Study on the Integration of Strategic Emerging Industries and Modern Service Industry in Guangdong Province

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Abstract

Adopting the input-output method, by measuring the correlation, interaction and integration of the integration and development of strategic emerging industries and modern service industries in Guangdong Province from 2005 to 2015, it is found that the driving force of strategic emerging industries on modern service industries is relatively strong, and the pulling effect on other industries is also increasing, and the integration degree of Guangdong's modern service industries on strategic emerging outputs is smaller than that of strategic emerging industries. The integration degree of modern service industry in Guangdong Province is smaller than that of strategic emerging industries, which indicates that the development of production service industry depends on the promotion of strategic emerging industries, and the integration is poor, reflecting the imbalance of the coordinated development of the industrial structure level in Guangdong Province.

Keywords

Strategic emerging industries; Modern service industry; Industrial integration; Input-output approach.

1. Introduction

The State Council issued the "On accelerating the cultivation and development of strategic Emerging Industries The Decision on Accelerating the Cultivation and Development of Strategic Emerging Industries" points out that, according to the characteristics of strategic emerging industries, based on China's national conditions and scientific and technological and industrial foundations, at this stage, we will focus on the cultivation and development of energy conservation and environmental protection, new generation of information technology, bio-technology, high-end equipment manufacturing, new energy, new materials, new energy automobile and other industries. According to the plan, by 2020, the added value of strategic emerging industries will account for about 15% of GDP. Energy-saving and environmental protection, new generation information technology, biology, and high-end equipment manufacturing industries will become the pillar industries of the national economy, and new energy, new materials, and new energy automobile industries will become the pioneer industries of the national economy. Guangdong Province is the frontier of reform and opening up, in order to earnestly implement the work of vigorously developing strategic emerging industries, the 2017 "Guangdong Province Accelerating the Development of Strategic Emerging Industries Implementation Programme" points out the key areas of development, and while vigorously developing the five pillar industries and the four strategic industries, it focuses on promoting the development of new-generation information networks, new displays, intelligent manufacturing, biomedicine, intelligent transportation equipment, high-end manufacturing Materials six major areas of development and growth. In order to implement the innovation-driven development strategy, promote the optimisation and upgrading of industrial structure,

and build a new modern industrial system based on the service economy, Guangdong Province has also formulated the "13th Five-Year Plan for the Development of Modern Service Industry in Guangdong Province" to guide the upgrading of industrial structure in Guangdong Province. Both strategic emerging industries and modern service industry are the engine of Guangdong Province's economic development, technological innovation makes the boundaries of industrial division of labour become more and more blurred, the development of strategic emerging industries promotes the development of modern service industry, the development of modern service industry accelerates the development of strategic emerging industries, the two industries are interdependent and interpenetrating, the integration of the two industries is inevitable, and gave rise to a series of new industries. This paper investigates the integration degree of the two industries in order to explore whether the industrial structure of Guangdong Province is coordinated, and to provide a reference basis for the upgrading of industrial structure.

2. Literature Review

2.1. Research on the Integration of Strategic Emerging Industries and Modern Service Industries

There are a lot of articles about "strategic emerging industries" and "industrial integration", but there are not many articles about the integration of strategic emerging industries and modern service industry, and the literature mainly focuses on the following aspects:

Research is conducted from the perspectives of the path of integration of the two industries and the effects of integration. The integration of the two industries promotes intra- and inter-industry structural upgrading and transformation, and improves social and economic efficiency. Wang Zhixin et al. (2017) used grey correlation analysis to measure the impact of the integration of science and technology services and strategic emerging industries on industrial upgrading, and Xiao Xingzhi (2010) believed that strategic emerging industries have an upgrading and promoting effect on modern service industries such as Jinqiang and logistics. Qian Zhixin (2010) points out that a sound financial industry can promote the rapid development of new energy industry. Wang Changlin (2011) points out that in the future the degree of integrity of computer information technology and biomedicine, high-tech materials and other industries will deepen the impact on economic development. Wang Xiaoping (2011) suggests new industries that may emerge after the integration of the two industries, such as new energy services, high-end manufacturing services, biomedical services and so on. Liu Hanxiang et al. (2013) believe that the integration of strategic emerging industries and modern service industries should be promoted with the financial industry as the basis, the new generation of information technology industry as the support, and the modern logistics industry and high-end equipment manufacturing industry as the focus. Liu Hanxiang (2014) used the method of case analysis to study the mechanism of the integration of strategic emerging industries and service industry in China, the United States and Japan, and put forward the borrowing experience of foreign countries and the shortcomings of China's

