

International Trade in Services and FDI: A Review and Bibliometric Analysis (2000-2020)

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Abstract

International trade in services is the engine of the world economy. Under complex and volatile international happenings, it is worth evaluating where the world service trade and FDI pattern will go. Therefore, it is necessary to gauge the trade-related research of service trade and FDI. This paper systematically reviewed the research on international trade in service and FDI through qualitative and quantitative research methods, which made up for the deficiency of the existing reviews in this field. This paper used VOS viewer software to carry out a bibliometric analysis of 1097 documents from Scopus (2005-2020). The study found that authoritative journals in this field are concentrated in the economic field and the quality of publications is high. The cooperation between scholars is not close, and papers are mainly distributed in North and South America, East Europe, South and Central Asia and partially Australia. The results of document co-citation showed that international trade in services and FDI is diversified into mainstream research fields, like trade liberalization, FDI in financial industry, international competitiveness, TRIPS, TRIS, GATT and corporate diplomacy. Further analysis of the above knowledge structure, we can master the development track of international trade core areas in services and lay a foundation for exploring new development trends.

Keywords: Services, FDI, International Trade, Bibliometrics

Introduction

The services sector has emerged as the largest and fastest-growing sector in the world economy in the last three decades, providing more than 63 per cent of global output and, in many countries, an even larger share of employment (World Bank, 2020). Not only has the services sector grown in terms of its share in global output and employment, but its share in total trade has also grown rapidly in this period. Along with this, we find that global FDI is also shifting away from manufacturing toward the services sector. The growing importance of the services sector and the corresponding rise in its role in integrating the world economy has led to a stream of literature that examines different aspects of trade and FDI in services. However, very few studies have focused on the conceptual issues concerning trade and FDI in services. This paper undertakes a selective review of both theoretical as well as empirical studies on trade and foreign

direct investment (FDI) in services. It identifies some of the conceptual issues in this area, e.g., whether theories of trade and FDI are relevant for services; what are the important barriers to trade in services; and what are the important determinants of FDI in services.

The growth of the services sector in the global economy has been accompanied by growth in its share in world transactions. Testimony to the rise in the international supply of services is the fact that services trade grew at the same rate as goods trade in the 1990s, i.e., about 6.5 per cent. In 2001, the value of goods trade fell by 4.5 per cent, while that of services trade declined by only half a percentage point. The value of services trade, in 2001 was about 24 per cent of the value of merchandise trade¹. In the FDI mode, the share of services investment in the global annual flow of FDI has been over 50% in the late 1990s. Consequently, the importance of service activities in the global stock of FDI has risen to a share of about 43 per cent. The growing internationalization of services has led to vast literature and some of the fiercest debates on critical issues regarding trade and investment in services.

Services are considered as the driving force of economic growth, structural changes and catch-up, and their impact on the national economy is far-reaching and extensive (Naudé & Szirmai, 2012). The trade friction launched by the United States in 2018 was aimed at China, to curb the pace of transforming China from a manufacturer of quantity to one of the qualities and maintaining its leading position in the high-end manufacturing field (USTR, 2018). As the major importer and exporter in the world, the trade conflict between China and the United States inevitably had a significant impact on the overall world trade pattern, with manufacturing standing in the breach. Therefore, the manufacturing trade has once again become an increasingly active research hotspot, with various disciplines coexisting.

First of all, many scholars pay attention to the effects of trade policy formulation and implementation under globalization. Nelson believed that drastic changes in US trade policy would pose a danger to the survival of the free trade system (Nelson, 2019). Sanchez reviewed the development of China's trade policy and put forward a series of challenges related to the trade policy that China faces (Sanchez-Fung, 2016). Zhang summarized trade policies in China from 2014 to 2016, mainly covering the "Belt and Road Initiative", trade facilitation policy, and the promotion of cross-border electronic commerce (Zhang, 2017). Chen discussed the trade policies of Singapore and its practices and pointed out the problems and challenges faced, put forward suggestions for other small open economies (Chen &

