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Database of Clause Depth of China's Regional Trade Agreement and Its Characteristics

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Abstract: This paper analyzes the text of 3261 clauses of 20 RTAs signed by China, classifies them into 52 policy areas according to the international mainstream HMS method, and assigns them through coding. The clause depth of China's RTAs is measured across three-dimensional systems (policy areas, clauses, and core clauses) and two generations of trade policy areas (WTO+, WTO-X, and all policy areas). It is observed that China's RTAs exhibit greater depth in Industrial Products, Agricultural Products, TBT, Antidumping, Countervailing, and Investment, while showing comparatively less depth in Fiscal Policy, Innovation Policies, and related areas.

Keywords: Regional trade agreement; Clause depth; Database construction; Agreement text

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1. Introduction

In the 21st century, trade has become more complex, and the demand for more complex international trade rules has also emerged. Due to the lack of flexibility in multilateral coordination of the WTO, the gap in rules has been filled by regional coordination. The number of bilateral and regional trade agreements (RTA) has increased explosively. By the first half of 2022, the cumulative number of effective RTA notified to the WTO has reached 580 (**Figure 1**). With the increasingly close relationship between trade and a country's finance, technology, culture, and other fields, the content of RTA has gradually developed to a wider and deeper level. This kind of coordination through deep regional trade agreements is also called 21st-century regionalism by scholars [1].

In the context of new regionalism, scholars have begun a preliminary discussion on the depth of RTA [2–5]. They use RTA clauses to construct indicators to measure the depth, and gradually increase from index construction to database construction [3–5]. Provide data support for RTA from quantitative research (using traditional trade openness indicators such as the percentage of tariff reduction and dummy variables of whether to sign a trade agreement) to in-depth research on the content of complex clauses, bringing the research on trade openness into a new stage [6–8].

Foreign research attaches great importance to database construction, but there is no systematic RTA in-depth database of China. President Xi Jinping emphasized during his visit to Renmin University on April 25 this year

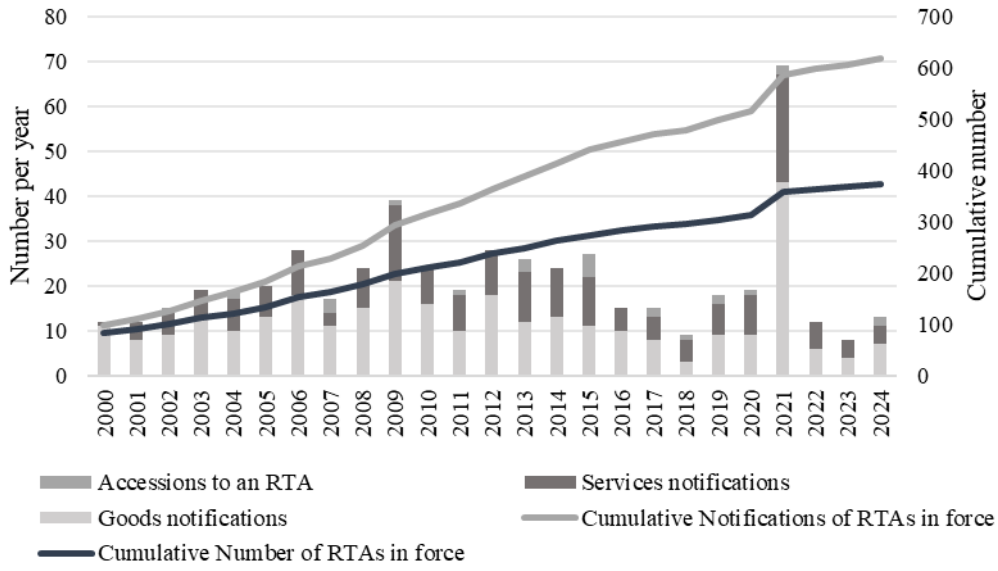

Figure 1. RTAs currently in force, 2000–2024

that China should be taken as a reflection, take the reality as a reflection, solve China's problems based on China's reality. The construction of China's RTA database should also conform to this purpose, scientifically measure, and effectively solve China's practical problems in economic and trade development. In the past, domestic research basically used foreign databases to carry out empirical analysis, but the three existing databases are difficult to match with Chinese research.

