Comparative Study on Financial Services Trade Competitiveness in the Belt and Road Countries — Taking the Banking Sector as an Example

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Abstract

Based on the comprehensive evaluation results of entropy weight TOPSIS method, this paper conducted a comparative analysis on the financial services trade competitiveness in the Belt and Road Initiative countries, taking the banking sector as an example. The main findings are as follows: most Belt and Road Initiative countries lack competitiveness in financial services trade across borders and the gap is obvious when they are compared with Japan and other developed Western countries. China's financial services trade competitiveness is ranked highly among the Belt and Road Initiative countries; the financial services trade competitiveness in East Asia and Central and Eastern Europe is stronger than that of other regions with South Asia being the weakest. Based on Diamond Model, this study analyzed the reasons for the gap between the Belt and Road Initiative countries and developed Western countries, and found that the gap between them is obvious in most aspects. Finally, countermeasures are proposed to improve China's financial services trade competitiveness based on the analysis.

Keywords: the Belt and Road Initiative, financial services trade, competitiveness, entropy weight TOPSIS method

1. Introduction and Literature Review

1.1 Introduction

In 2013, proposed the concept of the Belt and Road Initiative (BRI), a new model of international economic and regional cooperation for China to promote the in-depth development of economic globalization. *Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road* published in 2015 clearly proposes to actively set up a service trade support system, particularly strengthening the financial cooperation with the Belt and Road countries. The BRI, as an effective booster, has created new possibilities and injected new impetus into the cooperation between China and other BRI countries in the service trade. In addition, the scale of China's financial services trade is still small, and its share of both the domestic market and the international market is

still relatively low. As an advocator and promoter of the BRI, understanding the development status and the financial services trade competitiveness of partners along the route, so as to better positioning of China's market, will lay a solid foundation for better development of China's financial services trade.

1.2 Literature Review

In the evaluation index of international competitiveness of financial services trade, scholars mostly use various indices developed based on the theory of comparative advantage. Most of them selected a few common indicators according to features of the research sample, conducted horizontal and vertical comparison among the data obtained and drew conclusions on the strength of international competitiveness of a country's trade. Allan et al. (2005) used RCA index and net export index. Liyuan Chen (2016) chose RCA index, TC index and MS index. Yuhan Dong (2018) chose RCA index. Ma Xiaoxuan (2021) chose MS index, TC index and RCA index as Indicators of measurement. Li Huaping and Liu Yan (2020) used MS index, RCA index, TC index and FO indices to evaluate the competitiveness of financial services trade in Shanghai, China. Some scholars have also compared specific areas of financial services trade. Wang Ye (2015) used the TC Index, RCA Index and Financial Services Trade Technology Index to analyze the current state of China's banking industry. However, there is an important flaw in these studies: most of them evaluated a countries' financial services trade competitiveness with a single indicator, which would be less persuasive and led to the lack of an objective understanding of the international competitiveness of financial services trade and ignorance of the new features of financial development and financial innovation that contribute to the competitiveness of financial services trade. Therefore, in this study the financial services trade competitiveness is placed in a comprehensive evaluation system, seeking to reflect the competitiveness of a country's financial services trade and its future development trend from different perspectives in a comprehensive manner. In addition, due to the lack of data on financial services trade in the commercial presence, Huang Manying and Deng Xiaohong (2018) indirectly analyzed financial services trade in commercial presence mode using the database of *The Banker* magazine in the UK, and both macro and micro indicators showed that China's banking sector is highly competitive compared with both developed Western countries and other BRI countries. Based on the previous research, this paper will provide a detailed comparative analysis of the financial services trade competitiveness under the cross-border transaction model, taking the banking sector as an example.

2. Study Area and Data Sources

2.1 Research Field

In this paper, 66 of the Belt and Road Initiative were selected as the study objects, as shown in Figure 1. On the basis of previous studies, with reference to Hu Mei (2019) and official website of China's Belt and Road, 66 countries were selected according to the traditional global continental and sub-regional classification methods, combined with the geographical conditions of the Belt and Road Initiative. Additionally, to provide a more objective and comprehensive assessment of the financial services trade competitiveness in the Belt and Road countries, some of the developed Western economies including the United States, Japan, France and Germany were included.

