Comparison of Services Trade Development among Shanghai, Hong Kong and Singapore

Zha Gui Yong

Abstract—**In Sep 2009, International Trade Center (ITC) has become another important development strategy of Shanghai after International Finance and Shipping Center. As the necessary component of ITC, Services Trade in Shanghai is lagged. Shanghai should improve Services Trade by drawing on the experience of ITCs in Hong Kong, Singapore and etc. So it is necessary to analyze the effective factors and put forward corresponding references of the development of Services Trade by comparing the development of Service Trade among Shanghai, H.K. and Singapore.**

Index Terms—**Comparative analysis, effective factors, international competitiveness, services trade.**

I. INTRODUCTION

In Sep 2009, Shanghai (SH) set a goal to build International Trade Centre (ITC) and determined the six specific measures, including developing Services Trade. By Comparing with Hong Kong (H.K.) and Singapore (SGP), Shanghai has great development in International Goods Trade, but International Services Trade has great gap with H.K. and Singapore. With the increasing dependence of economy and society on services, the poor Services Industry and Services Trade will be a limitation for Shanghai to build ITC. So, on the basis of comparing the comparison of the development of Service Trade among Shanghai, H.K. and SGP, this paper analyzes the effective factors on the development of Service Trade and puts forward corresponding suggestions for Shanghai to develop Service Trade and improve building of ITC.

II. COMPARING THE SCALE OF SERVICE TRADE AMONG SH, HKG AND SGP

From the 21st Century, Services Trade of Shanghai has developed dramatically (Table Ⅰ). From 2000 to 2011, the Services Export increased by 13 times while the Services Import increased more than 19 times. But its overall scale was still less than those of H.K and SGP.

III. ANALYZING THE INTERNATIONAL COMPETITIVENESS OF SERVICE TRADE

A. Construction of International Competitiveness Indexes

There are some main indexes to count and compare international competitiveness in the regarding studies [1].

TABLE I: THE SCALES OF SERVICE TRADE OF SH, HKG AND SGP

	HK EX	HK IM	SG EX	SG IM	SH EX	SH IM
2000	403.62	245.88	280.75	293.79	36.07	43.05
2001	410.56	247.97	273.07	316.50	46.05	48.90
2002	445.46	258.33	294.28	333.14	56.97	58.75
2003	465.00	259.94	362.43	398.67	77.40	83.08
2004	551.03	309.83	467.32	495.50	121.26	123.52
2005	636.51	338.38	531.51	549.02	161.30	163.55
2006	726.74	369.05	639.77	644.72	192.68	210.69
2007	846.43	424.50	804.90	746.87	250.91	308.22
2008	923.18	458.49	829.34	788.68	324.03	411.66
2009	863.06	443.79	738.50	741.14	299.26	448.1
2010	1061.6	510.06	1123.1	964.63	406.4	640.3
2011	1214.7	558.77	1291.8	1140.7	473.2	819.6

Resources: WTO, International Trade Statistics 2012，www.wto.org；Shanghai Municipal Commission of Commerce，Shanghai Service Trade Development Report, Shanghai Joint Publishing Press, 2011.

International Market Share (IMS) refers to the ratio of the export of *j* product of *i* country in the total export of *j* product of the world. The IMS is more high, the competitiveness of *j* product of *i* country is more strong.

Export Contribution Rate (ECR) refers to the ratio of the export of *j* product in the total export of *i* country. The ECR is more high, the competitiveness of *j* product of *i* country is more strong.

Competitive Advantage Index (CAI), also called Trade Special Index (TSI), Net-export Ratio Index (NRI) and Trade Competitiveness Index (TCI), refers to the ratio of the trade balance in the total trade of *j* product of i country.

The formula is as follows:

$$\text{TCI}_{i,j} = (X_{i,j} - M_{i,j}) / (X_{i,j} + M_{i,j}) \tag{1}$$

Therein, $X_{i,j}$ is the export of *j* product of *i* country, $M_{i,j}$ is the import of *j* product of *i* country.

CAI is from -1 to 1; CAI is equal to 0, the competitiveness is average; CAI is above 0, the competitiveness is strong, and CAI is more near *i*, the competitiveness is stronger; CAI is under 0, the competitiveness is weak, and CAI is more near -1, the competitiveness is weaker. As relative data, CAI can remove the effects of macroeconomics such as currency or economy inflation, economy scale and etc.

