

# Research on the Impact of Trade Facilitation on Service Trade Export

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**Abstract**—The paper uses the 2010-2016 “One Belt One Road” countries trade-related panel data to compare the trade facilitation level of the “One Belt One Road” countries through the establishment of a trade facilitation level system. And this paper analyzes the influence that trade facilitation had on Chinese Steel Products commerce as per the extended gravity model. The results show that: (1) The level of trade facilitation is an important factor affecting the export of service trade; among them, the influence of institutional environment on export volume takes the first place; (2) The improvement of trade facilitation will bring huge growth of trade space along the “Belt and Road” countries. Southeast Asia has the largest export potential; (3) Cooperation and innovation in trade facilitation in the “Belt and Road” construction, and promote the development of global trade and economy in a more open, inclusive, inclusive, balanced and win-win direction. Has a long-term significance.

**Keywords**—Trade facilitation, “One Belt One Road”, Service trade export, Gravity model, Trade potential

## I. INTRODUCTION

With the continuous improvement of trade facilitation, global service trade will become an important force to promote world economic growth. Therefore, studying the level of trade facilitation in various countries and strengthening mutual economic cooperation among countries have important practical significance for promoting the growth of world trade in services. From September to October 2013, during his visit to Central Asia and Southeast Asian countries, Secretary General Xi proposed to develop the “Silk Road Economic Belt” and “21st Century Maritime Silk Road” (referred to as “One Belt, One Road”). Promoting trade facilitation is the main starting point for realizing the smooth flow of the “Belt and Road” trade, and is also an important task for promoting the construction of the “Belt and Road” and promoting economic and trade cooperation.

## II. LITERATURE REVIEW

At present, there is no internationally recognized standard definition of trade facilitation. Relevant international organizations usually discuss it according to their own research needs, but the basic connotation is similar, that is, trade facilitation promotes the country by simplifying and regulating trade procedures. The healthy and steady development of trade between the two.

In the early studies of trade facilitation indicators, the four first-level indicators of port efficiency, customs environment, institutional environment and e-commerce application proposed by Wilson (2003) have been widely used and expanded by even scholars, but the setting of secondary indicators has its own emphasis.

With regard to the quantitative empirical research on trade facilitation, the existing domestic and foreign literature mainly uses the following methods to quantify trade facilitation: on-site investigation and analysis, general equilibrium analysis and gravity model. Wilson (2003) used the gravity model to simulate the trade facilitation level of APEC member countries after establishing the trade facilitation level measurement standard, and measured the import and export trade volume. The results showed that the level of trade facilitation in member countries rose to After the average level, trade flows will increase by 21%.

## III. CALCULATION AND ANALYSIS OF THE LEVEL OF TRADE FACILITATION IN COUNTRIES ALONG THE “BELT AND ROAD”

### A. Construction and Calculation of Trade Facilitation Evaluation System

Based on the previous studies, this paper selects port efficiency (P), customs management (C), and institutional environment (R), finance and e-commerce (FE) four first-level indicators to build a trade facilitation level indicator system, and refined to the prevalence of railway infrastructure quality, port infrastructure quality, aviation infrastructure quality, unconventional payments, trade barriers The burden of customs formalities, the efficiency of customs clearance, the independence of the judiciary, the burden of government regulation, the efficiency of legal and regulatory dispute resolution, the transparency of government decision-making, the commercial cost of crime and violence, the degree of integrity, the availability of financial services, and the availability of financial services. Acceptability, availability of the latest technologies, technology absorption at the enterprise level, foreign direct investment and technology transfer, and 19 secondary indicators for Internet users basically cover the main content of trade facilitation. The data comes from the Global Competitiveness Report and the Global Trade Promotion Report published by the World Economic Forum.

In this paper, the data of the previous year or country is missing for the second-level indicator. The data of the previous year is used. If there is no data of the previous year, the sample is retained by adding a smaller value (for example, 0.01). Because the data source and statistical caliber of the selected secondary indicators are not the same, for the convenience of comparison,

the data is standardized, and the value range is fixed to 0-1. The determination of data weights, the simple arithmetic average of the secondary indicators to obtain the value of each level of indicators, and then give each level of indicators a 25% weight, and finally get the level of trade facilitation (TFI).

#### B. Analysis of Calculation results

In the classification of trade facilitation level, most scholars divide TFI into the following four grades: 0.8 points or more means very convenient; 0.7-0.8 means more convenient; 0.6-0.7 means general convenience; 0.6 or less means inconvenience, this article is analyzing The above standards are also referred to in the level of trade facilitation in various countries.

