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Abstract: On the basis of clear classification and review of the modern service industry in Guangdong province, and according to the input-output tables in Guangdong province in 2002 and 2007, the input-output table of 15 sectors, including 9 modern service industry sectors and the input-output table of 4 sectors, including only 1 modern service industry sector, are derived to analyze the input-output of modern service industry in Guangdong province. The analysis shows that modern service industry of Guangdong province has the characteristics of low input and high output, and that the rapid growth of consumer demand for modern service industry leads to Guangdong's persistent and rapid economic growth; as modern service industry of Guangdong province is highly capital-intensive industry, the development of modern service industry can ensure the persistent and rapid growth of the national economy; in Guangdong province, modern service industry's promoting role is greater than its leading role, and its growth rate is much higher than that of the other industries in the national economy.

Key words: Modern service industry; Input-output; Econometric analysis; Guangdong province

1. Introduction

Modern service industry is an emerging industry in the industrial development to a higher level whose development mainly relies on high technology, such as electronic information, and modern management idea, operation mode, the organization forms. Development degree of modern service industry is an important symbol to measure the regional synthesized competitiveness and the level of modernization.

The proportion of added value of service industry of Guangdong province had reached 42% in 2007, however the proportion of added value of modern service industry accounting for that had reached 57%, the proportion of the added value of the service industry of Guangdong Province is expected to reach more than 50% in the next few years, in a traditional definition, the service sector's contribution to the economy is more than the manufacturing industries', that is, it enters the post - industrial age. How to make modern service industry to be a new engine for economic development in Guangdong Province is an important task at present.

2. The summary of research on modern service

Modern service industry was first proposed by the American scholar Daniel Bell. Bell made a detailed analysis of the characteristics of the post - industrial society in his Coming of Post-Industrial Society, and highlighted the differences between the modern service industry in post - industrial society and the traditional service industries before. He said that the services sector then predominate in technical and informative service and public service in industrial society. Since then, a great deal of research was carried out on modern service industry abroad and important achievements have been made. However, limited by historical conditions, the domestic research in this field gradually developed until the late of last century.

Theoretical studies on the modern service industry in China, mainly center on the connotation and characteristics of modern service industry and background of the development of modern service industry and the stage of the development of modern

service industry and relations between the development of modern service industry and industrialization, and economic growth and the agglomeration phenomenon and agglomeration effect of development of modern service industry etc.

Hu Qiheng (2004) held that modern service industry is developed in the relatively developed stage of industrialization, mainly relying on information technology and modern ideas, information and knowledge relatively intensive service sector, and emphasize the features of high - tech knowledge and technology - intensive, compared with the traditional service industries. Zhou zhenhua (2005) studied on a number of specific basic conditions the development of modern service industry must rely on. First, the level of economic development constantly improve, and the high development of manufacturing show the trend of "service", bringing the generalization of service activities as well as to enter the service economy era. Second, the degree of social specialization and the associated market-oriented has continued to improve, so that a large number of services internal change to the service external, bringing service activities into an independent. Third, the use of modern information technology which is also network-based change part of the properties of the service activities and promote the generalization and independence of the service activities. Dai-Wen, Qin Yuan-jian (2006) put forward three development mode of the cluster development of modern service industry in a innovative way, separately for the development mode of virtual industry cluster , the development pattern of ecological industrial cluster and the model of industrial cluster chain groups, according to the characteristics of the development of modern service industry cluster ,Sought to provide development of modern service industry cluster with new ideas and methods , on the basis of the study on dynamic mechanism of the development of modern service industry. While Wang Chenrong(2007) Put forward the main problems existing according to the situation of the development of modern service industry in Henan Province and pointed out that suggestions on speeding up its development, good practical significance with a good practical significance. Domestic research on modern service industry, based on the input and output methods, is rarely seen. Wang Junhu (2008)studied on input - output relationship based on the investment structure

of production, output structure and Industry spread effect, as well as the social end user will eventually induce the production of modern service industry, etc, using the data of the "national input-output table in 2002" on China's modern service industry. Pan HaiLan (2008) analyzed the relevant characteristics of Chinese modern service industry, and put forward some countermeasures and suggestions to accelerate its development, based on the data of Chinese input-output in 2002, using three indicators of the input-output method, that is, direct consumption coefficient, influence coefficients and sensitivity coefficients. Zhong Xingyun (2008) pointed out that the adjustment of the internal structure of modern service industries play an important role in large and medium cities in promoting the overall development of the National economy, with the prediction methods of exponential growth model and linear regression model to forecast the growth trend prediction of subdivision industry and to determine the direction of adjustment of the internal structure, and the results were verified.