Revealed Comparative Advantage (RCA) refer to the ratio between the proportion of the export of *j* product of *i* country in the total export of *j* product of world and the proportion of the total export of *i* country in the total export of world. The formula is as follows:

$$RCA_{i,j} = \left(X_{i,j} / X_i \right) / \left(X_{w,j} / X_w \right) \tag{2}$$

Therein, $X_{i,j}$ is the export of *j* product of *i* country, X_i is the total export of *i* country; $X_{w,j}$ is the export of *j* product of the world, X_w is the total export of the world.

If RCA is above 2.5, the competitiveness of the Service Trade of *i* country is very strong; If RCA is from 1.25 to 2.5, the competitiveness is much strong; If RCA is from 0.8 to 1.25, the competitiveness is average; If RCA is under 0.8, the competitiveness is weak.

TABLE II: INTERNATIONAL COMPETITIVENESS INDEXES OF SERVICE TRADE IN SH, H.K. AND SGP

	IMS(%)			ECR(%)			CAI		
	HK	SGP	SH	HK	SGP	SH	HK	SGP	SH
2000	2.66	1.88	0.24	16.6	17.2	5.53	0.24	-0.03	-0.09
2001	2.69	1.88	0.30	17.7	19.1	6.34	0.25	-0.06	-0.03
2002	2.71	1.88	0.35	18.1	19.8	6.51	0.26	-0.04	-0.02
2003	2.46	2.01	0.41	16.9	19.2	6.45	0.28	-0.03	-0.04
2004	2.41	2.11	0.53	17.2	19.6	6.99	0.28	-0.02	-0.01
2005	2.48	2.17	0.63	17.9	19.5	7.06	0.30	-0.01	-0.01
2006	2.55	2.28	0.66	18.4	19.6	6.74	0.33	0.009	-0.05
2007	2.43	2.44	0.72	19.5	22.1	7.10	0.33	0.065	-0.10
2008	2.36	2.54	0.83	20.0	22.7	7.61	0.33	0.063	-0.12
2009	2.48	2.68	0.86	20.8	25.7	8.43	0.33	0.082	-0.20
2010	2.77	2.93	1.06	20.9	24.2	8.76	0.35	0.076	-0.22
2011	2.86	3.04	1.12	21.1	24.0	8.65	0.37	0.062	-0.27
	RCA			RTCA			NRCA		
	HK	SGP	SH	HK	SGP	SH	HK	SGP	SH
2000	0.86	0.89	0.28	0.31	-0.09	-0.15	0.06	-0.01	-0.03
2001	0.89	0.96	0.32	0.33	-0.16	-0.12	0.07	-0.03	-0.02
2002	0.89	0.97	0.32	0.33	-0.16	-0.13	0.07	-0.03	-0.02
2003	0.84	0.95	0.32	0.32	-0.22	-0.12	0.07	-0.04	-0.02
2004	0.86	0.98	0.35	0.32	-0.19	-0.13	0.07	-0.03	-0.02
2005	0.91	0.99	0.36	0.37	-0.16	-0.21	0.08	-0.02	-0.04
2006	0.95	1.01	0.35	0.41	-0.16	-0.28	0.09	-0.02	-0.05
2007	0.98	1.11	0.36	0.43	-0.07	-0.38	0.09	0.001	-0.07
2008	1.02	1.16	0.39	0.45	0.009	-0.48	0.09	0.012	-0.09
2009	0.95	1.18	0.39	0.43	0.021	-0.52	0.10	0.013	-0.10
2010	1.04	1.20	0.44	0.51	-0.02	-0.58	0.11	0.005	-0.11
2011	1.11	1.26	0.46	0.57	-0.04	-0.68	0.11	0.002	-0.12

Note: The goods trade of Shanghai is on the basis of the customs area in order to be in line with Hong Kong and Singapore, and the same below.
Resources: UNCTAD, Handbook of Statistics 2012, www.unctad.org; Shanghai Municipal Commission of Commerce, Shanghai Service Trade Development Report, Shanghai Joint Publishing Press, 2011; Shanghai Statistics Office, Shanghai Statistics Yearbook, 2012.

RCA can objectively reflect the relative advantage by eliminate the impact of the gross volume fluctuate of the country and the world.

Revealed Trade Competitive Advantage (RTCA) refers to the gap between the relative export proportion and the relative import proportion of *j* product of *i* country in the world. The formula is as follows:

$$RTCA_{i,j} = RCA_{i,j} - \left(M_{i,j} / M_i \right) / \left(M_{w,j} / M_w \right) \tag{3}$$

Therein, $M_{i,j}$ is the import of *j* product of *i* country, M_i is the total import of i country; $M_{w,j}$ is the import of j product of the world, M_w is the total import of the world.

