

The Airport Economy Development of ZAEZ' s Innovation on the Regional Development Pattern

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Abstract: Regional economic development can be enhanced through the development of an airport economy that includes: changing the regional elements endowment at the micro scale, coupling with regional industries at the medium scale, and accelerating tax revenues and employment growth at the macro scale. As a representative example of the Chinese airport economy, the Zhengzhou Airport Economic Zone (ZAEZ) has played a significant leading and demonstrating role in the following fields: deepening the system reforms in an all-round way, promoting the "synchronization of five modernizations", building "one carrier and four systems", constructing "Four Henan", advancing the structural reform of supply-side and integrating the resources of the Henan airport. This article concludes: The supply-side structural reform needs to be accelerated and integrated into the international frontiers under "the Belt and Road" initiative. The ZAEA development has promoted the innovation of regional development patterns and showed the tendency toward the "five modernizations" of future regional development. The airport economy has developed rapidly based on the international aviation transportation system, and may change the traditional development patterns of regional centers located in coastal areas, and open a new era of regional development in the inland regions.

Keywords: airport economy; the structural reform of supply-side; Zhengzhou Airport Economic Zone; regional development pattern; inland era

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The "Airport economy" is a new type of economic pattern surrounding airports and airport peripheral areas. In recent years economic development and production technologies have progressed, big data, the Internet and intelligent manufacturing have been changing the rules of industrial competition and business enterprise locations. A new competition system based on aviation, digital communications, globalization and time value has been forming. In order to meet the new system's demands for efficiency, flexibility and reliability, industries which are sensitive to time have gradually gathered around the airports in Beijing, Shanghai, Guangzhou and many other cities. High-tech and IT companies, for example, are now frequently located near airports. All of these factors have further stimulated the expansion of air cargo and air express, thus continuing the growth of airport economies and together offering a certain industrial and brand advantage to the companies involved. As a representative of the airport economic development in China, ZAEZ has made remarkable achievements in a short span of four years. In order to accurately understand the deep reasons that drive the ZAEZ economic development of Henan Province, and to summarize China's airport economy development systematically, this paper makes analysis of the basic features of airport economy, interprets the mechanism and path of how airport economies drive the development of regional economies, and combines the practice of ZAEZ.

1. The Characteristics of an Airport Economy

1.1 The airport economy is a kind of speed economy

The speed economy is one that offers enterprises some extra profit by rapidly meeting

customers' diverse needs." Speed economy" was first introduced in a masterpiece named *The Visible Hand: the Managerial Revolution in American Business* written by Alfred D. Chandler Jr., an American economist. He thought modern mass production and distribution, modern transportation and communication and their economic features came from speed rather than scale. In the era of the speed economy, time becomes more and more precious and the new business focus of enterprises and supply chains is on how to meet customers' needs in the shortest time. Saving time is saving cost, and time is becoming an important source of enterprise core competitiveness. In this situation, efficiency and flexibility should be first considered in enterprise business activities. The core carriers of airport economic development are the aviation hub and, of course, the aircraft. Aircraft are simply the transportation mode that provides the most efficient response to production factors. They can improve efficiency by saving supply chain time and accelerating network development, national and international outsourcing, personalized production, and rapid movement of products. As a famous American scholar John D. Kasarda proposed, the key to developing an international aviation hub and airport economy is "speed, speed, and more speed."

1.2 The airport economy is an internationally efficient economy

Modern society is gradually evolving into a society using comprehensive information technology, integrating knowledge and processing, and creating intelligent tools to transform and update economic systems and social fields. A large number of high value-added, quantitative products are constantly emerging, such as computer chips, software, biotechnology and microelectronics. The transportation costs of

these products account for only a small portion of their total cost and the reduced cost ratio makes it possible for multinational companies seeking production facilities on a global scale to expand to offshore regions as a result of air transport. In the development of global economy, air freight value accounts for more than one-third of the global freight value, making air freight an important element in the global trading system. In 2011, the international airport association report showed that global air freight accounted for 1% of all freight transported, while the air freight value accounted for 36% of the total global freight value. 1: 36 is a ratio that the public can understand and use to analyze the importance of contemporary air transport.

1.3 The airport economy is a beautiful piece of music leading the global economic integration

Under the influence and promotion of economic globalization, the regions that involve production process and services continue to extend to the whole world, production factors are realized optimal configuration globally, and social division of labor can be decomposed in accordance with the industrial chains worldwide. In the 21st century, global economic integration has turned into the high-tech era, and the global information technology has been rapidly popularized. Therefore, success in this new global network allows the global investigation of suppliers to obtain the best materials and components at the lowest prices. In other words, "global accessible" is the new requirement of globalization. The study of Justin D. Stilwall and R. John Hansman (2013) showed that more than half of the global top 500 company headquarters were located within 16 kilometers around United States hub airports, while 29% of the commercial institutions were near an

airport. International hub airports have the fastest and widest range in the global route networks. They adapt to the demands of long distances, and meet the requirement of "global accessible". So an international aviation hub becomes more valuable than scale economy and scope economy to multinational companies, it becomes the primary choice of multinational business sites and regional businesses as well, and also becomes the most characteristic note of the wonderful business landscape of global economic integration. In this context, air freight has become an important driving force to promote regional economic growth, while the focus on airport economies has become the best choice of leading the global economic integration.