General description of analysis methods have been adopted with regard to the study of modern service industry in Guangdong Province such as analysis of their development status, existing problems, and that its development of the countermeasures , etc. Jing xia, Xu Jianxia (2008) pointed out that the opportunities and challenges faced by the modern service industry in Guangdong province on the basis of the analysis of modern service industry situation in Guangdong province, and put forward some related development. Zheng JingShu, Yuan Fei (2008) tried to find the right location on this basis of the in-depth analysis on the strengths, weaknesses, opportunities and challenges, existing in the current development of modern service industry in Guangdong, to develop measures to promote better and faster development of modern service industries in Guangdong. While the use of input-output method to explore the modern service industry in Guangdong Province, is almost no research results.

3. Input - output table of modern service industry in Guangdong

Province

Theoretical circles don’t achieve an agreement on accurate understanding of the concept and scope about modern service sector. A definition is used more frequently, that is: " Modern service industry is accompanied by the development of information technology and knowledge-based economy, with modern new technologies, new form and a new service mode to transform traditional services, creating demand, and guide consumption to the community to provide high value-added, high-level, and knowledge-based production and life service.” August 8, 2008 the Guangdong Provincial Statistical Bureau issued a circular on the establishment of a accounting system of value added of the modern service industry and preliminarily defined the modern service industry in Guangdong Province, including the following nine categories of activities: ① information transmission, computer services and software industry; ② financial services industry; ③ real estate; ④ leasing and business services; ⑤ scientific research, technical services and geological prospecting; ⑥ water conservancy, environment and public facilities management industry; ⑦ education; ⑧ health, social security and social welfare sector; ⑨ culture, sports and entertainment industries.

This nine industry categories which belong to the modern service mentioned above, according to the "National Economic Industry Classification" formulated by State Statistics Bureau in July 2002, is regard as the study of modem service industry departments. At present, the national and provincial basis of input - output tables are compiled every 5 years. Basis of input - output tables of the Guangdong Provincial Statistics Bureau in the last two years are based in 2002 and 2007, the most departments that referred are 122 and 135 respectively. The input - output table with nine modern services department of 15 departments can be derived according to these above-mentioned units in Guangdong Province in 2002 and 2007. they are：1. Agriculture, 2.Industrial 3.The construction industry 4.Transport e-mail storage industry 5.Information transmission, computer services and software industry, 6.Catering industry 7.The financial sector, 8.Real estate, 9.leasing and business

services, 10.scientific research, technical services and geological prospecting, 11. Water, environment and public facilities management industries 12.education, 13.health, social security and social welfare industries, 14.cultural, sports and entertainment, 15.resident services, public administration and social organization. Modern service industry includes nine department, they are: 5. information transmission, computer service and software, called the Information Service industry, 7. the financial industry, 8. real estate industry, 9. leasing and business services sector called the leasing business sector, 10.Scientific research , technical services and geological prospecting industry (referred to as IT services) 11.water conservancy, environment and public facilities management industry (referred to as water-based management industry), 12.education, 13.health, social security and social welfare sector (referred to as Health and Social services), 14.culture, sports and entertainment (the sports services). Non-modern service industry includes three sectors, they are: 4.transport e - mail storage industry, 6.drinks industry, 15. Resident services, public administration and social organizations (referred to habitat management industry in the public service) .The other three sectors belong to the first and second respectively, they are: 1.Agriculture, 2.Industrial, 3.The construction industry. The input-output tables of 15 departments of modern service industry in Guangdong Province In 2002 and 2007 are omitted.

Meanwhile, the input-output tables are exported which contain only a modern service sector and the other three industries in four sectors in Guangdong Province in 2002 and 2007. Input-output table of 4 departments of modern service industry in Guangdong Province in 2002 is shown in table 1, that in 2007 is shown in table 2.

Table 1 Input-output table of 4 departments of modern service industry in Guangdong Province in 2002 (￥100 million)

		Primary industry	Secondary industry	Modern service industry	Other service industries	subtotal	Final consumption	Capital formation	output	subtotal	input	Gross output
		1	2	3	4		Y_C	Y_I	Y_E	Y	Y_M	X
Primary industry	1	324.9	561.0	3.3	72.0	961.2	1038.4	99.3	176.5	1314.2	418.7	1856.6
Secondary industry	2	353.7	16112.0	825.2	1135.4	18426.3	2070.0	4320.2	13706.8	20097.0	13039.3	25484.0

