

Comparative Analysis of Digital Service Trade between China and the U.S.

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Abstract. Digital service trade has become an important force driving global trade growth. This paper selects two digital trade powers, China and the United States, and focuses on the comparison of digital service trade between the two countries, analyzing the scale of digital service trade, international market share, import and export source and target countries, and four aspects of segmentation structure, summarizing the shortcomings of China in digital service trade compared with the United States, and proposing measures to promote the development of digital services trade in China.

Keywords: digital trade; trade in services; international comparison.

1. Introduction

On June 23, 2022, WTO released its latest Global Services Trade Barometer: world services trade had a reading of 105.5 in the second quarter, exceeding the baseline value of 100, while world goods trade had a boom reading of 99. This indicates that world services trade is growing rapidly while world goods trade is growing slowly. In addition, the representative industry of digital services trade, information and communication technology (ICT) services, had a boom index of 104.2, contributing significantly to the improvement of the services trade boom index.

All of the above show that digital service trade is becoming an important force in promoting the innovative development of foreign trade around the world at present.

2. Digital Trade and Digital Services Trade

Digital trade is a trade form in which digital information technology plays a major role, and the biggest difference with traditional trade is the digitization of the transaction method and the digitization of the transaction object.

This paper focuses on digital services trade, which can be divided into different scopes. In this paper, when comparing the digital service trade between China and the United States, the data sources and the core of the discussion will be more inclined to ICT industry.

3. Comparison of digital services trade between the U.S. and China in general

The digital services trade situation can reflect the competitiveness of a country in the digital economy.

3.1 Total exports

From Figure 1. It is easy to see that China and the U.S. have gradually climbed in the value of digital services exports during the decade 2012-2021. The US has maintained a steady growth in total digital services exports from \$40 billion in 2012 to over \$60 billion in 2021; China has also maintained a growth trend in total digital services exports from lower than \$10 billion in 2012 to \$20 billion in 2021. China's jump in 2017 was mainly due to the leading role of industrial clusters in

ICT export innovation base cities. After completing one jump, China's digital services trade has since maintained a steady growth similar to that of the U.S., and the country has begun to gradually establish and improve relevant policies and regulations, coupled with the impact of the new crown epidemic and the worldwide downturn in goods trade and the outbreak of services trade, China's digital services trade jumps up in the 2020-2021 phase.

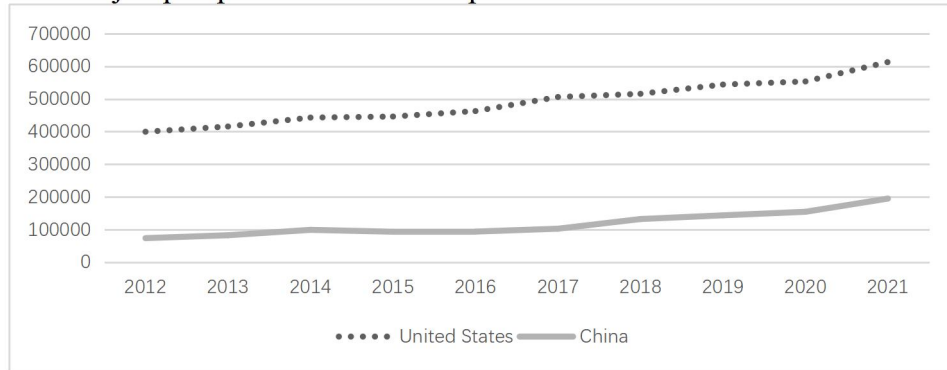


Fig. 1 China's total U.S. digital services trade exports, 2012-2021 (measured in real dollars exchange rate, in millions of dollars)

Source: UNCTADSTAT, International trade in digitally-deliverable services, value, shares and growth, annual

3.2 International market share

In 2021, countries in the European and Asian regions account for the majority of the world's digital services trade market. Asia contributes 24.118% of digital services trade exports share. North America occupies 17.588%. The digital service exports of two major economies, as shown in Figure 2, China's digital service trade exports accounts for nearly 6% of the world's total digital service trade exports and the U.S. accounts for nearly 16% .