First, in response to the objective requirements of the new trend of Global trade system reform, China's active participation in regional economic cooperation and governance and accelerating the construction of high-level RTA are the inevitable choice to build a new system of higher-level open economy, and also an important path to actively integrate into high-standard international economic and trade rules and build a trading power [9]. Although the development of China's RTA started relatively late, and it was only signed after entering the 21st century, it has made great progress in a short period of time. However, these important RTAs signed by China in recent years are not within the statistical period of the above databases, which makes the current research on the depth of China's RTA lack of data support. It is necessary to build acore depth measurement index for China's RTA.

Second, with the signing of more and more high-level trade agreements, it can be found that the clauses of each chapter in the agreement are becoming more and more detailed. Existing databases and cutting-edge research on this issue by domestic scholars often only assign 1/0 based on whether the agreement involves a certain topic area, lack of a more detailed indicator system to measure, and cannot highlight the importance of the specific content involved in a certain clause in a trade agreement [10–13]. In order to break through this limitation, correspond to the 52 policy areas, and use text analysis to build the RTA depth's core indicator system, which can be used for subsequent extended research and can also be used to test the robustness of the analysis conclusions.

Third, as a developing country, some core clauses in the RTA signed by China will play an important role and cannot be mixed with the core clauses valued by developed countries. The index system in the above databases cannot be fully applicable to China's problems. It is necessary to scientifically build composite indicators of core

clauses focusing on the key areas of RTA signed by China, so as to achieve a multidimensional measurement of the depth of RTA.

Therefore, under the background of high-quality trade development, it is urgent to fill the gap in the in-depth data of China's signing of RTA clauses, innovatively build China's RTA in-depth three-dimensional database that fully meets the research needs, and provide data support for the classification and refinement of the impact of RTA depth on improving the quality of China's economic and trade development in the new era. Based on the agreement text, this paper will focus on the content and depth of the RTA itself signed by China so far, and build a three-dimensional index system reflecting the depth of RTA, so as to build a systematic database of China's RTA clauses.

2. Literature review

As a "lubricant" for bilateral or regional countries to trade in goods, economic exchanges and international services, the contents of the terms covered by the trade agreement are further deepened, from the initial level of "border measures" such as tariff and non-tariff barrier reduction to the level of "post border measures" covering intellectual property protection, service trade, competition policy, e-commerce, etc. It has become an irreversible trend for countries to pursue a higher level of trade openness by signing deep RTA [14–16].

2.1. Meaning of RTA depth

The concept of "RTA Depth" was first proposed by Lawrence (1996) [17]. He believed that there was a difference between deep RTAs and shallow RTAs, and some scholars later call it the heterogeneity of trade agreements, pointing out that the dummy variables of RTA or simple tariff elimination could not evaluate RTA well [18]. Most of the leading-edge literature titles are "deep regional trade agreements" or "RTA depth". In short, the meaning of RTA depth is not just to see how many RTAs have been signed, but to download and reorganize the text of each signed agreement, and measure the depth of the signed RTA through an in-depth analysis of the clauses.

2.2. Research progress of RTA clause depth

Previous studies have mainly analyzed the impact of whether to sign a certain agreement, but Kohl *et al.*, pointed out that due to the heterogeneity of trade agreements, the traditional method of dummy variables is misleading [4]. Not all types of clauses in trade agreements have trade-promoting effects and should be studied by category. That is, this traditional method cannot reflect the influence of the heterogeneity of the RTA depth terms. In order to solve this problem, Horn *et al.* earlier deepened the research perspective into the specific clauses of RTAs, and proposed the HMS method, which uses "Agreement Coverage Rate" and "Legal Commitment Rate" to measure the RTA clause depth [2]. After studying the 28 effective RTA clauses signed by the United States and the European Union, they divided the 52 issues involved in these agreements into two categories: "WTO+" and "WTO-X". The former is known as "first-generation" trade policy, referring to issues that exist within the WTO system. The latter is known as "second-generation" trade policy, referring to new issues that have evolved over time (**Table 1**).