Shao, 2017). Secondly, many scholars make systematic reviews of a branch of international trade in the manufacturing industry. Orden supervised the World Trade Organization's performance in regulating agricultural and food trade and proposes a regulatory roadmap (Orden & Roberts, 2007). Vaubourg stressed the complexity of the relationship between finance and trade. On the one hand, finance was driven by trade patterns; on the other hand, there was institutional interaction between finance and trade reform (Vaubourg, 2016). Also, many scholars conduct useful discussions on the relationship between international trade and the environment. The research of Cherniwchan attracted wide attention in the academic circle. He introduced a new method to link emission changes with production activities at the factory, enterprise, industry, and national levels (Cherniwchan, Copeland, & Taylor, 2017). Frei was concerned about global green energy trading and believed that the channels and products of green trading would affect the green energy market (Frei, Loder, & Bening, 2018).

After nearly 25 years of development, the services trade has formed a relatively rich knowledge reserve and theoretical contributions. However, at present, the reviews in this field mainly adopt qualitative methods and rely on the framework constructed subjectively by the authors to sort out the existing literature. Therefore, understanding and grasping the history, current situation and trend of international trade research are of practical significance for further understanding of international trade research in manufacturing and discovering new research issues, providing references for scientific research topics, academic innovation, and development direction of international trade in the manufacturing. Compared with the traditional qualitative review, it is more comprehensively, intuitively and objectively based on a knowledge map to quantitatively measure and visualize the literature.

The main objective of the paper is to identify some of these conceptual issues and provide a selective review of both theoretical and empirical studies on these issues. Emphasis is laid on the studies that not only discuss the conceptual issues but also provide insights for policymakers and help to further research in these areas. Therefore, this paper used VOSviewer, a scientific visualization software, to make an overall bibliometric analysis of international trade in the services, to review and track the evolution of hotspots and the progress of the knowledge structure of international trade in services and FDI, and to look forward to the development trends of this field.

3. Basic Statistical Analysis of International Trade in Services and FDI

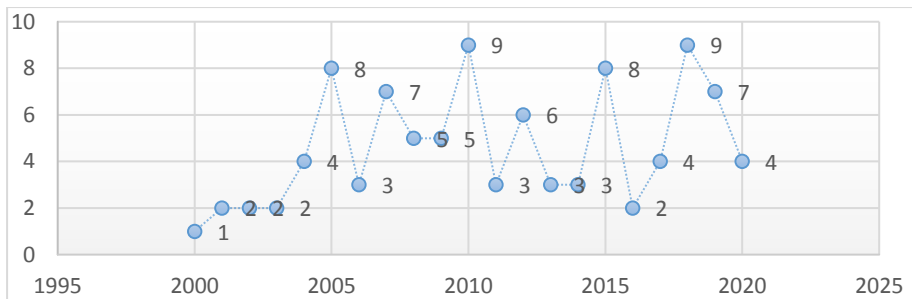
3.1. Yearly Quantitative Distribution of Literature

Bibliometrics refers to the use of quantitative research methods such as statistics to analyse the quantitative relationship and evolution path of literature, which can reveal the research status and development process of the discipline. Therefore, this paper made statistics on the 97 documents on international trade in services and FDI, as shown in Figure 1. On the whole, the total number of articles published in this field was increasing year by year: it could be divided into two stages: the number of articles published before 2010 was small and the growth rate was slow, and the relevant research in this field was tepid; after 2012, the number of articles increased significantly and at a faster rate. The research in this field escalated in 2018. After that, the number of published articles decreased slightly but remained relatively high. The above showed that the research on the application of international trade in services had a relatively small and steady increase from 2000 to 2011, and the research in this field was in the infancy stage. From 2011 to 2020, the number of articles published increased gradually, and research in this field has become a research hotspot, which has attracted huge attention from scholars.

Table 1: Summary of searching for details.

