

# IX. RESEARCH ON THE INFLUENCE OF PILOT FREE TRADE ZONE ON THE ECONOMIC DEVELOPMENT OF SHANDONG PROVINCE

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The Shanghai Pilot Free Trade Zone was China's first of its kind, initiating the broader development of pilot free trade zones across the country. By 2023, China had established 21 such zones. 2019 Shandong Province launched its free trade area, encompassing Qingdao, Yantai, and Jinan. This region has prioritised innovation-driven development and strengthened risk prevention mechanisms to support economic growth. This paper examines the impact of the Shandong Pilot Free Trade Zone on regional economic development, focusing on gross domestic product, trade, and investment. The findings indicate that the zone has positively influenced foreign trade by expanding its volume and fostering industrial agglomeration. It has also enhanced the efficiency of foreign investment through improved investment structures and diversified financing channels. Additionally, the zone contributes to balancing the roles of the market and government and improving the tax system.

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## 1 Introduction

With the continuous development of economic globalisation, regional cooperation has deepened, and new organisational forms have emerged. The Shanghai Pilot Free Trade Zone is China's first pilot free trade zone, which also opened the prelude to the vigorous development of China's pilot free trade zones. By 2023, China had set up 21 pilot free trade zones, forming a "wild goose array" structure with Shanghai as the leading goose, coordinating east, west, north, south, and central China and the coordinated development of land and sea. Establishing a free trade zone is significant in promoting the high-quality development of the regional and even national economies. It is an integral part of China's strategy of deepening reform and opening up. Therefore, evaluating the economic effect brought by the establishment of the free trade zone is one of the hot spots in the current academic circle.

Similarly, this paper studies the free trade zone under the definition of FTZ in China. Therefore, the relevant research literature is mainly completed by Chinese scholars. Tan (2015), through research, found that establishing the free trade zone has effectively stimulated Shanghai's total import and export value and industrial added value (Tan, Zhou, & Lin, 2015). Zheng (2018), through research, proved that establishing the Fujian Free Trade Zone has a positive significance for stimulating the local economy, especially the policy effect of macroeconomic indicators is more significant (Zheng, 2018). Through research, Wang (2020) found that the free trade zone has a positive impact on the regional economy to different degrees. Still, the degree of influence varies from place to place and according to the indicators (Wang, 2020). To sum up, the impact of the establishment of free trade zones on the local economy is generally a positive promoting effect.

2019 Shandong Province set up a pilot free trade zone, including three Qingdao, Yantai, and Jinan districts. Since establishing these three zones, it has been adhering to the innovation-driven development strategy. In 2021, the international arbitration courtyard households were established in the Yantai area, and in 2022, the digital warehouse was launched in the Qingdao area. The main tasks of the three areas are to accelerate the transformation of government functions, improve investment, vigorously develop the marine economy, and further deepen the cooperation between China, Japan, and the ROK. At the same time, the Shandong Pilot Free Trade Zone should establish risk awareness, improve the risk prevention and control

and disposal mechanism, escort the high-quality development of the regional economy, improve production efficiency, and better meet the consumer needs of the people (Wang et al., 2022).

Understanding the development status of the Shandong Free Trade Zone mainly involves four aspects: spatial layout, industrial characteristics, development orientation, and system composition. Understanding the changes in the economic development of Shandong Province after the establishment of the Pilot Free Trade Zone requires analysing national economic growth rates, foreign trade, industrial structure, and the degree of investment facilitation in Shandong Province. This will further promote the development of the Shandong Provincial Pilot Free Trade Zone.

The study of the development of Qingdao, Yantai, and Jinan will put forward new ideas for promoting the coordinated development of the regional economy. Analysing the existing problems of the Shandong Pilot Free Trade Zone and putting forward corresponding suggestions will help improve its development level (Zhou, Kang, & Tian, 2022). The study also provides a reference for developing other pilot free trade zones. As an essential part of China's maritime power strategy, Shandong Province's experience in export-oriented economic development can be used as a reference in other coastal areas. This paper will devote itself to studying the impact of the establishment of the Shandong Pilot Free Trade Zone on the economic development of Shandong Province, analysing the factors that have a greater driving force for economic growth, and summarising the development characteristics of the three pilot zones of Shandong Province to provide a reference for the construction of other pilot free trade zones.