RTCA is above 0, the competitiveness of *j* product of *i* country is strong, and is weak if RTCA is under 0; RTCA is more big, the competitiveness is more strong, and vice versa.

Net-export Revealed Comparative Advantage (NRCA) refers to the gap between the ratio of the export of *j* product in the total export of *i* country and the ratio of the import of *j* product in the total import of *i* country.

The formula is as follows:

$$NRCA_{i,j} = X_{i,j}/X_i - M_{i,j}/M_i \qquad (4)$$

RTCA is above 0, the competitiveness of *j* product of *i* country is strong and is weak if RTCA is under 0; RTCA is more big, the competitiveness is more strong, and vice versa.

Because NRCA indicates the both impacts of the export and import by eliminating the affect of intra-industry specialization and trade, so it the best index to appraise the international competitiveness of industry.

B. Comparison of the International Competitiveness of Services Trade References

The above indexes of Services Trade among SH, HK and SGP are showed in Table II.

According to Table Ⅱ, all of these six indexes indicate the competitiveness of Shanghai Services Trade is much lower than that of H.K. and SGP. Especially, CAI, RTCA and NRCA in view of the import indicate the competitiveness of Shanghai Services Trade is worsening, while those of Hong Kong and Singapore are enhancing or improving. In a word, Shanghai has only start to build ITC and must make great endeavor to settle a lot of difficulties.

Then, according to the classification of WTO, this paper counts the CAI, RCA and NRCA of ten kinds of sub-industries service trade of SH, HKG and SGP in order to analyze deeply their international competitiveness of service trade[1].

According to CAI, Shanghai has competitiveness only in Computer & Information, Other Business Service, personal and cultural and recreational services. When comparing with H.K. and SGP, Shanghai is in the lead in communications, Computer and Information Service, and is middle in contraction, other business service, personal and cultural and recreational services, and is lag in other sub-industries of service. Especially the insurance and financial service has a great lag and does not comply with the building of ITC and International Finance Center.

According to RCA, Shanghai has competitiveness only on personal and cultural and recreational services because the RCA is above 1.25 from 2005, all other sub-industries of service has no competitiveness because all the RCAs has been kept under 0.8. Comparing with H.K. and SGP, Shanghai is lead in computer and information, and is middle in construction and insurance service, and is laggard in other sub-industries of service.

According to NRCA, Shanghai has competitiveness only on construction, computer and other business service.

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[1] The ten kinds of sub-industries service trade refer to transport, travel, communications, contraction, insurance, financial service, computer and information, royalties and license fees, other business service, personal and cultural and recreational services. The data of indexes are not listed, please contact the author directly if need.

Comparing with H.K. and SGP, Shanghai is lead in communication, computer and information, and is middle in construction, royalties and license fees.

By comparing comprehensively, Shanghai has a strong competitiveness in computer and information, which maybe due to the development of Information Technology Outsourcing (ITO). But foreign investments take over leading role in ITO, so we must review the competitive advantage of computer and information [2]; Shanghai has a middle competitiveness in other business service, personal and cultural and recreational services.

IV. Effective Factors of Competitiveness of Service Trade of SH, HKG and SGP

The international competitiveness of Services Trade in Shanghai is far lower than those of H.K. and SGP, and can not adapt to the building of ITC at a certain extent. So, it is important and necessary to analyze the cause of the gap between Shanghai, H.K. and SGP, in order to provide references for Shanghai to improve the competitiveness of service trade.

A. The Gap of Labor Productivity of Service Industry

Labor productivity is a determining factor of the economic growth potential and international competitiveness. Generally, more high labor productivity means more low socially necessary labor time, producing cost and price, and more strong international competitiveness [3]. Table III shows the rank of labor productivity of services industry is consistent to the rank of international competitiveness of SH, H.K. and SGP. Shanghai must improve labor productivity of service industry.

TABLE III: Labor Productivity of Service Industry in SH, HKG and SGP (USD/L)

	2003	2005	2007	2009	2010	2011
HK	51286.3	54522.7	61044.5	63683.4	67372	71882
SG	50455.4	61648.2	79586.0	82854.0	95404	106384
SH	9971.49	11806.6	16437.8	22052.4	23816	27738

Resources: Hong Kong Stats Office, Hong Kong Statistics Yearbook 2012, www.censtatd.gov.hkg; Singapore Stats Office, Singapore Statistics Yearbook 2012, www.singstat.gov.sg; Shanghai Stats Office, Shanghai Statistics Yearbook, 2012.

