Analysis on the Economic Impact of the Establishment of Large-scale Free Trade Zone on Major Industries

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Abstract: Since the establishment of China's pilot free trade zone, we have accumulated some experience in the economic construction of major industries in the free trade zone. In order to better promote economic development and integrate with international economic and trade. The establishment of the free trade zone ensures the development of an open economic system in China. From the practice of regional economic development since the reform and opening up, the development of open economy is the only way for regional development. We should make full use of the opportunity of domestic economic development, vigorously develop the open economy, and promote the leap forward development of the provincial economy. We will improve the new open economic system and promote rapid economic development. Then, it analyzes the economic impact of large-scale free trade zone on the main industries; this paper uses SWOT analysis method to analyze the economic development status of the free trade zone. Based on the analysis of the participation in the international division of labor, the competitiveness of the industrial market and the operating environment of the industrial economy, this paper puts forward some countermeasures for the development of the innovative economy, including the self-organization of the market, the promotion of the development of the learning mechanism, the construction of a new open economic system from the perspective of the free trade zone, the acceleration of the integration process of international free trade, and the promotion of the steady and rapid economic development.

Keywords: Free trade zone; Industrial economy; Investment management

1. Introduction

Since the reform and opening up, China's developed economic circle has gradually developed. In order to develop the export-oriented economy, vigorously promote the opening up, through the establishment of free trade zones, can promote trade and investment, enhance the processing, financial and shipping functions of economic development, improve its international competitiveness and status, and promote the development of regional export-oriented economy. We should further open up the development of economic industries and the liberalization of services, trade and investment, deepen the supporting reforms in related fields, accelerate the transformation of government functions, and straighten out the relationship between the government and the market [1]. Promoting the free trade zone policy will accelerate the process of domestic system reform. On the basis of summarizing the relevant research results at home and abroad, this paper analyzes the influence of free trade area on the development of regional export-oriented economy from three aspects of foreign investment and foreign investment. It is suggested that we should learn from the experience of free trade zone to release reform

dividend and promote the development of export-oriented economy [2]. In terms of foreign trade, the government encourages the joint development of small enterprises, large enterprises are responsible for technology research and development, and small enterprises explore the market in a flexible way and extend to both ends of the product chain. The economic and Trade Fair provides a platform for exchanges and cooperation between enterprises at home and abroad.

2. Economic Impact of Free Trade Zone on Major Industries

2.1. The impact of free trade zone economy on industrial investment management

In the past decades of reform and opening up, China has accumulated rich experience in trade development. The rapid development of international cities is inseparable from its location advantages. The economy and transportation are very developed, which provides a favorable environment for its industrial development. As the upstream industry of logistics, logistics needs the support of logistics professional services [3]. At present, in terms of the innovation of the management system of industrial

investment by the economy of the free trade zone, we should focus on accelerating the reform of the management system of foreign investment, change the foreign investment management system of the free trade zone from the examination and approval system to the record system, change the foreign investment access restriction from the approval system to the negative list system, and change the contract rules and regulations of foreign-funded enterprises from the examination and approval system to the filing system. In the free trade zone, the registered capital subscription system is implemented, and the annual report system is implemented. The entrepreneur project adopts the record management mode, while the ordinary project adopts the overseas investment filing system [4]. Through a series of reform measures, a large number of domestic and foreign enterprises have been attracted to invest in China. Promoting the integration of customs clearance of "four zones and three ports" is the core of export-oriented strategic development, and also the key to promoting the development of logistics and export-oriented economy in the free trade zone [5]. Logistics efficiency, cost, time and management provide space for the development of enterprises. Based on this, the contents of industrial investment management of the current free trade zone economy are standardized, as shown in Table 1:

Table 1. Content specification of economic investment management of free trade zone