This classification method is cited by WTO (2011), making the classification methods of "WTO+" and "WTO-X" more authoritative. In the HMS method, "agreement coverage rate" refers to the ratio of the number of articles involving WTO+ or WTO-X in the agreement to the total number of clauses. And "legal commitment rate" refers to the ratio of the number of substantive legally binding clauses involving WTO+ or WTO-X in the

agreement to the total number of clauses covered. The HMS method has since been widely adopted by research in this field [4, 5, 10–12, 19–25].

Table 1. Category of RTA clauses by HMS

WTO+ field	WTO-X field		
FTA Industrial Goods	Competition Policy	Environmental Laws	Investment
FTA Agricultural Goods	Labour Market Regulation	Movement of Capital	Consumer Protection
Customs Administration	Data Protection	Agriculture	Approximation of Legislation
Export Taxes	Audio Visual	Civil Protection	Innovation Policies
Sanitary and Phytosanitary Measures	Cultural Cooperation	Economic Policy Dialogue	Education and Training
State Trading Enterprises	Energy	Financial Assistance	Human Rights
Technical Barriers to Trade	Illegal Immigration	Illicit Drugs	Industrial Cooperation
Countervailing Measures	Information Society	Mining	Money Laundering
Antidumping	Nuclear Safety	Political Dialogue	Public Administration
State Aid	Regional Cooperation	Research and Technology	Small and Medium Enterprise
Public Procurement	Social Matters	Statistics	Taxation
Trade-related Investment Measures	Terrorism	Visa and Asylum	Health
Trade in Services Agreement	Anti-Corruption	Intellectual Property Protection	
Trade-related Intellectual Property Rights			

2.3. Three existing RTA clause depth databases

While conducting in-depth research on RTA terms, scholars have gradually shifted from index measurement to database construction. There are currently three major databases in this field.

2.3.1. DESTA

Dür *et al.* conducted a text analysis of 587 RTAs signed between 1945–2009, involving a total of 3310 initial memberships, covering 10 broad sectors of cooperation, encompassing market access, services, investments, intellectual propoerty rights, competition, public procurement, standards, trade remedies, non-trade issues, and dispute settlement [3]. Through text analysis, for each of these fields, Dür *et al.* performed assignment coding and added them to obtain the RTA depth index, and constructed the DESTA database. The DESTA project team regularly updates the extended database, which has currently coded over 710 agreements (as of October 2020).

When the DESTA database was released in 2014, 8 Chinese RTAs were coded. With the continuous updating of the database, the number has risen to 14, but it is still far from being fully covered, and it has not counted RCEP, the world's largest RTA. In addition, the policy areas selected by Dür are not in the same system as the HMS method. They did not use the mainstream 52-category issue classification method, but selected areas that they considered to be widely involved and assigned subjective scores to build the database. The results of studies using this database are not comparable to those of studies using the HMS.

2.3.2. GPTAD

Kohl *et al.* used the HMS method to conduct a textual analysis of 296 RTAs signed between 1948–2011, including the clause coverage and legal commitment of 13 WTO+ fields (agriculture, anti-dumping & countervailing measures, customs administration, export restrictions, import restrictions, intellectual property rights, investment, public procurement, sanitary and phytosanitary measures, services, state aid, state trading enterprises, technical barriers to trade) and 4 WTO-X fields (capital mobility, competition, environment, labor) [4]. In addition, Kohl also established 9 RTA institutional quality indicators (consultations, definition, dispute settlement, duration & termination, evolutionary clause, institutional framework, objectives, plan & schedule, transparency) to examine the heterogeneity of RTA in program design and enforceability. Based on these metrics, Kohl *et al.* constructed the GPTAD database [4].

The GPTAD database is a database constructed based on the mainstream HMS classification method, which facilitates research on different RTAs within a unified framework. It covers 17 policy areas, and is more comprehensive in terms of the breadth of policy areas compared to DESTA. It can support researchers to search a large number of agreement texts by keywords, and compare similar clauses in different agreements. It also adds institutional quality indicators to deal with the heterogeneity of institutional design and legal enforceability, and to apply these differences to international trade. The database was used by Inmaculada & Walid to investigate whether a comprehensive RTA can help reduce air pollution [26]. In addition, the database's RTA sample also includes non-WTO member trade agreements, which helps scholars study the possible heterogeneity or consistency between the nature and quantity of clauses contained in non-WTO member's RTAs.