Table 1. The Belt and Road Initiative countries

Region	Country	Region	Country	Region	Country
Southeast Asia	Thailand*	South Asia	Uzbekistan*	East Asia	China
	Indonesia*		Turkmenistan*		Mongolia
	Vietnam*	West Asia, North Africa	Turkey	Central and Eastern Europe	Russia
	Malaysia*		United Arab Emirates*		Poland
	Singapore*		Egypt		Belarus
	Laos*		Iran*		Hungary
	Myanmar*		Saudi Arabia*		Czech Republic

South Asia	Cambodia*		Qatar*		Ukraine*
	Philippines*		Israel*		Serbia
	Brunei*		Greece		Romania
	East Timor*		Jordan*		Bulgaria
	Pakistan*		Kuwait		Slovakia
	Sri Lanka*		Azerbaijan		Slovenia
	India*		Georgia*		Croatia*
	Nepal*		Bahrain*		Lithuania
	Bangladesh*		Armenia		Albania*
	Maldives*		Oman*		Estonia
	Afghanistan*		Iraq*		Montenegro*
	Bhutan*		Lebanon*		Latvia
	Kazakhstan		Syria*		Macedonia
	Kyrgyzstan		Yemen*		Moldova
	Tajikistan		Palestine*		Bosnia and Herzegovina*

Data source: official website of the Belt and Road Initiative.

Note: The marker * represents that data of these countries is missing or incomplete in the sample. After removing countries with incomplete data, there are 3 countries in South Asia, 6 countries in West Asia and North Africa, a total of 26 countries with 2 countries in East Asia and 15 countries in Central and Eastern Europe.

2.2 Data Sources

The data provided by UNCTAD database, World Bank database and Guotai'an Database were used. According to the GATS, financial services trade is divided into four different modes. UNCTAD's financial services trade statistics are mainly based on BOP statistics, covering data under three modes of cross-border delivery, overseas consumption and natural person flow, that is, the statistics only include cross-border transactions, excluding commercial presence data. Moreover, the database refer to IMF's Balance of Payments Manual (6th edition), the financial services scope of which has not been changed much from the 5th edition: financial services mainly includes financial inter-mediation services provided by banks and other financial companies, excluding insurance and pension services.

3. Theoretical Analysis

3.1 Entropy Weight TOPSIS Method

The evaluation of financial services trade competitiveness in cross-border transactions is a multi-objective comprehensive evaluation. According to the characteristics of the development of financial services trade in the Belt and Road countries, this paper selected a more objective assignment method, combining the advantages of the entropy method and TOPSIS method, adopted entropy weight TOPSIS method to conduct dynamic analysis and evaluation of financial services trade competitiveness.

3.2 Evaluation Index System

The index system of this paper is divided into three levels. The first-level indicator is the financial services trade competitiveness, on the basis of which three second-level indicators are set up, including the indicator of financial services export quality which reflects and evaluates the improvement of the financial services exports quality of each country, the indicator of financial services export growth which evaluates the financial services trade competitiveness from the perspective of changes in the financial services exports growth of each country, the indicator of financial services trade competitive potential which reflects and evaluates the growth potential of financial services trade at present and in the future.

a. The indicator of financial services trade export quality corresponding to the three levels of

indicator selected international market share of financial services, competitive advantage index of financial services, revealed symmetric comparative advantage index of financial services, revealed competitive comparative advantage index of financial services and Michaely fluctuation index of financial services.

(1) International market share of financial services

International market share (MS) reflects the overall competitiveness or the change of competitiveness of a country's industry. X_{ij} and M_{ij} are the exports and imports of industry j in country i. X_i and M_i are the total exports and imports of all industries or products in country i. X_{wj} and M_{wj} represents the total exports and imports of industry j in the world market. X_w and M_w represents the total exports and imports of all industries in the whole world market in the same period.

$$MS_{ij} = X_{ij} / X_{wj} \qquad (1)$$

(2) Trade competitive advantage index of financial services

The trade competitive advantage index (TC) excludes the influence of fluctuations in price levels of the country and can be used to compare the competitiveness of the same product among different countries.

$$TC_{ij} = (X_{ij} - M_{ij})/(X_{ij} + M_{ij}) \qquad (2)$$

(3) Revealed symmetric comparative advantage index of financial services

The RSCA index eliminates the effects of fluctuations in national aggregates and world aggregates to better reflect the relative strengths of the industry. RCA_{ij} shows the index of revealed comparative advantage of industry j in country i.