B. The Development Level of Service Industry

According to the National Diamond Theory, a country must build its own competitive industries in order to gain international competitiveness, because the development level of industries is a material foundation and a key factor of the competitiveness of the industry.

Table IV shows that the rank of development level of service industry indicated by the ratios of add value and employment of service industry is totally consistent with the rank of the international competitiveness of service trade in SH, H.K. and SGP, and indicates that the development of service industry in SH has lagged behind relatively and can not provide a solid foundation to the service trade in Shanghai, and Shanghai's service trade has no competitiveness. Shanghai must fleetly develop the service

industry.

TABLE IV: DEVELOPMENT LEVEL OF SERVICE INDUSTRY IN SH, H.K. AND SGP (%)

		2004	2005	2007	2009	2010	2011
Ratio of Service Industry GDP In Total GDP	HK	89.9	90.6	92.3	92.6	93.2	93.4
	SG	68.0	69.0	71.0	74.6	71.7	75.0
	SH	50.8	50.5	52.6	59.4	57.3	57.9
Ratio of Service Industry Employment in Total Employment	HK	84.9	85.4	86.3	87.9	88.4	92.8
	SG	75.2	77.3	76.4	77.1	77.9	79.2
	SH	54.2	55.6	56.4	55.7	55.9	56.3

Resources: Chinese Stats Office, International Statistics Yearbook, 2011, www.stats.gov.cn; Shanghai Stats Office, Shanghai Statistics Yearbook, 2012, www.stats-sh.gov.cn.

C. The Scale of Goods Trade

The operation of goods trade needs the input of services, so the rapid expansion of goods trade is the crucial prerequisite of the emergence and development of the service trade. Especially in modern society, service industry becomes an inalienable part of the manufacture and marketing of lots of finished products because that services industry can provide various necessary inputs such as engineering design and data processing etc., and promote the sales of products by providing after-sale services.

Table V shows that the rank of the scale of goods trade is totally consistent with the rank of international competitiveness of service trade in SH, H.K. and SGP, namely Shanghai must strive to develop goods trade in order to strengthen the foundation of service trade.

TABLE V: TOTAL AMOUNT OF GOODS TRADE IN SH, HK AND SGP (BILLION USD)

	2000	2005	2007	2008	2009	2010	2011
HK	416.7	592.3	719.5	763.2	681.7	842.1	912.4
SG	272.4	429.7	562.5	658.0	515.7	662.7	775.3
SH	109.3	350.7	520.9	606.6	515.5	684.7	812.3

Resources: WTO, International Trade Statistics 2012, www.wto.org; Shanghai Stats Office, Shanghai Statistics Yearbook, 2012, www.stats-sh.gov.cn.

D. FDI Inflow of Service Industry

The international capital flow can optimize the capital allocations all over the world, and has a deep impact on the industry development and international competitiveness upgrade of the host country by spillover effect [4]. Table VI shows that the rank of FDI inflow is totally in line with the rank of international competitiveness of Service Trade in SH, H.K. and SGP. Shanghai must accelerate the opening of service industry and enlarge the FDI inflow to Service Industry.

E. Comparison of Human Capital

With the development of science and progress of society, service industry has a change in its interior construction –the human capital intensive emerging service industry and special service industries appear in abundance and become

dominant, then the make service industry be human capital intensive [5], and the international competitiveness of service industry is up to the human capital at a large degree.

The human capital is measured by the ratio of public expense in GDP and the ratio of the enrolment students in high education institutions in total population. Table VII shows that the ranks of these two ratios are totally accordant to the rank of the international competitiveness in Service Trade of SH, H.K. and SGP. So, Shanghai must increase the investment in education, especially in high education.

TABLE VI: RATIO OF FDI INFLOWS TO SERVICE INDUSTRY IN THE TOTAL FDI INFLOWS IN SH, H.K. AND SGP (%)

	2004	2005	2006	2007	2008	2009	2010
HK	93.9	93.0	94.3	94.1	94.4	95.5	97.2
SG	66.5	69.3	71.6	75.3	78.3	70.2	84.0
SH	44.6	51.1	62.1	67.1	67.8	72.3	79.4

Resources: UNCTAD, Foreign Direct Investment database 2012, www.unctad.org; Shanghai Stats Office, Shanghai Statistics Yearbook 2012, www.stats-sh.gov.cn.