1.4 The airport economy promotes the connectivity of the global market

Airport economy is an open system that consists of many open elements. It connects major cities both in China and abroad by using the airport route network. High quality economic factors such as capital, information, technology and talents are circulated in the airline network and quickly integrated into the global economy,



International hub airports have the fastest and widest range of the global route network.

which drives the cycle of the whole economic system and promotes the connectivity of global markets. At the same time, the international aviation hub itself has the function of free trade, which brings convenience to personnel exchanges and quickly meets customers' demands. It brings customers more convenience to buy the goods of internationally famous brands, especially high-end goods and fashion products, such as cosmetics, high-end clothing, and branded watches. So the essence of airport economic development is to build a shopping paradise for local customers and create convenience for global connectivity.

1.5 The airport economy promotes the rapid development of international tourism

With the improvement of people's living standard, long-distance travel and leisure are in greater demand and air transport has become the best choice for tourists. A study by the international airport association shows that over the next 20 years, with the development of international air transport, tourism incomes will double. Taking Bangkok as an example, since the 1960s, the number of tourists in Bangkok has increased nearly 40 times, and this miraculous growth was mainly attributed to the great capacity of the Boeing 747. Powerful aviation passenger capacity leads large-scale international tourism into a new era which is characterized by tourist charter flights. According to the account of the United Nations World Tourism Organization, the number of tourist passenger has accounted for 75% of all airline passengers, however, only 7% of the people choose to travel by air among the people who have the ability to afford flight travel in the world. The World Economic Forum reported that the common point in tourism countries was that they have formed a set of convenient and high quality air traffic networks and supporting

service such as roads, hotels and banks. Once the industry interoperability has formed, the effectiveness will be extremely strong and have great development potential. At the same time, because large investments in fixed assets by the airlines are required in an airport economy, in order to guarantee its rate of capital return, airlines must fly day and night, so the average price of air transport is becoming continually cheaper. Powerful passenger traffic and cheaper prices of air transport makes for greater international travel demand and the airport economy becomes an important inducement to promote international tourism.

1.6 The airport economy promotes the communication and integration between Chinese and Western cultures

It is more than ten thousand kilometers from central and east China to Europe, so the efficiency of the transportation must be constantly advanced. Along with the evolution of transportation and the miniaturization of high-tech products, increasingly more cargos are transported by aircraft. The Airport economy which relies on the international aviation hubs develop quickly and the transport time is greatly reduced. This creates a process of constant convergence, making the communication between all ethnic groups and different countries around the world very convenient, and promotes the exchange and integration of Chinese and western cultures. We can say that due to the convenience of air transportation, Chinese and western cultures can learn from each other through communication and fusion, make continuous innovation and improvement in studying and understanding, and promote the continuous progress of human civilization. The communication and integration not only guarantee the diversity of regional cultures, but also give

further play to the soul part of excellent cultures leading the development, improving the cultural consciousness of inclusive development of the world's countries, and reducing the risk of political conflicts between different cultures.

2. How Airport Economy Is Leading the Development of Regional Economy

The report from the air transportation group in 2008 indicated that the air transportation industry was the main contributor to global economic growth. In 2006, it carried more than 2.2 billion passengers and accounted for 35% of the global international trade and created 32 million job opportunities and about 3.56 trillion dollars' of economic benefits which accounted for 7.5% of the world GDP. In the year 2002, the Europe Department of International Airport Associate indicated in its report that as the motivating force of inland and regional development, the contribution of airports to regional economies had been reflected in the leading role of economic growth and social employment. Appord and Kasard's study (2013) on the employment of the 25 busiest American airports showed that there were 3.1 million employment opportunities within a 4 kilometer radius of the airport, 4.5 million employment opportunities within an 8 kilometer radius, and 19 million employment opportunities (which account for 17.2% of the American total employment opportunities) in a 16 kilometer radius. Cao Yunchun (2009) put forward that with the continuous interactive functions among the airline network, ground network, social environment, and hinterland economy, airport economy had constantly played roles in attracting, spreading, driving, supporting and feeding economic growth. The airport economic

zone has taken full advantage of its interior land to introduce the elements such as preferential policy, supporting finance, management systems and human resource used by the airline networks and flows of people and products of the airport to form the high-end industrial clusters, and utilize the domination effect, multiplier effect, and diffusion effect on the growth pole to make interactions with the interior land and to accelerate the regional economic development.