$$RCA_{ij} = (X_{ij}/X_i)/(X_{wj}/X_w) \qquad (3)$$

$$RSCA_{ij} = (RCA_{ij} - 1)/(RCA_{ij} + 1) \qquad (4)$$

(4) Revealed competitive comparative advantage index of financial services

Revealed competitive comparative advantage index (CA) takes into account both imports and exports of an industry and therefore provides a more comprehensive picture of the competitiveness of an industry in a country.

$$CA_{ij} = RCA_{ij} - (M_{ij}/M_i)/(M_{wj}/M_w) \qquad (5)$$

(5) Michaely index of financial services

Michaely Index (MI), also known as Michaely Fluctuation Index, evaluates the fluctuation of economic variables and thus examines the stability of economic variables.

$$MI = (X_{ij}/X_i) - (M_{ij}/M_i) \qquad (6)$$

b. The indicator of financial services export growth corresponding to the three levels of indicator selected the import and export growth capacity of financial service, the export growth capacity of financial service and the export advantage variation index. The import and export growth capacity of financial services is the ration of the current financial services import and export growth to that of the previous period, which is designed to reflect the financial services trade export growth capacity of country i from the overall perspective of financial services trade import and export. The export growth capacity of financial services is calculated as the growth of financial services imports in the current period divided by financial services exports in the previous period, reflecting the future growth of financial services trade from the perspective of financial services exports. The export advantage variation index of financial services is the difference between the financial services trade exports of country i compared to the exports of other industries in the country, comparing the export growth rate of a product in a country with the total export growth rate of all goods and services in that country. G_{ij} is the export growth rate of product j in country i. G_i is the total export growth rate of all goods and services in country i. When PI>0, it means it has competitive advantage. When PI<0, it means it has no competitive advantage. The larger the indicator, the greater the growth advantage is and the better the development prospect is. The calculation formula is:

$$PI = G_{ij} - G_i \qquad (7)$$

c. The indicator of financial services trade competitive potential corresponding to the three levels of indicator selected the foreign direct investment attraction ability index, financial innovation-driven ability, information technology level and trade technology index of financial services.

(1) The foreign direct investment attraction ability refers to the direct investment behaviour of foreign economic organizations and individuals who use their own capital, physical goods, brands and technology to set up factories and carry out business activities within the scope of regulations and policies in the country. The stronger the ability to attract foreign direct

investment, the better it is at driving growth in financial services trade exports and improving competitiveness.

(2) Innovation plays a positive role in releasing the export potential of financial services trade and playing the competitive advantages of financial services trade. The stronger the ability to drive financial innovation, the more conducive to the competitiveness of financial services trade it will be. To promote the innovation-driven ability is to innovate financial support methods, to improve the financial service system that adapts to the development of the service industry, to accelerate the development of products and services that meet the needs of service industry enterprises. In this paper, the financial innovation-driven ability is measured by the cross-sectional variable of the ratio of domestic credit to GDP and R&D expenditure to GDP in the private sector, reflecting the level of development of financial factors and innovation capacity in each country.

(3) With the emergence of new services trade, the overall structure of services trade is constantly being restructured. With the advent of the Internet Plus era, many new financial services products are increasingly available. The basic impetus for their emergence lies in the upgrading of information technology and the renewal of people's consumption concepts, and is a comprehensive product of information technology such as internet development and modern management concepts. The development of technology-based financial services relying on big data and cloud computing would have a greater impact on traditional Chinese finance. The higher the level

of information technology in a country, the stronger the potential the country has to become competitive in financial services trade. This paper uses the number of Internet servers per million people to assess the level of information technology development in each country.

(4) The technology content index of financial services trade analyses the impact of financial services technology content on the international competitiveness of this field from the technological perspective. According to Wang Ye (2015), the higher the technology content of a country's financial services trade, the higher its financial services trade competitiveness potential is. Based on the hypothesis that labour productivity is the source of the technological content of a product, the increase in labour remuneration is accompanied by the increase in labour productivity. In other words, the technological content of a product and labour productivity can be reflected by labour remuneration. Extending this to the field of financial services trade, it reflects that the providers of financial services trade are often countries with high incomes and high labour remuneration, indicating that countries with high incomes have equally high technological added value of their financial services trade products. Based on this, the technology content of a country's financial services trade can be measured by its per capita income level Y_i, and the percentage of a country's total exports of financial services trade in the total world exports of financial services trade MS_i, with $pgdp_i$ being the per capita income of country i.