Measurement of the integration of strategic emerging industries and modern service industry. Xu Yuanyuan (2015) calculated the intermediate product input rate, intermediate product demand rate, inductance coefficient, influence coefficient and integration degree of strategic emerging adoption and modern service industry by using the input-output table method to analyse the correlation, interaction and integration degree of the integration of strategic emerging adoption and modern service industry in Anhui Province. Zhang Yanfang (2015) also used the input-output table method to calculate the direct consumption coefficient and integration degree of strategic emerging adoption and modern service industry in Tianjin. He Zhengchu et al. (2012) calculated the intermediate input rate and intermediate demand rate of

strategic emerging industries and modern service industry to analyse the degree of integration, and found that when China's strategic emerging industries drive the development of the production service industry, the two have uneven degree of integration and insignificant integration. The strategic emerging industries have stronger integration power to the production service industry, while the production service industry relies too much on the inputs and demands of the strategic emerging industries. Yang Yiwen et al. (2012) constructed a quantitative model based on the production service market and used questionnaire data from the Yangtze River Delta region to empirically test the relationship between strategic emerging industries and the production service industry, concluding that the two industries can develop in a coordinated manner. Jin Chun (2017) used the value-based input-output model to measure the integration of the two industries in Hebei Province, and proposed that the integration of strategic emerging industries to modern service industry is strong, but the integration of modern service industry to strategic emerging industries is weak, the modern service industry does not play a full role in the development of strategic emerging industries, and the interaction of the integration of the two is insufficient.

Policy suggestions for the integration of strategic emerging industries and modern service industries. Liu Hanxiang (2013) points out that the government should formulate some relevant policies to create a favourable environment for industrial integration and enhance the impetus for the integration and development of the two industries. He Zhengchu et al. (2012) believe that the government should give some support from the macro environment, promote the flexible innovation and transformation of market mechanism and system, create a good institutional environment for pooling capital, technology, talents and resources, and guide the benign integration and development of strategic emerging industries and production service industry.

2.2. Literature review

The literature on the integration of strategic emerging industries and modern service industries has been very rich, and the literature reviewed above has the following characteristics:

1. For the measurement of the integration degree of strategic emerging industries and modern service industry, most of the articles adopt the input-output method to calculate the input rate of intermediate products, the demand rate of intermediate products, the coefficient of inductance, the coefficient of influence and the degree of integration, and due to the scarcity of data on patents in our country, almost no scholars have adopted the patent method to calculate the degree of integration.

2. The research on policy recommendations is relatively general, and given the complexity of China's national situation, the varying degrees of integration in different regions, and the different macro-environments, the policy recommendations are not targeted.

3. Most scholars believe that the integration of the two major industries promotes intra- and inter-industry structural upgrading and transformation, and improves socio-economic efficiency, and does not test this with empirical analyses.

3. Theoretical Framework

3.1. Integration mechanisms

3.1.1. Technological innovation as an intrinsic driving force for industrial integration

The diffusion of major technological innovations among different industries leads to technological integration, and technological integration makes different industries form a common technological foundation and makes the boundaries between different industries tend to be blurred, and the continuous development of strategic emerging industries provides strategic emerging industries with more specialised technological and knowledge services,

which contributes to the enhancement of the production efficiency of strategic emerging industries and the reduction of the transaction costs; in addition, the continuous development of strategic emerging industries requires a series of supporting specialised services, which also provides a strong impetus for the modern service industry. In addition, the continuous development of strategic emerging industries requires a series of supporting professional services, which also provides a strong impetus to the modern service industry.

3.1.2. Deregulation provides external conditions for industrial integration

The deregulation has led to the business of other related industries joining in the competition of this industry, creating a more relaxed policy and institutional environment for industrial integration, thus gradually moving towards industrial integration. Modern service industry is rapidly penetrating into the whole process of pre-production R&D, design, financing, medium-term management, logistics, marketing, after-sales service and information feedback of each industry within the strategic emerging industries, and the cultivation and development of the strategic emerging industries should be carried by industrial clusters (parks), and the policies should promote the development of the strategic emerging industries and the modern service industry in a certain spatial area in a clustered manner and then in an integrated manner, so as to realise the pulling effect of the modern service industry on the development of the strategic emerging industries. Through the policy to promote the cluster and integrated development of strategic emerging industries and modern service industry in a certain spatial area, and realise the pulling effect of modern service industry on the development of strategic emerging industries.