Search Settings	Content
Database	Scopus
Searching term	International trade + services + FDI
Literature	Article; Book chapters; Conference Papers, Review, Book
Time span	2000-2020
Results	1097

Figure 1: Number of articles in the field of international trade in services and FDI (2000-2020).



3.2: Journal Distribution

Following Table 2 provides introspection of highly cited core journals in international trade in services and FDI, from 2000-2020, mainly concentrated in the economic field, accounting for 87% of the total number

of published papers. It indicated that the journals of trade-related research documents in services were relatively concentrated. The impact factors of the top 5 journals were all above 1, and the average impact factor was more than 1.5, which present that many authoritative academic journals were interested in this field. Strong manufacturing helps to improve the quality of employment, strengthen its international standing and promote sustained economic prosperity. As reflected in Table 2, the number of articles published by World Economy and Applied Economics Letters were more than 4, belonging to the most influential journals, while the influence of other journals was not much different.

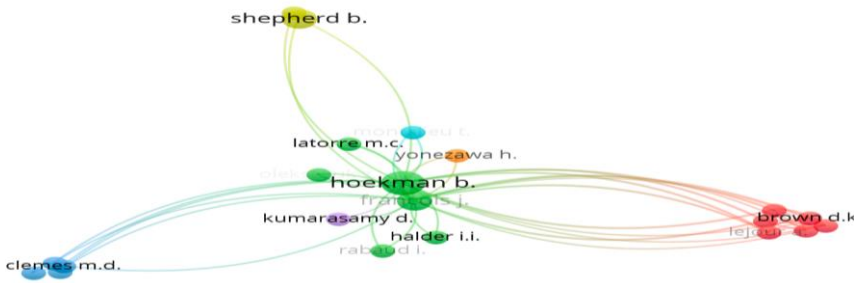
Table 2. High cited journals in international trade of manufacturing (Top 5).

Ranking	Count	Year	Cited Journal	2020 Impact factor
1	4	2007, 2010, 2012, 2015	World Economy	1.450
2	2	2014, 2019	Applied Economics Letters	1.157
3	2	2012, 2020	Journal of World Trade	1.561
4	2	2011	Prospects in International Investment Law and Policy: World Trade Forum	1.113
5	2	2007	Romanian Journal of Economic Forecasting	1.038

3.3. Analysis of Core Authors

The number of articles is the performance of researchers' productivity in a certain research field. VOS-viewer was used to analyse the author's network of international trade in services, and core authors who had made outstanding contributions in this field were discovered (Figure 3). The high number of articles indicates a high output in the field. In Figure 3, there are many and scattered nodes, and the number of nodes connected is small. This illustrated that the research of international trade in manufacturing was relatively scattered, and the links between academic communication and scientific research were not closely related. Individuals and small groups were the main contributors in this field. Among them, Morgan, W., Snowden, N., the American professor and scholar, ranked first with 7 articles.

Figure 2: The Network of main Authors



3.4. Space-Distribution

Table 3 lists the main countries and research institutions of international trade in manufacturing. The number of documents indicated the research level and contribution of different countries or scientific institutions. The core regions of research were distributed in North America, Europe, Asia and Australia (Table 3). First of all, the United States topped the list with 37 articles, accounting for about 38% of the total number of articles, of which the NBER was the main institution in service international trade. Secondly, representative Asian countries with large numbers of published articles were China, with 12 articles followed by India, with 9 articles. Research on service trade in Europe was concentrated in developed countries such as Britain, Netherlands and Belgium. The Bureau of International Economic Research of the UK was the world’s core research institution, ranking first with 37 articles. World Bank, Cambridge University, RIS and USM in the UK, Malaysia were also important to research institutions for service trade.

Table 3: The lists of countries and institutions (Top 5).

