

Study on the Trade Potential and Influencing Factors between China and South Asian Countries

Qiubo Su¹, Shenzhou Luan^{2*}, Wencan Liu¹, Zhiyu Liang¹, Jiai Jiang¹, Yaqing Dai¹, Da Qin¹,
Yuanyuan Zhou¹, Xiaojiang Wang¹

¹The School of Economics and Management, Qinghai Minzu University, Qinghai, China

²Central Asia-Turkmenistan Country Research Center, Qinghai Minzu University, Qinghai, China

*Corresponding Author.

Abstract:

On the basis of consulting and analyzing a large number of domestic and foreign trade potential literature, this paper used empirical analysis to measure the trade potential index between China and South Asian countries. The results showed that the trade potential index between China and South Asian countries was different, and the trade potential index of Bangladesh and Nepal was less than 1, which belonged to the trade shortage type countries. The trade potential indexes of Pakistan, Bhutan, Sri Lanka and India were greater than 1, which belonged to the type of excessive trade type. The influence factors between China and South Asian countries were analyzed by using the improved gravity model. The results showed that China's per capita GDP, the proportion of Internet users, the member countries of the World Trade Organization had a significant positive impact on the import and export volume, and the distance between the two countries, the export cost of 20 feet container, the export time, and the cost of the court resolving the dispute over the sale of goods had a significant negative impact on the total import and export volume.

Keywords: *The Belt and Road, South Asia, Gravity Model, Trade Potential.*

I. INTRODUCTION

In September and October 2013, Chinese leaders proposed the initiative to build the "New Silk Road Economic Belt" and the "21st Century Maritime Silk Road". "The Belt and Road" is the short form for the Silk Road Economic Belt and 21st Century Maritime Silk Road.

Over the past nine years, the Belt and Road initiative had attracted great attention from the South Asian media and the public. China and South Asian countries' cooperation had made positive progress and many achievements. At present, the Belt and Road initiative has achieved full coverage of the seven countries in South Asia. But at the same time, there were weak trade growth and difficult to implement investment funds. To effectively solve the above problems, a deep analysis of the bilateral trade potential and

influencing factors is needed.

II. TRADE DEVELOPMENT STATUS BETWEEN CHINA AND SOUTH ASIAN COUNTRIES

2.1 The Scale of Bilateral Trade was Constantly Expanding

In recent years, the trade volume between China and South Asian countries has been growing and rise in fluctuation. Bilateral trade volume has increased from US \$50.844 billion in 2007 to US \$186.62 billion in 2021, with an average annual growth rate of 11.69%, among which China's exports increased from US \$34.945 billion to US \$153.163 billion, and imports increased from US \$15.899 billion to US \$33.457 billion, the results are showed in the TABLE I. After the implementation of the "Belt and Road" initiative, the import and export trade volume between China increased significantly. The average annual growth rate of China's exports to South Asian was 12.08%. The average annual growth rate of China's imports from South Asian was 7.61%.

TABLE I. List of import and export trade between China and South Asia from 2007-2021(Unit: US \$1 Billion)

| YEAR | IMPORT AND EXPORT | EXPORT | IMPORT |
|------|-------------------|---------|--------|
| 2007 | 50.844 | 34.945 | 15.899 |
| 2008 | 65.704 | 44.238 | 21.466 |
| 2009 | 56.851 | 41.648 | 15.203 |
| 2010 | 80.393 | 57.433 | 22.960 |
| 2011 | 97.177 | 71.072 | 26.105 |
| 2012 | 92.590 | 69.984 | 22.606 |
| 2013 | 95.915 | 74.919 | 20.996 |
| 2014 | 105.605 | 85.436 | 20.169 |
| 2015 | 110.883 | 93.882 | 16.951 |
| 2016 | 110.274 | 95.432 | 14.842 |
| 2017 | 126.201 | 106.819 | 19.382 |
| 2018 | 139.452 | 117.110 | 22.342 |
| 2019 | 135.166 | 113.906 | 21.260 |
| 2020 | 111.315 | 87.200 | 24.115 |
| 2021 | 186.620 | 153.163 | 33.457 |

