

# Analysis on Relationships and Influencing Factors of Trade in Digitally-Deliverable Services between China and Japan

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## Introduction

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## Introduction

In recent years, digital technologies have made a spurt of progress and digital economy has developed rapidly. Under such circumstances, digital trade, as a new trade pattern, has got more and more attention all over the world. The term of digital trade was proposed by U.S. International Trade Commission (USITC) in 2013 which was regarded as the first explanation for it, and it became a very hot topic in the academic and official fields after that, but there is no single recognized and accepted definition till now. In 2020, some typical international institutions, WTO, IMF and OECD issued *Handbook on Measuring Digital Trade (Version 1)* together, in which illustrated the meaning of digital trade and suggested how to make statistics of digital trade according to the existed statistical systems. In China, some academies, such as the China Academy of Information and Communications Technology (CAICT), have also explained the meaning of digital trade in different perspectives. While no single definition and the method of statistics, consensus have reached in some aspects, such as the digitalization of trade mode and trade objects, the digital technologies and digital platform as the fundamental basis. The statistics of trade in digitally-deliverable services<sup>1)</sup> developed with the fastest steps among the opinions above.

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1) Only United Nations Conference on Trade and Development (UNCTADSTAT) releases the data about international trade related to digital trade with the clear title so far, and the categories included will be presented in the following paragraph.

At present, to specify the categories of trade in service which can be digitally delivered are also different from the international institutions database. For instance, digital trade is divided into digitally ordered trade and digitally delivered trade in *Handbook on Measuring Digital Trade (Version 1)*. In order to avoid the overlap between them, the *Handbook* takes the view that only services (and not goods) can be digitally delivered. In addition, the *Handbook* takes as a starting point the scope of services covered in the closely related notion of trade in ICT-enabled services, which, according to the categories of trade in service in the *Extended Balance of Payments Services classification* (EBOPS 2010), six categories as follows are included: insurance and pension services (EBOPS 6, following only numbers); financial services (7); charges for the use of intellectual property n.i.e. (8); telecommunications, computer, and information services (9); research and development services (10.1); professional and management consulting services (10.2); architectural, engineering, scientific and other technical services (10.3.1); other business services n.i.e. (10.3.5); audio-visual and related services (11.1); health services (11.2.1); education services (11.2.2) and heritage and recreational services (11.2.3). United Nations Conference on Trade and Development (UNCTAD) calls it “trade in digitally-deliverable services”, which include insurance and pension services; financial services; telecommunications, computer, and information services; charges for the use of intellectual property n.i.e.; other business services n.i.e. and audio-visual and related services based on the *Technical Note No.3 Unedited* issued by UNCTAD (2015) and a *Report of the Partnership on Measuring Information and Communications Technology for Development* issued by United Nations Statistical Commission (UNSC, 2016). It is clear that 4 categories, covered insurance and pension services; financial services; telecommunications, computer, and information services; charges for the use of intellectual property n.i.e., that can be digitally delivered has been agreed, but there are some different opinions about the subcategories of other business services; personal, cultural, and recreational services. According to the UNCTADSTAT, the global export value of international trade in digitally-deliverable services in 2020 was more than USD 3.17 trillion and accounted for 63.55% of the total export value of trade in services; and export value of members of RCEP Agreement was more than USD 513.18 billion and accounted for 16.20% of global export value correspondingly.<sup>2)</sup>

As we known, the RCEP Agreement has gone into effect on 1<sup>st</sup> January 2022 after 8 years negotiation, all of the members are looking forward to the increase in intra-regional

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2) From the database, most of the export values in 2020 had minus growth relative to those of in 2019, only China and Korea had positive growth. But global export value percentage of total trade in services increased from 51.79% in 2019 to 63.55% in 2020, and for the members of RCEP Agreement, the percentage of total export value of trade in digitally-deliverable services also increased from 15.82% in 2019 to 16.20% in 2020.

trade and investment, and it will create tremendous opportunity for the development of intra-regional digital trade. China and Japan are the largest economies under the RCEP Agreement and in digital economy & digital trade. This paper focuses on the trade in digitally-deliverable services,<sup>3)</sup> analyzes the current situation and relationship of bilateral trade by use of some indices, takes the RCEP Agreement as the most important influencing factor with the related chapters and articles in detail and considers some other factors to illustrate the bilateral trade in digitally-deliverable services. Finally, the author puts forward some sincerely suggestions on how to develop bilateral digital trade in higher quality and higher speed.

## 1. The Current Situation of Trade in Digitally-deliverable Services between China and Japan

As to the statistical data, UNCTAD released the data of international trade in digitally-deliverable services of all kinds of economies from 2005 based on its own definition and some concepts in the sixth edition of the IMF's *Handbook of Balance of Payments and International Investment Position Manual (BPM6)* and adjusted the data based on *BPM5* before. But it is a pity that no bilateral data or the data with specific trade partners exist on this database, so the author accordingly uses the data from WTO database<sup>4)</sup> to analyze the current situation. In consideration of being lack of data of subcategories and possible missing under the circumstances of fast development of digitalization of international trade, this paper looks on all of the 6 categories mentioned above as the services that can be digitally delivered.

### 1.1 The value of bilateral trade increases with fluctuation

As shown in Table 1, from China's perspective firstly, after a short period of decrease, the value of Sino-Japanese bilateral trade in digitally-deliverable services increased year by year, it reached USD 18.433 billion in 2019, increased by 21% compared with that in 2014, and a year-on-year rise of 3.6%. But at the same time, the percentage of the value of Sino-Japanese bilateral trade in digitally-deliverable services in the total foreign trade value in digitally-deliverable services of China decreased obviously, from 7.6 in 2014 to 6.8 in 2019 (as shown in column ①). From Japan's perspective secondly, Japan-Chinese bilateral trade value also decreased from 2015 to 2016, then increased slowly. The percentage increase was 13.3 from 2014 to 2019, and only 1.5 from 2018 to 2019. Similarly,

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3) In view of no single definition of digital trade and related terms in detail, in this paper, the author also makes use of the name of "trade in digitally-deliverable services" as the research terminology and the object.

4) Up to finishing this paper, WTO database releases the data of trade in services as of 2019.

**Table 1** The values of bilateral trade in digitally-deliverable services between China and Japan 2014–2019

(Units: million dollars, %)

Items Years	China-Japanese bilateral trade value				Japan-Chinese bilateral trade value			
	Value (Ex+Im)	Balance (Ex-Im)	①	②	Value (Ex+Im)	Balance (Ex-Im)	③	④
2014	15,234	-4,056	7.6	41.9	12,248	32	6.4	44.3
2015	12,865	-2,339	7.2	34.8	12,184	80	6.4	40.7
2016	13,518	-2,972	7.1	35.8	11,862	830	5.7	38.6
2017	14,447	-2,965	6.9	37.3	12,345	1,919	5.7	38.3
2018	17,792	-3,146	6.9	39.8	13,672	1,770	6.0	37.3
2019	18,433	-2,525	6.8	42.2	13,874	1,324	5.7	38.2

Notes: ① Percentage in the total foreign trade in digitally-deliverable services of China; ② Percentage in the total bilateral trade in services with Japan; ③ Percentage in the total foreign trade in digitally-deliverable services of Japan; ④ Percentage in the total bilateral trade in services with China.