3.1.3. Industrial Symbiosis Theory

The vast majority of strategic emerging industries are industries, in which research and development, design, financing, marketing, after-sales service and so on were initially dependent on the manufacturing industry, but with the development of information technology, this part of the service industry has gradually been spun off from the industry to form an independent modern service industry to provide services for industrial enterprises. In addition, the combination of new-generation information technology (Internet of Things, cloud computing, digital virtual, etc.) and modern service industry in strategic emerging industries has given rise to new industries such as online banking, e-commerce, and cultural and creative industries. Therefore, in the development process of modern service industry and strategic emerging industries, they have formed a mutually beneficial industrial symbiosis form with strong integration, high interaction and coordinated development.

3.2. Input-output table method to measure industrial linkages, interaction and integration

3.2.1. Industrial linkages

Input-output tables describe horizontally the consumption in production in each sector, which can be divided into intermediate and final use according to its purpose, and represent the use and distribution of each sector in the national economic system. For each sector, total output is equal to the sum of the sector's intermediate use (intermediate demand) and final use (final demand), balanced as follows: intermediate use + final use = total output

The input-output table describes vertically the use of the products of each sector, and the inputs required by each sector are divided into intermediate inputs and value added. Total inputs consist of the sum of intermediate inputs and value added in a balanced relationship:

Intermediate inputs + value added = total inputs

Inter-industry sectoral linkages are economic relationships of dependence and constraints formed in the production process of various sectors of the national economy. Generally speaking, there are two forms, namely, backward linkages and forward linkages. Backward linkages are

the ratio of intermediate inputs to total inputs in sector j, i.e. the intermediate input rate. Forward linkages are the ratio of intermediate use to total use in industry sector i, i.e. the intermediate demand rate.

3.2.2. Industrial interaction

The coefficient of inductivity, which reflects the degree to which an industry sector is demand-sensitive to the production of other industry sectors, i.e., the amount of output that needs to be supplied by that industry sector for the production of other industry sectors. The larger the indicator, the greater the demand for the production of that sector.

The stronger the industry sector's demand-sensing of economic development, the greater the degree of susceptibility to the influence of other industries, and the greater the economic

The more the development of other industrial sectors in the activity pulls on this industrial sector. The formula for calculating the coefficient of susceptibility is as follows:

$$r_i = n\sum_{j=1}^{n} B_{ij} / \sum_{i=1}^{n}\sum_{j=1}^{n} B_{ij} \quad i=1,2,...n$$

where r_i denotes the coefficient of inductance for industry sector i, and B_{ij} are the coefficients of row i and column j in the inverse Leontsev matrix.

The coefficient of influence reflects the extent to which the production of an industrial sector exerts a ripple effect on the production demand of other industrial sectors, and this indicator reflects the extent of the influence of an industrial sector on other industrial sectors. The larger the coefficient of influence of an industrial sector is, the greater the pulling effect on the development of other industrial sectors, and the greater the pillar role in the whole national economy. The formula for calculating the coefficient of influence is as follows:

$$s_i = n\sum_{i=1}^{n} B_{ij} / \sum_{i=1}^{n}\sum_{j=1}^{n} B_{ij} \quad j=1,2,...n$$

where s_i denotes the coefficient of influence of industry sector i, and B_{ij} are the coefficients of row i and column j in the inverse Leontsev matrix.

3.2.3. Industrial integration

This paper mainly studies the integration development of strategic emerging industries and modern service industry in Tianjin, modern service industry relies on the development of science and technology, knowledge, and strategic emerging industries are high-tech, high-knowledge, economic oriented content of the representative industry, so the main path of the integration development of the two industries is the integration of the various sub-industries of the modern service industry to the sub-industries of the strategic emerging industries in the sum. When measuring the integration degree of the two industries, the total input value of the modern service industry in the strategic emerging industries is divided by the total output value of the strategic emerging industries, and the value of this ratio will theoretically be in the interval of [0,1], and the closer it is to 1, the higher the integration degree is, and vice versa.