Data source: The National Bureau of Statistics of China

2.2 The Sources of China's Imports were Concentrated

In recent years, India, Pakistan, Bangladesh, Sri Lanka dominated the import trade between China and South Asian countries. Overall, the import volume from the above regions showed a trend of rising decline. In 2007, China imported US \$15.896 billion, accounting for 99.91% of the imports of South Asia. In 2021, it was US \$33.388 billion, accounting for 99.92% of the imports, the results are showed in the TABLE I. In terms of the proportion of trade volume, India, Pakistan, Bangladesh, Sri Lanka had occupied the majority

of import trade in the past 15 years, no less than 99%. The lowest year was in 2014, and the proportion was 99.76%, and the highest year was in 2008, and the proportion was 99.97%. Other countries accounted for a small part of their import trade, with the lowest year being in 2008, accounting for 0.03%. In the past 15 years, China's import trade from the seven South Asian countries also showed three fluctuations, the first fluctuation was from 2007 to 2009, it peaked in 2008, a second fluctuation was from 2010 to 2016, It peaked in 2011, and an upward trend was from 2017 to 2021. But China's cumulative imports from Bhutan, Maldives, Nepal were relatively low. In 2007, China imported US \$0.0028 million, US \$15 million and US \$15 million from the above countries, and in 2021, China imported US \$0.001 million, US \$43 million and US \$26 million. From 2007 to 2021, China's import trade volume from these countries grew slowly, and the proportion of imports from the three countries was very low and changed little, accounting for 0.09% in 2007 and decreasing to 0.08% in 2021.

2.3 China's Exports have not yet Formed a Diversified Pattern

At the national level, China's exports to India, Pakistan, Bangladesh, Sri Lanka dominate. In 2007, China exported US \$34.93 billion, accounting for 98.81% of the total exports. In 2021, US \$150.698 billion was exported to those countries, representing 98.66% of the total exports, the results are showed in the TABLE I. Exports in 2021 increased 4.44 times than in 2007. In terms of the proportion of trade volume, in the past 15 years, the above countries have accounted for the vast proportion of import trade, not less than 97%. The highest year was in 2008, and the proportion is 99.06%. And China's cumulative exports to Bhutan, the Maldives, Nepal were relatively small. In 2007, China exported US \$0 million, US \$0.28 million and US \$15 million to the above countries, and in 2021, China exported US \$108 million, US \$407 million and US \$1.95 billion. From 2007 to 2021, China's export trade to these countries grew slowly, and the proportion of exports to the three countries was very low and changed little, accounting for 1.19% in 2007 and 1.34% in 2021.

2.4 South Asia was the Concentration of China's Trade Surplus

The source country of trade surplus is relatively concentrated. From 2007 to 2021, seven countries of the South Asia were the source countries of China's trade surplus, which was very stable. In 2021, India was the largest source of China's trade surplus, with a surplus of US \$69.377 billion, followed by Bangladesh, Pakistan, Sri Lanka, Nepal, Maldives and Bhutan, with a cumulative surplus trade of US \$23.05 billion, US \$20.644 billion, US \$4.602 billion, US \$1.924 billion, US \$0.403 billion and US \$0.109 billion respectively. From the perspective of trade surplus product structure, in 2016, China's trade gap mainly came from clothing and clothing accessories, drugs, cotton, grain, fish, meat, coffee, tea, spices, carpets and other textiles, tobacco, raw skin, etc. The trade surplus was mainly derived from electric motors, boilers, animal and plant fats and oils, organic chemicals, plastics, steel, chemical fertilizers, chemicals etc. in 2016.