TABLE VII: HUMAN CAPITAL OF SH, H.K. AND SGP (%)

		2003	2005	2009	2010	2011
Ratio of Public Education Expense in GDP	HK	4.35	4.2	4.62	3.34	3.27
	SG	3.83	3.02	3.22	3.19	3.30
	SH	1.96	2.00	2.31	2.43	2.96
Ratio of Enrollment In High Education Inst. In Total Population	HK	3.28	3.27	4.36	4.31	4.19
	SG	3.97	4.16	4.32	4.34	4.30
	SH	2.21	2.49	2.32	2.24	2.18

Resources: Hong Kong Stats Office, Hong Kong Statistics Yearbook 2011, www.censtat.gov.HKG; Singapore Stats Office, Singapore Statistics Yearbook, 2012, www.singstat.gov.sg; Shanghai Stats Office, Shanghai Statistics Yearbook 2012.

F. Development of Information Technology

With the development of science and technology, especially the IT revolution in 1960s, there are great changes in the items and kinds of the services which can be utilized trans-nationally, and the development of service industry and service trade depend on the advanced IT and Communications technology at a very large extent. That is to say, the international competitiveness of service trade is up to the informatization level of a country [6].

Table VIII shows that the rank of the development level of IT measured by the popularizing rate of broadband and person computers is accordant to the international competitiveness of Service Trade in SH, HKG and SGP. Hence, Shanghai must still improve the application and popularization of IT.

TABLE VIII: DEVELOPMENT LEVEL OF IT IN SH, HKG AND SGP

		2004	2005	2008	2009	2010
Broadband Number per 1000 Persons	HK	220.8	241.9	279.2	294.2	301.6
	SG	120.8	156.0	207.3	225.2	238.8
	SH	82.03	125.2	199.5	212.8	224.7
International Internet Users Per 1000 Persons	HK	559.6	617.3	685.7	614.0	704.0
	SG	617.3	660.0	743.2	684.5	711.1
	SH	218.8	253.6	378.9	565.5	677.5

Resources: World Bank, World Development index 2012, www.worldbank.org; Shanghai Stats Office, Shanghai Statistics Yearbook, 2012, www.stats-sh.gov.cn.

G. Free Trade Area (FTA) in Service Trade

With the development of service trade which becomes the new growth point of national trade and economy, more and more FTAs break through the goods trade and bring the service trade into their categories in order to improve the liberalization and competitiveness of service trade. For a long time, Hong Kong has been carrying out free trade and competitive policies, and has built an open and transparent environment for trade and investment, and keep to be one of the most open economics allover the world. So, Hong Kong has been building good environments for the development of Service Industry and Trade, and has provided a stronger international competitive system.

As one member of ASEAN, Singapore has benefited lots from the liberalization of service trade of ASEAN, because the *ASEAN Framework Agreement on Services* and the four following Package Agreements have significant influences on the international competitiveness of Singapore Service Trade. Except for Asia-Pacific trade agreement (Bangkok Agreement), Singapore has signed 11 pieces of bilateral FTAs with New Zealand, Japan, EU, Australian and etc, and has reached consensuses in signing bilateral FTAs with Egypt, Bahrain, Kuwait and United Arab Emirates, and is negotiating bilateral FTAs with Canada, Mexico and Pakistan. Especially, Singapore signed the first FTA crossing three continents with New Zealand, Chile and Brunei.

Except for *CEPA* and *Bangkok Agreement*, China has issued 9 pieces of bilateral FTAs with Chile, Pakistan, New Zealand, Singapore, Peru, Costa Rica and ASEAN and is negotiating to sign FTAs with GCC, Australia, Ice Land, Norway and SACU.

Comparatively speaking, Shanghai falls behind Singapore in quantity and quality (the economy development level of contracting parties) of FTAs, and lead to a relatively laggard Service Industry and weak international competitiveness. Hence, Shanghai must find out a new route for the liberation of Service Trade and improve the progress of liberation.

V. CONCLUSION

The lower international competitiveness and laggard development of Service Trade will be the principal bottlenecks for Shanghai to build ITC. Hence, Shanghai should learn the experiences and lessons from Hong Kong and Singapore to accelerate the development and improve the international competitiveness of its service trade, and tamp a reliable and solid foundation for the building of ITC.

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Zha Gui Yong was born in Jingxian County Anhui Province China in Nov 1978. Zha has got the bachelor in history (Modern and Contemporary Chinese History) in Lanzhou University in Gansu Province in 2001, and the master in economics (International Trade) in Shanghai Institution of Foreign Trade in 2004, and the doctor in economics (World Economy) in East-China Normal University in Shanghai in 2007, and had a Academic Visit to University of California-San Bernardino in U.S. for three months. Now Dr Zha is an associate professor in Shanghai Customs College and has been engaged in the teaching and study of International Trade, International Investment and Management of International Corporations.