Year	Foreign capital domestic	Investment	Increase rate (%)
Number of registered enterprises	2057	2089	2125
Registered Capital	US $11.4 billion	US $13.8 billion	US $19.2 billion
Headquarters economy enterprises (households)	241	255	273
Operators (households)	22	26	28
Amount	16.2	18.2	20
Growth rate%	22.5	24.1	26.8
Growth rate%	22.5	24.1	26.8

More than 60 innovative measures have been taken for customs, inspection and quarantine, maritime and other departments. The "single window" management system for foreign trade was launched, and a new round of opening up was launched in an all-round way. Cross border financing refers to that domestic enterprises apply for loans from foreign banks, and foreign banks provide RMB funds to China, and at the same time, realize the return of RMB through other channels [6]. Domestic and foreign deposit and loan interest rates are different, foreign deposit and loan interest rates will be lower than domestic. When domestic financing is difficult or the financing cost is too high, enterprises can go to China for financing and reduce the financing cost. In order to promote the domestic financial leasing industry to better serve the real economy, solve the problems existing in the cross-border financing business of the free trade zone, reduce the financing cost, and realize the diversification and internationalization of financing methods, China has set up the first batch of cross-border RMB financing pilot projects [7]. We should explore and innovate the cross-border RMB financing mode of non bank financial institutions in the free trade zone, give full play to its good demonstration role, further give full play to the policy advantages of the free trade zone, make full use of high-quality resources at home and abroad, realize two-way opening-up, and promote the development of the real economy [8]. Speeding up headquarters gathering and overseas business development and participating in global competition is the goal of promoting trade transformation and upgrading. Actively explore the shipping development system and operation mode with international competitiveness, and improve the function of shipping center and logistics efficiency.

Table 2. Comparison of investment facilitation in the region

	Outside the white trade zone	In the white trade zone
Management mode of foreign investment	According to the catalogue for the guidance of foreign investment industries, it is divided into encouraged, restricted and prohibited categories	In the negative list: prohibited outside the negative list: national treatment shall be given before foreign investment is admitted
Overseas investment in China	The approval system is adopted for foreign investment projects. The contract and articles of association of the investment enterprise shall be examined and approved by the Ministry of Commerce. The form of foreign investment company is limited company	From the examination and approval system to the record system, the examination and approval of the contract and articles of association of the enterprise shall be cancelled, and the record management shall be changed to allow the establishment of joint-stock foreign-funded investment companies
Domestic overseas investment	The national development and Reform Commission is in charge of the approval of foreign investment projects, and the commercial department is responsible for the examination and approval of specific overseas investment matters, and issues overseas investment certificates for Chinese enterprises	The general projects of overseas investment shall be put on record, and the enterprises established by overseas investment shall be managed mainly by the filing system
the business	Traditional industrial and commercial registration system	We should establish a registration system for registered capital

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registration system		subscription, an annual report filing system, and a directory system for abnormal business operations

We will further carry out pilot projects for the cross-border use of RMB and reform the management of foreign exchange. According to the data provided by the portal website of the free trade zone, the website aims at financial services to the real economy, promotes trade and investment facilitation, creates conditions for capital account convertibility, cross-border use of RMB, marketization of interest rate, and foreign exchange management system on the premise of controllable risks [9]. It has opened 974 free trade accounts in the wind, and realized the separation of 10 banks on this basis. The total amount of settlement and sale was 322.6 billion yuan, including 19.728 billion yuan of RMB overseas loans and 78.3 billion yuan of cross-border cash pool business income. Cross border RMB two-way business can improve the efficiency of capital use and reduce the financing cost of enterprises [10]. To promote the regional economic development of the pilot free trade zone is an international routine. It is a common practice to simplify trade and investment procedures and implement negative list management. It is also a major change in the functions of the free trade zone within the zone. The establishment of FT free trade will provide demonstration and guidance for domestic investment and trade facilitation reform [11]. All regions should actively participate in the reform of the free trade zone, gradually adjust unreasonable policies, so that foreign investment can better integrate into local economic development, expand the scale of foreign investment, alleviate the plight of centralized sources, and reduce the financing cost of enterprises.