2.1 The airport economy changes the local elements endowment of region development at the micro scale

In the support of certain production modes, the local endowment characteristics of a regional economic structure are relatively stable over a certain period. The surrounding areas of the aviation hub have become the regional core growth pole because of the fast development of the airport economy around it. With the interactive function of the airport economy and hinterland economy, newer and better production elements will be attracted to the hinterland economy. This is especially true for the production and consumption elements, which are much more sensitive to speed and time and will rapidly aggregate to the adjacent areas of the aviation hub as the scale effect is forming. Such elements include fashionable high-tech products and parts, fashionable clothing, most popular cosmetics, fresh fruits, high quality milk, and international logistics services. If an international business environment is created with the global top 500 companies in it, such changes will be more notable and growth will advance rapidly. As time goes on, these production elements will accumulate continuously in the airport area and the hinterland area. The human resource structure which is related to such elements will change significantly as top talents will be

accumulated and these areas will possess more core competitiveness in the development of capital intensive and technology intensive industries. The technologies attracted to the area will be more and more advanced, the capital demand will be increased, more listed companies will enter the market area and more local companies will be listed. Therefore, the development of the airport economy will change the local endowment of the hinterland area at the micro level, and will enhance the core competitiveness of the hinterland economy by promoting the regional capitalization standard and improving the industry structure.

2.2 To realize the industry coupling between the airport economy and the regional development at the medium scale

Once the aviation hub develops sufficiently, the aviation industries which are directly matched to the hub such as manufacture, maintenance, logistics, services and human resource training will also accelerate the development of the region. When this happens, the hinterland enterprises will offer the matching products and extensional services for the aviation industry, which will help the other enterprises gain knowledge spillover, capital and human resources from the aviation industry, thus improving the technological and management standard of the regional enterprises in a short time, promoting their internationalization and expanding the market space rapidly. Also, logistic costs of aviation industry will be saved, information exchange speed and veracity will be improved, and communications between elements will be promoted, thus effectively promoting concept innovation and technology innovation of the aviation industry, further strengthening the amalgamation and lock-in effect of this special industrial cluster, and ultimately advance the hinterland industry upgrading and its entry

into the international market. Therefore, the industry interaction between airport economy and hinterland economy shows up as the industrial chain coupling, inter-industrial coupling and industry environment development coupling in the medium scale. And through these international industry couplings, the inner quality of regional economy development and the benefit of the local people will be improved.

2.3 The airport economy promotes the growth of regional tax revenue and employment at the macro scale

In the analytical framework of Keynes macro-economy, the development of an airport zone presents that the aviation industry output is increased, more and more labor is absorbed, and much more consumption and fiscal revenue are generated. In other words, finance, trade, posts and telecom, communication, catering, exhibition, and tourism are greatly developed by building an aviation hub and its matching functional zones such as business districts, export processing zones, bonded areas, logistics parks and the cross border electronic trade zones, thus creating a large number of employment opportunities and improving the regional revenue. The increase of salaries of the employed population and the local tax revenue brings greater economic growth through the population consumption and the government's purchasing behavior. In the 70th Global Air Transport Summit hosted by the international air transport association on June 2, 2014 in the capital of Katar, Tang Yanlin, president of a council and CEO of the International Air Transportation Association, pointed out in his presentation, "The aviation industry is the lifeline of the global economy nowadays. It has brought 5.8 million job opportunities and created 2.4 trillion dollars in the annual economic activity."

Apparently, the promotion function of airport economy to the global economy is significant in the macro scale.

In conclusion, although the airport economy is a new economic form, it plays a very important role in the global economy at the micro, medium and macro scale. The global air freight value has accounted for more than 1/3 of the annual value of freight. The practice of the airports in Memphis, Frankfurt, Schiphol, Dubai, and Incheon has shown to the world that under the new historical conditions, the global transportation and regional development model have entered the fifth circulation, airport economy may change the development mode originated from the industrial revolution when the regional developing center existed mainly in the coastal areas or riverside areas, and may open a new era when the development centers will move to the inland areas (figure 1). Parts of the inland areas where concentrated populations, abundant resources, a rapidly developing Internet economy, large cities, livable environments and appropriate business will become the new hotspots of regional development.

3. The Major Achievements of ZAEZ

ZAEZ' s development plan, one of the three national strategic plans in Henan Province, was approved by the State Council of the P.R.C. on March 7, 2013, making ZAEZ the unique national airport economic comprehensive experimental zone. ZAEZ contributed a lot to the development of the local economy and society, and it has been the core growth pole of the Central China Economic District.