III. REVIEW OF TRADE POTENTIAL LITERATURE

The gravity model is the most widely used model by foreign scholars to analyze the determinants of trade growth. Tinbergen (1962) and Poyhonen (1963) proposed a relatively complete and simple economic model- -gravitational model[1-2]. Mdtyds (1997, 1998), Chen & Wall (1999), Breuss & Egger (1999), Egger (2000) improved the economic specification of gravity model[3]; Berstrand(1985), Helpman(1985) tried to introduce some new variables to improve[4-5]. One is the measurement of introducing the dummy variables. Such as common language, common borders, common colonial history, common religion etc. Amita Batra (2006) introduced history and the same culture to measure the trade potential between countries[6]. The results showed that history and the same culture would have a positive impact on bilateral trade. Rahman M M (2010) had introduced openness and a common language to study Australia's trade potential. Sultan M and Munir K (2015) introduced the common boundary variables and studied the determinants of exports, imports and trade potential. The other category was the addition of system quality index variables. Such as whether they belonged to a preferential trade agreement or regional economic integration organization, government governance quality, contract implementation guarantee etc. Masudur Rahman M and Arjuman Ara L (2010) introduced trade costs, infrastructure level and non-policy barriers, and used the extended gravity model to estimate Bangladesh's global trade potential. Yeshineh A K (2016) introduced economic openness to analyze Ethiopia's trade with its major trading partners. A Salim, Ruhu, Mahfuz Kabir and Mohammad (2011) introduced whether they were members of the Gulf Arab States Cooperation Council, and the results showed that the members had a significant role in promoting trade, and there was still huge trade potential among the member states.

Chinese scholars also had a lot of research on China's trade potential with countries along the "Belt and Road" routes. It was mainly studied from the following four perspectives: trade potential between China and countries along the Belt and Road, trade potential between provinces and cities and countries, departmental trade potential between China and countries along the Belt and Road, and trade potential using indirect calculation indicators.

One is the study of trade potential from a national perspective. Wan Yongkun (2017) made a deep analysis of the random forward position gravity model to increase the share of China and Russia and stimulate the trade potential. Wang Qihong and Zhao Qiao (2017) introduced the level of economic development, transportation costs, tariff level and resource endowment into the gravity model, and analyzed the main factors affecting the trade potential between China and Turkmenistan[7]. Li Jun and Li Jieling (2017) found that the airports' facility quality and average tariffs of BRICS would have an impact on improving China's export potential to BRICS countries[8]. Fang Xin (2017) used the gravity equation to estimate the trade potential between China and Pakistan, and found that China-Pakistan trade was a potential expansion type. Hou Min and Deng Linlin (2017) showed that the bilateral trade potential between China and South Asia and China's export potential to South Asia were great. Zhao Yongbo and Guo Miao (2017) pointed out that the western corridor of China-Europe freight trains could effectively enhance the trade potential of countries along the China-Europe freight train with China.

Secondly, there were some documents that analyzed the trade potential from the perspective of various provinces and cities and countries along the "Belt and Road" route. Wu Yu (2017) studied the development situation of Xinjiang's foreign trade and the trade development potential of Xinjiang and "Belt and Road" countries. Wang Ting (2016) calculated the trade complementarity index between Zhejiang Province and countries along the "Belt and Road" routes. The potential value of garment export trade to countries along the "Belt and Road" route was calculated using the extended gravity model. Suna (2016) studied the influencing factors and potential of export trade flow in Jiangsu Province, and the research results showed that Jiangsu still had great trade potential with the United States, Belgium and other countries. Zhang Fenglin (2017) believed that to expand economic and trade cooperation between Heilongjiang and Japan, Korea and Mongolia, expand cultural exchanges, export traditional commodities, expand imports; strengthen cooperation in environmental industry, service industry and emerging industries; attracted Japan and Korea to develop processing industry in Heilongjiang Province; and seized the opportunity to deepen cooperation with Mongolia[9].