2.2. The influence of free trade zone on industrial value content

The proportional relationship between the value of manufactured goods and the value of imported raw materials is used to measure the degree of processing of goods in member countries, and to determine whether the finished products have the local origin qualification. Through the investigation of different free trade zones, it is found that the calculation method of the standard can be roughly divided into the value gain of exporting countries, the value gain of imported products and the value gain of parts. First of all, the value-added elements of exporting countries mean that the value added of exporting countries must reach a certain percentage, usually 40% - 60%. The composition of the value of imported products: there is a percentage upper limit value of the ratio between the value of imported inputs and the value of finished products, which shall not exceed this upper limit value. Thirdly, component value composition means that the proportion of original value of parts should reach the lowest percentage in the value of finished products. The advantage of this method is that the calculation accuracy is high and the related data is easier to verify [12]. Its shortcomings lie in that there are price fluctuations in the international market, and exchange rate fluctuations will aggravate the price fluctuations, thus affecting the calculation results; at the same time, for some sensitive industries, the cost of each link in the open and transparent industrial chain is unscientific; thirdly, the calculation of regional value of multi products is a challenge for the Customs Department, which increases the audit Burden. Process specification. This standard is mainly used to inspect whether the imported raw materials and parts have been fully processed and manufactured, so as to judge whether they meet the requirements of origin. The main method is to establish a list of processing procedures, which lists in detail the processing procedures required for the products to meet the quality standards. When the processing technology of imported raw materials meets the requirements listed in the list, it can be identified as substantive processing. Its advantages are accuracy, operability and so on. In actual operation, the Customs Department is also easy to judge. However, the shortcomings of processing standards are also obvious. First, the rapid development of science and technology, so that the list of Member States is lagging behind; second, when determining the process standards, interest groups are easy to manipulate; third, the content of SP is very complex, which increases the management cost of customs and the trade cost of export enterprises [13]. The chart below summarizes the various forms of rules of origin for specific products, each of which can have an additional special description or allow an additional description. Based on this, the economic rules of industrial origin are analyzed, and the specific analysis results are as follows:
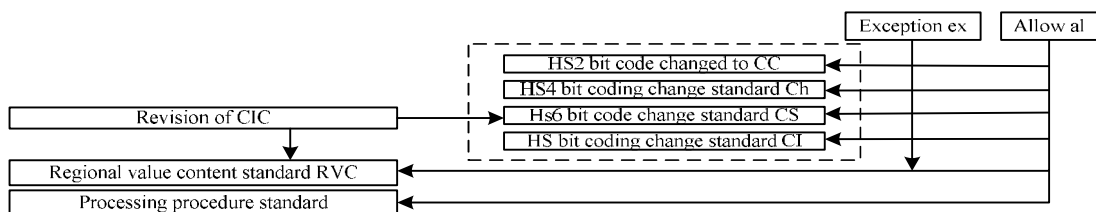

Figure 1. Economic rules of industrial origin

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Generally speaking, the exception label will make the rules of origin more stringent, which is applicable to the exception of high-speed 6-bit code change. If the final product belongs to high-speed 6-bit code X and is assembled by imported middleware, the middleware must be any of the high-speed 6-bit code change products except X. On the contrary, the additional conditions stipulated in the rules of origin make the rules of origin more relaxed. These rules can be divided into three types: cumulative rules, additional rules and direct entry rules. Since this rule is beyond the scope of this article, it only briefly introduces the accumulation rule. Under the division of international trade, the industrial chain of a product often involves more than two countries. Of course,