3.1 The rapid growth of economic output

ZAEZ has made remarkable achievements since it was founded. The GDP of ZAEZ has increased 18 times in the last five years, from 2.76 billion *yuan* in 2010 to 52.08 billion *yuan* in 2015, and the average annual growth rate was 43.3% during the period of the 12th Five-Year Plan. In addition, the value added by large-scale industry has achieved 42.99 billion *yuan*, with an increase of 26.0%, 19.9% higher than the national average, and 17.4% higher than the province average. The value added by computers, communications equipment and other electronic

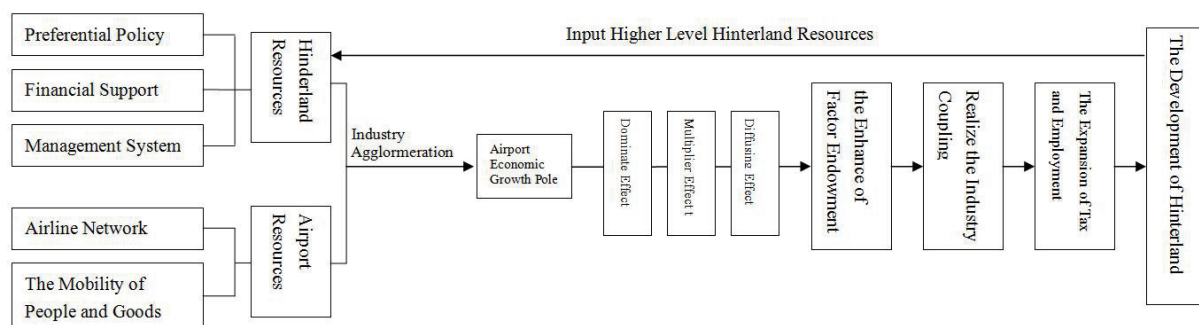


Figure 1: The Pattern of Airport Economy Leading Regional Economy Development

equipment manufacturing industries has achieved 41.94 billion *yuan*, with an increase of 27.3%, accounted for 97.6% of the value added by large-scale industries. In 2015, ZAEZ' s FAI (Fixed Assets Investment) was 52.18 billion *yuan*, with an increase of 30.2%; the FCAU (Foreign Capital Actually Utilized) was 505 million US dollars, with an increase of 74.7%; the TEIV (Total Export-Import Volume) was 48.33 billion US dollars, with an increase of 27.5%; the financial gross income was 35.89 billion *yuan*, with an increase of 84.5%. And the customs revenue was 26.73 billion *yuan*, with an increase of 72.5%; the general public budget revenues expenditures were 2.95 billion *yuan* and 8.66 billion *yuan*, respectively, with an increase of 39.4% and 38.5%. Meanwhile, the number of job opportunities offered by ZAEZ has increased rapidly, and ZAEZ has become the fastest-growing area in employment in Zhengzhou. During 2010 to 2015, ZAEZ has played such an important role in driving the local economic development that Zhengzhou' s GDP has been increased from 500 billion *yuan* to 731.5 billion *yuan* (Table 1).

3.2 The rapid construction of the international aviation hub

By the end of 2015, Zhengzhou airport has opened a total of 171 airlines, with an increase of 92 airlines from 2011, 30 of which were all-cargo international airlines, ranking first in mainland China. The airlines now cover all the world' s major economies and the passenger and freight transport have grown rapidly (Table 2). Passenger turnover has exceeded 17.3 million, doubled in five years, ranking 17th in the nation. And the cargo turnover has exceeded 403, 000 tons, with an increase of 3.7 times in five years, ranking 8th in the nation. The freight growth rate in 2013 and 2014 ranked the first place in large airports in

China while the passenger growth rate ranked the first place in 2014. Therefore, in September 2014, when the ICAO Air Cargo Development Forum was held in Zhengzhou chairman of the ICAO council, Olumuyiwa Benard Aliu commended Zhengzhou Airport as the "world' s fastest growing cargo airport." In 2014, the international and regional cargo turnover of Zhengzhou airport increased by 82%, accounting for 55% of the total of cargo and mail, the international and regional turnover exceeded the amount of domestic postal turnover, and cargo volume of all cargo carriers occupied the dominant position. Due to the rapid growth in freight, it had greater impact on China EU air cargo, and the "Zhengzhou Price" became an important benchmark of international air cargo between China and the EU tariffs. By the end of 2015, the number of Zhengzhou airport arrival boundary port had exceeded 1.2 million. The immigration flow of Zhengzhou Airport has maintained an average annual growth rate of 50% for eight consecutive years, which was among the forefront of the country airports. It has attracted UPS, FedEx, China Southern Airlines, China Eastern Airlines and other cargo air companies. The international cargo airlines of Zhengzhou airport has accounted for 90% of the middle areas, and it has been the only airport approved by the government to provide international express service." Zhengzhou-Luxembourg" international freight "dual hub" airlines were opened on June 27, 2014, and it was the first international freight company air base, whose turnover exceeded 1 million tons at the end of the same year. By November 23, 2015, Luxembourg cargo airlines had performed 438 flight missions, contributed 50 thousand tons of cargo turnover to Zhengzhou airport, and contributed up to 60 thousand tons by the end of the year. The run of Zhengzhou-Luxembourg "dual hub" has accelerated the