Modern service industry	3	49.5	937.3	1015.8	797.6	2800.2	2326.7	231.6	50.0	2608.2	30.5	5377.9
Other service industries	4	90.6	1694.5	425.5	613.7	2824.2	1851.6	111.9	1281.1	3244.5	549.3	5519.5
subtotal		818.7	19304.7	2269.9	2618.7	25011.9	7286.6	4762.9	15214.4	27263.9	14037.8	38238.0
Payment for laborers	V	1012.1	2722.1	1049.1	1218.4	6001.8						
Fixed-asset depreciation	D	4.7	1059.7	241.7	381.1	1687.3						
The net production tax	T	17.2	977.4	847.5	320.3	2162.4						
Operating surplus	M	3.9	1420.1	969.7	981.0	3374.6						
Total value added	G	1037.9	6179.3	3108.1	2900.8	13226.1						
Total investment	X	1856.6	25484.0	5377.9	5519.5	38238.0						

Table 2 Input-output table of 4 departments of modern service industry in Guangdong Province in 2007 (￥100 million)

		Primary industry	Secondary industry	Modern service industry	Other service industries	subtotal	Final consumption	Capital formation	output	subtotal	input	Gross output
		1	2	3	4		Y_C	Y_I	Y_E	Y	Y_M	X
Primary industry	1	341.5	1468.9	7.9	268.1	2086.4	1478.2	13.0	145.9	1637.2	902.4	2821.2
Secondary industry	2	630.8	49770.2	2119.4	1921.1	54441.5	4600.5	10067.3	43949.3	58617.1	40243.1	72815.5
Modern service industry	3	79.7	2754.8	1958.5	1298.2	6091.2	5115.8	737.5	146.8	6000.1	0.5	12090.8
Other service industries	4	73.7	2738.5	547.6	884.7	4244.4	3972.1	331.1	2259.2	6562.4	827.7	9979.2
subtotal		1125.7	56732.4	4633.4	4372.1	66863.5	15166.7	11148.9	46501.3	72816.9	41973.7	97706.7
Payment for laborers	V	1684.2	6165.4	2219.5	1984.3	12053.5						
Fixed-asset depreciation	D	0.0	2631.8	763.8	618.7	4014.3						

The net production tax	T	11.3	2147.0	1712.1	688.5	4558.9
Operating surplus	M	0.0	5139.0	2762.0	2315.6	10216.6
Total value added	G	1695.6	16083.1	7457.5	5607.1	30843.2
Total investment	X	2821.2	72815.5	12090.8	9979.2	97706.7

4. The structure analysis of Guangdong province modern service industry

4.1 Industrial structure analysis

Industrial structure refers to technology and economic ties various industries in the economic activities form and some proportions displayed. In the process of economic activities there are wide, complex and close technology and economic ties between various industries and within the industry. This can be analyzed by two aspects, output structure and added value structure. Output refers to total value of goods and services, economic units have produced in accounting period, including the newly added value in accounting period and the transfer value of intermediate input, which reflects the total scale of economic unit production activities . Added value refers to newly added value and fixed assets transferring value economic units in the production process have created, which equals the balance after output deducting intermediate input . According to 4 departments and 15 departments input-output tables of the modern services in Guangdong province in 2002 and 2007,in 4 departments and 15 departments , the industrial internal structure (total output and added value structure)of modern service industry in 2002 and 2007 show respectively as table 3 and 4.

Table 3 Industrial structure of 4 departments in 2002 and 2007(%)

	year	The first industry	The second industry	Modern service industries	other service industries
Total output	2002	4.86	66.65	14.06	14.43
	2007	2.89	74.52	12.37	10.21

Added value	2002	7.85	46.72	23.50	21.93
	2007	5.50	52.14	24.18	18.18

Table 4 The industrial structure of 9 departments in modern industries in 2002 and 2007(%)

	year	Information service industry	financial industry	Real estate industry	Leasing business industry	Science and technology service industry	Water conservancy set tube industry	education	Health club service industry	Stylistic service industry
Total output	2002	17.72	16.04	18.88	20.28	4.38	2.49	8.96	7.84	3.41
	2007	13.72	24.31	21.90	15.84	4.99	2.20	7.87	6.14	3.03
Added value	2002	16.77	14.63	26.00	17.13	3.28	2.41	10.61	6.14	3.04
	2007	12.42	24.11	28.72	12.80	3.45	2.34	9.02	4.50	2.64

The calculation results from the table 3 show that modern service industry in total output occupies the smaller scale and the proportion in 2007 is smaller than that in 2002, but added value occupies bigger scale than the first industry and other services, and the proportion in 2007is bigger than that in 2002, which displays modern service industry has less input and higher added value and other advantages, and with the development of economy, modern service industry's contribution to economic grows. In table 4 data shows that, in addition to finance, real estate and scientific research, technical services and geological prospecting stage, the proportion of the other departments in total output and added value declines. However, we should see, finance and real estate industry taking a large proportion in the modern service industry, are important forces to economic growth.