The GPTAD database covered 7 China's RTAs when it was released, but it has not been updated since then. If it is used to study China's RTAs, it will face a serious problem of missing samples, and the topics covered by the database are not comprehensive enough, which brings many limitations to frontier research, especially only four WTO-X issues are included, making it impossible for scholars to conduct second-generation trade policy-related research based on this database. In addition, in terms of presentation form, the database has no ready-made data for direct use. Therefore, if scholars want to use this database to conduct research, they need to integrate it themselves, which is inconvenient.

2.3.3. CDTA

Hofmann *et al.* collected the texts of 279 RTAs covering 189 countries around the world from 1958 to 2015 [5]. Based on the HMS method, they studied all 52 categories of WTO+ and WTO-X, and systematically sorted out the specific clauses and legal enforceable information of these RTAs. They further divided the 52 issues into four sub-categories: "WTO+ AC", "WTO+ LE", "WTO-X AC", and "WTO-X LE", where AC is the area coverage and LE is the legal enforceability. The database provides detailed data on the content and depth of RTAs. It can be used to compare the number of trade agreements signed by different countries and the number of areas covered and legal commitments. It can also illustrate the dynamics of the number of agreements signed, the number of clauses covered, and the number of legal commitments between 1958 and 2015.

The database only contains the RTA that has come into force and notified the WTO, making the sample of the database less than the samples of the above two databases. Based on this database, Hofmann found that the 14 policy areas of WTO+ and 4 core policy areas of WTO-X (competition policy, investment, movement of capital, and intellectual property) are important characteristics of deep RTA. In order to explore the reasons behind it, Hofmann systematized the information extracted from the agreement text and further constructed three composite

indexes to measure the depth of RTA: total depth index, core depth index, and PCA depth index (obtained by principal component analysis). Through this database, it is intuitively found that RTA is deepening, especially in the fields already covered by WTO+ and the core fields in WTO-X.

It can be said that the CDTA database covers the widest range of policy areas among the three databases, including 52 issues under the HMS method, and is widely used by scholars to study the impact of the agreement depth of global RTA [11, 23, 27–30]. Some Chinese scholars also apply it to the research of Chinese RTA, but because the Chinese RTA samples contained in the database are limited, the sample period they use is only until 2015 [16, 31].

The CDTA database covered 11 RTA signed by China when it was released in 2017, and has been updated to 13 now. However, compared with the 22 agreements signed by China at present, it is far from complete coverage. Although the policy area is comprehensive, it doesn't refer to core and detailed clause indicators.

2.4. Summary

In conclusion, among the three major databases, DESTA database contains the most RTA samples, covering 14 China's RTAs. However, it is not under the mainstream HMS research method system, but uses the 0-7 scoring method. GPTAD database uses HMS method for reference, but it covers only 7 China's RTAs and involves few policy areas. Moreover, the database is presented in the form of text content, which requires further integration by researchers. CDTA database has the most comprehensive policy areas and the most convenient data use among the three databases. But it is more suitable for the study of global RTA. The sample size of China's RTA is only 13. The three databases lack the detailed and essential clause analysis for China's key policy areas, which is not conducive to the in-depth study of China's RTA.

It is worth noting that the current research on RTA is getting more and more in-depth, and scholars are gradually focusing on a single RTA clause. Among them, the research on the origin clause, intellectual property clause, environmental clause, service clause, investment clause, and competition clause is relatively mature. For example, studying the relationship between rules of origin and enterprise productivity and trade costs [32, 33]; studying the impact of RTA with IPR clauses on the import and export of IPR-intensive products [34, 35]; studying the export-inhibitory effect of environmental protection clauses [36–38]; studying the reversal effect of technological innovation [39, 40]; studying the relationship between service clauses and firm productivity and trade liberalization [41–43]; studying the investment clauses on FDI [44, 45]; and studying the impact of competition policy clauses on innovation and investment [46, 47].

