stage, and pays attention to coordinating various resources' distribution and flow.

- Considering that Xiong'an Special Zone will attract an increasing population, saving land and optimizing the quality of internal development Saving land and optimizing the quality of internal development should be included in the planning of urban construction land. In terms of population management, Xiong'an can learn from the successful experiences of Pudong and Binhai, who have used universities to attract permanent residents and high-tech talents. Meanwhile, it should also pay attention to the cultivation of local talents. The cultivation of local talents can be considered from two aspects. On the one hand, we should strengthen education construction, improve local education level, intensify training efforts, and increase high-quality talents from the source. On the other hand, we will promote the transformation of retired people's working ability into higher education and re-employment, and further bring into play the role of retired people in high-tech and emerging industries.
- The construction of the special zone should pay attention to the balance of resources input and pursue the long-term and stable growth trend. In order to reasonably evaluate the development quality of the special zone, the evaluation system can be established from the aspects of policy, economy and the original development level of urban and rural areas.

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