4.2 consumption structure analysis

According to 4 departments and 15 departments input-output tables of the modern services in Guangdong province in 2002 and 2007,in 4 departments and 15 departments , final consumption structure in 2002 and 2007 show respectively as table 5 and 6.

Table 5 Final consumption structure of 4 departments in 2002 and 2007(%)

year	The first industry	The second industry	Modern service industries	other service industries
2002	14.25	28.41	31.93	25.41
2007	9.75	30.33	33.73	26.19

Table 6 Final consumption structure of 15 departments in 2002 and 2007(%)

year	agriculture	industrial	building industry	Transporting postal service	Credit services*	catering industry	financial circles*	Real estate industry *	Commercial leasing * industry	Scientific services *	Water set industry *	education *	Health club industry *	Stylistic industry *	Public living industry
2002	14.25	28.33	0.08	2.74	5.40	9.87	3.23	5.28	1.06	2.05	1.63	6.44	5.47	1.38	12.79
2007	9.75	29.36	0.97	1.89	5.34	12.95	4.69	7.77	0.83	1.44	1.52	6.15	4.61	1.38	11.36

Note: the table *refers to modern service industry.

Data in table 5 shows, the final consumption of modern service industry product in total consumption reach 30%, the first place in four departments, and little higher in 2007 than in 2002, which implies that the final demand of market to modern service industry is big and tends to increase. Therefore, in the final demand driving, the development of modern service industry will effectively pulled, and the optimization and upgrading of industrial structure is promoted. Table 6 data shows that in modern service industry, the proportion of final consumption in most department has fallen slightly, But in the real estate and finance final consumption has rising proportion which shows that financial and real estate industry is the future direction of the development of modern service industry in Guangdong province, At the same time, it also should be paid attention to coordinating each of the development within modern service industry departments.

4.3 intermediate input structure analysis

Input coefficient of intermediate products is that if one industry manufactures one unit product, how much it should consume products which other industries (including the industry itself) manufacture. Its value discretion can distinguish the industry as the primary industry or as the manufacturing. High coefficient, the industry as the manufacturing, conversely, the industry as primary industry. According to 4 and 15 departments input-output table of the 2002 and 2007 modern service industry in Guangdong province ,4 departments and 15 departments' input coefficient of intermediate products in 2002 and 2007 show as table 7 and 8.

Table 7 Input coefficients of intermediate products of 4 departments in 2002 and 2007

year	The first industry	The second industry	Modern service	Other service industries	Average

				industries		
2002	0.4409	0.7575	0.4221	0.4744	0.6541	
2007	0.3990	0.7791	0.3832	0.4381	0.6843	

Table 8 Input coefficients of intermediate products of 15 departments in 2002 and 2007

year	agriculture	industrial	building industry	Transporting postal service	Credit services *	catering industry	financial circles*	Real estate industry *	Commercial leasing industry *	Scientific services *	Water set industry *	education *	Health club industry *	Stylistic industry *	Public living industry	Average
2002	0.4409	0.7593	0.7391	0.5406	0.4532	0.4420	0.4729	0.2040	0.5118	0.5670	0.4409	0.3154	0.5478	0.4859	0.4594	0.6541
2007	0.3990	0.7802	0.7614	0.5300	0.4413	0.4013	0.3883	0.1912	0.5014	0.5741	0.3453	0.2930	0.5485	0.4620	0.4129	0.6843

Note: * mark for the modern service industries.

From the data in table 7 we can be seen, input coefficients of intermediate products of the modern services is in the smallest, and far below the average level, only 0.4221 in 2002 and 0.3832 in 2007, which illustrates that with every increasing production of 10,000 Yuan, modern service industry need other industries (including itself) provide product of 4221 Yuan and 3832 Yuan separately. Compared with the other three departments, this reflects the modern services' characteristics of low investment, and the downtrend of semi finished product input, overall it belongs to the basic industry. Compared with table 8, input coefficients of intermediate products of each department in modern service industry are lower than that of all industries, and besides extremely individual departments increased slightly, input coefficients of intermediate products of most departments fall more or less, which illustrates modern service industry is a typical fundamental industry.