The formula can be written as follows:

$$R_z = \frac{F_f}{Z_z}$$

Among them. R_z denotes the integration degree of strategic emerging industries and modern service industry; F_f denotes the total input value of modern service industry in strategic emerging industries, and Z_z denotes the total output value of strategic emerging industries.

4. Research on the Integration of Strategic Emerging Industries and Modern Service Industries

4.1. Sample Selection and Indicator Selection

This paper adopts part of the data in the input-output table of Guangdong Province in 2005-2015. As the classification of service industries in the input-output table of Guangdong Province

in 2005-2015 is different, in order to make the quantitative analyses comparable and easy to be operated, this paper takes out industries with the same naming in the period of 2005-2012 and carries on the statistical analyses. According to the Decision on Accelerating the Cultivation and Development of Strategic Emerging Industries published by the State Council, which points out seven strategic emerging industries such as energy conservation and environmental protection, new generation of information technology, biology, high-end equipment manufacturing, new energy, new materials, new energy vehicles, etc., five industries, namely, petroleum, coking products and processed nuclear fuels, chemical products, transport equipment, communication equipment, computers and other electronic equipment, and electric power and heat production and supply, are selected. production and supply of electricity and heat, and five industries were selected for modern service industries: transport, storage and postal services, information transmission, software and information technology services, finance, leasing and business services, and scientific research and technology services. Due to the change of statistical calibre, in the input-output tables of 2010, 2007 and 2005, the sector of transport, storage and postal services is equal to the transport and storage industry plus the postal industry, and the sector of scientific research and technical services is equal to the research and experimental development industry plus the integrated technical services industry.

4.2. Analysis of the Integration of Strategic Emerging Industries and Modern Service Industry in Guangdong Province

4.2.1. Measurement of the relevance of integration and development and analysis of results

In order to measure the correlation between the integration and development of strategic emerging industries and modern service industry in Guangdong Province, the input-output table of Guangdong Province in 2015 is collated, and the intermediate input rate and intermediate demand rate of strategic emerging industries and modern service industry in Guangdong Province in 2015 can be calculated by using the Excel software, and the intermediate demand rate and intermediate demand rate of strategic emerging industries and modern service industry in Guangdong Province in 2005, 2007, 2010, and 2012 can be calculated by the same reason. Similarly, the intermediate demand rate and intermediate input rate of strategic emerging industries and modern service industry in Guangdong Province in 2005, 2007, 2010 and 2012 can be calculated, see Table 1 and Table 2.

Table 1. Demand coefficients for intermediate products in Guangdong Province

Product Sector	2015	2012	2010	2007	2005
Petroleum, coking products and processed nuclear fuel products	0.857	0.7855	1.342	0.8187	1.1614
Chemical products	0.5455	0.5412	0.5953	0.6301	0.6619
Transport equipment	0.481	0.4897	0.5201	0.4794	0.3325
Communications equipment, computers and other electronic equipment	0.7389	0.738	0.6207	0.6519	0.4565
Production and supply of electricity and heat	0.5779	0.563	0.5479	0.5645	0.4213
Transport, storage and postal services	0.3951	0.336	0.2911	0.2819	0.3606
Information transmission, software and information technology services	0.2119	0.2276	0.2038	0.1982	0.3132
financial	0.2386	0.2682	0.4337	0.4303	0.4043
Leasing and business services	0.3363	0.3367	0.3743	0.3865	0.6108
Scientific research and technical services	0.0926	0.0609	0.2869	0.1768	0.162

From the above table, it can be concluded that the demand coefficients of intermediate products of strategic emerging industries, except for the industry of transport equipment, are all greater than 0.5, which is relatively high and belongs to the intermediate product industry; while the demand coefficients of intermediate products of modern service industry are all less than 0.5, which is relatively low and belongs to the final product industry. The intermediate demand rate of each strategic emerging industry is higher, and the production promotion of each industry is

stronger, and the production promotion of transport equipment to other industries is not obvious. The low intermediate demand rate of the information software industry in the modern service industry also highlights the relatively low average degree of informatisation in various industries.