It can be seen that the research on a single clause has been gradually carried out, while the existing database is still at the overall depth. It is not refined to the specific clause level indicators of the number of clauses, area coverage, and implementation efficiency of each policy area. It may bring misjudgments to empirical research and policy recommendations. At the same time, there is also a lack of core clause synthesis indicators for robustness testing. The synthetic clauses are highly subjective and lack scientific basis under the same database system, and it is impossible to carry out comparative research on the impact of main clauses under the same system.

Therefore, the research on China's RTA needs to rise from the quantitative level to the depth level, and the existing research lacks a systematic measurement of the depth of China's RTA. It is urgent to build a multi-level database of China's RTA depth that meets the needs of comprehensive

3. Construction and measurement of China's RTA core clause depth

Scholars have given different definitions of core terms or core areas [5, 23, 48]. Summarizing these standards, it is believed that the characteristics of the core clauses are: wide coverage (frequently appearing in different agreement texts), and promoting the trade and investment of the contracting parties. Two composite indicators of China's RTA core clauses can be constructed based on the key clauses concerned by current Chinese scholars' literature and the important fields that repeatedly appear in China's RTA:

3.1. Measurement based on literature

The Chinese literature on the research of RTA clauses can be summarized in the above, and regarded the six widely studied clauses (origin clause, intellectual property clause, environmental clause, service clause, investment clause, and competition clause) as the core clauses of China's RTA to construct the indicator.

$$Coredepth_{C1} = \sum_{1}^{6} clausecoverage_{ab} / 6 \quad (7)$$

where $Coredepth_{C1}$ is the core clauses index, $clausecoverage_{ab}$ is the specific clause coverage rate, *a* is RTA, *b* is clause.

$$Coredepth_{L1} = \sum_{1}^{6} LCR_{ab} / 6 \quad (8)$$

3.2. Measurement based on the agreement text

After sorting out the original texts of China's RTAs, areas with high coverage rate were covered to construct the core clause index. The coverage rate of 52 clauses was sorted, selected the clauses with more than 60% coverage rate, and finally got 19 clauses. According to the characteristics of China's RTA, "industrial product concessions" and "agricultural product concessions" is combined nto "product concessions", and finally used 18 clauses to construct the core clauses index. These include 9 WTO+ areas—product concessions, TBT, GATS, customs administration, anti-dumping, countervailing, SPS, TRIM, TRIP, and 9 WTO-X areas—regional cooperation, investment, economic policy dialogue, competition policy, data protection, research and technology, taxation, environmental laws, and industrial cooperation. The calculation formula is the same as the above method. Using the corresponding data, China's core clause indexes and under measurement 2 can be obtained.

4. Analysis of database results and basic characteristics

From the perspective of economic effectiveness, some clauses may be more important economically than others. Therefore, two sets of Chinese RTA core clauses is built in combination with the clauses widely concerned in the current Chinese scholars' literature and the important fields in the actual text collation process to calculate the composite core clause indicators, respectively. The results are shown in **Table 2**.

Table 2. The core indicators of China's RTA

	(1)	(2)	(3)	(4)	(5)	(6)
	$Depth_C$	$Depth_L$	*Coredepth*	*Coredepth*	*Coredepth*	*Coredepth*
APTA	0.91%	0.43%	0.83%	0.42%	2.08%	0.97%
China - ASEAN	3.49%	2.16%	14.58%	6.25%	7.29%	4.86%
China - ASEAN (Upgraded)	3.12%	1.79%	8.05%	3.45%	7.66%	4.79%
China - Chile	1.07%	0.54%	3.86%	1.79%	2.48%	1.19%
China – Chile (Upgraded)	1.61%	0.25%	9.69%	4.46%	3.75%	0.65%
China-Pakistan	1.06%	0.49%	5.02%	1.00%	3.01%	1.07%
China - New Zealand	1.36%	0.40%	6.39%	1.40%	3.38%	0.78%
China - New Zealand (Upgraded)	1.40%	0.39%	6.69%	1.36%	3.35	0.87
China - Singapore	1.59%	0.65%	5.36%	1.88%	4.35%	1.64%
China – Singapore (Upgraded)	1.48%	0.89%	3.15%	4.17%	4.08%	2.44%
China - Peru	1.51%	0.46%	6.22%	3.07%	3.62%	1.11%
China - Costa Rica	1.07%	0.33%	5.65%	3.17%	2.45%	0.76%
China - Iceland	1.13%	0.46%	7.75%	5.17%	2.84%	1.21%
China - Switzerland	1.50%	0.87%	7.85%	5.56%	3.80%	2.08%
China - Korea	1.58%	0.66%	8.52%	3.37%	4.11%	1.65%
China - Australia	1.32%	0.39%	9.76%	1.88%	3.43%	0.98%
China - Georgia	1.98%	0.46%	9.42%	2.48%	4.63%	1.09%
China - Mauritius	1.65%	1.11%	10.91%	5.07%	4.22%	2.88%
China - Cambodia	1.58%	0.40%	4.94%	1.38%	3.71%	0.81%
RCEP	1.63%	0.43%	9.05%	2.17%	3.76%	0.97%