4.4 capital equipment analysis

Capital equipment coefficient is a unit of department of depreciation of fixed assets investment corresponding to the input, the employee compensation coefficients of the employee compensation investment that, conversely, the coefficient of depreciation of fixed assets investment said. Accordingly, can determine capital equipment relative coefficients of the department are relatively large belongs to labor-intensive industries, capital equipment department relatively small capital-intensive industries belong to. Capital equipment only considers the direct input coefficient, without considering the

indirect investment. If the depreciation of fixed assets investment and laborer compensation, its use fully invested capital equipment coefficient than say completely, likewise, coefficients of the department are relatively large belongs to labor-intensive industries, small coefficient of department relatively belongs to capital-intensive industries. Relatively direct investment capital equipment, complete all, considering the coefficient calculation result is more scientific. According to the 2002 and modern service industry in Guangdong province April 2007 and 15 departments input-output table, four departments and 15 departments in 2002 and 2007 completely capital equipment coefficient table 9 and 10.

Table 9 The 4 sectors' capital equipment coefficients of 2002 and 2007

year	The first industry	The second industry	Modern service industries	Other service industries
2002	12.60	2.87	1.55	3.00
2007	16.05	2.93	1.58	2.76

Table 10 The 15 sectors' capital equipment coefficients of 2002 and 2007

year	agriculture	industrial	building industry	Transporting postal service	Credit services *	catering industry	financial circles*	Real estate industry *	Commercial leasing industry *	Scientific services *	Water set industry *	education *	Health club industry *	Stylistic industry *	Public living industry
2002	12.38	2.65	3.41	2.17	1.26	2.56	2.46	0.40	1.48	2.98	1.95	4.53	4.09	2.09	4.20
2007	16.03	2.77	3.53	1.50	0.89	2.80	5.05	0.44	1.63	3.92	1.10	5.04	4.46	2.11	4.73

Note: * mark for the modern service industries.

The data of the table 9 shows, modern services has the least complete capital equipment coefficient in 4 departments. This specifies that modern service industry needs more capital investment, technology and equipment, more investment, less labor force, and its output is proportional to investment but inversely proportional to the required number of labor in industry. It is a typical capital-intensive industry. However, the complete capital equipment coefficient of modern service industry in 2007 is larger than in 2002, meaning in relative to capital investment, labor inputs fast growth. It illustrates that along with the development of modern service industry, a lot of labor remuneration influx, laborer reward investment is obviously improved. We can know from the calculated results of table 10, capital equipment complete

coefficient of modern service industry departments is generally less than other departments with the least real estate, and belongs to capital-intensive industries. Corresponding to the results of table 9,except for computer information transmission, service and software, and water conservancy, environment and public facilities management, the complete capital equipment coefficient of other departments is increased which specifies the labor capital investment of the departments is relatively increased more. Overall, modern service industry has become one of important absorbing labor department. However, the development of capital intensive industry , needs a large number of technical equipment and capital, and limited by capital shortage , large population and backward technology, the development of large-scale capital-intensive industries will be encountered many difficulties. Therefore, we should start with reality; give full play to the initiative of the enterprise and government, and the orderly development of modem service industry.

5. The association analysis of modern service industry and other industries of Guangdong province

5.1 Sensitivity analysis of modern service industry

According to the 4 department and 15 department input-output table of modern services in 2007 and 2002 in Guangdong province, if the modern service industry output increased by 10 billion Yuan on condition that other industries was invariant, four department output in 2007 and 2002 are as shown in table 11. If the internal departments of modern services output increased by 10 billion Yuan respectively, and other industries were in the condition of constant use eventually, the output revaluation of 15 departments in 2002 and in 2007 is shown as table 12 .

Table 11 The 4 sectors' added value of GDP in 2002 and 2007

year	The first industry	The second industry	Modern service industries	Other service industries	total
2002	0.16	4.97	10.00	1.27	16.40
2007	0.17	6.12	10.00	0.75	17.04

Tablel2 2002 (upper part of the data) and 2007 (lower part of the data) 15 sector output increases