Table 1: ZAEZ' s economic index in 2010–2015

Year	2010		2011		2012		2013		2014		2015	
Items	Am.	In. (%)	Am.	In.(%)	Am.	In.(%)	Am.	In. (%)	Am.	In. (%)	Am.	In. (%)
GDP (billion yuan)	2.76	16.5	11.15	89.8	19.07	77.6	32.3	69.4	41.29	18.0	52.08	22.5
FAI (billion yuan)	3.82	17.2	8.04	110.7	11.62	44.0	21.2	82.4	40.09	89.1	52.18	30.2
BR (billion yuan)	0.16	15.8	0.39	143.8	0.73	87.2	1.52	106.8	2.12	40.4	2.95	39.4
TEIV (billion \$)	0.014	16.3	8.91	62298.3	28.0	214.3	34.9	24.6	37.92	8.7	48.33	27.5
Employment (ten thousands)	6.0	15.5	12.0	200.0	20.0	66.7	28.0	40.0	35.0	25.0	40.0	14.3

Note: GDP represents Gross Domestic Product; FAI represents Fixed Assets Investment; BR represents Budget Revenue, TEIV represents Total Export–Import Volume, Am. Indicates Amount, and In. indicates Increment.

Table 2: The growth condition of ZAEZ' s passenger and freight traffic in 2011–2015

Year	Cargo carrying capacity		Passenger carrying capacity	
	Absolute values (ten thousand tons)	Increasing rate (%)	Absolute values (ten thousand persons)	Increasing rate (%)
2011	10.3	19.8	1015	16.5
2012	15.1	46.6	1167	15.0
2013	25.6	69.5	1314	12.6
2014	37.0	44.5	1581	20.3
2015	40.3	8.9	1730	9.4

global cargo network layout in the Zhengzhou international hub, which is the air "Silk Road" between China and the EU. With Zhengzhou Airport T2 project put into operation at the end of 2015, the transport capacity was improved significantly. According to the 13th Five-Year Plan, the passenger turnover will have reached 19 million and the cargo turnover will have reached 1 million tons by the end of 2020, which is becoming one of the most active airports in world' s passenger and cargo market growth.

3.3 The remarkable development of airport-related industries

ZAEZ' s industrial advantage lies in high-

end manufacturing products that are forming whole industry chains including R&D, parts manufacturing and marketing. There are 119 smart-phone enterprises such as Foxconn, Coolpad, K-Touch and Skyworth, which produced 200 million smart phones, accounting for about 1/7 of global products in 2015. Meanwhile, the tertiary industries developed rapidly, with express service from Zhengzhou to New York, Moscow, London, etc. 13 international cities have, "Sent the same day, delivered the next day" service. Currently, the Xinzheng Comprehensive Bonded Zone has been one of the 10 national pilot cities where "self-produced and domestic-sale products can be repaired in the comprehensive bonded

zone". There are "truck flights" available through the customs supervision. It has opened the first express supervision center in the middle areas, and has been approved to be the carry-over pilot of the bonded goods, and has opened the "truck flights" to 13 major cities such as Beijing, Shanghai, and Chongqing. Especially, Zhengzhou cross-border trade E-commerce services pilot city was approved in August, 2012, thus it has been the only comprehensive pilot of import and export relying on the function of "tax returned while entering the zone, tax bounded while entering the country, international division and distribution" of the bonded supervision areas. It provided online shopping services for customers from China and eight other countries by the model of "E-commerce + Bonded center + International mail direct seal system", and collaborated with more than 3,000 enterprises from Germany, Russia, the United States, Japan, Korea, Israel and other countries. In November and December, 2014, the import and export commodity packages exceeded one hundred thousand pieces and two hundred thousand pieces, respectively. In 2015, this data reached 1 million in January and 4.7 million in the first quarter. It was able to deal with 5 million packages when reaching its peak in the third quarter, and 98% of those documents were finished by automated audit. Zhengzhou cross-border trade E-commerce services pilot was accepted by the Ministry of Industry and Information Technology of the PRC on November 27, 2015, its business volume reached 50 million pieces, the comprehensive index such as the business volume, tax amount and the related enterprise amount ranked first of all the pilot cities in China, and it became the vane of China's cross-border trade E-commerce services in the innovation of industry integration, business process and regulation model. Meanwhile, China (Zhengzhou) comprehensive experimental zone

of cross-border E-commerce was approved in January, 2016, and it will build the complete industrial chain and ecological circle. Zhengzhou is entering a new era of international business development characterized by the "global trade" instead of the old impression.