Sources: be derived from the disposal and calculation of the original data released by WTO STATS database.

the percentage of the value of Japan-Chinese bilateral trade in digitally-deliverable services in the total foreign trade value in digitally-deliverable services of Japan decreased steadily, from 6.4 in 2014 to 5.7 in 2019 (as shown in column ③). It also shows that the statistics from two sides as a whole are different, the value of China as the reporter was higher than that of Japan as the reporter, but the same phenomena were that China had trade deficits and Japan had trade surpluses in the bilateral trade in digitally-deliverable services from 2014 to 2019. In addition, the percentages of bilateral trade value of digitally-deliverable services in the bilateral value of trade in services from their respective side were quite close but with reversed trends, as shown in columns ② and ④.

### 1.2 The structures of bilateral trade become similar gradually

In the past several years, from China's side, the main objects of export and import with Japan were other business services; charges for the use of intellectual property n.i.e.; telecommunications, computer, and information services; insurance and pension services, which accounted for more than 98% of total bilateral value of trade in digitally-deliverable services. As shown in Table 2, other business services was always the top one, insurance and pension services ranked decline from the second place in 2014 to the fourth place in 2017, charges for the use of intellectual property n.i.e was the third place in 2014, after that it kept the second place, telecommunications, computer, and information services ranked up from the fourth place to the third place in 2017. From Japan's side, other business services; charges for the use of intellectual property n.i.e.; telecommunications, computer, and information services were always the top three with China, and the trade value of them accounted for over 96% of total Japanese foreign trade

in digitally-deliverable services. This means that the structures of bilateral trade in digitally-deliverable services are very similar from two sides since 2017, and have the same trends.

From the view of export and import, the main exports of China to Japan were other business services, telecommunications, computer, and information services, the export value almost accounted for more than 97% of total, the main imports of China from Japan were charges for the use of intellectual property n.i.e., other business services, insurance and pension services, and the import value also accounted for almost more than 94% of total.

**Table 2** The structures of bilateral trade in digitally-deliverable services between China and Japan 2014–2019

(Units: million dollars, %)

Items		Years							
		2014	2015	2016	2017	2018	2019		
China as the reporter TOP 4 main categories	other business services	Value	6,682	6,133	5,969	6,134	6,908	7,281	
		percentage	43.9 (1)	47.7 (1)	44.2 (1)	42.5 (1)	38.8 (1)	39.5 (1)	
	charges for the use of intellectual property n.i.e.	Value	3,513	3,516	3,723	4,536	5,689	5,606	
		percentage	23.1 (3)	27.3 (2)	27.5 (2)	31.4 (2)	32.0 (2)	30.4 (2)	
	telecommunications, computer, and information services	Value	1,140	1,531	1,690	1,924	3,061	3,525	
		percentage	7.5 (4)	11.9 (4)	12.5 (4)	13.3 (3)	17.2 (3)	19.1 (3)	
	insurance and pension services	Value	3,717	1,542	1,927	1,607	1,849	1,692	
		percentage	24.4 (2)	12.0 (3)	14.3 (3)	11.1 (4)	10.4 (4)	9.2 (4)	
	Japan as the reporter TOP 3 main categories	other business services	Value	5,880	6,128	5,741	5,591	6,103	6,085
			percentage	48.0 (1)	50.3 (1)	48.4 (1)	45.3 (1)	44.6 (1)	43.9 (1)
charges for the use of intellectual property n.i.e.		Value	4,141	3,999	4,032	4,655	5,328	4,928	
		percentage	33.8 (2)	32.8 (2)	34.0 (2)	37.7 (2)	39.0 (2)	35.5 (2)	
telecommunications, computer, and information services		Value	1,888	1,652	1,680	1,685	1,797	2,379	
		percentage	15.4 (3)	13.6 (3)	14.2 (3)	13.6 (3)	13.1 (3)	17.1 (3)	

Note: numbers in the brackets represent rankings according to the percentages.

Sources: be derived from the disposal and calculation of the original data released by WTO STATS database.

At the same time, the main exports of Japan to China were charges for the use of intellectual property n.i.e., other business services, the export value accounted for almost more than 90% of total, the main imports of Japan from China were other business services, telecommunications, computer, and information services, and the import value

also accounted for almost more than 96% of total. It is clear that the degree of similarity of exports and imports between China and Japan each other is very high.

### 1.3 The statuses of trade partners are stable

As shown in Table 3, in the past years, the roles of China's top 3 trade partners did not change, they are Hong Kong of China, the United States of America and Japan. Japan's main trade partners were the United States of America, the United Kingdom, China and Singapore, the United States of America and the United Kingdom were always the first largest two partners, and China was the third largest partner in 2014 and became the fourth partner from 2015 which was overtaken by Singapore. It's no doubt that China and Japan are important trade partners each other.

**Table 3** The trade partners of bilateral trade in digitally-deliverable services of China and Japan 2014-2019

Years \ Items	China's main trade partners			Japan's main trade partners			
	1	2	3	1	2	3	4
2014	Hong Kong	USA	Japan	USA	UK	China	Singapore
2015	Hong Kong	USA	Japan	USA	UK	Singapore	China
2016	Hong Kong	USA	Japan	USA	UK	Singapore	China
2017	Hong Kong	USA	Japan	USA	UK	Singapore	China
2018	Hong Kong	USA	Japan	USA	UK	Singapore	China
2019	Hong Kong	USA	Japan	USA	UK	Singapore	China

Sources: be derived from the disposal of the original data released by WTO STATS database.

## 2. The Complementary and Competitive Relationships of Trade in Digitally-deliverable Services between China and Japan

It is popular to use related indices to reflect complementary and competitive relationships of bilateral trade between two economies. In terms of complementarity, common indices are comprehensive trade complementarity index and some other trade complementarity indices. This paper uses the former with the intermediate variable revealed comparative advantage index (RCA) to illustrate the complementary relationship of trade in digitally-deliverable services between China and Japan. As in terms of competitiveness, export similarity index and trade competitiveness index are usually adopted, this paper still uses the former to analyze the degree of competition of

trade in digitally-deliverable services between China and Japan. In addition, trade intensity index and weighted intra-industry trade index also can be used to reflect the complementary and competitive relationships of bilateral trade between two economies.

## **2.1 The complementary relationship of trade in digitally-deliverable services between China and Japan**

### 2.1.1 Analysis of revealed comparative advantage index

Revealed comparative advantage index (RCA) can reflect the comparative advantage of an industry or a kind of product (goods or service) in an economy. It is the ratio of two percentages, the numerator is the percentage of the export value of an industry or a kind of product (goods or service) to the total export value in an economy; the denominator is the percentage of the export value of an industry or a kind of product (goods or service) to the total export value all over the world. Its formula can be expressed:

$$RCA_{ik} = (X_{ik}/X_{it}) / (X_{wk}/X_{wt}) \quad (1)$$

In (1),  $X_{ik}$  stands for the export value of k industry (goods or service) in an economy i,  $X_{it}$  stands for total export value in an economy i;  $X_{wk}$  stands for the export value of k industry (goods or service) in the world,  $X_{wt}$  stands for total export value in the world. Generally, if  $RCA_{ik} > 2.5$ , which represents that the industry (goods or service) in an economy has high comparative advantage in the world; if  $1.25 \leq RCA_{ik} \leq 2.5$ , which represents that the industry (goods or service) in an economy has stronger comparative advantage in the world economy; if  $0.8 \leq RCA_{ik} \leq 1.25$ , which represents that the industry (goods or service) in an economy has medium comparative advantage in the world; if  $RCA_{ik} < 0.8$ , represents that the industry (goods or service) in an economy has not comparative advantage in the world. This index has been widely used after its birth, but many scholars paid much more attention to its limitations in selecting indicators and application conditions, such as uncertainty of data, existence of intra-industrial trade, fluctuations in product markets and prices, foreign trade policies, etc.. After being revised and perfected, some new indices emerged gradually but omitted here in this paper.