The two columns (1) (2) in the table are the average values of specific clause coverage and legal commitment $rate_{(2)}$ of 52 issues. Column (3) and Column (4) are the core clause indicators calculated according to the six topics widely concerned by Chinese scholars in the literature. Column (5) and Column (6) are the core clause indicators based on the 18 areas (9 WTO+, 9 WTO-X) that appear frequently in the text of the agreement signed by China.

First, comparing (1) (3), it is found that except for the APTA, the average coverage rate of the other 18 RTAs according to the selected 6 areas is higher than that of all 52 areas, and from the perspective of stricter legal coverage, this feature is also found in comparison with (2) (4). The reason is that the APTA belongs to the economic integration of preferential trade arrangements, and its goal is to promote intra-regional trade in goods and reduce tariff barriers. In addition to the rules of origin and trade in services, the other four provisions, IPR, environment, investment, and competition policy, have no direct relationship with traditional trade. The APTA has little mention of these four areas, and the rate of specific clause legal commitments is 0. In particular, the RTA signed with ASEAN has the highest index of core clauses, which may be related to the relatively simple content of the agreement and the small number of articles, only 16. Among them, there are 8 articles involving the six core clauses.

From a multi-dimensional analysis, China's core clauses index does not show a clear trend of steady rise or fall over time, and the differences in the economic development levels of the contracting states have not had a regular impact on the index. This may be due to the limited number of agreements China has signed. The contracting is based on the actual economic and trade exchanges with various countries, and the selection of the six core clauses is only based on the focus of academic attention, not from the agreement itself, so it may lack certain representativeness. But in terms of these 6 clauses, rules of origin contribute the most to the index, and its commitment rate ranks first among the 6 clauses, followed by the trade in services and investment rules, while the total commitment rate of IPR, environment, and competition provisions is only two-fifths of the rules of origin. Most of the parties to the agreement with a certain commitment rate in these clauses are developed countries. For example, the commitment rate of IPR clauses in RTA signed with Switzerland reached 10.34%, while the average was only 1.25%. As important post border measures, these three provisions deserve more attention in China's future agreement negotiation and signing process.

Second, comparing (1) (5) and (2) (6) respectively, the average of the specific clause coverage and legal commitment rates of the 18 areas selected are higher than the total average of all 52 areas, and have similar trends, indicating that the selected areas are representative. From the perspective of the RTA type, it is found that the average core clause index of plurilateral trade agreements is higher than that of bilateral agreements. This may be because plurilateral agreements involve multiple countries, and the specific needs of each country for integration need to be integrated in the agreement, and the areas involved are expanded compared to bilateral agreements. In addition, when many countries sign an agreement, more accurate and enforceable clauses need to be negotiated to facilitate the implementation of RTA's preferential policies in the later region, so as to reduce the cost of implementation and coordination among many countries.

Although the method is different, the DESTA database also calculates the core depth (value range is 0–7), so it is compared with the results of the database in **Figure 2**.