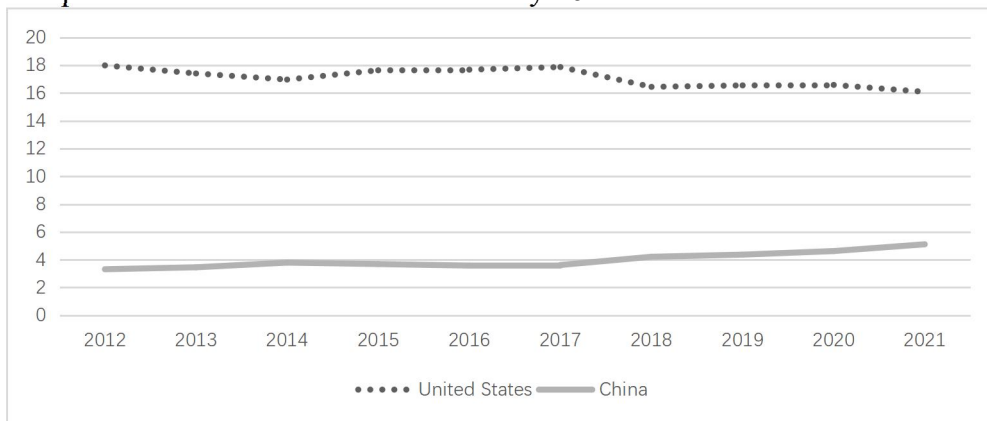


Fig. 2 China's U.S. digital services trade exports as a percentage of world services trade exports, 2012-2021 (unit: %)

Source: UNCTADSTAT, International trade in digitally-deliverable services, value, shares and growth, annual

3.3 Export target countries and import source countries

In this paper, we select the latest digital services trade data between economies in the WTO database. The top target and source countries for digital service trade in 2021 are shown in Table 1.

Table 1. Ranking of China's U.S. Digital Services Trade Export Targets and Import Sources in 2021

Ranking	United States				China			
	Export		Import		Export		Import	
1	EU	24.7%	EU	27.9%	EU	24.4%	EU	38.4%
2	Canada	11.9%	India	27.4%	United States	22.9%	United Kingdom	18.5%
3	United Kingdom	10.1%	Ireland	14.9%	Hong Kong, China	16.2%	United States	17.9%
4	Switzerland	6.8%	Canada	14.2%	Japan	5.5%	Hong Kong, China	14.5%
5	Japan	6.8%	United Kingdom	9.7%	United Kingdom	4.5%	Singapore	6.1%
6	Ireland	6.1%	Netherlands	3.0%	Singapore	4.0%	Ireland	4.5%
7	Germany	5.1%	Philippines	2.4%	Australia	3.1%	Germany	4.5%
8	Brazil	4.4%	Germany	2.4%	Germany	3.0%	Korea	3.6%
9	Singapore	4.2%	Switzerland	1.7%	Netherlands	2.7%	Australia	2.8%

Source: WTO stats, commercial services exported by sector and partner - annual (million US dollars)

Among them, both the EU and the US are the most important target countries for China's digital service exports, currently China exports about 47% of its digital services to the EU and the US; at the same time, China is also quite dependent on the digital trade exports from the US and Europe, with the EU, the UK and the US dominating a total of about 75% of China's digital service imports.

However, the U.S. relies very little on China in terms of digital services trade imports and exports. China is not among the important export targets and import sources of the U.S.. The U.S. target markets are more concentrated in the EU, Canada and the UK, with the top three accounting for nearly 47% of U.S. digital service trade exports. In terms of digital services imports, the U.S. relies more on digital services exports from developed European countries, India and Canada, with digital services trade imports from the EU accounting for 27.9% of total U.S. digital services imports.

4. Comparison of the breakdown structure of digital service trade between China and the United States

4.1 Leading areas in digital services trade

From Table 2, it can be seen that ICT services and other business services dominate most of the digital services exports worldwide. China's ICT services and other business services accounted for 87.5% of the country's digital services exports, the United States ICT services and other business services accounted for 45.8%. The U.S. government has a first-mover advantage in four categories- financial services, intellectual property services, ICT services, and other business services.

4.2 Rate of change in digital services trade segments

From Table 3, it is easy to see that most of the economies' ICT service exports in their own digital service exports rose, China ranking first in the world with +18.9% and the United States

+2.5% ranking 14th. China has a very strong backward momentum in ICT service exports, and is solidly and rapidly improving China's ICT strength to catch up with the world's advanced countries.

However, in the rate of change of other business services, China ranks last in the world with a decline rate of -24.1%. The main reason is that the country's more attention lies in the emerging service exports, and the inflow and concentration of talents and capital to the emerging service exports makes China's development in other business services show a slow or even regressive trend.