The third type of Analysis trade potential was from the perspective of China and countries along the Belt and Road routes. Zhang Tongpu and Han Yang (2017) used the gravity model to analyze and predict the agricultural trade flow and potential between China and "Belt and Road" countries from the aspects of GDP, population, geographical distance, per capita GDP difference and institutional arrangement. Wang Sisi (2015) constructed a gravitational model of agricultural import and export trade between China and the five Central Asian countries, and used the extended gravity model to measure the potential of bilateral agricultural trade. Shao Guilan, Ma Li and Li Chen (2017) found that the bilateral trade in aquatic products between China and countries along the "Belt and Road" routes showed huge trade vitality and trade potential. Guo Shuke (2017) empirically analyzed the potential types and influencing factors of aquatic products in countries along the "Belt and Road".

Fourthly, used indirect calculation indicators to analyze the trade potential. Wang Jinbo (2017) adopted the trade complementarity index, intra-industry trade index, Lafay index and other empirical measurement indicators to systematically measure and analyze the matching degree, competition and trade growth potential of commodity trade structure between China and "Belt and Road" countries. Liu Zhizhong (2017) estimated the complementarity of the trade between China and Russia by using the display competitive advantage index and the trade complementarity index. Using the extended gravity model, the development potential of bilateral trade between China and Russia is estimated. Lu Yanping and Xiao Haifeng (2017) found through calculating the trade combination index, trade similarity index, dominant comparative advantage index and trade complementarity index that the agricultural products exported to New Zealand were poorly complementary, while the agricultural products that New Zealand exported to China were highly complementary.

IV. CALCULATION OF BILATERAL TRADE POTENTIAL AND ANALYSIS OF INFLUENCING FACTORS

4.1 Traditional Gravity Model

The idea and concept of gravity models were derived from the law of gravity proposed by the physicist

John Newton. In the early 1950s, Isard & Peck (1954) and Beckerman (1956) intuitively found the larger trade flow between geographically similar countries. It was widely believed that Tinbergen (1962) and Poyhonen (1963) firstly used gravity models to study international trade, which independently analyzed bilateral trade flows and obtained the same result: the scale of bilateral trade was proportional to their economic aggregate and inversely proportional to the distance between the two countries.

The basic form of the trade gravity model is:

$$ME_{ij} = \beta \frac{GDP_i GDP_j}{DIS_{ij}} \quad (1)$$

Formula (1) reflects that the trade volume between the two countries increases with the increasing economic scale, but decreases with the increasing geographical distance. To facilitate econometric analysis, the natural logarithm of formula (1):

$$\ln ME_{ij} = \beta_0 + \beta_1 \ln GDP_i + \beta_2 \ln GDP_j + \beta_3 \ln DIS_{ij} + \varepsilon_{ij} \quad (2)$$

In the formula, ME_{ij} is the total trade volume of countries i and j ; GDP_i is the gross domestic product of country i that show the export production capacity of country i ; GDP_j is the gross domestic product of country j that show the production capacity of country j ; DIS_{ij} is the distance between two countries; the coefficient of the variable; ε_{ij} is the random error item.

4.2 Model Construction and Data Description

4.2.1 Measurement model setting

According to the research purpose of this paper, based on the traditional gravity model, the new explanatory variables are introduced (the expected symbols and theoretical analysis are showed in the TABLE II), and the new extended trade gravity model is obtained as follows:

$$\begin{aligned} \ln ME_{ijt} = & \beta_0 + \beta_1 \ln GDPP_{it} + \beta_2 \ln GDPP_{jt} + \beta_3 \ln DIS_{ijt} + \beta_4 WTO_{ij} + \beta_5 \ln TB_{ijt} + \beta_6 \ln CP_{ijt} \\ & + \beta_7 \ln EC_{ijt} + \beta_8 \ln TR_{ijt} + \beta_9 \ln CEC_{ijt} + \beta_{10} \ln CIC_{ijt} + \beta_{11} \ln TE_{ijt} + \beta_{12} \ln TI_{ijt} + \beta_{13} \ln IO_{ijt} \\ & + \beta_{14} \ln IU_{ijt} + \varepsilon_{ij} \end{aligned} \quad (3)$$

In the formula, t is the year, i is China, j is the importer, β_i ($i=1,2, \dots, 14$) is the coefficient of each variable, β_0 is a constant term and ε_{ij} is a random error term.