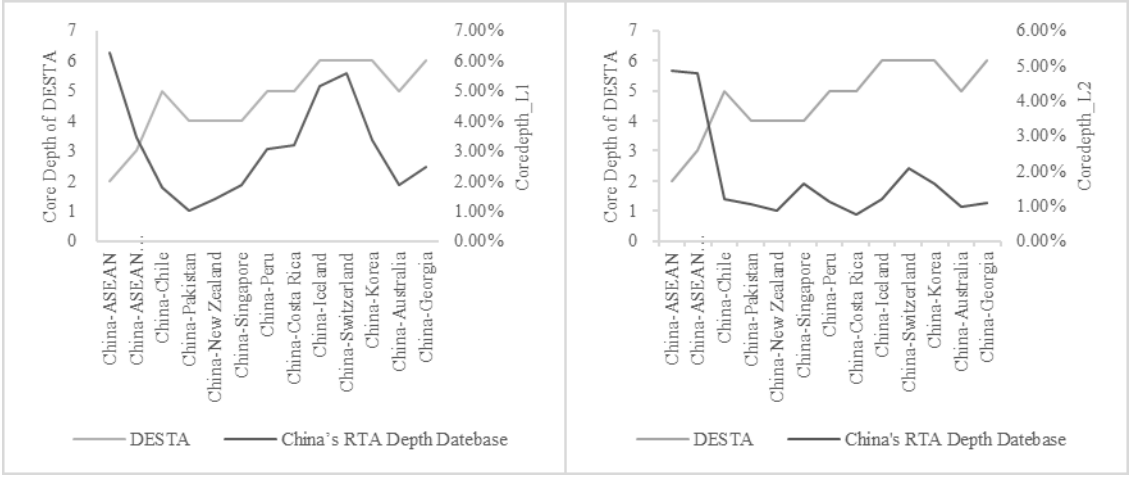

Figure 2. Comparison of two core depths of DESTA and China RTA depth database

Among the 14 RTAs DESTA contains, China-Switzerland, China-Korea, China-Iceland, and China-Georgia have the deepest depths of 6, while China-ASEAN has the shallowest depths of only 2. Based on the core clauses, the first set of core clause index ranked in the top 4 in depth is China-ASEAN, China-Switzerland, China-Iceland, and China-ASEAN (upgraded) is selected; while the second set of core clause index ranked in the top 4 in depth

China-ASEAN, China-ASEAN (upgraded), China-Switzerland, China-South Korea. It can be seen that the ranking of the core depth of China-ASEAN in the two databases is diametrically opposite. This is due to the different core clauses selected on the one hand, and the basic data used for calculation on the other hand. Our core clause index is calculated using secondary data, and the ratio is high due to the small number of articles in China-ASEAN. The China-ASEAN and its upgraded version have a much higher than average commitment rate in product concessions and customs administration, making its core clause index higher than other RTA. China and ASEAN are highly complementary in trade, close in geographical distance and low in logistics cost. Providing convenience in the trade of goods can further create and share trade dividends. Therefore, there are more in-depth provisions on the relevant provisions of trade in goods in the trade agreement. The fact that ASEAN and China became the largest trading partner of goods also confirms the effectiveness of this decision. Using other databases can not accurately reflect this feature, which will also mislead the follow-up empirical research.

5. In-depth analysis of indicator for clauses on digital trade

Digital trade rules do not belong to the 52 areas of the RTA identified by the WTO (2011), but are an emerging area. In addition, China has developed rapidly in this field. At present, there are few literatures on digital trade rules. The calculation of the depth of digital trade rules in the existing literature is mainly based on the TAPED database [49]. On the basis of previous research, this paper defines digital trade clause as including the following: e-commerce, data flow, digital intellectual property, and also includes the following three aspects: digital trade facilitation (including paperless trade, electronic signatures and authentication, digital tariffs), data security and network security (including location of computing facilities, cross-border data flow, personal privacy protection), promotion of digital participation of SMEs and the public (including online consumer protection, SME cooperation).

As can be seen from **Table 3**, among the RTAs signed by China so far, first of all, from the perspective of the four RTAs with upgrading agreements, namely the China-ASEAN Agreement (Upgraded), the China-Singapore Agreement (Upgraded), the China-New Zealand Agreement (Upgraded) and the China-Chile Agreement (Upgraded) have significantly improved the coverage of digital trade clauses compared with the old agreements, reaching 13.80%, 6.63%, 9.29% and 12.79% respectively. It shows that the formulation of digital trade rules has been given high attention in the process of agreement upgrading, among which the China-Chile upgrade agreement has the highest coverage of digital trade among all 20 RTAs.