the whole industrial chain is also linked with the member countries in the FTA and the non member countries outside the FTA [15]. The cumulative rule is a supplement to the preferential rules of origin, which softens the rules of origin. Therefore, if necessary, cumulative rules can reduce the seriousness of rules of origin. Under the principle of accumulation, the value composition of some special imported raw materials can be equivalent to that of domestic similar products. According to the applicable scope of accumulation law, it can be divided into four types: bilateral accumulation, diagonal accumulation, regional accumulation and complete accumulation. Based on the above analysis, the economic development structure of preferential origin can be summarized as follows:
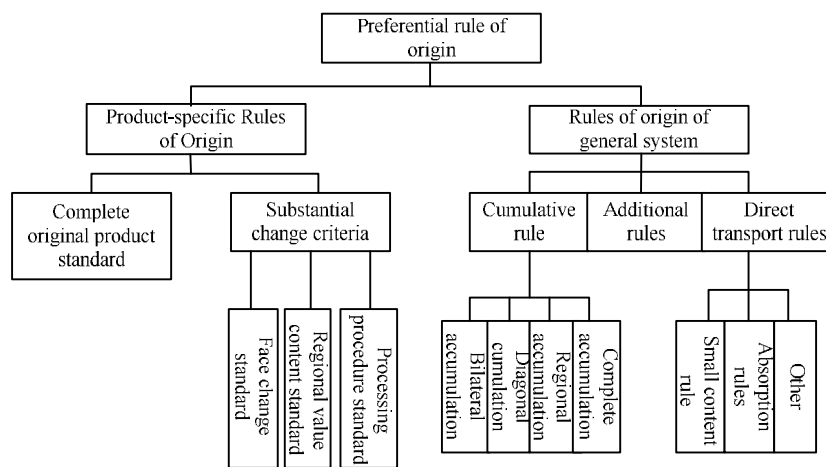

Figure 2. Economic development structure of preferential origin

The establishment of free trade is mainly through the reduction of trade tariffs among Member States and the gradual elimination of tariffs, so as to reduce the production costs of exporting countries and promote the trade circulation among Member States. However, due to the strict existence of rules of origin, domestic export enterprises of FTA member countries must not use intermediate inputs with high prices in order to comply with the rules of origin, which will eventually lead to cost increase, production decline and production distortion.

2.3. Analysis on the economic impact of free trade to industry

Tariff barrier is the concentrated embodiment of regional economic advantages. Regional economies need low or zero tariffs. When the domestic commodity trade of member countries is affected by cost-effectiveness, they will choose countries with high cost and low tax rate for trade transfer; in addition, regional cooperation and competition coexist, and enterprises of various countries compete in technological innovation and terms of trade, so as to promote the development of regional innovative economy. Its dynamic economic benefits are mainly

manifested in market benefits and enterprise benefits. At the market level, with the gradual weakening of tariff barriers, the domestic market originally limited to domestic trade has gradually expanded; countries require the formation of an interactive market through integration, so as to expand the scale and capacity of the market and create objective conditions for enterprises to realize scale economy. At the same time, the competitive environment faced by enterprises is becoming more and more intense. On the premise of balancing competition and scale, enterprises pursue economies of scale and improve labor productivity. As far as enterprises are concerned, with the development of trade, a large number of foreign capital has poured into China, and enterprises in various industries have ushered in the spring, which provides more financial support and development direction for the development of enterprises, and also promotes the progress of domestic science and technology. Moreover, the expansion of the competitive market, in a certain process, makes the enterprises of various industries in our country face greater market competition, thus increasing the competitive pressure of enterprises, so as to promote enterprises to improve the strength of white body labor pro-