3.4 Initially established the center of inland open economy

The *Plan of Central China Economic Region* (2012-2020) defined Zhengzhou airport as an inland open center, which many people feel unable to understand. In August 2010, Foxconn smart phone project landed in Zhengzhou. It was only a month from contract signing to the operation of production lines. In October 2010, Xinzheng Comprehensive Bonded Zone completed its declaration and ratification within 100 days. Both of them have created miracles and beautiful stories in Zhengzhou. In 2012, the import and export turnover in Xinzheng Comprehensive Bonded Area reached 28.5 billion US dollars, ranking the second of the 31 Comprehensive Bonded Areas in China, and it has great potential for development. In 2015, the total import and export in ZAEZ was 48.33 billion US dollars, accounting for 85.0% of the total import and export in Zhengzhou, and 67.4% in Henan Province, thus it deserved the name of "inland open center". With greater efforts to open up, the ports such as cars, meat, Australian live cattle, imported fruits, vegetables and flowers have been put into use, the ports of food, medicines, medical equipment will be put into use in 2016, and the ports of plants and seedlings are declaring for construction. ZAEZ has the largest number of open ports in inland areas. It has been called the development model of "little zone leading big province" by the Customs, and it has been the new engine of the foreign trade development in Henan Province.

4. The Driving Effects of ZAEZ to Henan Development

Airport economy is the strategic need to upgrade the Chinese economic development. ZAEZ has continued its high-speed development since it was constructed. And the high-end manufacturing and GDP have expanded greatly especially with the support of the ultra high speed growth of investment, import and export, passenger and freight transport. The construction and development of ZAEZ have exerted a profound influence on economy of Henan Province.

4.1 The driving effect on comprehensively deepening the system reform

The 18th National Congress of the Communist Party of China proposed that we must deepen the reform comprehensively to build a well-off society in all aspects. Deepening the reform comprehensively is the key for Henan Province to fundamentally solve its development problems and environmental constraints. As the core growth pole of the Central China Economic Region, the ZAEZ has played an important role in deepening the reform comprehensively. First, it has a driving effect on economic system reform. The ZAEZ has made the market a decisive role in resources allocation to take full advantage of the open, fair, impartial and efficient allocation of resources. Second, it has a driving effect on social system reform. The social system reform has evolved around the better livelihood and social justice, promoting equalization of basic public services between urban and rural areas. Third, it has a driving effect on ecological civilization system reform. According to the standard of "Beautiful Henan" it has deepened the characteristic system reform of ecological civilization by centering on the "two major ecological corridor" and

improving the living conditions. Fourth, it has a driving effect on administrative systems reform. It has established the efficient system and mechanism by taking advantage of the new institution and insisting on the "small government, great service" direction, established the work structure and responsibility mechanism with "two layers and three levels", attempted the direct system with extended range and perfect process between provincial departments and ZAEZ, and implemented the flexible institution settlement. ZAEZ has been at the forefront of deepening the system and mechanism reform in Henan Province.

4.2 The driving effect on balanced development of industrialization, informatization, urbanization, agriculture modernization and greenization

In accordance with the CPC and Henan Province strategic planning, ZAEZ has sought for balanced development of industrialization, informatization, urbanization, agriculture modernization and greenization. Especially, ZAEZ has insisted on building characteristic airport industry clusters around the high-end manufacturing, improved the new industrialization by developing smart-phones, aerospace materials, biomedical medicine, precision instruments and other key industries, which have played a typical role in the new type industrialization in Henan. It has the forward-looking urban planning concepts, and has explored new ways to create a new type of urbanization, especially in smart city construction, green development, low-carbon development and sustainable development, which have set up the unique model of the new urbanization construction. ZAEZ has sought better rural-urban integration. It has provided basic protection for 220, 000 rural residents entering the city, provided policy support and system guarantees for

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more employment entering the city, and greatly improved the new agricultural modernization in Henan. Meanwhile, in priority to the development of green industry, the ZAEZ has focused on the development of high-end services and a smart city. It has formed a new green metropolitan by taking full advantage of the Afforestation Garden of Zhengzhou. Currently, a supercomputing center is under construction and the Internet plus is under implementation. ZAEZ is developing its smart information, services and economies, such as the Internet, the Internet of Things, cloud computing and big data, which will enable ZAEZ to become a leading informational and technical metropolis.