The results in Table 4 show that China and Japan have comparative advantages in different categories of services when the two economies played the role of exporter respectively. China had medium or stronger comparative advantages in telecommunications, computer, and information services; other business services, the RCAs of insurance and pension services was 0.8 or thereabouts, near stronger comparative advantages. Japan's RCAs of charges for the use of intellectual property n.i.e. were higher than 2.5, which represented extremely high comparative advantages; RCAs of other business services were over 0.8, close to 1, which represented medium comparative advantages.

**Table 4** The RCAs of bilateral trade in digitally-deliverable services between China and Japan 2014–2019

Categories		insurance and pension services	financial services	charges for the use of intellectual property n.i.e.	telecommunications, computer, and information services	other business services	personal, cultural, and recreational services
Items and years							
China as the exporter	2014	0.80	0.23	0.05	1.02	1.43	0.06
	2015	0.93	0.12	0.08	1.23	1.21	0.24
	2016	0.78	0.17	0.08	1.29	1.22	0.25
	2017	0.73	0.18	0.31	1.23	1.19	0.24
	2018	0.76	0.15	0.30	1.65	1.15	0.33
	2019	0.75	0.16	0.35	1.71	1.13	0.32
Japan as the exporter	2014	0.37	0.49	7.19	0.21	1.04	0.21
	2015	0.40	0.69	6.80	0.21	0.95	0.29
	2016	0.47	0.75	6.63	0.22	0.99	0.33
	2017	0.49	0.64	6.55	0.27	0.98	0.40
	2018	0.53	0.69	6.95	0.23	0.97	0.25
	2019	0.54	0.79	6.80	0.29	0.98	0.34

Sources: be derived from the disposal of the original data released by WTO STATS database.

### 2.1.2 Analysis of comprehensive trade complementarity index

Trade complementary index (TCI) is used to reflect the degree of coincidence of one economy's export and the other economy's import, can embody the complementarity of bilateral trade. Trade complementary index takes into consideration of import and export and is popular to be used to analyze complementarity of bilateral trade with the help of RCA as the intermediate variable.

According to the description of calculating method, in order to be convenient to calculate and analyze the index of trade in digitally-deliverable services between China and Japan (c represents China, j represents Japan), this paper expresses the formula of it is as follows:

$$C_{cjk} = RCA_{xcck} \times RCA_{mjk} \quad (2)$$

In formula (2),  $C_{cjk}$  indicates the trade complementary index of category k of bilateral trade in digitally-deliverable services,  $RCA_{xcck}$  indicates China's revealed comparative advantage index of category k in export of trade in digitally-deliverable services,  $RCA_{mjk}$  indicates Japan's revealed comparative advantage index of category k in import of trade in digitally-deliverable services. Their calculating formulas in detail are as follows:

$$RCA_{xcck} = (X_{ck}/X_c)/(X_{wk}/X_w) \quad (3)$$



$$RCA_{mjk} = (M_{jk}/M_j)/(M_{wk}/M_w) \quad (4)$$

In formulas (3) and (4),  $X_{ck}$  and  $X_c$  indicate China's export value of category k in trade in digitally-deliverable services and total export value of trade in services;  $X_{wk}$  and  $X_w$  indicate the export value of category k in trade in digitally-deliverable services and total export value of trade in services all over the world;  $M_{jk}$  and  $M_j$  indicate Japan's import value of category k in trade in digitally-deliverable services and total import value of trade in services;  $M_{wk}$  and  $M_w$  indicate the import value of category k in trade in digitally-deliverable services and total import value of trade in services all over the world.

Looking on all the trade in digitally-deliverable services as a whole, and making weighted average of trade complementarity index of each category, then the formula of comprehensive trade complementarity index (CTCI) of trade in digitally-deliverable services between China and Japan is as follows:

$$C_{cj} = \sum [(RCA_{xck} \times RCA_{mjk})] \times (X_{wk}/X_w) \quad (5)$$

The results of formula (5) take one as the reference value, more than one stands for obvious trade complementarity of bilateral trade in digitally-deliverable services, the bigger the stronger complementarity, and vice versa. If Japan is the exporter, it can be used the same method to analyze by adjusting the symbols and values in the formula accordingly.

As shown in Table 5, from the view of 6 categories of trade in digitally-deliverable services, China as the exporter, had stronger complementarity with Japan in telecommunications, computer, and information services; other business services, and the indices rose in recent two years, near 2.5 in 2019, which was beyond 1 greatly. Japan as the exporter, had strong complementarity with China only in charges for the use of intellectual property n.i.e., but the indices all fell in 4.5-6.0, which meant very strong complementary relationship. These results reflected the same situations with the RCAs which reflected respectively comparative advantages of two economies, both China and Japan exported services with comparative advantages to the other side and had high complementarity each other. But in terms of comprehensive trade complementary index, neither China nor Japan as the exporter had strong complementarity with each other, as shown in the last column of the Table 5. The degree of complementarity of China as the exporter was higher than that of Japan as the exporter. These results also reflected the same situations with the previous analysis of trade structure and the status of trade partners.

**Table 5** The trade complementary index of trade in digitally-deliverable services between China and Japan 2014–2019

Categories		insurance and pension services	financial services	charges for the use of intellectual property n.i.e.	telecommunications, computer, and information services	other business services	personal, cultural, and recreational services	comprehensive TCI
Items and years								
China as the exporter	2014	0.47	0.13	0.07	1.02	1.97	0.02	0.56
	2015	0.59	0.08	0.09	1.38	1.81	0.13	0.56
	2016	0.59	0.12	0.11	1.58	1.71	0.14	0.58
	2017	0.61	0.15	0.44	1.40	1.63	0.11	0.57
	2018	0.73	0.13	0.42	2.00	1.66	0.08	0.64
	2019	0.81	0.14	0.56	2.49	1.46	0.08	0.68
Japan as the exporter	2014	0.41	0.12	5.05	0.09	0.44	0.03	0.45
	2015	0.19	0.09	4.47	0.08	0.38	0.09	0.40
	2016	0.33	0.07	4.46	0.10	0.39	0.11	0.41
	2017	0.28	0.05	5.12	0.17	0.37	0.17	0.46
	2018	0.33	0.06	5.95	0.16	0.37	0.11	0.51
	2019	0.31	0.08	5.84	0.24	0.39	0.19	0.52

Sources: be derived from the disposal of the original data released by WTO STATS database.