Ranking	Count	Countries	Count	Institutions
1	141	USA	37	NBER
2	124	England	32	World Bank
3	31	China	12	Cambridge University
4	35	India	9	RIS
5	16	Malaysia	5	USM

3.5. Discipline Distribution

Table 4 shows the distribution of discipline attributes of international trade in manufacturing in the past 25 years, mainly concentrated in Economics, Econometrics and Finance because international trade in services mainly involves industry and enterprise-level research followed by social sciences, Business, Management and Accounting, Environmental

Sciences, engineering, etc. From the time distribution, we can find that the discipline distribution of international trade in services has shifted from the earliest in the subject of economics, econometrics and Finance to recent Environmental Science, computer science, medicine, arts and humanities and energy. The data proved that the international trade in services indicated a trend of interdisciplinary development.

Table 4. Discipline distribution (Top 10).

Ranking	Count	Year	Scopus Categories
1	52	1995	Economics, Econometrics and Finance
2	43	1997	Social Sciences
3	27	2000	Business, Management and Accounting
4	10	2003	Environmental Science
5	9	2005	Engineering
6	6	2007	Computer Science
7	6	2010	Medicine
8	4	2013	Earth and Planetary Sciences
9	2	2016	Arts and Humanities
10	1	2019	Energy

Figure 2: Documents by Year

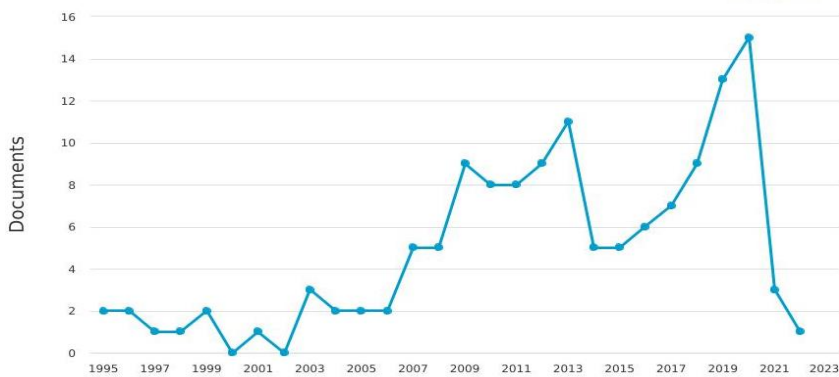


Figure 3: Documents by Affiliation



4. Analysis of the Evolution Path on International Trade in Services and FDI

Table 5 lists the most frequently keywords given by authors and indexers to the records. Keywords are a highly concise and concentrated summary of the whole research topic, representing knowledge points and research hotspots in a certain field. The co-occurrence frequency of keywords refers to the number of times that a group of words appears in the same group of documents. Its function is to analyse the internal relationship of an academic field and reveal the frontiers of research within it. International trade and trade were the most frequented keywords in service international trade and FDI, reflecting the research issues in this field. Scholars were more interested in manufacturing exports and remained optimistic about trade expectations, so growth was also a high-frequency word. More scholars began to pay attention to service trade, and export of financial services trade was also a prominent feature of service trade. Building models were the main research methods, which focused on technology and emphasized the importance of innovation. In recent years, the relationship between foreign direct investment and international trade had also become a research hotspot.

To better understand the evolution paths of research hotspots of international trade in services and FDI, this study identified research frontier areas, this paper employed the form of Timezone to explore the process of keywords correlation (time level) and evolution of knowledge. From 1995 to 2020, there were 113 keywords in the literature on international trade in manufacturing, with a total frequency of 1453. The research focuses on scholars in different stages that were diverse, which were divided into two stages according to the time slots. The size of the font indicates the

frequency of occurrence, i.e. the bigger the font, the higher the frequency of keywords occurrence. In different periods, the high-frequency keywords for international trade in services and FDI are shown in Figure 4.

The first stage (1995-2010): the new research introduced new objects and new phenomena. In this stage, there were fewer keywords and fewer articles. The average word frequency of more than 10 keywords reached 85, and research hotspots were relatively concentrated. International trade and trade were mainly discussed from the macro level. The construction and evaluation model was the main quantitative method. The traditional services trade power, the China, United States, still attracted many scholars' attention. The services industry was taken as the research object, emphasizing the importance of site selection and international cooperation. The hotspots at this stage reflected a typical research paradigm, that was, starting from the theoretical definition and ending in the design and inspection of research parties.