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duction through the reasonable distribution of resources. Suppose that each country I exports to country j, the output of n is the total expenditure of each country on cost, insurance and transportation; P is the proportion of product w to expenditure, and u is the composite value index. Table rewriting flexibility is as follows:

$$S_{ijk} = u \left(\frac{P_{ijk}}{W_j} \right)^{1-s} \qquad (1)$$

The comparative advantage of different countries j_{ik} is affected by the price of different countries:

$$E = \frac{kp_i}{j_{ik}} - S_{ijk} \qquad (2)$$

Labeling refers to the trade cost of K product with K product in country I and country j, including tariff, rules of origin restrictions, etc. J national consumer price is:

$$P_{ijk} = t_{ijk} p_{ik} / E + S_{ijk} \qquad (3)$$

If X represents total trade, then bilateral trade between country I and country j:

$$\begin{aligned} V_{ij} &= \sum_k P_{ijk} X_{ijk} = \sum_k S_{ijk} E_j \\ &= \sum_k \left(\frac{P_{ijk}}{P_j} \right)^{1-s} E_j \\ &= \sum_k \left(\frac{t_{ijk} p_{ik}}{P_j} \right)^{1-s} E_j \end{aligned} \qquad (4)$$

Suppose that the GDP of country j is calculated according to its total exports to all countries (including country I itself):

$$\begin{aligned} Y_i &= \sum_{j=1}^m V_{ij} = \sum_{j=1}^m \sum_k \left(\frac{t_{ijk} p_{ik}}{S_{ijk}} \right)^{1-s} E_j \\ &= \sum_k \left[p_{ik}^{1-s} \sum_{j=1}^m \left(\frac{t_{ijk}}{S_{ijk}} \right)^{1-s} E_j \right] \end{aligned} \qquad (5)$$

The cost of trade between products is:

$$\overset{\smile}{\Omega}_i = \sum_k \left(\frac{1}{j_{ik}} \right)^{1-s} Y_i V_{ij} \qquad (6)$$

It can be expressed as PI and rewritten as pi:

$$p_i = \frac{Y_i}{\overset{\smile}{\Omega}_i} \qquad (7)$$

Based on the rules of origin, enterprises reduce production. If an enterprise wants to obtain the certificate of origin at the time of export, it must increase the use of intermediate input L, so that the more input L, the higher the cost. As shown in the figure, in order to produce the same amount of products, the enterprise must increase the input of more l to obtain high cost. By comparison, under the condition of the same output and more strict rules of origin, the cost De is taken as the production point with higher cost paid by the enterprise. Enterprises according to the same cost and strict as for plate making,

the more strict the original version, the more strict the rules of plate making.
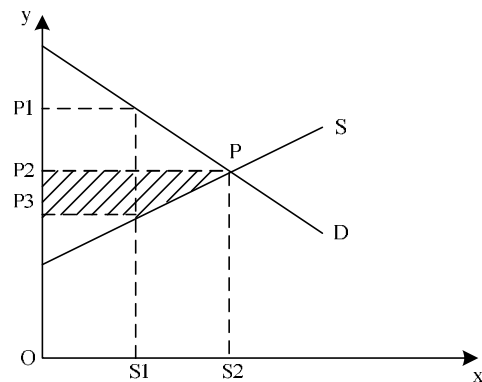

Figure 3. Distribution function of industrial economic benefits

The establishment of trade will produce trade creation effect and trade transfer effect. When exporting final products, enterprises can choose raw materials and other inputs as much as possible according to the requirements of the rules of origin. Although the investment cost of free trade zone is high, as long as the tariff rate is higher than the corresponding cost, enterprises will increase investment. This practice of replacing low-cost input with high-cost investment in the region has led to the trade transfer that the free trade zone hopes to see, that is to say, to strengthen the economic ties between the member countries in the region. However, in practice, due to the high origin restriction index and high cost of using preferential tariff, enterprises prefer to give up preferential tariff rather than use intermediate products in areas with higher prices, so as to gradually reduce the use of intermediate products and reach the level before the establishment of free trade zone. Therefore, in this case, a high level of rules of origin will offset the trade creation effect and weaken the trade diversion effect.