## 2.2 Analysis of the competitive relationship of trade in digitally-deliverable services between China and Japan

Glick & Rose (1999) revised and put forward the export destination-oriented export similarity index on the basis of the method proposed by Finger & Kreinin (1979), this index can measure the similarities of the exports of different economies to the third market or global market, reflect the degree of competition between two economies further. According to the description of the index, this paper defines the formula of export similarity index of trade in digitally-deliverable services between China and Japan as follows:

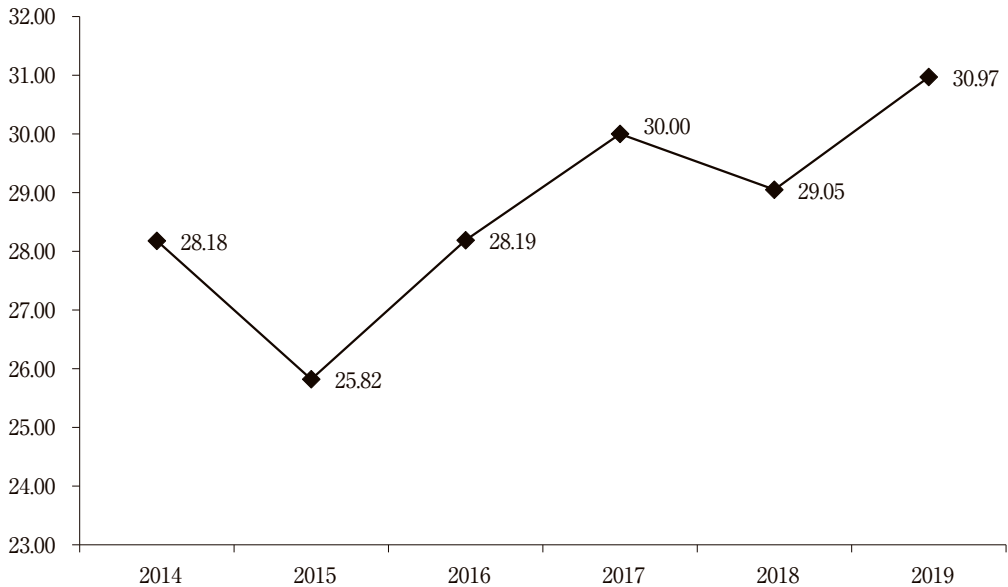
$$S^p(cj, w) = \sum \{[(X_{cw}^k/X_{cw} + X_{jw}^k/X_{jw})/2] \times [1 - |(X_{cw}^k/X_{cw}) - (X_{jw}^k/X_{jw})| / (X_{cw}^k/X_{cw} + X_{jw}^k/X_{jw})]\} \times 100 \quad (6)$$

In formula (6),  $S^p(cj, w)$  indicates the similarity index of trade in digitally-deliverable services from China and Japan to the global market,  $X_{cw}^k$  and  $X_{jw}^k$  indicate the export value of category  $k$  from China and Japan,  $X_{cw}$  and  $X_{jw}$  indicate the total export value from China and Japan to the world. This index falls the range of 1 to 100, if the value is near 100 that represents the exports from the two economies have higher similarity in the global market, also means more competition, and vice versa.

As shown in Figure 1, the results show that since 2014, the competition of trade in

digitally-deliverable services from China and Japan in the global market was not strong, the indices ranged from 25 to 31, reached the lowest 25.82 in 2015 and the biggest but only 30.97 in 2019, which was less than half of the range. That is to say the competitive relationship was weak between China and Japan.

**Figure 1** The export similarity index of trade in digitally-deliverable services between China and Japan 2014–2019



Sources: be derived from the disposal and calculation of the original data released by WTO STATS database.

### 2.3 Analysis of degree of trade closeness and developing potential

Trade combined degree (TCD), is also called trade intensity index (TII), can reflect the degree of trade closeness of two trade partners. That is the degree of trade dependence each other and developing potential of bilateral trade meanwhile. This index also takes one as the reference value, more than one means close trade relationship, bigger developing potential of bilateral trade, and vice versa. Just because of the value of this index can reflect close or loose trade relationship, some scholars regarded it as the complementary index, other scholars thought of it as the competitive index. This paper does not classify it deliberately, only uses its results together with other indices to analyze bilateral trade relationships in digitally-deliverable services.

According to the description of its definition, the formula of trade combined degree of trade in digitally-deliverable services between China and Japan can be presented as follows:

$$TCD_{cj} = (X_{cj}/X_c)/(M_j/M_w) \quad (7)$$

In formula (7), China is as the exporter and Japan is as the importer, in which  $X_{cj}$  indicates the export value of trade in digitally-deliverable services from China to Japan,  $X_c$  indicates the total export value of trade in digitally-deliverable services of China,  $M_j$  indicates the total import value of trade in digitally-deliverable services of Japan, and  $M_w$  indicates the global import value of trade in digitally-deliverable services. If Japan is as the exporter and China is as the importer, just changing the corresponding letters in the formula.

The results in Table 6 showed that, when China was as the exporter and Japan was as the importer, except telecommunications information, computer, and information services, almost all of TCDs of the rest five categories of trade in digitally-deliverable services were more than one (or very near one in individual year), in which financial services; personal, cultural, and recreational services had very close relationships with Japan, insurance and pension services; other business services had higher trade developing potentials. At the same time, Japan was as the exporter and China was as the importer, the TCDs of telecommunications information, computer, and information services; personal, cultural, and recreational services were more than 2, and the latter had increasing trend. It shows that from the above results, personal, cultural, and recreational services had high dependence from two sides, but Japan's dependence on China was stronger than that of China on Japan. To take all the trade in digitally-deliverable services as a whole, China's TCDs in 2014 and 2015 were 0.95 and 0.96, less

**Table 6** The TCDs of trade in digitally-deliverable services between China and Japan 2014–2019

Categories Items and years		insurance and pension services	financial services	charges for the use of intellectual property n.i.e.	telecommunications, computer, and information services	other business services	personal, cultural, and recreational services	TCD as a whole
China as the exporter, Japan as the importer	2014	0.97	5.80	2.40	0.31	0.92	2.21	0.95
	2015	1.04	5.41	1.84	0.45	0.92	1.97	0.96
	2016	1.14	8.37	6.33	0.54	1.01	5.96	1.13
	2017	1.27	9.49	7.76	0.59	1.09	2.53	1.23
	2018	1.21	9.30	3.81	0.57	1.04	1.11	1.13
	2019	1.13	8.55	4.98	0.56	1.03	2.03	1.13
Japan as the exporter, China as the importer	2014	0.31	1.23	0.70	2.35	0.85	2.28	0.75
	2015	0.27	1.09	0.67	2.31	0.90	2.48	0.80
	2016	0.22	0.70	0.65	3.21	0.87	4.68	0.77
	2017	0.20	0.68	0.71	3.35	0.89	4.52	0.85
	2018	0.28	0.85	0.73	2.89	0.88	4.57	0.86
	2019	0.22	0.71	0.65	2.92	0.84	4.83	0.80

Sources: be derived from the disposal and calculation of the original data released by WTO STATS database.

than one but very close to one, from 2016 the TCDs were all more than 1, that is to say, China had very big trade developing potential with Japan. While TCDs of Japan from 2014 to 2019 were always less than one, but the gaps were small, which also means the trade potential were increasing.

Considering the complementary index and trade combined degree index, one reflects the trade complementarity of two economies, the other reflects the bilateral trade potential, the results of the two indices can tell some supplementary facts. For example, as to charges for the use of intellectual property n.i.e., the complementarity of China with Japan was much lower than that of Japan with China, but the trade potential of China with Japan was much higher than that of Japan with China; as to telecommunications information, computer, and information services, the complementarity of China with Japan was higher than that of Japan with China, but the trade potential of China with Japan was much lower than that of Japan with China. So it is necessary for both sides to pay much attention to the specific categories of services in bilateral trade.