Table 2. Structure of segmented digital services exports of representative economies in 2019 (share of exports of this service in the country's digital services exports, unit: %)

Sorting / Classification	Insurance Services		Financial Services		Intellectual Property Services		ICT Services		Other Business Services		Personal recreation services	
	Country	Percentage	Country	Percentage	Country	Percentage	Country	Percentage	Country	Percentage	Country	Percentage
1	Switzerland	9.1	Luxembourg	62.4	Japan	40.1	Ireland	57.3	Thailand	85.6	South Africa	6.3
2	United Kingdom	8.3	Switzerland	26.2	Netherlands	35.9	Finland	51.9	Indonesia	74.2	Canada	5.7
3	Germany	6.7	United Kingdom	25.9	Switzerland	29.3	India	43.5	Brazil	73.1	Australia	4.8
4	Singapore	5.7	United States	25.2	United States	21.8	China	37.5	Philippines	72.8	Luxembourg	4.5
5	South Africa	5.4	Singapore	25.2	Korea	18.5	Sweden	31.8	Russia	60.6	United States	4.3
6	Ireland	5.2	South Africa	22.1	Sweden	16.5	Russia	25.6	France	59.7	Sweden	4.2
7	Brazil	4.6	Australia	20.5	Finland	15.4	Philippines	25	Korea	55.9	France	3.3
8	France	3.9	Canada	16.5	Germany	12.1	Germany	21	Italy	55.7	Korea	3.2
9	Luxembourg	3.5	Italy	14	France	10.3	Australia	20.6	China	51	Indonesia	2.5
10	China	3.3	Germany	12.8	Canada	9.7	Italy	18.3	India	49.6	Brazil	2.5
11	Canada	3.3	Japan	11.8	Italy	9.2	South Africa	16.1	Canada	48.8	Russia	2.4
12	United States	3	France	10	United Kingdom	8.1	Canada	16	Singapore	48.5	United Kingdom	1.8

Source: United Nations Conference on Trade Promotion and Development, China Academy of Information Science and Communication

Sorting / Classification	Insurance Services		Financial Services		Intellectual Property Services		ICT Services		Other Business Services		Personal recreation services	
	Country	Percentage of	Country	Percentage of	Country	Percentage of	Country	Percentage of	Country	Percentage of	Country	Percentage of
1	Brazil	2.4	Australia	8.9	Switzerland	8	China	18.9	Luxembourg	10.8	Sweden	3
2	Indonesia	1.5	Japan	6.3	Germany	5.3	Ireland	11.3	United Kingdom	8.8	South Africa	2.6
3	Germany	0.6	Canada	4.6	China	3.6	Russia	10.4	India	8.4	Korea	1
4	Thailand	0.5	Sweden	4.4	Canada	3.5	Brazil	8.8	United States	5.9	Indonesia	0.8
5	Switzerland	0.4	Italy	3.3	Russia	2.5	Philippines	8.5	Indonesia	3.8	China	0.7
6	Sweden	0.3	France	3.2	Singapore	2.4	Korea	7.6	France	3.1	Luxembourg	0.6
7	Japan	0.2	China	1.6	Brazil	2	Australia	5.7	Switzerland	2.4	Japan	0.6
8	Australia	0.1	Thailand	1	Ireland	1.5	Sweden	5	Finland	1.7	Canada	0.6
9	Philippines	-0.1	Philippines	0.1	Luxembourg	1.5	Germany	3.8	Italy	1.2	Finland	0.5
10	Finland	-0.2	United States	-0.2	United Kingdom	1.5	Singapore	3.8	Ireland	1.1	Germany	0.4
11	India	-0.4	Russia	-1	Korea	1.2	Japan	3	Brazil	1	Philippines	0.4
12	Singapore	-0.4	Indonesia	-1.6	Indonesia	1	South Africa	2.6	Singapore	-0.1	India	0.2
13	Korea	-0.6	South Africa	-1.7	Thailand	1	Finland	2.5	South Africa	-0.6	France	0.1
14	United Kingdom	-0.7	Korea	-1.9	Italy	0.5	United States	2.5	Thailand	-1	Italy	0
15	China	-0.7	Finland	-2.6	India	0.4	Switzerland	0.3	Canada	-5.1	Singapore	-0.2

Table 3. Change in exports of digital services by segment for representative economies, 2019 (% of change in exports of this service as a percentage of change in exports of digital services in the country)

Source: United Nations Conference on Trade Promotion and Development, China Academy of Information Science and Communication

4.3 International market share for export of segmented digital services

In 2019, the international market share of four segments of U.S. digital service exports ranked first in the world, with intellectual property services, personal recreational services and financial services accounting for more than a quarter of the total. Insurance services and ICT services in the U.S. is still not to be underestimated.