The calculation results show that the level of trade facilitation between countries along the “Belt and Road” is significant. Taking 2017 as an example, Singapore scored a maximum of 0.87, which is very convenient for trade facilitation. The lowest score in Nepal is 0.41. The level of trade facilitation is extremely inconvenient, and there is a big gap with other countries. Among the 50 countries measured, it is very convenient to have only 1 country in Singapore, accounting for 2%; 5 countries are relatively convenient, accounting for 10%, and 13 countries are generally convenient, accounting for 26%; the remaining 31 countries are in inconvenient areas, accounting for 62%. In general, the level of trade facilitation in countries along the Belt and Road Initiative is generally low.

### IV. IMPACT OF TRADE FACILITATION ON THE EXPORT OF SERVICE TRADE OF COUNTRIES ALONG THE BELT AND ROAD INITIATIVE

#### A. Model Construction and Data Sources

The standard gravity model consists of three types of variables: explanatory variables that reflect the size of the economy, explanatory variables that reflect the geographical location of the two countries, and dummy variables that reflect trade policies. This paper studies the impact of the level of trade facilitation of the countries along the “Belt and Road” on the export of service trade. Therefore, in the empirical research, the gravity model is constructed by referring to the research methods of the predecessors, and according to the actual situation of the countries along the “Belt and Road”, The gravity model has been expanded. The extended gravitational model is as follows:

$$\ln Y_i = \alpha_0 + \alpha_1 \ln GDP_i + \alpha_2 \ln POP_i + \alpha_3 TAR_i + \alpha_4 TFI_i + \alpha_5 D_{open} + \mu_i \quad (1)$$

The specific model explains the meaning of the variables, expected symbols and data sources as shown in Table I:

TABLE I. MODEL INTERPRETATION VARIABLE MEANING, EXPECTED SYMBOLS, AND DATA SOURCES

Explanatory variables	Meaning	Expected symbol	Data Sources
Y	Trade in services	-	UN Comtrade
GDP	GDP	+	IMF
POP	Total population	+	IMF
TAR	Average tariff level	-	GCR
TFI	Trade facilitation level	+	-
OPEN	Economic openness	+	UN Comtrade

#### B. Analysis of Empirical Results

This paper uses Eviews8.0 software to perform regression analysis on the panel data of 49 trading partner countries along the “Belt and Road” from 2010 to 2016. Based on the results of the hausman test, the selection of the fixed effect model is determined. The regression regression results are shown in Table II:

TABLE II. TRADE GRAVITY MODEL REGRESSION RESULTS

Explanatory variables	lnGDPi	lnPOPi	TARi	TFIi	OPENi
Regression coefficients	0.5382 (***)	0.5862 (***)	-0.5039 (**)	2.3075 (***)	0.3117 (***)
t	6.3852	5.2859	-2.1845	4.9583	3.3865

<sup>a</sup> Note: \*\*\*, \*\*, \* indicate the significance level of 0.01, 0.05, and 0.1 respectively.

From the positive and negative aspects of the coefficients in the regression results, it is basically consistent with the expected symbols. From the perspective of the size of the regression coefficient, first of all, the coefficient of influence of trade facilitation on service trade exports is 2.3075, indicating that trade facilitation is an important factor in the export of service trade; secondly, the coefficient of influence of domestic population on service trade exports is 0.5862. It shows that the export volume of service trade increases with the increase of the domestic population of the exporting country; once again, the coefficient of influence of GDP on service trade is 0.5382, which is slightly lower than the influence coefficient of the population; the coefficient of influence of economic openness on service trade is 0.3117. It indicates that the higher the degree of economic openness of exporting countries, the higher the export volume of service trade; the coefficient of influence of tariff level on service trade exports is -0.5039, indicating that the export volume of trade in services decreases with the increase of tariff level of a country. From a holistic perspective, the regression coefficient of trade facilitation is the highest of the six

variables and much higher than the other five variables, indicating that trade facilitation plays an increasingly important role in international trade in services, and its trade in services The influence has far exceeded the impact of tariffs and gross domestic product.

## V. MAIN POLICY RECOMMENDATIONS

The empirical results of this paper show that the improvement of trade facilitation level along the “Belt and Road” countries can significantly promote the export of their service trade, and the growth potential of national trade exports along the “Belt and Road” is greater. If countries are committed to upgrading their TFI targets, they will certainly promote the export of service trade of various countries, stimulate bilateral economic development, and achieve common prosperity.

First, improve the institutional environment and improve policy transparency. A fair, efficient and convenient trading environment provides incentives and protection for the establishment and maintenance of trust between buyers and sellers. Therefore, improving the institutional environment, improving policy transparency, and creating a fair, efficient and transparent institutional environment play an important role in the development of a country's foreign trade. The role is also an objective requirement to promote trade facilitation in a country. Second, the government actively guides and promotes the development of the e-commerce environment. In the modern economic society, the dependence of service trade on e-commerce is becoming more and more obvious. Under the traditional trade situation, the more dispersed service industry is difficult to meet the needs of the international market, and e-commerce has promoted the development of traditional service trade. Finally, actively implement the Trade Facilitation Agreement and deepen international cooperation in trade facilitation.

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