### 3. Factors Influencing the Development of Trade in Digitally-deliverable Services between China and Japan

Trade in digitally-deliverable services is an important part of digital trade. As national foreign trade policy orientation, level of digital technology and perfection of related laws and regulations, etc. are all important macro factors of affecting the development of digital trade, this paper focuses on the signature of RCEP Agreement and some other factors to analyze. China and Japan are large East Asian economies and important trade partners each other, but still absent each other in the FTA or EPA lists signed before RCEP Agreement, and China-Japan-Korea FTA experienced many difficulties and progressed slowly. RCEP Agreement includes China and Japan in a free trade agreement for the first time, and establishes new trade relationship for China and Japan. By series of measures, such as reducing customs and opening markets, RCEP Agreement can enlarge bilateral trade value of trade in goods, and some higher level trade rules in the related chapters or articles, such as intellectual property and e-commerce, will bring more opportunities for the development of trade in digital service. Meanwhile, it is no doubt that RCEP Agreement will also be possible to trigger unfavorable effects for bilateral digital trade.

#### **3.1 Promoting factors of trade in digitally-deliverable services between China and Japan**

##### 3.1.1 China's high level digital trade rules will create more opportunities for bilateral cross border e-commerce

China has signed 19 FTAs with 26 countries and regions so far, in which 6 FTAs

involved digital trade rules when signed them, 5 FTAs included special chapter of e-commerce, and 3 FTAs supplemented related chapters or articles of e-commerce through upgrading original FTAs.<sup>5)</sup> These special chapters of e-commerce include regular articles, such as Paperless Trading, Electronic Authentication and Electronic Signature, Online Consumer Protection, Online Personal Information Protection, Transparency, Customs Duties, etc. However, some typical articles in RCEP Agreement, such as Location of Computing Facilities, Cross-border Transfer of Information by Electronic Means, Unsolicited Commercial Electronic Messages, appeared for the first time in China's FTAs that have been signed. This means not only China's new start point of making high level digital trade rules and re-upgrading of building free trade areas, but also opportunities for China that is advanced in e-commerce and Japan as the important trade partner to cooperate in digital trade.

According to the statistics, Japan is China's the second largest source of imports in cross border e-commerce retail in 2020, and Japan is the No.1 supplier for cross border e-commerce of China, China's purchase value from Japan reached JPY 1944.9 billion, year-on-year rise of 17.8%, Japan's purchase value from China was JPY 34 billion, year-on-year rise of 8.9%. The two articles "Location of Computing Facilities" and "Cross-border Transfer of Information by Electronic Means" reflected new recognition in promoting cross border e-commerce among the members involved China and Japan, which can benefit cross border flow of goods, and increase the bilateral value of cross border trade in digitally-deliverable services.

### 3.1.2 Inclusiveness of related articles in RCEP Agreement can provide larger space for the development of bilateral trade in digital services

To compare with many other mega FTAs, the related articles about digital trade in the RCEP Agreement have obvious inclusiveness. Unlike the agreements among the developed countries, such as the USA, EU and Japan, etc., the members of RCEP Agreement are different in economic systems, level of economic development, economic scale and volume. China and Japan as the second and third largest economies in the world also have differences in many aspects and present different degree of gaps, so the wide inclusiveness just can provide large space for the development of digital trade in services step by step. For instance, there are some existed problems or large disagreements about some rules including non-discriminatory treatment of digital

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5) These 6 agreements include China-Korea FTA, China-Australia FTA, China-Georgia FTA, China-Mauritius FTA, China-Cambodia FTA and RCEP, in which only China-Georgia FTA has not special chapter of electronic commerce but has related articles. Three upgrading FTAs are China-Chile FTA, China-New Zealand FTA and China-Singapore FTA which added special chapter of electronic commerce.

products and no requirement of open source code, they were the parts of Japan's FTAs or EPAs with other countries or regions, such as *Japan-United States Digital Trade Agreement (JUDTA)*, *Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)*, *Japan-EU Economic Partnership Agreement (Japan-EU EPA)*, while they were included in the article "Dialogue on Electronic Commerce" of RCEP Agreement in order to negotiate and improve gradually among the members. Some articles with Japan's positive stand, such as "Cross-border Transfer of Information by Electronic Means", "Location of Computing Facilities"<sup>6)</sup> are as the independent articles in "Promoting Cross-border Electronic Commerce" of RCEP Agreement, and the members can take and maintain any measure that is necessary for the protection of essential security interests. In addition, cross-border data flow and the location of computing facilities in financial services are also included in "Promoting Cross-border Electronic Commerce" in order to promote restricted cross-border data flow and non-localization of computing facilities. It is no doubt that these articles provide enough space for the members to get further agreements, especially for China and Japan, inject motive power into spurring potential trade in digitally-deliverable services, the proposal of trade in new financial service is a good example.<sup>7)</sup>

### 3.1.3 Special chapter of Trade in Services and its annexes in RCEP Agreement can cause direct promoting effects

Chapter 8 of RCEP Agreement is the special chapter of Trade in Services, and includes 25 detailed articles and 3 annexes (Financial Services, Telecommunications Services and Professional Services), all of members reached many consensuses on how to promote trade in services. According to national treatment, market access and additional promise and most-favoured-nation treatment, all of members made specific commitments for services (as the Annex II of RCEP Agreement) and reservations and non-conforming measures for investment (as the Annex III of RCEP Agreement), which were the typical results. 8 countries including China adopted positive list approach to make specific commitments (that is Annex II), other 7 countries including Japan adopted negative list approach to make specific commitments (that is Annex III).<sup>8)</sup> Compared with consumption abroad,

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6) Note that these articles concerned exceptions in CPTPP, JUDTA and Japan-the UK EPA.

7) The definition of new financial service in Chapter 8, Annex 8A of RCEP Agreement is: it means any financial service which is not supplied in the territory of a Party but is supplied and regulated in the territory of any other Party. This may include a service related to current and new products, or the manner in which a product is delivered.

8) All of 15 members covered by RCEP Agreement adopted negative list approach to make commitments for investment, but as to the openness of trade in services, Japan, Korea, Australia, Singapore, Brunei, Indonesia and Malaysia adopted negative lists; China, New Zealand, Cambodia, Lao, Myanmar, Philippines, Thailand and Viet Nam adopted positive lists, and committed to start

commercial presence, presence of natural persons in the modes of supply, cross-border supply has closer relation with trade in digitally-delivered services. To sort out the related items in specific commitments,<sup>9)</sup> as to the computer and related services (corresponding to some subcategories in SI2), professional and management consulting services<sup>10)</sup> (corresponding to some subcategories in SJ2) including legal services, accounting, auditing and bookkeeping services, taxation services, advertising services, and architectural services, engineering services, onshore oil-field services, services incidental to forestry, related scientific and technical consulting services, rental and leasing services (corresponding to some subcategories in SJ3), none of limitations on market access and national treatment;<sup>11)</sup> part of audiovisual services (corresponding to some subcategories in SK1), sporting and other recreational services and services for the aged (corresponding to some subcategories in SK2) also have none of limitations.<sup>12)</sup> In the aspect of telecommunications services (SI1), market access is permitted only joint venture with the minority holding of foreign investment, and no limitation of national treatment. Telecommunications services as the annex of chapter 8 (Annex 8B) also broke through original “ASEAN + 1” agreements, built up the rules for the development of intra-regional telecommunications services within RCEP Agreement. Financial services (SG) had clear commitments in market access, no commitments except for these; in national treatment, no commitments for non-bank financial institutions engaging auto consumer credit, no limitation for other. China made higher level of commitments than before in financial services, and introduced new rules for new financial services, self-regulatory organization, transfers of information and processing of information in the Annex 8A, the transparency of governing the activities of financial service will increase. In addition, China made further liberalization commitments in professional services, such as legal

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the procedure of negative list within 3 years after coming into effect of RCEP Agreement and transmit to negative list approach within 6 years, in which Cambodia, Lao, Myanmar should be within 15 years.