TABLE II. The meanings of explanatory variables, expected symbols, and theoretical analysis

| VARIABLE SYMBOL | VARIABLE MEANING | EXPECTED SYMBOL | THEORETICAL ANALYSIS |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $\ln DIS_{ij}$ | Distance between the two countries (km) | - | The farther the distance between the two countries, the smaller the bilateral trade is |
| $\ln GDPP_{jt}$ | Per capita <i>GDP</i> at constant prices along the “Belt and Road” (USD) | + | The higher the economic development level of a country, the larger the economic aggregate and the greater the bilateral trade flow, which is positively related to the bilateral trade flow |
| $\ln GDPP_{it}$ | Chinese <i>GDP</i> per capita at constant prices (USD) | + | The higher the level of economic development, the larger the economic aggregate and the greater the bilateral trade flow, which is positively related to the bilateral total trade and classified product trade flow |
| $\ln IO_{ijt}$ | Integrated infrastructure (e. g., transportation, communications and energy) (1 highly underdeveloped; 7 efficient) | + | The larger the comprehensive level of infrastructure, the more conducive to the increase of bilateral trade, which is positively related to the total bilateral trade |
| $\ln TB_{ijt}$ | To what extent does the non-tariff barrier index (e.g., health and product standards, technology, labeling requirements, etc.) limit the import and export of goods, (1 indicates strict restrictions; 7 means no restrictions) | + | The larger the non-tariff barrier index, the more conducive it is to promote the increase of bilateral trade volume, which is positively related to the total bilateral trade volume |
| $\ln TR_{ijt}$ | Customs rate comprehensive level index (1 indicates the highest rate level; 7 indicates the lowest rate level) | + | The larger the comprehensive level index of tariff rate, the more conducive to promoting the increase of bilateral trade volume, which is positively related to the total bilateral trade volume |
| $\ln EC_{ijt}$ | The cost of the court in resolving the dispute over the sale of goods is expressed as a percentage of the claim | - | The higher the cost of dispute resolution, the more conducive to the increase of bilateral trade volume and negatively related to the total bilateral trade volume |
| $\ln CP_{ijt}$ | Customs procedure complexity index (1 indicates minimum efficiency; 7 indicates maximum efficiency) | + | The greater the cumbersome degree index of customs procedures, the more conducive to promoting the increase of bilateral trade volume, which is positively related to the total bilateral trade volume |
| $\ln IU_{ijt}$ | Percentage of visitors to (%) via a fixed or mobile network | + | The more people who get online, the more conducive it will reduce information costs and promote the development of cross-border e-commerce, which is positively related to total bilateral trade |
| $\ln CEC_{ijt}$ | Export cost for 20 ft container (USD) | - | It is negatively related to the total bilateral trade volume |
| $\ln CIC_{ijt}$ | Import charge for 20 ft container (USD) | - | It is negatively related to the total bilateral trade volume |

| | | | |
|----------------|--------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------|
| $\ln TE_{ijt}$ | Export time (days) | - | It is negatively related to the total bilateral trade volume |
| $\ln TI_{ijt}$ | Import time (days) | - | It is negatively related to the total bilateral trade volume |
| WTO_{ij} | Virtual variable, whether the two countries belong to the World Trade Organization members | + | If it is a WTO member, it will increase bilateral trade and is positively correlated with total bilateral trade |

Data sources: World Bank Database, Global Competitiveness Report 2016-2017, Baidu Map, World Trade Organization

4.2.2 Data Description

4.2.2.1 Data source

The specific data sources of this article are as follows: the bilateral trade flow data between China and 6 countries are from the database of the General Administration of Customs of China from 2007 to 2016; GDP, legal relief cost, container cost of export goods, container cost of imported goods, export time and import time are obtained from the World Bank database; The distance between Beijing and the capitals of South Asian countries is calculated by Baidu map; The WTO member data is obtained from the WTO database; The prevalence of non-tariff trade barriers, the complexity of customs procedures, tariff rates, the comprehensive level of infrastructure and the proportion of Internet users come from the Global Competitiveness Report released by the World Economic Forum. In addition, bilateral trade costs have 0 value that can not take the log number, every 0 value is assigned 0.1.