## **2 Development status of Shandong pilot free trade zone and its influence on the economic development of Shandong province**

In 2019, Shandong Province established a pilot free trade zone consisting of two coastal areas of Qingdao and Yantai and three inland areas of Jinan, covering 119.98 square kilometres. These three areas drive the development of surrounding cities and promote the economic development of Shandong Province.

## **2.1 Development status of Shandong Province Pilot Free Trade Zone**

Shandong Pilot Free Trade Zone comprises two coastal areas of Qingdao and Yantai and inland areas of Jinan. The three districts have reasonable layouts, characteristic industries, and transparent development directions, which are of great significance in promoting the economic development of Shandong Province.

### **General Overview of Shandong Pilot Free Trade Zone**

To accelerate the supply-side structural reform, strengthen China's opening up to the outside world, accelerate the transformation of government functions, optimise the domestic market environment, and promote the development of foreign trade, the Shanghai Pilot Free Trade Zone was established in 2013. The successful Shanghai Free Trade Zone experiment also opened the prelude to the vigorous development of China's pilot free trade zones. 2015 Guangzhou, Fujian, and Tianjin Pilot Free Trade Zones were established, and the Shandong Pilot Free Trade Zone was officially established in 2019. The free trade area covers an area of 119.98 square kilometres, with three regions—Qingdao, Jinan, and Yantai—distributed in the east, central, and west of Shandong Province, covering an area of 52 square kilometres, 37.99 square kilometres, and 29.99 square kilometres, respectively. These three large areas have their respective advantages, creating a balanced approach to promoting economic development across Shandong Province.

By 2022, the development tasks of the Shandong Pilot Free Trade Zone mainly included the following.

We will accelerate the transformation of government functions. In the free trade zone, the government will delegate some of its powers, which will help simplify procedures, improve efficiency, and enhance the business environment in Shandong Province. With the development of science and technology, the examination and approval system is being implemented in engineering construction. Artificial intelligence is replacing inefficient labour, which contributes to reducing costs, shortening enterprise work cycles, and improving efficiency (Wang, 2023).

Improve the investment climate. Implementing the negative list management system will increase transparency for foreign direct investment and avoid the restrictions of some potential treaties, which are conducive to foreign direct investment. At the same time, we will promote the facilitation and liberalisation of foreign investment in the free trade zone and improve the management system of foreign investment. In addition, the construction of a two-way investment service platform for enterprises should be strengthened to promote various forms of mortgage loans for export enterprises, combine "bringing in" and "going out," and promote balanced economic development (Wu, 2023).

We will vigorously develop the marine economy. Shandong Province is located in Bohai Bay, which should leverage its geographical advantages and actively create a marine economy. Establishing the Shandong Pilot Free Trade Zone will help promote the creation of an aquatic products processing and trade centre in Northeast Asia, optimise seafood import procedures, maximise port advantages, and encourage qualified financial institutions in the free trade zone to provide maritime financial services for related enterprises. In terms of sea transportation, we will build a comprehensive information platform for maritime big data, strengthen the linkage between pilot free trade zones and seaports, and promote the steady economic development of Shandong Province.

Deepen the cooperation between China, Japan, and the ROK. We will promote the construction of the China-South Korea Industrial Park in the Yantai area, further optimise the cooperation model, and expand overseas business to support RMB internationalisation.

### **Spatial Layout of Shandong Province Free Trade Zone**

Although the three areas of the Shandong Pilot Free Trade Zone are relatively scattered, they are located in the top three prefecture-level cities in terms of GDP and optimising economic development within the province.

**Jinan area.** It covers an area of about 37.99 square kilometres, accounting for 31.7% of the free trade area. The Jinan area mainly includes the Financial International City, Jinan High-Tech Zone Core and East, and Tang Ye Core Area. The first batch of enterprises and entity projects in the Jinan area includes five significant investments,

with a total investment reaching 25.3 billion yuan. The area also houses approximately 36 fund companies with a combined scale of 140 billion yuan and ten banking institutions. Unlike the Qingdao and Yantai areas, which are located along the coast, the Jinan area is inland but has a strategic geographical position. To the north, it connects with the Beijing-Tianjin-Hebei region; to the south, it links to the Yangtze River Delta region; and to the west, it connects with Heze, Binzhou, and Liaocheng—economically underdeveloped cities—enhancing economic spillover effects and promoting balanced economic development (Li, 2023).