- 9) The classification of sectors in this Schedule is based on the 1991 provisional Central Product Classification (CPC) of the United Nations Statistical Office, while the ordering reflects the classification system used by the WTO Secretariat in MTN.GNS/W/120 dated 10 July 1991. The data used in the second part of this paper are according to the classification of EBOPS 2010, there are big differences between two files, so the English letters in the following brackets showed the corresponding categories or subcategories in EBOPS 2010. See the Annex II in detail.
- 10) No commitments for market research service.
- 11) SI2 corresponds to the category 9 in EBOPS 2010: telecommunications, computer, and information services; SJ2 and SJ3 correspond to the category 10 in EBOPS 2010: other business services.
- 12) SK1 and SK2 correspond to the category 11 in EBOPS 2010: personal, cultural, and recreational service, but no commitments for education services. Higher education was also included in Japanese negative list (List A7).



services, taxation services, etc., and part of computer and related services, and other business services, such as management consulting services, etc..

Japan adopted negative list approach to make commitments,<sup>13)</sup> in the aspect of financial services, Japan keeps the right to take further measures in the national treatment of part of banking and other financial services (excluding insurance and insurance-related services) (List A8), the market access of part of insurance and insurance-related services (List A9), the market access, national treatment and most-favoured-nation treatment of above two sub-sectors (List B10 and B11) and all of financial services (List B20). In the aspect of telecommunications services, there are some limits on the national treatment and market access of part of telecommunications, telecommunications and internet based services (List A11 and A 12). In addition, there are also some limits on market access and local presence for medical, health care, and welfare (List A19), part of professional services covered accountant, lawyer, judicial scrivener, etc. (List A22-33). On the whole, there are not so many limits in Japan's negative list.

Furthermore, the special chapter Intellectual Property of RCEP Agreement involved many articles including copyright, trademarks, geographical indications, patents, industrial designs, genetic resources, traditional knowledge, and folklore, etc., the intra-regional level of protection for copyrights will increase. And each party confirms that the enforcement procedures set out in Subsection 2 (Civil Remedies) and Subsection 4 (Criminal Remedies) shall be available to the same extent with respect to acts of infringement of copyright or related rights and trademarks,<sup>14)</sup> so that guarantee the effective actions can be taken for anti-infringement in the digital environment.

According to the analysis of bilateral complementarity and competitiveness, China as the exporter, had stronger complementarity with Japan in telecommunications, computer, and information services (SI9); other business service (SJ10), and had large trade potential in financial services (SG7); charges for the use of intellectual property n.i.e. (SH8); personal, cultural, and recreational services (SK11). Japan as the exporter, had strongest complementarity with China in charges for the use of intellectual property n.i.e. (SH8), and had large trade potential in telecommunications, computer, and information services (SI9); personal, cultural, and recreational services (SK11). All in all, either from China or from Japan, bilateral trade in services with strong complementarity

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13) Japan adopted negative list approach to make commitments in detail in the Schedule of Reservations and Non-conforming Measures for Services and Investment (Annex III). There are List A and List B, the difference between them is that with respect to specific sectors, subsectors, or activities for which Japan may maintain existing or adopt new or more restrictive, measures. The classification obeys to Japan Standard Industrial Classification (JSIC) set out by the Ministry of Internal Affairs and Communications, and revised on 30 October 2013.

14) See Chapter 11 Intellectual Property, Section J, Subsection 5 Enforcement in the Digital Environment.

and large trade potential broke through the openness level of original “ASEAN + 1” and reached high level of commitments. So it is inevitable to bring direct positive effects for the bilateral trade in digitally-deliverable services between China and Japan.

### **3.2 Confounding factors of trade in digitally-deliverable services between China and Japan**

#### **3.2.1 The FTAs established between other members of RCEP Agreement with China and Japan respectively may disperse bilateral effects of trade**

There are 15 members covered by RCEP Agreement, ASEAN ten countries, three large economies China, Japan and Korea in East Asia, main economies Australia and New Zealand in Oceania. Before the signature of RCEP Agreement, 15 members have reached dozens of free trade agreements each other, and formed complicated trade relationships. China, Japan and Korea signed “10 + 1” FTAs respectively with ASEAN; ASEAN signed a trilateral FTA with Australia and New Zealand. China established bilateral free trade areas with Korea, Australia, Singapore, Cambodia. Japan signed bilateral economic partnership agreements respectively with Australia, Singapore, Malaysia, Thailand, Indonesia, Brunei, Philippines, Viet Nam, and Australia, New Zealand, Brunei, Malaysia, Singapore and Viet Nam are as members included in CPTPP leading by Japan. In addition, Korea signed FTAs with Australia, New Zealand, Singapore and Viet Nam; Australia signed FTAs with New Zealand, Singapore, Malaysia and Thailand; New Zealand signed FTAs with Malaysia and Thailand.<sup>15)</sup> Among these FTAs (including updating FTAs), because of the time dimension of signed differs a lot, there are big gaps among the level of digital trade rules. Especially for Japan, it signed the most EPAs with the other members in RCEP Agreement with great differences in the level of digital trade rules. For example, the rules in CPTPP and the ones related to trade in services are higher than those with ASEAN obviously. All of agreements and articles crisscross, it is hard to avoid “Spaghetti Bowl Effect”, and may weaken the intensity of bilateral trade in digitally-deliverable services between China and Japan.

#### **3.2.2 It is difficult to bridge digital divides between China and Japan in the short run**

Digital divides has received more and more global attention with the rapid development of digital economy. The related digital technologies, infrastructures and administrative systems are all the key factors to digital trade, especially to the trade in digitally-deliverable services. The inclusiveness of RCEP Agreement will ease in some extent the problem of digital divides among the 15 members. For instance, in special chapter electronic commerce, Cambodia, Lao PDR, and Myanmar shall not be obliged to apply some articles for a period of five years after the date of entry into force of this Agreement,

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15) WTO RTA database, <http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx>

such as in paperless trading, legal validity of the electronic signature, adopt or maintain a legal framework which ensures the protection of personal information of the users of electronic commerce, provide recourse against suppliers of unsolicited commercial electronic messages who do not comply with its measures implemented. As to important rules of location of computing facilities, cross-border transfer of information by electronic means not only had five years buffer period, and with an additional three years if necessary. The same five years buffer period also fit for Viet Nam. In addition, Cambodia has five years buffer period for the domestic regulatory framework in e-commerce.