4.2.2.2 National scope

This paper uses the gravity model to calculate the import and export trade volume between South Asian countries and China from 2007 to 2016 to obtain the trade potential between China and South Asian countries. The six South Asian countries include: India, Pakistan, Bhutan, Sri Lanka, Bangladesh and Nepal.

4.3 Analysis of the Empirical Results

4.3.1 Least-squares regression analysis

$\ln ME_{ij}$ is as the dependent variable, $\ln DIS_{ij}$, $\ln GDPP_{jt}$, $\ln GDPP_{it}$, $\ln IO_{ijt}$, $\ln TB_{ijt}$, $\ln TR_{ijt}$, $\ln EC_{ijt}$, $\ln CP_{ijt}$, $\ln IU_{ijt}$, $\ln CEC_{ijt}$, $\ln CIC_{ijt}$, $\ln TE_{ijt}$, $\ln TI_{ijt}$, WTO_{ij} are as the independent variable, and the regression results are shown in TABLE III.

The first regression found 10 explanatory variables and test statistics is significant. China's per capita GDP, distance between the two countries, the cost of court settlement of goods sales disputes, customs formalities complexity index, the proportion of Internet users, export costs of 20 foot containers, import costs of 20 foot containers, export time, import time, and WTO member states have passed the inspection.

Except for the complexity index of customs formalities, the export cost of 20-foot containers, and the import time, the regression coefficient symbol of the above explanatory variables is the same as the expected symbol, indicating that the gravity model in this paper basically explains the decision of bilateral trade flow in international trade. Based on the second regression, there are 7 explanatory variables fitting the effect and the test statistic are ideal. The distance between the two countries, the proportion of Internet users, the export cost of 20-foot containers, export time and *WTO* members are significant at 1%, China's per capita *GDP* is significant at 5%, and the court costs of resolving goods sales disputes are significant at 10%.

From the above regression results, a total of 60 samples participated in the analysis. The F value (10,49) =135.94 and P value (Prob> F=0.0000) indicate that the model is relatively significant. The goodness of fit of the model was 0.8866, and the decision coefficient of the model correction was 0.8688, indicating that the model explained better (The results are showed in the TABLE III).

The regression equation of the least squares model can be obtained from the above analysis results:

$$\ln ME_{ijt} = -6.293445 \ln DIS_{ij} + 1.099765 \ln GDPP_{it} - 0.1746304 \ln EC_{ijt} + 0.8216262 \ln IU_{ijt} - 9.438886 \ln CEC_{ijt} - 5.711101 \ln TE_{ijt} + 3.6233 WTO_{ij} + 98.40631 \quad (4)$$

4.3.2 Robustness analysis

To ensure the reliability of the empirical results, the control variables are added for estimation. In order to minimize the estimation bias caused by missing variables, the paper draws on the experience of Novy (2007), Qian Xuefeng, Liang Qi (2008) and others, which introduce trade cost, infrastructure, tariff rate level, legal relief cost, import and export days on the basis of the traditional gravity model, the results are shown in TABLE III, the estimation results are very significant, indicating that adding control variables is reasonable that can effectively reduce the missing variables[10].