China performed relatively well among a group of developing countries. China's ICT service exports, other business service exports and insurance service exports are the three areas that performed more prominently, with international market shares of 7.9%, 5.2% and 3.5% respectively, and China is catching up with the U.S. in ICT service international market share. However, the international market share of other segments are still only in the mid-range.

We can conclude that the U.S. and Europe are still the core supply area of global digital services.

Table 4. International Market Share of Digital Services Exports by Segment of Representative Economies, 2019 (in %)

Source: United Nations Conference on Trade Promotion and Development, China Academy of

Sorting / Classification	Insurance Services		Financial Services		Intellectual Property Services		ICT Services		Other Business Services		Personal recreation services	
	Country	Percentage of	Country	Percentage of	Country	Percentage of	Country	Percentage of	Country	Percentage of	Country	Percentage of
1	United Kingdom	18.7	United States	26.1	United States	28.7	Ireland	18.3	United States	13.5	United States	28.4
2	United States	11.8	United Kingdom	15.4	Netherlands	16.2	India	9.6	United Kingdom	10.3	United Kingdom	7
3	Germany	9.8	Luxembourg	12.2	Japan	11.4	United States	8.2	Germany	6.6	France	6
4	Ireland	8.3	Singapore	5.6	United Kingdom	6.2	China	7.9	France	6.4	Luxembourg	5.6
5	Switzerland	5.4	Germany	4.9	Germany	5.9	Germany	6.2	Netherlands	5.6	Canada	3.8
6	Singapore	4.8	Switzerland	4.1	Switzerland	5.8	United Kingdom	4.4	India	5.3	Germany	3.3
7	France	4.2	Ireland	3.5	France	3.8	Netherlands	4.1	China	5.2	Netherlands	2.8
8	China	3.5	France	2.9	Ireland	2.7	France	2.8	Singapore	4	India	2.5
9	Luxembourg	2.6	Japan	2.6	Singapore	2.1	Sweden	2.3	Ireland	3.7	Sweden	2.4
10	India	1.8	Canada	1.8	Sweden	1.9	Singapore	2.2	Japan	3.3	Korea	1.6
11	Japan	1.8	Netherlands	1.5	Korea	1.9	Finland	1.8	Italy	2	China	1.5
12	Canada	1.3	Italy	1.3	China	1.6	Switzerland	1.6	Canada	1.9	Japan	1.1
13	Netherlands	1	India	0.9	Canada	1.3	Canada	1.3	Luxembourg	1.7	Australia	1
14	Brazil	0.7	China	0.8	Italy	1.1	Italy	1.3	Korea	1.7	Singapore	0.8

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5. Future trends of digital service trade between China and the U.S.

From the perspective of the pattern, the U.S. is the world's top digital services power, and China is gaining momentum among developing countries, but still lags behind, mainly in terms of the large difference in the international market share of each country's digital services exports.

Structurally, the U.S. holds a near-monopoly advantage in four key areas of digital services trade, including financial services, intellectual property services, other business services, and personal recreational services, and also has one of the world's leading achievements in ICT services. The U.S. has unleashed the potential of high-value parts to fully dominate the international market. Although China has achieved good results in ICT services and has many first-class ICT outfits competing with U.S. companies, as shown in the following figures, world's top-ranked digital platform companies like Tencent, Alibaba, Jingdong and Jindong. The gap between the U.S. and China in ICT services is still large.