China and Japan are two largest economies in RCEP Agreement and are large digital economies at the same time, but there also exist some problems in digital divides. According to the report of world digital competitiveness, China's digital competitiveness increased greatly, comprehensive ranking was No.15 in 2021, Japan was No. 28 and with declining trend. But from the technological framework sub-indicators in detail, each of the two economies has its own advantages. China was inferior to Japan in wireless broadband, mobile broadband subscribers, internet users, internet bandwidth speed, but was ahead of Japan in communications technology, which also embodied in other materials. For example, from the cost of optic fiber broadband, according to purchasing power parity, China's average price and medium price were all higher than those of Japan, the average bandwidth was inferior to Japan, so the unit price was higher than that of Japan. Japan was the country with the lowest price within 71 investigated objects. But China has lower cost in mobile communication than that of Japan and located advantageous status in the world. By 2020, 4G mobile network coverage was 100% both in China and Japan, but the promotion of 5G in China was ahead of Japan. China's top 3 communications operators, that is China Mobile, China Telecom, China Unicom, provided 5G commercial services one after another from November 2019. Up to the end of November 2021, China has built 1.396 million 5G base stations, 5G signals cover all of the city proper above prefecture level, over 97% of counties and 50% of villages and towns.<sup>16)</sup> Japan's top 4 operators including NTT Docomo, KDDI/OCT, Softbank and Rakuten Mobile have different frequency bands, they carried out pre-service from September 2019, the former three operators provided commercial services one after another in March 2020, and planned to apply 5G base stations with special height in all of the prefectures, the 4 operators aimed to totally achieve 98% of deployment before 2023. In addition, percentages of internet users including male and female percentages in Japan are all higher than those of China. In 2020, mobile-cellular and fixed-telephone subscriptions per 100 inhabitants in China and Japan were 132 and 203, active mobile-broadband and fixed broadband subscriptions per 100 inhabitants were 129 and 237,<sup>17)</sup> China should

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16) CAICT APP, 2021 5G Development Events, 2021.1.14.

17) ITU, <https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/Digital-Development.aspx>.

enhance the national ability to use internet, increase the percentage of population who can use the internet and the related technologies.

### 3.2.3 The digital trade rules that Japan have concluded with European countries and the USA may have negative impact on trade in digitally-deliverable services between China and Japan

According to the analysis above, the No.1 trade partner of Japan in trade in digitally-deliverable services was always the USA, the UK is the second partner. It is worth mentioning that Japan and the USA have signed the single independent agreement of digital trade, that is *Japan-United States Digital Trade Agreement (JUDTA)*, reached *Japan-UK Comprehensive Economic Partnership Agreement (Japan-UK EPA)*. The former contained obvious American-style rules, the latter contained both American-style rules and European-style rules. For instance, as to the treatment of digital products, American-style rule is non-discriminatory treatment, however, European-style rules do not mention this. But to take an overview of the bilateral and multilateral FTAs or EPAs signed by Japan, the digital trade rules in the two agreements mentioned above were harsh and tended to the development of digital trade in services.

Though China and Japan are the largest two economies in RCEP region, these two countries had never signed any direct bilateral FTA, the main digital trade rules in the special chapter electronic commerce of RCEP Agreement are the only standards in digital trade for them. These rules took consideration of some member countries with lower digital technologies on the one hand, on the other hand left enough leeway about the problems with large disagreements, and became relative relax compared with the rules dominated by the USA and European countries, so that the promotion of trade in digital services would be slowly. Some anticipation shows that after the enforcement of RCEP Agreement, the commitments of reduction in customs duties will increase the intra-regional trade value by 42 billion dollars, in which the trade creation effect will be about 17 billion dollars, and trade diversion effect will reach 25 billion dollars. Japan will get the largest benefit from the trade diversion. These trade effects will embody on trade in goods obviously. The members of RCEP Agreement reached agreement on not imposing customs duties on electronic transmission, but will not preclude from imposing taxes, fees, or other charges on it, which may impact on the trade in digital services, and it will be difficult to appreciate the effects of RCEP Agreement on the trade in digitally-deliverable services between China and Japan.

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Percentage of internet users refers to the percentage in total population, 93% in Japan in 2019, 71% in China in 2020; male or female percentage refers to in total male (female), 95%, 91% respectively in Japan in 2019, both 70% in China in 2020.

#### 4. Suggestions on Promoting the Development of Trade in Digitally-deliverable Services between China and Japan

The high-profile RCEP Agreement has come into effect on 1<sup>st</sup> January 2022, some members of it started to fulfill their commitments, and intra-regional trade in goods, trade in services and foreign direct investment will increase in different degree. At the same time, RCEP Agreement still has huge developing space and enough updating leeway. In promoting the development of bilateral even intra- and extra-regional trade in digitally-deliverable services, China and Japan, as two typical economies in this region, should take the RCEP framework as the basis, contribute to lead East Asian digital trade rules, strengthen the cooperation of trade in digital services and reduce barriers of trade in digital services.

##### 4.1 China and Japan should make positive efforts in leading digital trade rules

More and more countries take part in the negotiations of global digital governance rules currently, the digital trade rules are one of the most important issues. Because members of WTO who participated in the negotiations of electronic commerce have different claims, more and more serious geopolitics and continuous COVID-19, so many uncertainties made the overall multilateral negotiations of electronic commerce progress slowly, bilateral and regional FTAs become the important platforms of making global digital trade rules. Japan has reached JUDTA with the USA which was centered American interest demand and Japan-EU EPA which reflect European-style claims, and CPTPP Agreement also reflect American-style rules though Japan dominated it after the USA withdrew from TPP. RCEP Agreement represents the preliminary shape of East Asian digital trade rules and reflects China's interest demand in some aspects, also reflects the agreements in digital trade rules between China and Japan for the first time.

China formally applied to join CPTPP on 16<sup>th</sup> September 2021, Japanese society held different standpoints. Some journalists commented that Japan should treat China's application sincerely, the entrance of China will benefit Japan. some viewpoints from official channels seemed not very positive, they were caught in a dilemma facing the applications of Chinese mainland and Chinese Taipei one after another, or doubted the difficulties for China reaching the standards of entrance and hoped the USA return to CPTPP.<sup>18)</sup> In addition, China formally applied to join *Digital Economy Partnership*

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18) The Japan Times, YOICHI FUNABASHI: A better CPTPP would include both the U.S. and China, <https://www.japantimes.co.jp/opinion/2021/11/21/commentary/world-commentary/better-cptpp/>; and the related editorials from national main newspaper media in Japan, Nihon Keizai Shimbun, Asahi

*Agreement (DEPA)* on 1<sup>st</sup> November 2021, Singapore, Chile and New Zealand are the three members of DEPA and as the main members of CPTPP, they hold positive standpoints to China's entrance into the CPTPP; Brunei, Malaysia and Viet Nam, as the members of both CPTPP and RCEP, also expressed supportive stance. China and Japan, as the main economies in East Asia and the important members of RCEP Agreement, should take this as the opportunity to cooperate and progress together. Japan should hold positive and open attitude to China's entrance into CPTPP, and make positive efforts with China in making East Asian digital trade rules. Especially the related rules of trade in digital services, China and Japan should enhance the dialogue systems, try to play the role of pioneers and good examples in the high level rules, such as the treatment of digital products, cross border transmission of data, in order to increase bilateral trade value of digital services.