$$STC = MS_i * pgdp_i \qquad (8)$$

Table 2. Indicator system for evaluating the financial services trade competitiveness

Level 1 indicator	Level 2 indicator	Level 2 indicator	Nature of indicator	Data sources
financial services trade competitiveness	export quality	international market share of financial services	+	UNCTAD
		competitive advantage index of financial services	+	UNCTAD
		revealed symmetric comparative advantage index of financial services	+	UNCTAD
		revealed competitive comparative advantage index of financial services	+	UNCTAD
		Michaely fluctuation index of financial	+	UNCTAD

		services		
	export growth	import and export growth capacity of financial service	+	UNCTAD
		export growth capacity of financial service	+	UNCTAD
		export advantage variation index	+	UNCTAD
	competitive potential	foreign direct investment attraction ability index	+	UNCTAD
		financial innovation-driven ability	+	World Bank
		information technology level	+	World Bank
		trade technology index of financial services	+	UNCTAD

4. Comparative Analysis of the Financial Services Trade Competitiveness

4.1 Competitiveness Comparative Analysis

Table 3 shows that the majority of BRI countries have no competitive advantage in financial services trade, and there is a significant gap between them and developed countries such as the UK and the US. Among the Belt and Road countries and regions, China, Estonia and the Czech Republic show a strong comparative advantage. By region, the competitiveness of financial services trade is stronger in East Asia and Central and Eastern Europe than in other regions, with South Asia being the least competitive. The competitiveness of China's financial services trade ranks highly among BRI countries.

Table 3. Comprehensive evaluation of financial services trade competitiveness of the Belt and Road countries

Region	Country	2013 Index	Ranking	2015 Index	Ranking	2018 Index	Ranking	2020 Index	Ranking
East Asia	China	0.364	7	0.315	7	0.426	4	0.342	5
	Mongolia	0.124	28	0.118	28	0.129	28	0.112	25
South Asia	Kazakhstan	0.128	27	0.146	26	0.12	29	0.154	24
	Kyrgyzstan	0.213	20	0.308	8	0.258	13	0.219	11
	Tajikistan	0.144	26	0.247	13	0.13	27	0.06	30
West Asia North Africa	Armenia	0.233	15	0.167	22	0.259	12	0.16	22
	Azerbaijan	0.249	14	0.153	25	0.214	21	0.11	26
	Egypt	0.342	8	0.319	6	0.337	8	0.232	9
	Greece	0.173	24	0.172	21	0.2	24	0.168	21
	Kuwait	0.374	6	0.278	10	0.424	5	0.177	17
	Turkey	0.187	22	0.123	27	0.228	18	0.222	10
Central and Eastern Europe	Belarus	0.088	30	0.05	30	0.109	30	0.09	28
	Bulgaria	0.221	18	0.153	24	0.16	25	0.185	16
	Czech Republic	0.256	13	0.273	11	0.3	9	0.255	7
	Estonia	0.263	12	0.279	9	0.227	19	0.286	6
	Hungary	0.269	11	0.199	17	0.254	15	0.198	13

	Latvia	0.409	5	0.399	4	0.365	7	0.188	15
	Lithuania	0.273	9	0.2	16	0.257	14	0.234	8
	Moldova	0.218	19	0.203	15	0.207	23	0.107	27
	Macedonia	0.119	29	0.094	29	0.144	26	0.075	29
	Poland	0.199	21	0.199	18	0.253	16	0.189	14
	Romania	0.165	25	0.19	20	0.292	10	0.175	18
	Russian Federation	0.233	16	0.216	14	0.26	11	0.157	23
	Serbia	0.177	23	0.154	23	0.217	20	0.169	19
	Slovakia	0.227	17	0.26	12	0.233	17	0.169	20
	Slovenia	0.271	10	0.197	19	0.211	22	0.207	12
developed Western countries	France	0.456	4	0.385	5	0.417	6	0.357	4
	Germany	0.52	3	0.465	3	0.483	2	0.442	2
	Japan	0.524	2	0.488	2	0.428	3	0.439	3
	United States	0.871	1	0.783	1	0.822	1	0.927	1

4.2 Analysis of Causes

Most scholars started with Porter's Diamond Model to analyze the factors influencing the international competitiveness of financial services trade.