4.3 The driving effect on "One Carrier and Four Systems"

Currently, the overall goal of deepening the reform comprehensively is to improve and develop the mode of practice with "One Carrier and Four Systems" in Henan Province. Taking advantage of the local air cargo network resources, ZAEZ has strengthened their collaboration with global raw material suppliers, manufacturers, distributors and users. Making full use of the global resources and both the international and domestic markets, ZAEZ has established the

production supply and consumption supply chains to drive the high-end manufacturing and modern service industry development. It has formed a famous industry cluster of airport economy, and established its industry system with the support of aviation logistics and related industries, so as to lead the development of the high-end industries. Meanwhile, taking advantage of the local industrial base and regional market, it has established a complex relationship with all the industries in Henan Provinces to help the surrounding enterprises integrate into their industry chains, thus participating in the global industrial division, and driving the rapid development of the surrounding areas.

4.4 The driving effect on "Prosperous Henan, Civilized Henan, Safe Henan, Beautiful Henan" Construction

The concept of "Prosperous Henan, Civilized Henan, Safe Henan and Beautiful Henan" is the practice of "Five-in-One Overall Arrangement" in Henan Province proposed at the 18th National Congress of the Communist Party of China. In the construction of "Prosperous Airport Areas" and "Prosperous Henan", ZAEZ has centered on development of high growth industries,

strategic emerging industries and modern service industries according to the principle of "the most competitive, the best growth, and the most relevant," to lead the development of new industries and new businesses, and cultivate the new dynamics. In the construction of "Civilized Airport Areas" and "Civilized Henan", ZAEZ has centered on conserving the practice of the core values of Chinese socialism, strengthened moral construction, cultivated and practiced the core values of Chinese socialism, and improved its conversion from theoretical form to social practice. In the construction of "Safe Airport Areas" and "Safe Henan", ZAEZ has centered on the social management innovation and the mass lines, strengthened prevention and management of the sources of social conflicts, adhered to scientific decision-making, democratic decision-making, conscientiously implemented social stability risk assessment system, and established the scientific and reasonable evaluation system. In the construction of "Beautiful Airport Areas" and "Beautiful Henan", ZAEZ has fully implemented the basic state policy of resources saving and ecological environment protection, optimized the pattern of land and space development, encouraged the development model of green, low-carbon and sustainable, advanced the resource-saving and environment-friendly society construction. Besides, ZAEZ has taken aerotropolis theory as the guide, taken beautiful living environment as the direction, and taken the system and mechanism as the driving force.

4.5 The driving effect on the structural reform of supply-side

ZAEZ has taken full advantages of the airport industries, and established close ties between airport-related industries and high-end manufacturing. The spillover and diffusion of

talents, technology, knowledge, information and other factors have made up for the shortage of high-end production factors, promoted the supply-side reform and the advanced manufacturing construction in Henan. It is because of early start of the supply-side reform in ZAEZ that the import and export trade of Henan Province bucked the broadly weaker tone in the national economy in 2014. In 2015, the total volume of foreign trade in Henan Province increased by 15.3%, while the national total volume of foreign trade decreased by 7%. Moreover, the proportion of service industry in GDP has increased continuously, from 32.0% in 2013 to 39.5% in 2015. All of these have played an important role in inspiring the activity and sustainability of Henan's economy. In 2015, Henan's GDP increased by 8.3%, while the national GDP increased by 6.9%. The total GDP of Henan Province ranked fifth in the country, and the relative position has maintained in a continuous upward trend. Meanwhile, with an open international view, ZAEZ has taken advantage of the international hub located on the Asian geographical center and the transport capacity of Zhengzhou Airport T2 project to accelerate the development of aviation logistics, aviation finance, cross-border electronic business, big data storage and processing, technology research and development, industrial design, education and training, business exhibition, cultural and creative industries. And, ZAEZ has taken its advantage to cultivate the new business of modern service industry, create a new situation in modern service industry which is supported by international logistics and cross-border electronic business, drive the structural reform of supply-side in Henan Province, encourage the construction of high-growth service industries and cyber-economy, and to provide the necessary conditions for economic transformation and upgrading.

4.6 The driving effect on the integration of airport-related resources in Henan

With the rapid traffic growth of the Zhengzhou airport, it has become a hot area of regional economic development. Meanwhile, there is great potential in passenger and freight traffic in Luoyang airport, Nanyang airport and Kaifeng airport. In accordance with the innovation-driven development and sharing-driven development, ZAEA's land area will be greater, the function will be stronger, and the efficiency will be higher. Taking Zhengzhou airport as the leader, and Luoyang airport, Nanyang airport and Xinyang airport as the supporting, through system and mechanism innovation, ZAEZ has established the complete air transport network with related trunk and branch, reasonable layout and perfect function. Thus, it has become the main alternate airport and high-end aviation talent training base, which is helpful for the resource integration and overall development of the airport economy. In addition, the effect of special resources of truck flights, the comprehensive bonded zone and the customs can be amplified, which is helpful to integrate the airport resources. And it also makes the airport resource shared by the whole province, bringing direct and indirect benefits to economic growth, and driving the development of airport economy and open economy in Henan Province.