The increase of 1 billion	agriculture	industry	construction industry	E - mail transport industry	Convincing *	Drinking industry	The financial industry *	The housing industry *	Rental business *	Branch services industry *	Water based industry *	education*	Health Club Industry *	Style Industry *	Home Public sector	total
Convincing	0.22	6.65	0.04	0.45	10.00	0.96	0.31	0.29	0.51	0.09	0.01	0.01	0.01	0.02	0.09	19.66
The financial industry	0.19	5.35	0.06	0.79	1.03	1.13	10.00	0.79	1.18	0.03	0.01	0.02	0.01	0.36	0.12	21.06
The housing industry	0.07	1.78	0.31	0.18	0.12	0.25	0.42	10.00	0.55	0.05	0.00	0.00	0.00	0.03	0.06	13.83
Rental business	0.15	3.63	0.03	0.62	0.23	0.58	0.61	0.18	10.00	0.03	0.01	0.01	0.01	0.05	0.09	16.21
Branch services industry	0.30	8.53	0.06	1.34	0.76	1.84	0.35	0.46	0.59	10.00	0.04	0.02	0.04	0.22	0.16	24.71
Water based industry	0.26	7.91	0.06	0.74	0.79	1.30	0.30	0.16	0.56	0.14	10.00	0.04	0.06	0.16	0.14	22.62
education	0.18	5.58	0.05	0.59	0.38	0.77	0.30	0.11	0.60	0.15	0.01	10.00	0.08	0.14	0.10	19.05
Health Club Industry	0.43	14.28	0.04	0.74	0.28	1.03	0.32	0.15	0.57	0.09	0.01	0.01	10.00	0.04	0.11	28.09
Style Industry	0.37	10.32	0.03	0.60	0.30	1.06	0.63	0.21	0.55	0.10	0.01	0.01	0.01	10.00	0.12	24.33
Convincing	0.25	8.97	0.02	0.36	10.00	0.73	0.46	0.18	0.97	0.04	0.01	0.01	0.00	0.05	0.06	22.12
The financial industry	0.07	2.32	0.02	0.24	0.56	0.25	10.00	0.12	0.58	0.01	0.00	0.01	0.00	0.03	0.02	14.25
The housing industry	0.08	2.58	0.14	0.14	0.12	0.27	0.95	10.00	0.36	0.01	0.00	0.00	0.00	0.03	0.02	14.70
Rental business	0.32	11.34	0.07	0.58	0.13	0.78	1.14	0.17	10.00	0.03	0.03	0.01	0.01	0.04	0.06	24.71
Branch services industry	0.50	15.43	0.04	0.77	0.25	0.75	0.59	0.34	0.55	10.00	0.01	0.01	0.01	0.05	0.10	29.39
Water based industry	0.21	6.61	0.05	0.24	0.35	0.37	1.46	0.10	0.39	0.02	10.00	0.01	0.01	0.05	0.19	20.06
education	0.21	7.76	0.05	0.29	0.16	0.49	0.38	0.18	0.24	0.02	0.01	10.00	0.01	0.06	0.05	19.88
Health Club	0.41	16.14	0.08	0.38	0.48	0.57	0.61	0.24	0.36	0.04	0.01	0.01	10.00	0.03	0.11	29.48

Industry																
Style Industry	0.32	11.92	0.04	0.44	0.22	0.62	0.74	0.20	0.61	0.03	0.01	0.01	0.01	10.00	0.20	25.35

Note: * mark for the modern service industries.

From the calculated results of the table 11, modern service industry output increased by 10 billion Yuan. In the condition of other industries' constant usage, the second largest industrial output revaluation was the biggest. At the same time, the national total economy increased 16.39 and 17.17 million Yuan respectively and in 2007 it tended to rise than 2002. Table 12 data shows that the modern service industry output increased within 10 billion Yuan in the condition of other industries' constant usage, and it's more obvious that science and technology, culture, public health, and financial services pulled the national total economy to rise .We can see that, modern service industry of the national economy, is especially the role. Guangdong has begun to enter in the post-industrial age. At this stage, the rapid development of industry, even more than industrial, will play an important role in driving national economy efficient growth.

5.2 Modern service industry association analysis

According to the 4 and15 department input-output table of modern service industry in Guangdong province in 2002 and 2007, their induction degrees influence coefficients in 2002 and 2007 are as shown in list 13 and 14.

Table 13 The 4 sectors' influence coefficient and induction coefficient of every industry

sector	**induction coefficient**		**influence coefficient**	
	2002	2007	2002	2007
Primary industry	0.5447	0.5046	0.8771	0.8587
Secondary industry	2.0434	2.2721	1.3749	1.4625
Modern service industry	0.7206	0.6627	0.8366	0.8096
Other service industries	0.6913	0.5605	0.9114	0.8692
average	1	1	1	1

Table14 The 15 sectors' influence coefficient and induction coefficient of every industry

sector	induction coefficient		influence coefficient	
	2002	2007		2002
Primary industry	0.7138	0.6794	0.9214	0.9002
The second industry	6.1112	7.1372	1.4471	1.5417
building industry	0.4557	0.4268	1.4184	1.4969
Transporting postal service	0.9402	0.7015	1.0532	1.0646
Credit service	0.7546	0.5729	0.9303	0.9433
catering industry	1.0379	0.7459	0.8886	0.8441
financial circles*	0.6915	0.9457	0.8915	0.7372
Real estate industry	0.6192	0.5423	0.6082	0.5952
Commercial leasing * industry	0.9695	0.7103	0.9343	1.0414
Scientific services	0.4658	0.4395	1.0469	1.1779
Water set industry	0.4213	0.4048	0.9324	0.7982
education *	0.4196	0.4029	0.7851	0.7910
Health club industry	0.4257	0.4038	1.1598	1.1749
Stylistic industry	0.4746	0.4232	1.0252	1.0127
Public living industry	0.4993	0.4638	0.9578	0.8808
average	1	1	1	1