4.2.1 Production Factors

From the perspective of production factors, there is a huge gap between China and other BRI countries compared to the developed countries in terms of industrial scale, technical level and talent quality in the financial services industry. The characteristics of a country with a high level of urbanization include sound infrastructure, abundant resources and a large number of highly qualified talents. Modern service industries often need cities as carriers, especially financial services, whose consumption needs to be driven by urbanization. Therefore, for a country to create a favourable environment for the development of financial services trade, it needs to accelerate the process of urbanization. The paper following calculated the proportion of urban population to total population to evaluate the urbanization process of each country, from which it is obvious that the urbanization process of the developed Western countries is very high whereas the urbanization competition of the Belt and Road countries is relatively low. Although China's urbanization process is growing rapidly, there are still some gaps when compared with developed countries.
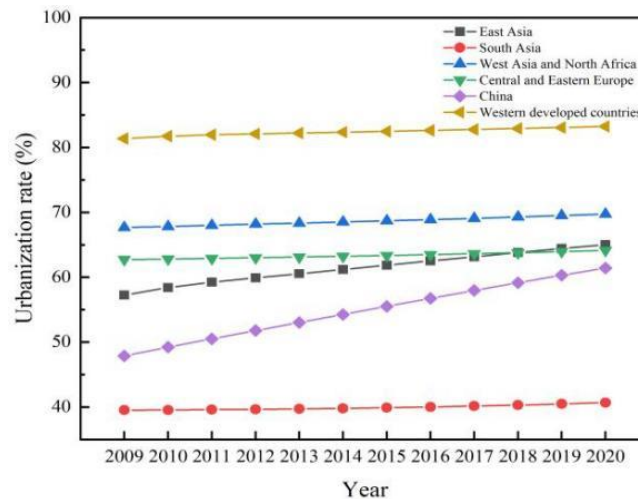

Figure 1. Evolution of urbanization level in countries

4.2.2 Demand Factors

As the level of quality of life increases, does the demand for trade in financial services. A country's demand for services depends on the development of its economic level. Maslow's Hierarchy of Needs Theory shows that people will only consider further development in other areas after their subsistence needs are met, so the financial development of a country needs to be based on the development of GDP. In terms of GDP per capita, the gap between China and other BRI countries compared with developed countries is obvious, which is not conducive to the improvement of the international competitiveness of the financial services trade. Additionally, the development of the banking sector cannot be separated from the savings of the country's residents, and the growth of total social savings will promote the development of the banking sector. Compared to the developed Western countries, other BRI countries have a clear difference in the level of savings, while China has an obvious advantage in this aspect, indicating that China's banking sector has a strong advantage in this regard.
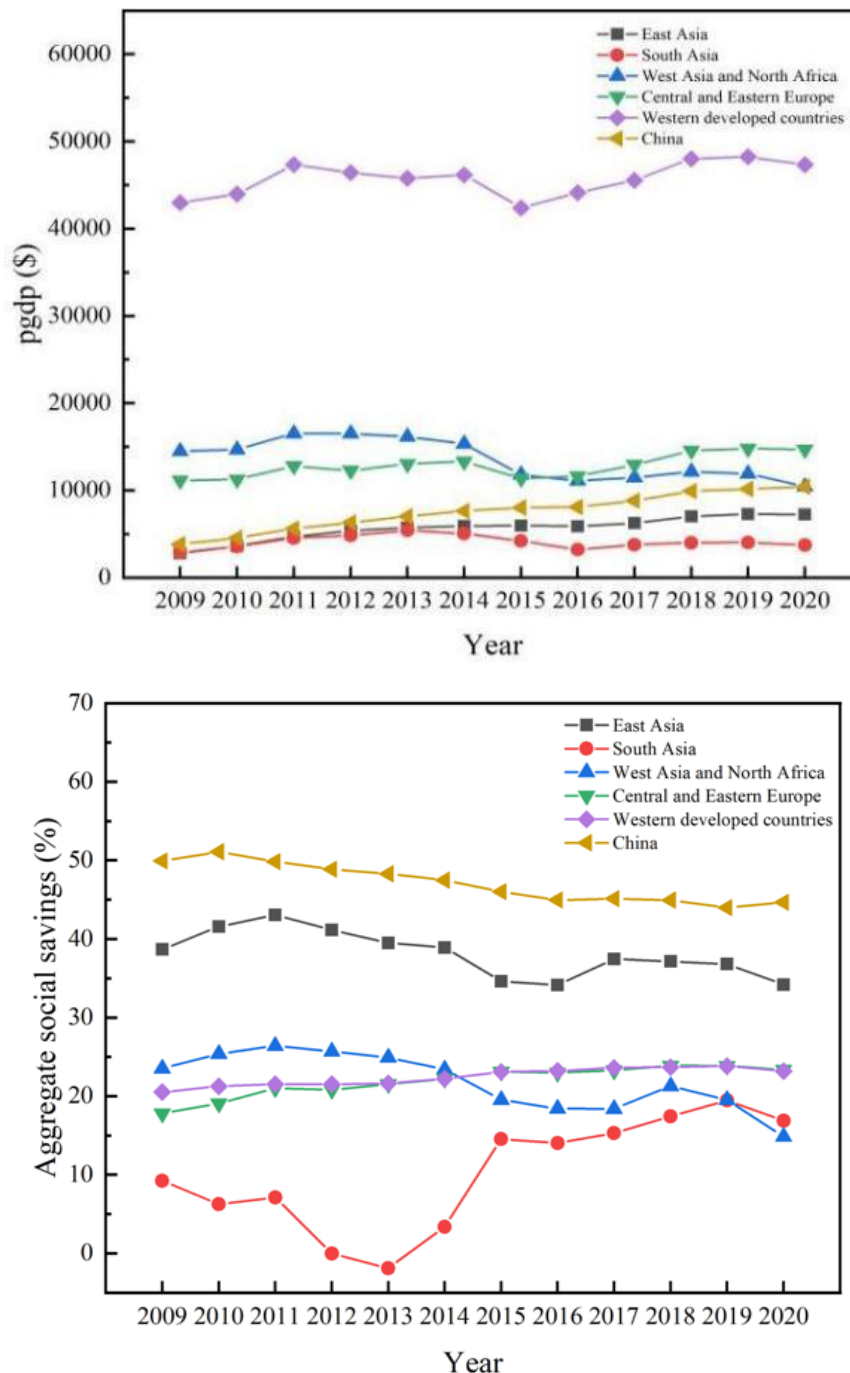