5. Preliminary Conclusions

5.1 The structural reform of supply-side needs to accelerate the development to integrate into the internationally advanced airport economy.

Supported by the international air transport system, airport economy is a kind of high-end form of development worldwide, but it is just an emerging field in China. ZAEZ is a bold

exploration in airport economy for China. It is meant to transform the economic development pattern, promote the structural reform of supply-side, and to adapt and lead the new normal. We should treat the construction and development of ZAEZ with an international view, focus on the speed and internationalization with great innovation courage, form larger advantages in manufacture-related service industries, and explore courageously in the new ways of international aviation and ZAEZ development, so as to gain experience in the structural reform of supply-side, find a new way of opening-up in the central and western regions of China, lay the foundation of industry structure adjustment and economic promotion in Henan, which will create much more substantial development benefits for the citizens by job enlargement and income increase.

5.2 Airport economy is promising under the "the Belt and Road" Initiative.

The initial attempt of ZAEZ shows the great charm of airport economic development in the process of China's economy evolving in the world economy. Especially, the high increase of passenger and cargo throughput in ZAEZ, its leading role in the leap development of open economy in Henan and its surrounding regions show us that the airport economy has already been the new engine of Henan development, which also shows clearly that the national strategy of constructing international aviation hub in Zhengzhou (located in the middle of China) besides Beijing, Shanghai and Guangzhou is advancing and strategic. Airport economy has been and will continue exerting an important influence on the cultivation of advantages and the development of the aerial Silk Road in the central and western regions. With the advantages of airport economy being clearly demonstrated in

Zhengzhou and with the promotion of concerning policies and regulations, airport economy has great potential in creating further development opportunities and has a bright future. Just as John Kasarda says, Zhengzhou will be the leading aerotropolis of China if it can combine airport planning, urban planning and business location planning dynamically. Aerotropolis will promote the hinterland economic development internally, form an aerial Silk Road externally, build the bridge of China's integration into the global economy, and accelerate the implementation of "the Belt and Road" Initiative.

5.3 Zhengzhou Airport economy development promotes the innovation of regional development mode.

Joel Garreau, the writer of *Edge City*, stated that city development always relied on the most advanced means of transportation at that time. John Kasarda, author of *Aerotropolis* pointed out that the outline and destiny of a city has been depending on the means of transportation. The construction of international aviation hub has great influence on the airport economy development in Zhengzhou and Henan. The significant feature of airport economy is speed. After several years' development, "Zhengzhou speed" is well-known both at home and abroad. "Zhengzhou speed" is created by the improvement of the local investment environment, the optimization of the international business environment and the advance of government management efficiency, which manifests development advantages of central China and the exploration of regional development patterns. This progress is just the spectacular lightspot during the reform and development in Henan. Therefore, ZAEZ is a beacon that lights up the future direction of comprehensively deepening reform and "Synchronization of Five

Modernizations", creates the new pattern of inland development, and finds a new path for the structural reform of supply-side. This new pattern based on the practice of Henan, a huge province with 100 million people will be of great theoretical importance. It shows that the traditional theory of regional development, that 80% of the developed regions centralized in the coastal area or along the river since the industrial revolution, will be changed. The hotspot of regional development will turn to the inland areas as air transportation has an expanding effect on global economic development. If this analysis is true, the theory of development economy will experience significant innovation, the global pattern of regional economic development will make major historical changes, and some inland regions suitable for airport economy development will enjoy important opportunities.

5.4 Zhengzhou Airport economy development shows us the trend of future regional development with four characteristics.

In 2012, the proportion of service industries in GDP exceeded the proportion of the secondary industries for the first time. The service industry has become the most active factor in economic development, and it has entered the golden period of comprehensive development. Keeping with the provincial and national development trend, Zhengzhou airport economic development also presents a new trend with four characteristics. First, the regional economic development shows characteristics of servitization. High-speed international logistic development, cross-border electronic commerce, and cloud computing and large data services have provided huge space and great impetus for construction of the service industry in Henan Province. Second, the service industry development shows characteristics of informatization. The service industry,

especially the manufacture-related part, will realize informatization completely by taking the information age express and taking advantage of the opportunities of cloud computing and big data. Third, the information industry development shows characteristics of intelligentization. All kinds of smart equipment penetration have rapidly increased in China, especially smart phones, for its penetration is the highest in the world. The big data research and application is moving towards intelligentization which will have a far-reaching influence on our future work and life. Fourth, the

industry development shows characteristics of greenization. Currently, the green development has become people's basic demand, which will force us to completely change the development concept, adjust the industrial development path, reintegrate the resources configuration structure of the whole society, and to promote sustainable development, so that we can live under a blue sky, enjoy clean water and view green hills, enhance the quality of economic and social development, and satisfy the general public for the historic pursuit of green development.

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