Table 3. The index data of digital trade

	Clause Coverage Number II	Legal Commitment Number II	Clause Coverage Rate II	Legal Commitment Rate$_{(1)}$ II	Legal Commitment Rate$_{(2)}$ II
APTA	0	0	0.00%	0.00%	0.00%
China - ASEAN	1	0	6.25%	0.00%	0.00%
China - ASEAN (Upgraded)	4	0	13.79%	0.00%	0.00%
China - Chile	9	2	7.44%	22.22%	1.65%
China – Chile (Upgraded)	11	3	12.79%	27.27%	3.49%

Table 1 (Continued)

	Clause Coverage Number II	Legal Commitment Number II	Clause Coverage Rate II	Legal Commitment Rate$_{(1)}$ II	Legal Commitment Rate$_{(2)}$ II
China-Pakistan	2	2	2.41%	100.00%	2.41%
China - New Zealand	8	4	3.74%	50.00%	1.87%
China - New Zealand (Upgraded)	25	6	9.29%	24.00%	2.23%
China - Singapore	3	2	2.61%	66.67%	1.74%
China – Singapore (Upgraded)	13	2	6.63%	15.38%	1.02%
China - Peru	13	2	6.47%	15.38%	1.00%
China - Costa Rica	8	3	4.76%	37.50%	1.79%
China - Iceland	7	1	5.43%	14.29%	0.78%
China - Switzerland	4	1	2.30%	25.00%	0.57%
China - Korea	37	6	12.05%	16.21%	1.95%
China - Australia	14	2	6.31%	14.29%	0.90%
China - Georgia	7	0	4.17%	0.00%	0.00%
China - Mauritius	12	3	5.53%	25.00%	1.38%
China - Cambodia	17	4	11.72%	23.53%	2.76%
RCEP	27	8	7.48%	29.63%	2.22%

Secondly, RCEP includes a special “e-commerce” chapter. Other chapters, such as rules of origin, customs administration and trade facilitation, trade in services, IPR, investment, and SME all involve digital trade-related content. Digital trade has become a new trend in the development of global economy and trade. Finally, the RTAs established by China and developed countries, such as the China-South Korea and China-Australia agreements, have high coverage of digital trade clauses, but they do not clearly reflect the differences between developed and developing countries, like IPR clauses. In fact, the agreements signed by China and developing countries also have a high coverage of digital trade clauses, such as the China-Cambodia and China-Mauritius agreements, which also reflect its high attention to digital trade rules.

In terms of legal commitment rate, the digital trade rules clauses in the RTA signed in the early stage lacked legal commitment. Such clauses began to be given legal commitment after the China-Chile agreement, and the number of digital trade clauses in its upgraded agreement accounted for the highest legal commitment rate of all agreements. Although the digital trade clauses in the China-ASEAN upgrade agreement have the highest coverage, they are put forward in the form of initiatives and do not have legal commitments. Although the coverage of the clauses in the China-Pakistan agreement is low, each of them has legal commitment. Among them, more than 50% of the digital trade clauses signed with Pakistan, Singapore, and New Zealand have legal commitments, while RCEP, which has the largest number of articles in this area (27), also has a legal commitment rate of about 30%.

6. Conclusion

Regional trade arrangements have increasingly become a new driving force for the growth of Global trade, and their effects have also become a hot topic of academic attention. However, subject to factors such as incomplete data samples of China's RTA, incomplete policy areas, inconsistent standards, and incomplete indicators, compared with the research on RTAs in the United States and Europe, our research is relatively shallow, and there are certain obstacles in the research.

Many studies are currently trying to construct an index of RTA core clauses to study the depth of RTA. Therefore, the three-level index constructed can provide a good reference for subsequent scholars to study China's RTA core clauses index and conduct robustness tests. The indicators in this paper and basic data can be used to carry out a series of empirical research. Scholars can study and compare the depth of provisions in the areas of WTO+ and WTO-X in a more specific way, and excavate more data value from the comparative study of traditional rules and the new generation rules. It is also possible to compare the data of specific policy areas between RTAs, which is of great significance for the specific analysis of the country factors of RTA signing.

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