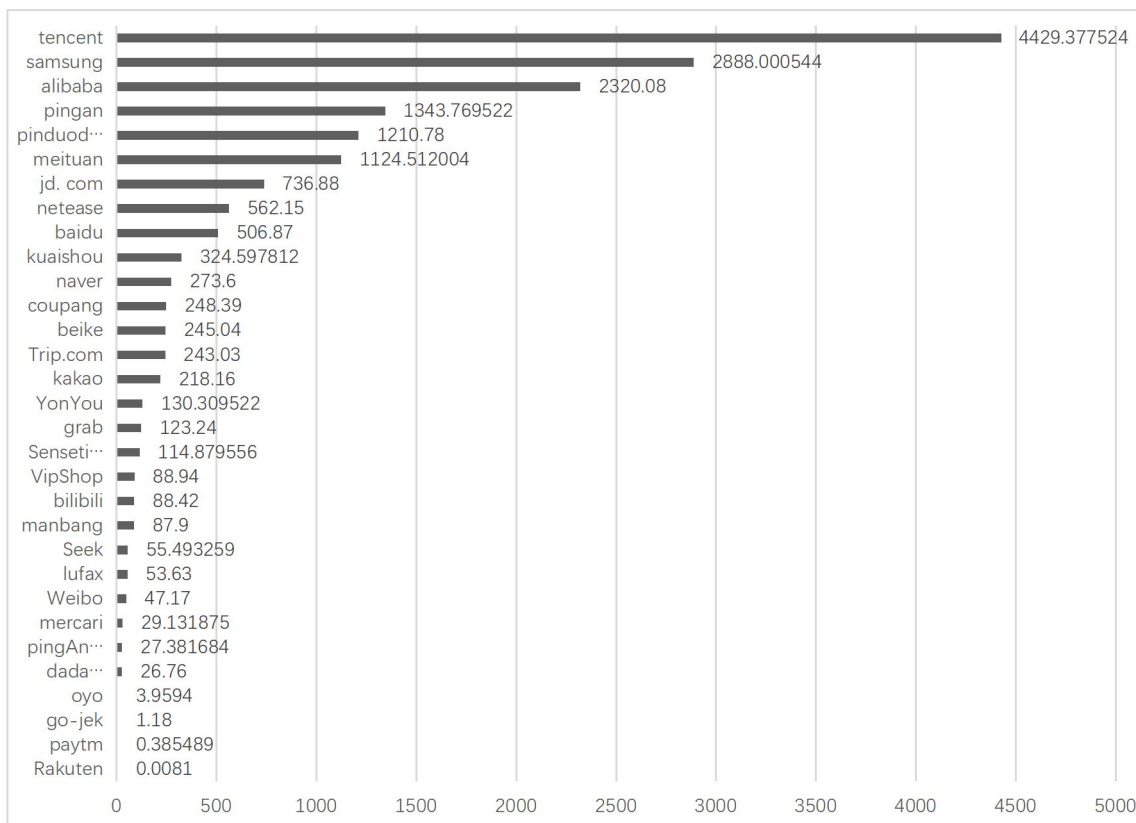


Fig. 3 Distribution of Asia Pacific Representative Digital Platforms (in USD billion at latest market cap in 2023)

Source: Stock Market Talk, MSN Money, market value valuation of unlisted companies published by Sina, NetEase and other media

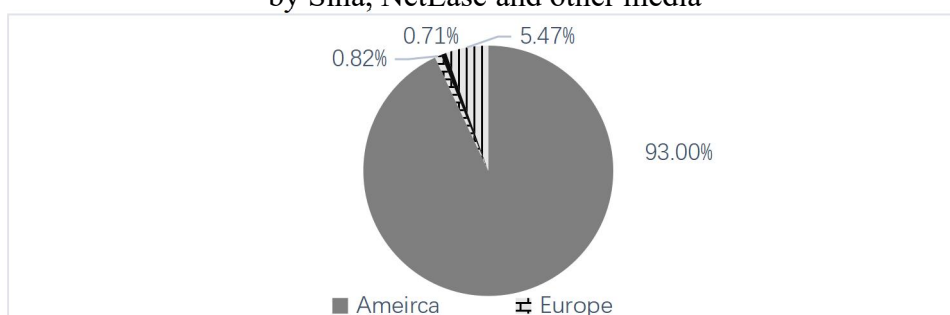


Fig. 4 Global regional distribution of representative digital platforms (by latest market capitalization in 2023)

Source: Stock Market Talk, MSN Money, market value valuation of unlisted companies published by Sina, NetEase and other media

From the competitiveness point of view, China has a huge competitive disadvantage in the field of memory and electronic components, the electronic manufacturing industry has the possibility of being controlled by other countries, and thus will be a direct threat to the development of China's digital services trade like the butterfly effect.

In terms of dependence, China is highly dependent on Europe and the US in terms of both export target countries and import source countries in digital services trade. In contrast, the U.S. digital services trade is very low in its dependence on China. Therefore, any friction between the U.S. and China on digital services trade will generate more enormous damage to China.

6. Suggestions related to the development of digital service trade in China

Firstly, we will firmly grasp the key point of "independent innovation", accelerate the layout of cutting-edge technologies, and gather wisdom and strength to accelerate the development of strategic and disruptive technologies.

Secondly, draw fully on the innovative institutional mechanisms of regional platforms to build Internet of Things platforms and public service platforms. Cultivate new themes in digital service exports, actively develop sharing, platforms, crowdsourcing, supply chains, cross-border e-commerce and other emerging market players, and accelerate the cultivation of integrated service providers led by R&D, design, marketing, branding and other service links.

Thirdly, improving domestic infrastructure development. new scenarios of 5G applications will bring new digital service trade opportunities for China.

Fourthly, build a digital governance system to meet the needs of openness. Carry out cross-border data classification and grading, and establish international data cross-border exchange rules and security protection and risk control mechanisms.

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