Figure 2. Evolution of GDP per capita and total social savings of countries

4.2.3 Related and Supporting Industries

The industrial clusters exist in many industries, and this is also the case for financial services. Financial services are strongly influenced by the development of services, which in turn depend on the development of trade in goods. Generally speaking, trade in goods and trade in services should be mutually reinforcing. A large number of services can make trade in goods more convenient and facilitate trade in goods. For example, insurance during the transportation of goods and letters of credit issued between enterprises have largely developed the financial services industry. China is a large exporter of goods, which has contributed to the improvement of the competitiveness of China's financial services trade in recent years. However, there is still a big gap between the export of goods in other BRI countries and China compared with developed Western countries. As the pillar industry of a country, the development of secondary industry plays an irreplaceable and important role in the development of a country and an important role in the development of financial services trade. In this regard, the industrial growth rate of the Belt and Road countries is relatively strong, allowing for the rapid growth of the competitiveness of financial services trade in the Belt and Road countries.
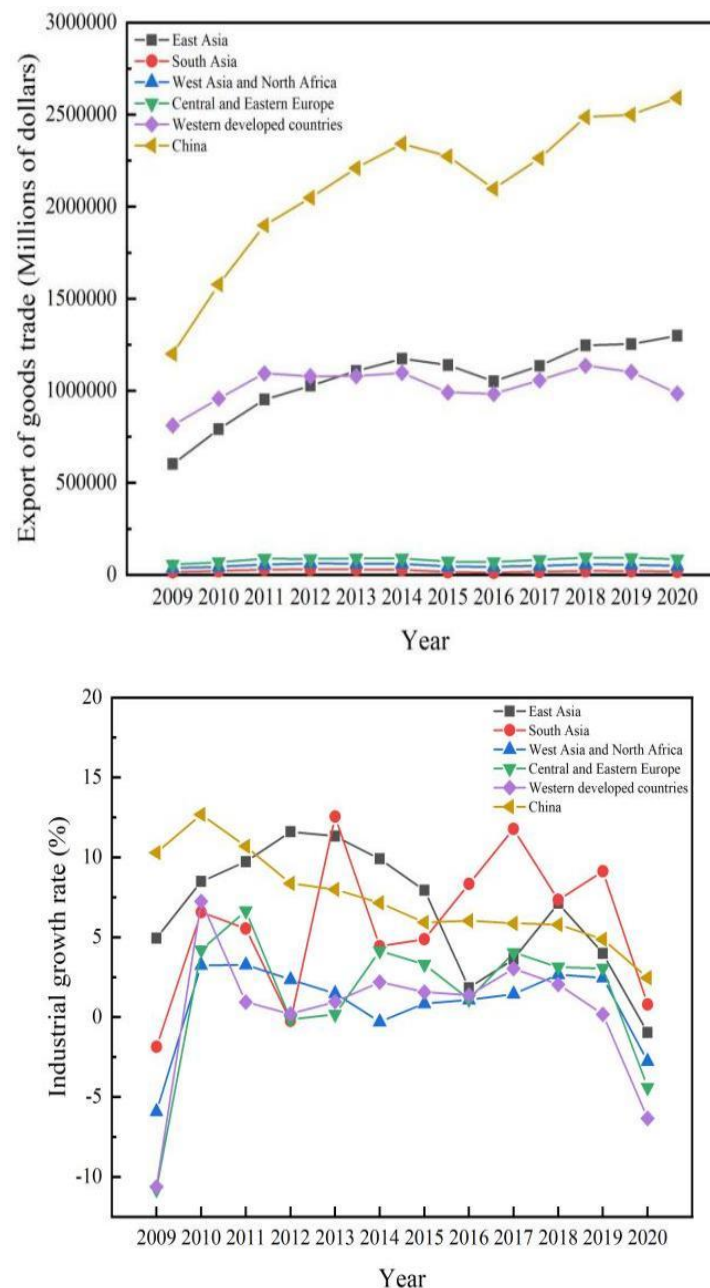