From the table 13 we can see, relative to the industry having bigger role in economic development, including modern service industry, all other industries induction coefficient is less than 1 degree , which specifies that these industrial society demand is not very strong ,with their relatively strong industrial

independence , playing smaller role in promoting the economic development ,and it also corresponds the current situation of economic development. We can draw the same conclusion by Analyzing the calculating result from table 14 , and the induction degree coefficient of modern service industry departments is less than 1, which illustrates that modern service industry departments of relatively strong independence and weak overall economic development impetus . But, after that, financial sense degree coefficient has raised which specifies that the financial industry in Guangdong plays a more important role in economic development.

Combined with the calculation results of table 13, on the whole, modern service influence coefficient is less than 1, which specifies from the perspective of the industrial connection, the development of modern service industry effects and pulls other industries not obviously, and with the passage of time, the affection weakened. The data of table 14 shows, modern service industry such as culture, sports and entertainment industry, scientific research, technical services and geological exploration etc. influence coefficient is greater than 1 .It specifies these departments have large complete induction to other industry production , and plays an important driving role in the development. And, after that, lease and business service, information transmission, computer service and software etc., such modern service department influence coefficients increased, which illustrates these departments play a increasingly important role in economic growth.

In the process of industrialization, when the growth rate of economic is quick, the induction coefficient generally showed a higher sector developed rapidly, while the impact of the higher coefficient of sector development to other industry sectors have a role in promoting development. Combination of tables 13 and 14 known, the modern service industry sensitivity coefficient is higher than the primary industry and other services, shows a whole, with the rapid economic growth, the development of modern service industry will be faster, on other industries to promote role will increase. However, the influence of modern service industry and other factors below the first service, indicating the development of modern service industry in driving the overall effect on the economy is not very clear.

6. Guangdong modern service industries' impact on Guangdong economic

Although the input-output method and econometric method are two great different quantity economic methods, in actual application, the two methods are often combined for economic analysis. Following, use the regression method, and establish the econometric model to analysis modern service industries' relationship with national economy and other industrial.

In order to do econometric analyses, a certain number of sample statistic data need to be collected. Because the document formally established the Guangdong province modern service industry accounting system in August 2008, so there is no system time series data of modern service industry, and in 2009 Guangdong statistical yearbook all accounting data of each city is not detail enough, so according to the 2008 Guangdong statistical yearbook 2007 Guangdong cities in GDP and various industrial added values' table cross-sectional statistics including modern service industry of are collected as table 15 shows.

Table15 2007 Guangdong cities in GDP and various industrial added value (0.1 billion yuan)

city	Guangzhou	Shenzhen	Zhuhai	Shantou	Foshan	Shaoguan	Heyuan	Meizhou	Huizhou	Shanwei	Dongguan
GDP	71091814	68015706	8959010	8501019	36051142	4716931	3280853	4106236	11049758	2912525	31519126
The first industry	1498737	69412	259684	471371	821750	669400	439770	877582	782407	537748	118991
The second industry	28067628	34047608	4946589	4498861	23277202	2286375	1752231	1781362	6512994	1354553	17909748
Modern service industry	22029369	21166639	1817021	1477648	5644315	714415	534273	701408	1743181	356821	8814791
Other service industry	19496080	12732047	1935715	2053139	6307875	1046741	554579	745883	2011175	663402	4675595

city	Zhongshan	Jiangmen	Yangjiang	Zhanjiang	Maoming	Zhaoqing	Qingyuan	Chaozhou	Jieyang	Yunfu
GDP	12380456	11070736	4078569	8925611	10246000	5930975	5939484	3802248	5858984	2710105
The first industry	380193	927631	1024290	2007142	1983449	1395225	840032	285946	770733	745422
The second industry	7533736	6156570	1596452	4140740	4223792	2015950	3227451	2181567	3201595	1208285
Modern service industry	2228618	1667083	470835	1132392	1264302	1022020	805797	526309	613162	341558
Other modern	2237909	2319452	986991	1645337	2774457	1497780	1066203	808426	1273494	414840