Table 5. The lists of high-frequency keywords (top 15).

Ranking	Count	Year	Keywords
1	525	1995	International trade
2	243	1995	Service Trade
3	247	1995	Foreign Direct Investment
4	109	1999	Financial Development
5	97	1998	Export of financial services trade
6	69	1996	FDI in financial industry
7	67	1999	Capital flow
8	48	2003	Competitiveness and labor division
9	29	2006	Technology, Financial service and International competitiveness
10	19	2004	Service information and Commerce

advantage of the Usage 365 function in VOSviewer, according to the number of full-text visits or full-text downloads in the past 1 year, it reflected the high-frequency keywords of in international trade in services and FDI. Trade agreements was the most frequently used keyword recently, with a total frequency of 35 times. As a major phenomenon, trade agreements attracted the attention of many scholars. In addition, high-frequency keywords also included FDI in financial industry and international competitiveness, reflecting the academic community's increasing emphasis on the dimensions.

Table 6. The lists of high-frequency keywords in recent 360 days (Top 10).

Ranking	Count	Year	Keywords
1	35	2005	Trade Agreements
2	32	2007	FDI in financial industry
3	29	2009	International competitiveness
4	19	2010	TRIPS and TRIMS
5	17	2008	GATS
6	14	1996	FDI in financial industry
7	13	2017	corporate diplomacy
8	11	2020	Firm heterogeneity
9	10	2019	Economic governance
10	9	2004	Commerce

International trade was in a dynamic situation, so it was normal to adjust timely to respond to changes in the internal and external environment. What was surprising is that corporate diplomacy, firm heterogeneity, and economic governance, became a recent research focus in this field? Simultaneously, specific behaviour and policy agreements helped to promote the systematic development of international trade in services.

8. Conclusion

In this paper, bibliometrics based on a knowledge map was adopted to summarize the research characteristics and basic situation in the field of international trade in services, to describe the evolution of the field, and on this basis to explore the future development trends of international trade in manufacturing. VOSviewer software was used to analyse 934 articles in the field from 1995 to 2020, including core journals, core authors, core regions, discipline distribution, keywords co-occurrence, and knowledge map of literature co-citation. The main research results could be presented as follows:

The highly cited core journals in this field were mainly concentrated in the economic field, and the research results were of high quality. Most

authors were individuals or small groups, and academic communications between authors were not close. The core areas of high productivity were distributed in North America, Europe, Asia and Australia. The United States topped the list with 296 articles, while the British International Economic Research Agency was the core research institution in the world. In terms of discipline distribution, the field had shifted from business and economics to international relations and business, showing a trend of interdisciplinary development.

The co-occurrence of keywords of international trade in services proved that it mainly focused on the level of enterprises and industries, paid attention to enterprise productivity or influencing factors, and how to realize growth and maintain export advantages. In addition, the number of research hotspots had undergone rarely clusters to loose and diverse clusters. The co-occurrence analysis of keywords for nearly 365 days indicated that China and USA attracted more and more scholars' attention. Corporate diplomacy, firm heterogeneity, and economic governance, became a recent research focus in this field.

The results of document co-citation showed that international trade in services and FDI can be diversified into mainstream research fields, namely, trade liberalization, FDI in financial industry, International competitiveness, TRIPS, TRIS, GATT and corporate diplomacy. Further analysis of the above knowledge structure, we can master the development track of international trade core areas in services and lay a foundation for exploring new development trends.

This paper through the quantitative analysis of literature characteristics and cited data, comprehensively grasped the current situation, frontier, hotspots and trends of international trade in services over the 25 years. To provide references and suggestions for scholars concerned in this field and decision-makers of governments and enterprises, and to make contributions for further in-depth research, there were still some shortcomings in this article. Only the core data set of Scopus was selected in this study, and some research documents may be omitted. Future research can extend the data set from the Web of Science, or Dimensions.

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