Figure 3. Evolution of trade exports in goods and industrial value added

4.2.4 Strategic Corporate Structure and Peer Competition

The efficiency of the financial system refers to the relationship between inputs and outputs of the financial sector, providing a more effective perspective for evaluating the development of a country's financial services trade. In general, the efficiency of the financial system is positively related to the competitiveness of a country's financial services trade. Efficient and rational management organization is conducive to competitiveness, both at the corporation and national levels. According to Figure 4, the efficiency of the financial systems of China and developed Western countries is high whereas the efficiency of the financial systems of other BRI countries is low, exerting a certain impact on the competitiveness of financial services trade.
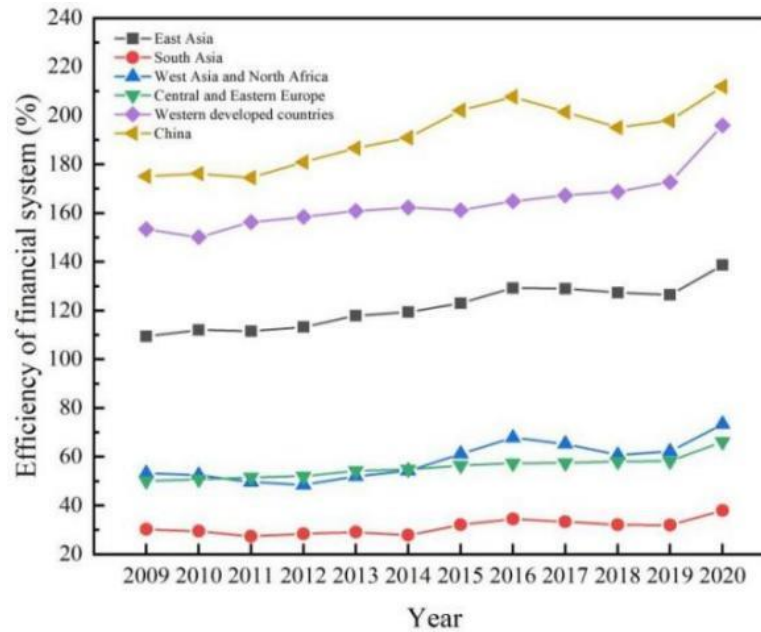