Table 2. Input coefficients of intermediate products in Guangdong Province

Product Segment	2015	2012	2010	2007	2005
Petroleum, coking products and processed nuclear fuel products	0.327833224	0.313703	0.179092799	0.1987414	0.32879587
Chemical products	0.592167106	0.589541	0.607605951	0.6193406	0.59525669
Transport equipment	0.6169 29874	0.596533	0.557863289	0.5582185	0.40100695
Communications equipment, computers and other electronic equipment	0.691259697	0.692949	0.665442951	0.7013231	0.58732561
Production and supply of electricity and heat	0.474168946	0.481724	0.533487108	0.4965262	0.48590016
Transport, storage and postal services	0.51129518	0.522183	0.469209169	0.3988907	0.41411092
Information transmission, software and information technology services	0.325642566	0.472004	0.274731665	0.3088766	0.22900279
financial	0.1708769	0.249331	0.381408082	0.3411306	0.2101363
Leasing and business services	0.419466608	0.438272	0.357424026	0.3153541	0.35044334
Scientific research and technical services	0.234189369	0.259955	0.360520729	0.4102488	0.26713683

From the above table, it can be concluded that most of the intermediate product input coefficients of strategic emerging industries are more than 0.5, which is relatively high, while the intermediate product input coefficients of modern service industry are less than 0.5, which is relatively low, and it can be seen that the strategic emerging industries promote the development of modern service industry. The intermediate input coefficient of strategic emerging industries is more, and the added value of the industry is lower, which is closer to the rough production and input mode in the process of industrialisation; the intermediate input rate of energy-saving and environmental protection industry reflects the phenomenon of insufficient development power of the emerging industry. According to Hirschman's industrial linkage benchmark, the selection of dominant industrial sectors should be ranked according to the size of the backward linkage coefficient of industrial sectors. As can be seen from the above table, the order of selection of leading industries in Guangdong Province should be communications equipment, computers and other electronic equipment, transport equipment, chemical products, these three industrial sectors from 2005 to 2015, the coefficient of intermediate product inputs showed an increasing trend, and they are all greater than 0.5, the dominant sector has a strong tendency to intermediate demand for intermediary products, to support the dominant sector growth of the intermediate sector input sectors The dominant sector has a strong tendency to demand intermediate products, which provides a market for the intermediate input sectors that support the growth of the dominant sector, so the dominant industry sector can drive the effective growth of the economy through the chain reaction of demand expansion.

It can be concluded from Tables 1 and 2 that, with a classification criterion of 0.5, the petroleum, coking products and processed nuclear fuels sector and the production and supply of electric power and heat have large forward correlation effects and small backward correlation effects, belonging to the intermediate input-type basic industries; the chemicals sector and the communications equipment, computers and other electronic equipment sector have large forward correlation effects and large backward correlation effects, belonging to the intermediate The chemical products sector and the communication equipment and computer and other electronic equipment sector have large forward and backward correlation effects and are intermediate input manufacturing industries; the transportation equipment sector has a

small forward correlation effect and a large backward correlation effect and belongs to final-demand manufacturing industries; and the service industries: transportation, warehousing and postal services, information transmission, software and information technology services, financial services, leasing and business services, and scientific research and technological services have small forward correlation effects and small backward correlation effects, and belong to final demand-based basic industries.

4.2.2. Measurement of Interactivity in Integration Development and Analysis of Results

In order to measure the interaction of the integration and development of strategic emerging industries and modern service industry in Guangdong Province, the input-output table of Guangdong Province in 2015 is collated, and the coefficient of inductivity and coefficient of influence of strategic emerging industries and modern service industry in Guangdong Province in 2015 can be calculated by using Excel software, and the coefficients of inductivity and coefficient of influence of strategic emerging industries and modern service industry in Guangdong Province in 2005, 2007, 2010, and 2012 can be calculated in the same way, see Table 3 and Table 4. Similarly, the coefficient of inductance and coefficient of influence of strategic emerging industries and modern service industry in Guangdong Province in 2005, 2007, 2010 and 2012 can be calculated, see Table 3 and Table 4.