3. Analysis of Experimental Results

Economic development not only depends on the population, education, industrial structure and other inherent economic factors, but also the policy effect brought by major policies will change the economic development of a region. Compared with the single difference method, the double difference method is based on the establishment of experimental group and control group. The dummy variables are "establishment of free trade area" and "establishment of free trade area". The control variable is other variables that affect regional economy. Double difference method can accurately evaluate the effect of policy, and it is widely used in policy effect evaluation. The quasi experimental method required by the two

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methods can be compared with the control group. As special economic zones, different types of free trade zones and free trade zones are different from the implementation of other policies. In recent years, the earliest free trade zones and free trade zones were established with the approval of the State Council, not the same batch. Therefore, it is impossible to divide all the experimental groups and control groups according to the year of implementation of a certain policy. Therefore, in order to achieve the important standard of distinguishing the experimental group from the control group, this paper adopts the dummy variable method and introduces the virtual variable free trade access to reflect whether it belongs to the free trade zone. In the data of the two categories, for the free trade zone group, the number of cities in each free trade zone category is 1, and the number of cities without free trade zone is 0. Among these regions, one province has established a free trade zone, and none has. There were natural differences between the established province and the non established province in all samples.

From the approval of the State Council to the establishment of FTA, the choice of FTA is one of the factors to be considered. Through the empirical study of several free trade zones (including free trade zones, free trade zones, free logistics parks and comprehensive bonded zones), the research group takes provincial capital cities, large cities, sub provincial cities, second tier developed cities and weaker second tier cities as the research objects. The free trade zone is selected according to the local city information. Fixed assets investment is the basic data of macro-economy, which plays an important role in forecasting economic development. In the development of local economy, the phenomenon of large investment and long construction period of fixed assets investment projects is quite common. In a sense, fixed assets investment promotes economic development, and also drives the development of regional economy, "getting rich first, getting rich later". The provincial and municipal fixed assets investment is taken as the index to reflect the future GDP growth ability. The data are from China Urban Statistical Yearbook and the website of National Bureau of statistics.

Table 3. Investigation on GDP growth capacity of free trade zone

Variable name	Maximum	Minimum value	Mean value	Standard deviation
GDP logarithmic form	24.45	0.50	2.19	0.66
GDP per capita in logarithmic form Is there a bonded area	21.70	-0.21	0.26	0.52
The number of students in Colleges and Universities	31.04	-0.10	0.23	0.44
Total Population	61.06	-0.21	0.24	0.59
Budgetary expenditure	62.03	-0.12	0.33	0.45
Output value of secondary industry / GDP of the year	66.22	0.26	0.84	0.66
Investment in fixed assets natural	70.40	0.36	0.95	0.46
Population	71.22	0.42	0.84	0.75
Growth rate	75.46	0.23	0.65	0.88
Output value of secondary industry / GDP of the year	59.64	0.46	0.64	0.81
Investment in fixed assets	70.22	0.32	0.72	0.94
natural population growth rate	51.82	0.21	0.55	0.92

In order to make the policy effect analysis more scientific, this part firstly verifies the Hausman model to determine whether the model conforms to the fixed effect model, and verifies whether the model and whether the fixed effect model are, so as to achieve double differences, so as to obtain the actual effect of the free trade zone policy.

$$Y_{it} = b_0 + b_1 \text{Bondedarea}_{it} + a X_{it} + g_i + e_{it} \qquad (8)$$

$$Y_{it} = b_0 + b_1 \text{FreeTradeArea} + a X_{it} + g_i + e_{it} \qquad (9)$$

Among them, formula (8) is the model of free trade zone groups, bondedarea is a dummy variable, which indicates whether cities establish free trade zones in year t, and its type is 1, which is the coefficient to explain the influence of policies on explanatory variables. The control variables such as the budget expenditure and the proportion of the secondary industry are x, and the coefficient of the control variable is a, and each city has a certain influence. The policy effect of establishing free trade area by dichotomy. The regression results are as follows:

Table 4. Trade regulation effect zone

	Log GDP of various bonded areas	Log GDP of free trade zone
Is there a free trade zone / free trade zone	0.332564	0.44201
The number of students in Colleges and Universities	0.01510	0.02013
Investment in fixed assets	0.04545	0.03302
Expenditure within the budget	0.02150	0.03064
Proportion of secondary industry in GDP	-0.05451	0.32210
Total Population	-0.03325	0.15215

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Annual natural growth rate of population	-0.02651	0.23201
Cons	1.45812	1.68420
Urban individual fixed effect	control	control
N	165840	153320
R^2	0.65950	0.15840

In view of the fact that the impact of the previous period's yield on the free trade zone policy is not obvious, this part only studies different types of free trade zones. Considering the differences in resources, history and policy enjoyment of different regions, in order to further confirm the impact of the establishment of Free Trade Zone on various regions, according to the private fixed assets investment data released by the National Bureau of statistics in 2015, the samples are divided into three regions, namely, Eastern, central and central, and tested by the model. It is found that the establishment of free trade zone has no obvious pulling effect on the economic development of the central region, but has a greater pulling effect on the eastern region. Comparing the regression coefficient between the eastern region and the western region, we can find that the establishment of the free trade zone has a greater pull on the western region. In

this paper, the double difference empirical research method is adopted, and the premise is that the experimental group and the control group meet the parallel trend, that is, under the influence of the policy of "establishing multiple free trade zones or free trade zones", the observation results of the experimental group and the control group should be consistent. By comparing the log trend of the experimental group and the control group, it is found that their trend is completely consistent before the implementation of the policy, which is in line with the parallel trend test. Then, the GDP data of the four years before the establishment of China's free trade zone were analyzed by logarithm analysis and parallel trend test. Therefore, the GDP data of the experimental cities and the control cities four years before the establishment of the first free trade zone in China are taken for logarithmic observation, and the charts are drawn.
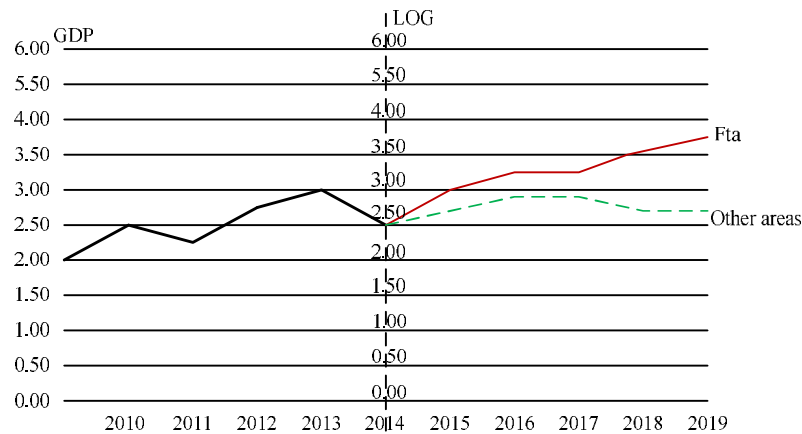

Figure 4. Analysis of survey results

Based on the test results of the above figure, it can be seen that under the same policy, the impact of the economic and industrial structure development parameters of the free trade zone is obviously better than that of other regions, which fully meets the research requirements.

4. Conclusion

Under the premise of maximizing economic benefits, the multi-national economic cooperation relations or organizations composed of many countries, whose main task is to develop economy, whiten bilateral or multilateral trade by reducing intra regional trade tariff or zero tariff, coping with the huge pressure of external economic forces through scale effect, and strengthening economic ties among countries through regional economy The land has

promoted political stability and economic prosperity. With the deepening of economic globalization, the relationship between countries in the world is getting closer and closer, and the scale of trade is becoming smaller and smaller. Therefore, it is necessary to analyze the economic impact of large-scale free trade zone on major industries, construct economic community and free trade zone, and analyze the impact of industrial economic development on regional economy, which is immeasurable for free trade zone.

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