TABLE III. Least-squares regression results

| | BASIC REGRESSION EQUATIONS | ADJUSTED REGRESSION EQUATION |
|-----------------|-----------------------------------|-------------------------------------|
| Variable | $\ln ME_{ijt}$ | $\ln ME_{ijt}$ |
| $\ln DIS_{ij}$ | -7.672161(0.082)* | -6.293445(0.000)*** |
| $\ln GDPP_{jt}$ | -1.657019(0.150) | — |
| $\ln GDPP_{it}$ | 2.157168(0.005)*** | 1.099765(0.013)** |
| $\ln IO_{ijt}$ | -0.1279579(0.945) | — |
| $\ln TB_{ijt}$ | -0.5640544(0.845) | — |
| $\ln TR_{ijt}$ | -0.7621672(0.415) | — |
| $\ln EC_{ijt}$ | -0.2571025(0.026)** | -0.1746304(0.075)* |

| | | |
|---------------------------------------|---------------------------------|---------------------------------|
| $\ln CP_{ijt}$ | 5.160891(0.070) [*] | — |
| $\ln IU_{ijt}$ | 0.9902873(0.008) ^{***} | 0.8216262(0.010) ^{***} |
| $\ln CEC_{ijt}$ | -9.409531(0.000) ^{***} | -9.438886(0.000) ^{***} |
| $\ln CIC_{ijt}$ | 7.407331(0.000) ^{***} | — |
| $\ln TE_{ijt}$ | -3.823927(0.020) ^{**} | -5.711101(0.000) ^{***} |
| $\ln TI_{ijt}$ | 3.893358(0.091) [*] | — |
| WTO_{ij} | 3.496303(0.062) [*] | 3.6233(0.000) ^{***} |
| constant term | 108.1041(0.024) ^{**} | 98.40631(0.000) ^{***} |
| observed value | 60 | 60 |
| coefficient of determination | 0.9711 | 0.8866 |
| Adjusted coefficient of determination | 0.9603 | 0.8688 |

The P-value data source is indicated in parentheses. Based on the STATA regression. The ***, **, * indicates the significance at the 1%, 5% and 10% levels respectively.

4.3.3 Goodness of fit and statistical tests

Goodness of fit test: the coefficient of determination is 0.8866, and the adjusted coefficient of determination is 0.8688, indicating that the built model fits the sample data well on the whole. The model satisfied the t-test and the F-test very well from the regression results. This shows that South Asian countries 'per capita GDP, China's per capita GDP, the comprehensive tariff level index, the import costs of 20-foot containers, the comprehensive infrastructure level, import time and WTO member countries have a significant impact on the total import and export.

4.3.4 Measurement of the trade potential between China and South Asian countries

The equation (4) eliminates the logarithm to change the following equation (5), that is the theoretical calculation equation of import and export value. Estimation of import and export volume between China and South Asian countries:

$$ME_{ijt} = e^{98.40631 + 3.6233WTO_{ij}DIS_{ij}^{-6.293445}GDPP_{it}^{1.099765}EC_{ijt}^{-0.1746304}IU_{ijt}^{0.8216262}CEC_{ijt}^{-9.438886}TE_{ijt}^{-5.711101}} \quad (5)$$

The theoretical value of imports can be calculated from equation (5), and according to formula (6), the trade potential index can be obtained.

$$\text{Trade Potential Index} = \text{analog value} / \text{Actual value} \quad (6)$$

4.3.5 Trade potential analysis

There is little difference in the trade potential index between China and South Asian countries. The trade potential index of two countries including Bangladesh and Nepal is less than 1(The results are

showed in the TABLE IV.), which belongs to the type of insufficient trade type. The above two countries are the countries that China will focus on conducting trade in the future. Pakistan, Bhutan, Sri Lanka and India have a trade potential index greater than 1 (The results are showed in the TABLE IV.), which belongs to the type of overtrade countries and should focus on developing new trade areas in the future. In recent years, economic and trade relations between China and South Asia have been climbing, and cooperation in various fields has been deepening. Bilateral cooperation has shown a good momentum and huge growth potential. Since 2008, China and South Asia have withstood the test of the financial crisis, and their economic and trade growth has recovered to pre-crisis levels, and regional economic and trade cooperation has entered an important stage.