Figure 4. Evolution of financial system efficiency across countries

4.2.5 Government

The policy guidelines set by a government can often determine the competitiveness of a country's financial services trade. A country's government can increase intervention in the capital market, make laws and regulations to regulate the financial market and make financial services standardized, set product standards to ensure product quality, lower taxes and increase subsidies to help its financial enterprises survive in the fierce competition, thus improving its competitiveness. This paper chose the degree of financial services trade openness to evaluate the impact of government actions on the financial services trade competitiveness. The openness of financial services trade provides more opportunities for a country's enterprises to participate in the international division of labour, and an open and free trade environment is conducive to competitiveness, while a country's government plays a very important role in the process of promoting the opening up of the industry. The graph shows that there is a significant gap between the openness of financial services trade in the Belt and Road countries and the developed Western countries, and China does not have any advantage in this respect.
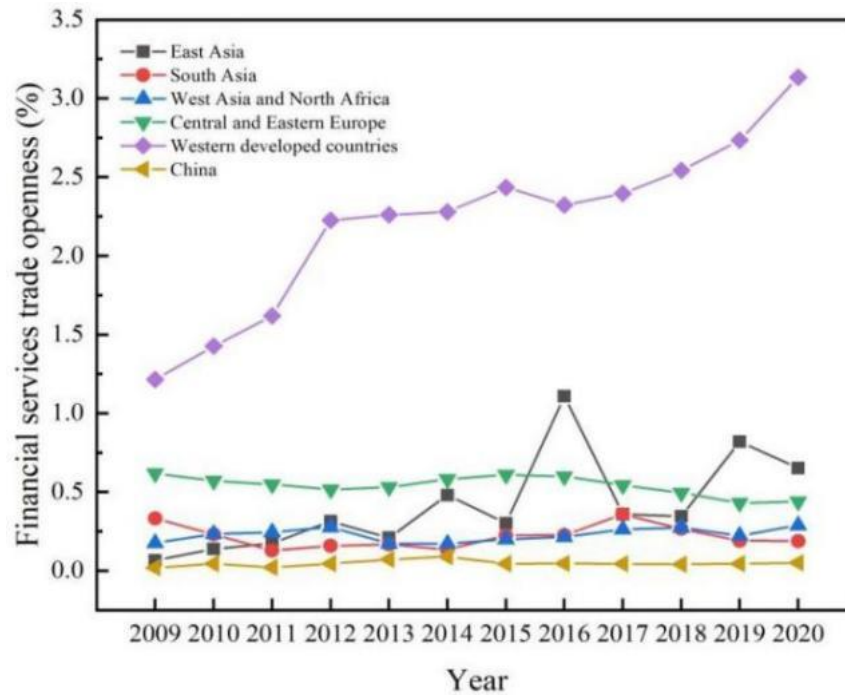
Figure 5. Openness of financial services trade across countries

5. Conclusions and Recommendations

5.1 Main Conclusions

a. Regarding financial services trade in cross-border transactions, most BRI countries and regions lack competitiveness in financial services trade, and the gap is obvious when they are compared with the United States, Japan and other developed Western countries, among which Estonia and the Czech Republic have strong competitiveness in financial services trade. The competitiveness of China's financial services trade ranks highly among the Belt and Road countries. The competitiveness of financial services trade in East Asia and Central and Eastern Europe is stronger than that of other regions and the competitiveness of financial services trade in South Asia is the weakest.

b. With Porter's Diamond Model, this paper analyzed the reasons for the huge gap in the financial services trade competitiveness between the Belt and Road countries and the developed Western countries. It was found that the Belt and Road countries are less competitive compared with the developed Western countries in terms of production factors, demand factors, related and supporting industry. At present, it is advisable for China to seize the opportunity of the Belt and Road Initiative and the dividends brought by the Internet era to promote competitive potential of financial services trade.

5.2 Policy Recommendations

First, the statistics of financial services trade needs to be strengthened. It is necessary to improve the existing BOP statistics. Meanwhile, the FATS statistics needs to be established so that China's financial services trade competitiveness can be reflected more comprehensively and accurately. Secondly, among the Belt and Road countries and regions, Estonia and the Czech Republic have strong competitiveness in financial services trade, so it is advisable that China strengthens cooperation with them and learn from their advanced development experience in the financial industry. Thirdly, the innovation of service products in the field of financial services trade needs to be strengthened, through strengthening human resources in this field and related fields and developing financial service products with high technical added value by talents to meet the domestic and international markets, so that the competitive potential of China's financial service trade becomes a reality. Fourth, under the new normal, traditional banks should combine with the characteristics of the Internet Plus era, give full play to the information advantages of the Internet Plus at this stage, face up to the importance of financial services and trade information consultation, strengthen the construction of online and offline platforms, and improve the overall competitiveness of financial

services and trade information.

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