#### **4.2 China and Japan should try to realize win-win cooperation in trade in digital services**

Firstly, enhance the bilateral foreign direct investment in telecommunication and finance with larger trade complementarity and potential. Recently, China's inward FDI in telecommunication has centered value-added businesses and enlarged gradually. On 27<sup>th</sup> December 2021, the National Development and Reform Commission and the Ministry of Commerce released the *Special Administrative Measures (Negative List) for the Access of Foreign Investment (2021)* and *Special Administrative Measures (Negative List) for the Access of Foreign Investment in Pilot Free Trade Zones (2021)*, all of the telecommunications business that China's commitments when entered into WTO can absorb outward FDI, and no limit of less than 50% of foreign shares in e-commerce, domestic multi-parties communication, store-and-forward classification and call center. In the *Schedule of Special Commitments for Services* of RCEP Agreement, China made commitments with positive list approach for the market access of telecommunication services provided by commercial presence, Japan made commitments with negative list approach. At present, the main bodies of outward FDI in telecommunication are from Chinese Hong Kong, the USA and Singapore, Japan should grasp the chance of China's "dual circulation" development pattern and increase FDI to China. In addition, with the increase of bilateral trade in goods and investment, bilateral cooperation in financial services, such as foreign trade-style finance, international settlement, can be promoted.

Secondly, deepen cooperation in sports, health care and higher education, etc.. It is necessary to take the Summer Olympic Games in Tokyo 2021 as the good basis, and the Winter Olympic Games in Beijing in 2022 as the new chance to strengthen the investment and cooperation in sports industry; in the aspect of investment of nursing centers,

because both Japan and China face a more and more severe social problem that is aging and lower birth rate, Japan is advanced in healthy and medical care industry, and China has no limits in the supply for cross-border healthy services, permits foreign service providers to build foreign-owned profitable nursing sectors, so there is a very prospective investment market for healthy and medical care in China. Because of COVID-19, a lot of students who want to study abroad in Japan had to stay at home. Though Japanese government has relaxed the policy of entrance into Japan step by step for them, but still has to consider many protective factors, time lag will be much longer. Under such circumstances, China and Japan can heighten the level of professional service, carry out the cooperation in online higher education, and explore new markets in higher education.

In addition, it is deserved to mention that since 2018, China has succeeded holding International Import Expo (CIIE) for 4 times, the 4<sup>th</sup> China International Import Expo in 2021 provided enough space for all kinds of enterprises home and abroad to exhibit digital technologies and digital products, and set up special zones for trade in services, Japanese enterprises got large benefits every time. Under the driven of China's "dual carbon" targets and Japan's related targets, Japanese enterprises will meet more new opportunities for FDI in China, there will be huge potentials for the development of bilateral trade in digital services.

### **4.3 China and Japan should relax regulatory policies of trade in digital services step by step**

Chinese and Japanese governments enacted various laws and regulations on digital economy, Japan started earlier, China accelerated in recent years. Take China as the example, *The Cybersecurity Law* which came into effect on 1<sup>st</sup> June 2017, two matched administrative regulations, *Regulation on Security Protection of Critical Information Infrastructure* and *Regulation on Security Vulnerabilities of Network Products* enacted on 1<sup>st</sup> September 2021, another is *Anti-Terrorism Law* enacted on 27<sup>th</sup> April 2018, the above constituted the laws and regulations system of cybersecurity; in the aspect of data governance, there are many laws and related regulations, *The Civil Code of the People's Republic of China* enacted on 1<sup>st</sup> January 2021, *Data Security Law* enacted on 1<sup>st</sup> September 2021, *Personal Information Protection Law*, *Measures for Network Data Security Management (Draft for Comments)*, *Measures of Data Cross-Border Transfer Security Assessment (Draft for Comments)*, *Interim Measures for Personal Information Protection on Mobile Internet Application Program (Draft for Comments)*, all enacted on 1<sup>st</sup> November 2021, *Provisions on the Administration of Algorithm-generated Recommendations for Internet Information Services* enacted on 1<sup>st</sup> March 2022. The laws and regulations enacted recently show that Chinese laws and regulations for digital economy and digital trade are improved, and guarantee global interest demand combined the developing stage of China, such as relatively strict management in the fields of

location of computing facilities, cross-border data flow, etc.. Take Japan as the example, Japan issued the *Act on the Protection of Personal Information* on 30<sup>th</sup> May 2003 and revised in 2020, which was regarded as one of the important parts of building digital society, planned to reorganize the law of personal information protection and local protection regulations supervised and implemented by different sectors, prepared to issue new act on the protection of personal information;<sup>19)</sup> in addition, there are still many laws related to digital economy and digital trade. For example, *Act on Electronic Signatures and Certification Business* issued on 31<sup>st</sup> May 2000 (revised on 19<sup>th</sup> May 2021), *Digital Procedure Act* issued on 13<sup>th</sup> December 2002 (revises on 19<sup>th</sup> May 2021), *Act on Prohibition of Private Monopolization and Maintenance of Fair Trade* issued on 14<sup>th</sup> April 1947 (revised on 25<sup>th</sup> May 2022), etc.. There are also some dynamics of Japanese government and related sectors in 2021, for example, Ministry of Economy, Trade and Industry issued *Guideline for Safety Verification of IoT Equipment* on 19<sup>th</sup> April to ensure the cyber security of IoT equipment; Personal Information Protection Commission (PPC) pronounced Q&A of renewing the *Act on the Protection of Personal Information*, new version of *Strategy of Cyber Security* was released on 27<sup>th</sup> September. All in all, both China and Japan have different and various related regulatory policies.

OECD releases digital services trade restrictiveness index to illustrate the regulatory environment of global digitally enabled trade in services, Japan's indices were from 0.064 in the period of 2014-2016 up to 0.104 in the period of 2017-2020, China's indices were from 0.488 in the period of 2014-2015 up to 0.51 in the period of 2016-2020. The indices from 2014 showed that the invisible barriers of digitally enabled trade in services in two economies became stronger, and China's invisible barriers were higher than those of Japan, especially in the infrastructure and connectivity.<sup>20)</sup> These conditions have direct relations to the related laws and regulations in two economies. Thus, China and Japan should keep up with the times, discretionarily promote relaxation of the regulatory policies, weaken the differences of bilateral regulatory policies, endeavor to provide enough legal guarantees for enlarging trade in digitally-deliverable services, and break through the barriers of trade in digital services gradually.

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19) In 2020, Japanese government accelerated to build digital society, one of the measures was to reorganize the different level of laws or regulations about protection of personal information, which included the *Act on Protection of Personal Information in Administrative Organizations* and *Act on Protection of Personal Information of Independent Administrative Corporations* that are controlled by Ministry of Internal Affairs and Communications, *Act on Protection of Personal Information* supervised by Personal Information Protection Commission, many kinds of regulations implemented by local public groups, then make only one accepted definition and change the original management mode, make new act finally on protection of personal information supervised by Personal Information Protection Commission and realize one-stop service.

20) OECD database, [https://stats.oecd.org/?datasetcode=STRI\\_DIGITAL](https://stats.oecd.org/?datasetcode=STRI_DIGITAL)



Acknowledgements: China Scholarship Council Sponsor Scholarship Program for Younger Cadre Teachers Study Abroad (No. [2018] 3103).

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