TABLE IV. The Trade Potential Index of China and South Asian Countries in 2016

| COUNTRY | SIMULATED VALUE OF IMPORT AND EXPORT VOLUME (100 MILLION USD) | ACTUAL IMPORT AND EXPORT VALUE (100 MILLION USD) | TRADE POTENTIAL INDEX | TYPE OF TRADE POTENTIAL |
|----------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------|----------------------------------------|
| Pakistan | 205.84 | 190 | 1.08 | Excessive trade |
| Bhutan | 0.057 | 0.050 | 1.14 | Excessive trade |
| Bangladesh | 130.43 | 150 | 0.87 | Lack of trade |
| Nepal | 8.52 | 8.90 | 0.96 | Lack of trade |
| Sri Lanka | 46.09 | 46 | 1.002 | Excessive trade |
| India | 813.60 | 700 | 1.16 | Excessive trade |

Data source: calculated by equation (5) and (6)

The trade imbalance between China and some South Asian countries is mainly due to the unreasonable trade structure and the lack of developing the complementarity of industrial structure. According to the analysis of the import and export structure, India's exports to China are mainly primary products, the minerals and agricultural products account for more than half of its total exports to China. India imports from China mainly include machinery, chemicals, metals, fibers and textiles. Most of India's exports to China are resource-intensive or labor-intensive, while China's exports to India are mainly industrial goods with high added value. The import and export structure makes Indian products difficult to enter the Chinese market and are prone to generate trade deficits. China and India are highly complementary in their resources, industrial structure, commodity structure and technological structure. China's secondary industry has a large proportion, such as equipment manufacturing industry and hardware industry, while India's tertiary industry and software industry are relatively developed, which have obvious advantages in the service field. And the two countries have great potential in industrial cooperation. And Pakistan has its own resource advantages, and China has a low average resource utilization rate, so the two countries can cooperate in the infrastructure and mining industries. China and South Asian countries attach great importance to economic development and are all emerging countries with dynamic economies, with huge market potential, highly complementary industrial structure and broad space for cooperation. As a developing country, China and South Asian countries have many common interests. All countries recognize that strengthening cooperation will promote common prosperity and progress and continuously

improve the international status of developing countries. At present, the enterprises of the two sides have a strong desire for cooperation, and hope to bring tangible benefits to the country and the people through mutually beneficial cooperation. For these reasons, the economic and trade ties between the two sides will be closer in the future.

V. POLICY SUGGESTIONS

Firstly, we should improve our infrastructure connectivity with South Asian countries. The key to Belt and Road is to achieve connectivity among all countries and regions along the Belt and Road. The Chinese government should focus on promoting connectivity of infrastructure in South Asia and build an all-round, multi-tiered and complex connectivity network. All countries should also jointly promote the construction of the China-Pakistan Economic Corridor and the Bangladesh-China-India-Myanmar Economic Corridor, further strengthen the construction of the air route network in South Asia, and strengthen the air links between China and cities in South Asia. All countries should jointly promote unification of transport standards, form a unified system of railway and highway standards for countries along the routes, and promote international transport facilitation.

Secondly, we need to create more platforms for trade promotion. Take advantage of Import Exposition and China-South Asia Investment and Trade Exposition platform for increasing import and export; expand the construction of border and overseas cooperation zone, guide outstanding Chinese enterprises to invest in cooperation zone, build the platform of capital, technology and talent cooperation; and build exchanging and cooperation platform of thinking tank.

Thirdly, we should strengthen investment cooperation. We will encourage South Asian enterprises to invest in China, encourage Chinese enterprises to invest in South Asia, and deepen cooperation in processing and manufacturing, software industry, park construction, cross-border e-commerce, and overseas warehouses.

Fourthly, we should continue to facilitate trade and investment. Promote the integration of customs clearance and "single window", implement pre-establishment national treatment plus negative list, strengthen the protection of intellectual property rights, create a high standard international business environment for countries to China; strengthen the construction of working group with countries along the road, and provide comprehensive institutional guarantee for the further development of "Belt and Road" trade.

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