**Yantai area.** It covers an area of about 29.99 square kilometres, accounting for 25.0% of the total free trade zone. The Yantai area includes two national-level parks: the China-South Korea (Yantai) Industrial Park and the western section of the Yantai Bonded Port. Upon its establishment, the area housed approximately 3,000 industrial enterprises and 124 financial institutions, with a total investment exceeding 130 billion yuan. Yantai's coastal location provides a geographical advantage, facilitating trade with Japan and South Korea while connecting to the Qingdao area in the south. It also helps alleviate economic pressure on the Qingdao area and serves as a financial hub for promoting the development of neighbouring Weifang and Dongying cities (Li, 2024).

**Qingdao area.** Covering an area of about 52 square kilometres, it accounts for 43.3% of the total free trade zone, making it the largest of the three regions. The Qingdao area comprises four functional zones: the Qingdao Qianwan Bonded Port Area, the West Coast Comprehensive Bonded Zone, the Qingdao Economic and Technological Development Zone, and the International Economic Cooperation Zone (Sino-German Ecological Park). Within just two weeks of its establishment, the registered capital of enterprises in the Qingdao area increased by 856.5 million yuan, with a total new investment of 86.9 billion yuan. Qingdao's strategic coastal position is key in fostering economic development in Shandong Province (Tong et al., 2024).

The Jinan, Yantai, and Qingdao areas of the Shandong Pilot Free Trade Zone all contribute to the economic development of Shandong Province by leveraging their unique advantages. However, each location has different industry focuses, promoting diversified economic growth within the province.

## 2.2 Performance of the impact of the establishment of the pilot free trade zone on the economic development of Shandong province

Shandong Province benefits from its superior geographical position, so international trade is an essential focus of its economic growth. The establishment of the Shandong Pilot Free Trade Zone not only promotes the foreign cooperation of Shandong Province, the development of the national economy, and the supply-side structural reform of Shandong Province.

### The GDP growth rate was stable.

Shandong Free Trade Zone in 2019 was officially established. To study its impact on economic growth in Shandong Province, data from the six years from 2017 to 2022 are selected for comparison and explanation. The comparative results are shown in Table 1.

**Table 1: Gross National Product of Shandong Province from 2017 to 2022(pricing in RMB)**

Age (year)	2022	2021	2020	2019	2018	2017
GNP (billion)	8743.51	8309.59	7279.82	7054.05	6664.89	63012.1
Year-on-year growth(%)	3.9	8.3	3.6	5.5	6.4	7.4
National growth rate(%)	3.0	8.1	2.2	6.0	6.7	6.9

Note: The original data are from the National Development and Reform Commission of the People's Republic of China.

As seen from the above table, the GNP of Shandong Province has been on an upward trend from 2017 to 2022, with the growth rate fluctuating slightly, increasing from 6301.21 billion yuan in 2017 to 8743.51 billion yuan in 2022. In terms of growth rate, the growth rate of GNP in 2018 was slightly lower than the national growth rate in 2019. From 2020 to 2022, the growth rate of GNP in Shandong Province is significantly higher than the national growth rate. At the end of 2019, the COVID-19 epidemic began to spread worldwide, especially in the service and manufacturing industries facing large-scale shutdowns. Many shopping malls and stores are closed, which is also a massive challenge for Shandong Province.

### The foreign trade situation has gradually improved

Regarding import and export trade, the Shandong Provincial Pilot Free Trade Zone also plays a positive role, and the data for the six years from 2017 to 2022 are selected here. Analysis of the influence of the Shandong pilot free trade zone on foreign trade, and then reflection on its impact on the economic development of Shandong Province. The finishing results are shown in Table 2.