Table 3. Guangdong Inductance Factor

Industry Sector	2015	2012	2010	2007	2005
Petroleum, coking products and processed nuclear fuel products	0.8707	1.0223	1.0133	0.9259	1.225
Chemical products	1.2924	1.2702	1.3844	1.4829	1.5163
Transport equipment	0.957	0.9619	1.0709	0.9787	0.8721
Communications equipment, computers and other electronic equipment	2.446	2.3743	1.8262	2.0657	1.1668
Production and supply of electricity and heat	1.0418	1.0425	1.0668	1.0856	1.039
Transport, storage and postal services	0.8329	0.7775	0.7622	0.708	0.898
Information transmission, software and information technology services	0.6191	0.621	0.6284	0.6211	0.8197
financial	0.7214	0.7089	0.9155	0.8806	0.811
Leasing and business services	0.6943	0.7136	0.7496	0.7146	1.0119
Scientific research and technical services	0.5244	0.5078	0.5827	0.5367	0.6402

Table 4. Impact Coefficient of Guangdong Province

industry sector	2015	2012	2010	2007	2005
Petroleum, coking products and processed nuclear fuel products	0.7902	0.7578	0.6491	0.6535	0.9129
Chemical products	1.1518	1.1367	1.1984	1.2091	1.344
Transport equipment	1.2492	1.2048	1.1683	1.154	1.0138
Communications equipment, computers and other electronic equipment	1.5476	1.5483	1.4648	1.5748	1.3527
Production and supply of electricity and heat	0.9259	0.939	1.0365	0.9744	1.0592
Transport, storage and postal services	1.0405	1.0377	0.9289	0.8507	0.9777
Information transmission, software and information technology services	0.9222	0.9166	0.8325	0.8741	0.8042
financial	0.64	0.7116	0.8524	0.793	0.7804
Leasing and business services	0.9894	0.9795	0.8926	0.8385	0.9046
Scientific research and technical services	0.7432	0.768	0.9766	1.078	0.8504

The coefficient of inductance is also known as the coefficient of propulsion, and industries with a coefficient of propulsion greater than 1 play a greater role in promoting economic

development, and the higher the coefficient, the greater the role of propulsion. From the above table, it can be seen that chemical products, communication equipment, computers and other electronic equipment, electricity, heat production and supply of the inductance coefficient are greater than 1, indicating that the inductance of the higher than the average social inductance level, the other industrial sectors to support the role of obvious. The coefficient of inductivity of the modern service sector is less than 1, and the time trend is not obvious.

Influence coefficient is also known as the driving coefficient, driving coefficient greater than 1 of the industry on the production of various industries fully induced by large, in the economic development of an important driving role. Transportation equipment, communication equipment, computers and other electronic equipment, transportation, storage and postal services show a year-on-year increasing trend, indicating that the pulling effect on other industries is increasing, and can stimulate the growth of total social demand; strategic emerging industries are more industry sectors with influence coefficients greater than 1, while the modern service industry is less than 1, indicating that the pulling effect of strategic emerging industries on the economy is slightly larger than that of the modern service industry. Modern service industry will be more favourable to the development of other industries.

4.2.3. Measurement of Convergence and Analysis of Results of Convergence Development

To facilitate the calculation, the input-output table of Guangdong Province in 2015 can be collated to obtain Table 5 and Table 6

Table 5. Intermediate Inputs to Modern Service Industries by Strategic Emerging Industries in Guangdong Province, 2015

Outputs Inputs (in tens of thousands of yuan)	Transport, storage and postal services	Information transmission, software and information technology services	financial	Leasing and business services	Scientific research and technical services	intermediate input	Total outputs
Petroleum, coking products and processed nuclear fuel products	6034534	37180	80974	6587251	85314	12825253	26025117
Chemical products	128559	22144	13954	3631	2781228	2949516	154808023
Transport equipment	1255092	1341	19653	24673	13102	1313861	82028584
Communications equipment, computers and other electronic equipment	8526700	5131389	63960	10966091	99253	24787393	334586466
Production and supply of electricity and heat	3002902	1002720	598592	270331	329787	5204332	70480824

According to Table 5 and Table 6, it can be calculated that the total amount of input of modern service industry in strategic emerging industries in Guangdong Province in 2015:

F_{f15} =12272973+743541+6639673+7171274+1611923=28439384.