With cross-sectional statistical data in table 15, quantitatively research Guangdong province modern service industries' relationship with national economy and other industrial relations, and through the calculation of correlation coefficient between modern service industry and national economy and other industries, find that the relationship between modern service industries' added value and GDP and the second industry's added value are very close. According to the related theory, the regression model about modern service industry GDP and the second industrial added value can be established. At the same time, in order to eliminate cross-sectional data may exist heteroscedastic effect and smooth the data, establish a bi-logarithm econometric model as follows:

$\ln(GDPX)=a_0+a_1\ln(GDP)+u_1$

$\ln(GDP2)=b_0+b_1\ln(GDPX)+u_2$

GDP、GDP2 and GDPX separately refer to Guangdong area of GDP、the second industry value added and modern service industry added value .ln () says logarithm, a and b is parameters, u is random item. Use econometric method to estimate and inspection, the regression results as follows:

ln (GDPX) = 5.6866 +1.2416ln (GDP)

t (-7.61) (26.63)

R^2=0.9739，DW=1.6725，F=709.20

ln (GDP2) = 3.8884 + 0.8049ln (GDPX)

t (5.89) (17.36)

R^2=0.9407，DW=2.1268，F=301.49

In results Determination coefficient R^2, t, F inspection, the value DW of self relevant inspection are all good .It does not exist heteroscedastic through test, and the regression results are significant

By the estimation results, Guangdong modern service industries' elastic coefficient to GDP is 1.2417,in other words, the average rate of growth with Guangdong modern service industry in 2007 in all cities is 1.24 higher than that of GDP. On average, every change 1% of GDP, modern service industry will change 1.2416%. Guangdong

modern service industry growth rate is higher than that of GDP, which shows that the modern service industry is the result when the national economy develop to a certain degree, what the knowledge economy reflects, and which is also high development potential, And the second industry's elastic coefficient to modern service industry is 0.8049, the average growth rate of the second industrial added value in 2007 in all cities is 80.49% of that of modern service industry. On average, the modern service added value every change 1% ,the second industry added value will change 0.8049%.The growth rate of modern service industry is higher than that of the second industry. High-growth modern service can push the development of the second industry. Overall, modern service industry with faster economic growth than other industries is an important component of national economy in Guangdong province. the modern service industry will be plays more and more important position in the whole national economy, and will become the main driving force of the national economy growth.

7. Conclusion

Modern service industry, as one of the important economic growth point in modern economy, will be a key area to adjust the industrial structure, optimize the investment environment, and strengthen urban function for Guangdong Province in next phase. Therefore, there is a great practical significance in approaching the development of modern service industry in Guangdong, which will be an unavoidable major subject in realizing better and faster development of social and economic and the all-round construction of well-off society. According to the analysis above, it can be concluded:

(1) The share of output structure is low in modern service industry of Guangdong province, while its share of added value is relatively high, twice as much as the total output, which reflects the modern service industry in Guangdong province with a low input, high output characteristics. It seems internally that finance, real estate and s on share largely in the modern service industry, the proportion of which has continued to rise. so these are not only important force effecting economic growth and important

pillar industries in modern service industry of Guangdong, but also the focus of the development of modern service industry in Guangdong.

(2) It is the consumer demand effecting fundamentally the Guangdong economic development and the consumption demand for modern service industry ,accounting for the largest share ,has exceed the traditional services and industrial, to account for about 1/3 of the total consumption . This requires more focus on the coordinated and sustainable development of the modern service industry, to promote the optimization and upgrading of industrial structure, and finally realize the sustained economic growth in Guangdong province.

(3) In general modern service industry in Guangdong is primary industry. For the sake of paralleling with manufacturing, overall considerations are needed to make them coordinated development. Meanwhile, the modern service industry is highly capital-intensive, especially in the real estate trade, information transmission, computer services and software industry, with the characteristics of large investment and less capacity of labor force. However, with the development of economy, modern service industries are absorbing more and more labor force.

(4) We can find that modern service industry is promoting the Guangdong economy more and more involving the influence of output per unit. Moreover, the modern service industries ,comprised of the health and social security, social welfare service, culture, sports and entertainment industry, scientific research, technical services and geological prospecting, which are important industries affecting the national economy of Guangdong Province, should be progressed to keep the national economy in sustained and rapid growth.

(5) Modern service industry has little impetus to the overall economic development in Guangdong as a result of its relatively strong independence, but along with the rapid growth of economy, finance are promoting the economic development more. At the same time, although modern services industry is not driving the economic development obviously on the whole, the leasing and business services, information transmission, computer service and software etc. are advancing the economic growth gradually.

(6) According to the empirical analysis of the modern service and other industries in Guangdong Province, the modern service industry have a far higher growth rate than GDP growth rate and the growth rate of industrial economy, which promotes the development of other industries with great potential of development.

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