**Table 2 Foreign Trade of Shandong Province from 2017 to 2022**

Age (year)	TIE (billion yuan)	TI (billion yuan)	TE (billion yuan)	ED (%)	ID (%)
2022	33 32.49	1296.91	2035.58	61	39
2021	29 30.41	1172.14	1758.27	60	40
2020	22 00.94	8 95.46	1305.48	59	41
2019	20 42.09	9 29.06	1113.04	55	45
2018	19 30.25	8 73.29	1056.96	55	45
2017	17 82.39	7 85.85	9 96.54	56	44

Note: TIE means Total imports and exports; TI means Total imports; TE means Total exports; ED means Export dependence; ID means Import dependence. Data are obtained from the Shandong Provincial Bureau of Statistics.

Table 2 since 2017, Shandong Province has increased year by year; 2019, total import and exports in Shandong Province rose 5.8% year on year, and the total import and export of RMB 200 million yuan since then, the total import and export growth trend, in 2020 in Shandong Province must grow 7.5%, late outbreak, especially in 2021, the performance of economic development is very outstanding, in 2021 in Shandong Province total import and export growth of 32.4%.

In 2021, the total import and export of Jinan, Qingdao, and Yantai accounted for 50%, among which Qingdao topped the Province's total import and export of 849.84 billion yuan, and Yantai ranked second. Qingdao's outstanding performance not only in the foreign economic development strategy but also with its diversified trade pattern and high-level trade platform; for example, Qingdao has a national economic and technological development zone, bonded port area, comprehensive bonded zone, export processing zone, and other national customs supervision zone, a micro become food, fruit, edible aquatic animals, ice aquatic products, meat and other seven kinds of goods designated import port.



In terms of foreign trade dependence, Shandong Province's export trade dependence is increasing. By the end of 2021, the survival rate of Shandong Province's foreign trade has reached 60%. Export-oriented final economic development degree is higher. In 2020, after the outbreak of international form development of global trade, Shandong Province's import and export growth slowed but still maintained a specific rate of growth from the foreign trade performance of Qingdao, Yantai, the establishment of the free trade area in Shandong Province added strong impetus to the economic development of Shandong Province, after the outbreak era, improving foreign trade in Shandong Province, also actively looking for new economic growth point.

### **The adjustment situation of industrial structure in the province**

The establishment of the free trade area in Shandong Province and the development of the three major industries in Shandong Province have a particular influence; to explore the impact of the free trade area in the Province, we also chose the data from 2019 to 2022, to assist free trade area in Shandong Province after the change of the proportion of the three industries in Table 3.

**Table 3 Shandong Province industrial structure ratio**

Age (year)	Total primary industry (100 million)	Growth rate (%)	Total secondary industry (100 M)	Growth rate (%)	Total tertiary industry (100 M)	Growth rate (%)
2022	6298.6	4.3	35014.2	4.2	46122.3	3.6
2021	5363.76	7.5	28612.19	7.2	39153.05	9.2
2020	5116.99	2.7	28171.78	3.3	37251.71	3.9
2019	4950.52	1.1	27523.67	2.6	34174.68	8.7

Note: Data are obtained from the Shandong Provincial Bureau of Statistics.

Vertically, since 2019, the growth rate of the total primary industry in Shandong Province has continued to accelerate, and the output value has also increased from 495052 million yuan in 2019 to 511699 million yuan in 2020 and continued to increase to 62986 million yuan in 2022. In terms of the construction of the first industry, the free trade area in Shandong Province has always put the development of the Marine economy in a prominent position; for example, in the free trade test zone will "enterprise social science" quartet linkage mechanism introduced proliferation discharge system, advocating Marine creatures "big maintenance" pattern, improve the proliferation of discharge precision, scientific, effectiveness,

development with the characteristic of Shandong biological maintenance industry. The growth rate of the total secondary industry in Shandong Province has maintained a rapid growth trend, with the output value increasing from 2,752,367 million yuan in 2019 to 3,501,42 million yuan in 2022. The construction of a total second industry constantly attracts outstanding foreign enterprises to the park. The growth of the total third industry in Shandong Province is more significant; it can be seen that in 2020, the tourism industry, the total third industry in Shandong Province, increased by 8.7% in 2019 to 3.9% in 2020, 2021, following the new champions league outbreak, the total third industry in Shandong Province growth to 9.2%, the island area depends on Qingdao rich tourism resources, its role in the third industry will be more and more apparent.