Total output of strategic emerging industries:

Z_{z15} = 26025117 + 154808023 + 82028584 + 334586466 + 70480824 = 667929014;

It can be obtained that the integration degree of modern service industry to strategic emerging industries in Guangdong Province in 2015 is:

$$R_{z15} = \frac{F_{f15}}{Z_{z15}} = \frac{28439384}{667929014} = 0.0425785$$

Similarly, the degree of integration of strategic emerging industries to modern service industry in Guangdong Province in 2015 can be calculated:

$$R_{f15} = 0.1656011.$$

Degree of Integration of Strategic Emerging Industries and Modern Service Industries in Guangdong Province, 2005, 2007, 2010 and 2012 Table 7 and Table 8

Table 6. Intermediate Inputs of Modern Service Industry to Strategic Emerging Industries in Guangdong Province, 2015

Outputs Inputs (in tens of thousands of yuan)	Petroleum, coking products and processed nuclear fuel products	Chemical products	Transport equipment	Communications equipment, computers and other electronic equipment	Production and supply of electricity and heat	Intermediate input	Total outputs
Transport, storage and postal services	510774	4735362	2294662	3061473	1670702	12272973	76034200
Information transmission, software and information technology services	7745	307734	150403	203611	74048	743541	44610200
financial	115285	1340571	762561	1043440	3377816	6639673	85014300
Leasing and business services	128923	3537502	1719893	1260464	524492	7171274	53577900
Scientific research and technical services	714	670828	668822	192595	78964	1611923	25063200

Table 7. Integration Degree of Guangdong's Modern Service Industry to Strategic Emerging Industries

	2015	2012	2000	2007	2005
Input	28439384	19373342	17765706	11993930	12224704
Total outputs	667929014	527694703	410186065	315447831	205990862
Degree of integration	0.0425785	0.0367132	0.0433113	0.0380219	0.0593459

Table 8. Integration Degree of Guangdong's Strategic Emerging Industries into Modern Service Industry

	2015	2012	2000	2007	2005
Input	47080355	41354690	25336599	14378255	6734033.1
Total outputs	284299800	205793200	160060500	97857894	65418596
Degree of integration	0.1656011	0.2009527	0.1582939	0.1469299	0.1029376

On the whole, the integration degree of modern service industry to strategic emerging outputs in Guangdong Province is smaller than that of strategic emerging industries to modern service industry, indicating that there is an asymmetric relationship between the integration degree of modern service industry to strategic emerging outputs and that of strategic emerging industries to modern service industry, reflecting that the operation of modern service industry relies on the inputs of strategic emerging industries, and that the modern service industry drives the development of strategic emerging outputs and the strategic emerging outputs promote the development of modern service industry. outputs, and strategic emerging outputs drive the development of the modern service industry. In addition to the integration degree in 2015, the integration degree of strategic emerging industries to modern service industry shows an increasing trend over time, the input volume of strategic emerging industries in modern service industry shows an increasing trend, but the growth of total output of modern service industry is relatively small, so the integration degree is increasing, the country has been vigorously developing the strategic emerging industries in the past few years, and has introduced many policies on strategic industries, the prosperous development of strategic emerging industries has promoted the development of modern service industry, and the development of strategic emerging industries has promoted the development of modern service industry. The

prosperous development of strategic emerging industries promotes the development of modern service industry, so the input of strategic emerging industries in modern service industry shows an increasing trend. The integration speed of strategic emerging industries to modern service industry is faster than that of modern service industry to strategic emerging output.

5. Conclusions and Recommendations

This paper adopts the input-output analysis method to calculate the integration development status of strategic emerging industries and production service industry in Guangdong Province from 2005 to 2015, and finds that the integration of the two industries is not very significant. This indicates that the demand driving force of the two is not consistent in the local development, the industrial structure is imbalanced, the development of production service industry depends on the promotion of strategic emerging industries, and the integration between the two is poor. This also reflects the imbalance in the coordinated development of the industrial structure of Guangdong Province, which is still under the development idea of "heavy industry, light service industry". The weak integration of production and service industries also means that the development of industries providing core technology services is not strong enough. If Guangdong Province wants to seize the economic and technological double high point, it must take advantage of such an industrial platform as strategic emerging industries to move forward to high-end manufacturing, and divest itself of the production and service sectors with core technological competitiveness, so as to realise the transformation from "Made in Guangdong" to "Created in Guangdong". This is the only way to realise the transformation from "Made in Guangdong" to "Created in Guangdong".

The Government should endeavour to create a favourable external environment for industrial integration support and promote the rapid development of industrial integration, such as intellectual property rights protection among enterprises, and support for property rights trading markets, information, technology, legal and other services.

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