Horizontally, since 2019, the development of Shandong Province has focused on the secondary and tertiary industries, but the growth rate of the tertiary sector has shown a shrinking trend. The proportion of the tertiary industry fell slightly, and the overall development of the primary sector remained stable. In 2021, the Shandong Provincial Pilot Free Trade Zone will cooperate with the Yunnan Provincial Pilot Free Trade Zone, To further deepen the dialogue and cooperation between the Shandong Provincial Pilot Free Trade Zone and the RCEP member states, Strengthen collaboration in food, agricultural products and other aspects, And in the textile, chemical, new energy and other industries to achieve specific communication results, Promote the development of the primary industry in Shandong Province, At the same time, to strengthen the weak links, To promote the coordinated development of the three major sectors, Taking the Shandong Pilot Free Trade Zone as the demonstration pilot zone in the Province, Then, the successful experience of the Shandong Pilot Free Trade Zone in the development of the three major industries was extended to other prefecture-level cities in the Province, "Coordinated development from point to surface", Further shorten the development gap within the Province, Create a good atmosphere for benign development, We will improve the quality of economic development.

### **Changes in trade and investment facilitation degree**

According to the 2022 edition of China's Annual Report on Trade Facilitation, China's trade facilitation index from 2020 to 2021 was 78.6 points (100 per cent system), up 0.9% yearly, with the overall environment improving. Since establishing

the Shandong Provincial Pilot Free Trade Zone in 2019, it has continuously attracted foreign investment and given foreign investment plus pre-establishment national treatment in the pilot free trade zone.

### **3 Conclusion**

The pilot free trade zone has had a positive impact on the economic development of Shandong Province. The pilot free trade zone can promote foreign trade by expanding the volume of foreign exchange and fostering industrial agglomeration. It can also enhance the efficiency of foreign investment utilisation by improving the structure of foreign investment and broadening enterprises' financing channels, thereby increasing the attraction of foreign investment. In addition, the pilot free trade zones balance the relationship between the market and the government and improve the tax system.

First, due to the trade creation effect and tax incentives for goods in the free trade zone, production enterprises will substitute low-efficiency, high-cost domestic production with more efficient and lower-cost imported goods. This shift allows enterprises to focus on developing industries within the free trade zone, improving production efficiency, optimising production factors, and reducing overall production costs. Additionally, it attracts foreign enterprises to import related products from the free trade zone, thereby expanding trade between countries and promoting international trade.

Secondly, due to the trade transfer effect, enterprises in the pilot zone benefit from preferential tax policies, high-standard talent introduction measures, and a convenient business environment. For example, the zone reduces remittance and foreign exchange settlement fees to facilitate fund management. Regarding talent recruitment, the Shandong Provincial Pilot Free Trade Zone has also made notable achievements. Yantai took the lead in implementing a talent housing security system, adopting a "leasing + property rights" model. In 2021, Yantai secured more than 1,000 housing units to meet the needs of skilled professionals. The free trade zone also facilitates international cooperation, enabling enterprises to import goods at lower prices from other countries or regions. The extensive international trade network within the zone increases exports and allows external enterprises to use the free trade zone as a gateway to seek foreign partners. This, in turn, fosters product

exports, secures low-cost cooperation opportunities, improves profit margins, and promotes economic development at a higher level.

Finally, improving the economic benefits within the free trade zone also contributes to economic spillover effects, integrating resources across Shandong Province, increasing resource utilisation efficiency, and attracting more enterprises to join the free trade area. This expansion diversifies Shandong's product offerings, enhances product quality, increases trade, improves technical efficiency, and broadens the range of trading partners, contributing to regional economic growth. Industrial agglomeration within the free trade zone helps enterprises strengthen inter-industry linkages, deepen industrial cooperation, and reduce production costs through shared infrastructure. This maximises the use of limited financial resources, enhances specialisation in production, and fosters innovation. Moreover, through the diffusion effect, the free trade zone drives the economic growth of surrounding cities, helping to bridge regional economic disparities.

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