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Research on China's Value-Added Export Trade to Countries along the " Belt and Road"

Pengfei Lei

Department of International Trade, Harbin University of Commerce, Harbin, China
1021518864@qq.com

Abstract: *Since the "Belt and Road" initiative was put forward, the cooperation between China and countries along the route has deepened, the content and structure of trade have been enriched, and the total volume of trade has also expanded. Based on UNCTAD-Eora global Value Chain database, this paper summarizes the development of China's export value added (VA) to countries along the Belt and Road in terms of region and industry, and makes a comparative analysis of different countries and industries. It finds that China still has weak links with countries along the Belt and Road, and labor-intensive products are subject to competition. On this basis, suggestions are put forward to improve the trade structure so as to promote the value-added of China's export trade to countries along the "Belt and Road".*

Keywords: *One Belt and One Road, Trade Structure, Global Value Chain, Export Added Value, Labor-intensive*

1. Foreword

Since China put forward the Belt and Road Initiative, it has strengthened economic cooperation with countries along the route and consolidated multilateral relations with them, and achieved significant development in foreign trade. As the trade of intermediate goods takes an increasing proportion in international trade, the traditional calculation method of total export cannot reflect the real export trade of a country. While VA (Value added) is a measure of the degree of export appreciation of exported goods of an exporting country. Value added of export trade is equal to domestic value added in total export and is equal to total export - foreign component in total export, which can reflect a country's export trade situation relatively truly. Article analysis on export VA by region and industry respectively and the manufacturing industry as an example, to understand China on the export trade of countries along the "area". Finally, this article tries to improve product added value, optimize the structure of export trade, realize the transition from "quantity" to "quality", and put forward feasible suggestions such as perfecting the foreign trade partnership.

2. The Value-Added of China's Exports to Belt and Road Countries

By referring to UNCTAD-Eora global Value Chain database, VA of China's exports to countries along the Belt and Road are sorted out by region and industry.

2.1. Export Value-Added by Region

Referring to the website of the Belt and Road Initiative, the article divides 64 countries into six regions, namely Northeast Asia, Southeast Asia, South Asia, West Asia and north Africa, Central and eastern Europe, and Central Asia. The transportation cost, economic conditions, cultural customs and political environment are different in different regions, which makes the trade of different regions show differences, as show in table 1.

Due to the absence of VA data for Timor-Leste and Palestine exports, the following analysis relies only on trade data for the remaining 62 countries. Figure 1 is the contribution of different regions to China's VA. We can see from the figure that the overall trend of China's VA export to countries along the Belt and Road is relatively stable, but in 2014-2015, VA export fluctuated in different regions with different fluctuations. Specifically, China exported the largest VA to Southeast Asia, almost the total VA exported to other countries along the routes, followed by West Asia and north Africa. The VA of China's

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exports to Central Asia and Central and eastern Europe is the smallest. The reason is that China has high trade complementarity with Southeast Asian countries, while trade costs and trade facilitation limit China's export to Central Asian and Central and eastern European countries. Russia makes a huge contribution to China's export, accounting for about 13.7% of VA exports to countries along the Routes. This shows that even though there are only two countries in Northeast Asia, VA ranks among the top three.

Table 1: Sample of Belt and Road countries

Geographical area	Number of countries	countries
Northeast Asia	2	Mongolia, Russia
Southeast Asia	11	Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, Vietnam
South Asia	7	Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka
West Asia and north Africa	20	Afghanistan, Armenia, Azerbaijan, Bahrain, Egypt, Georgia, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates, Yemen
Central and eastern Europe	19	Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, North Macedonia, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, Ukraine
Central Asia	5	Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan

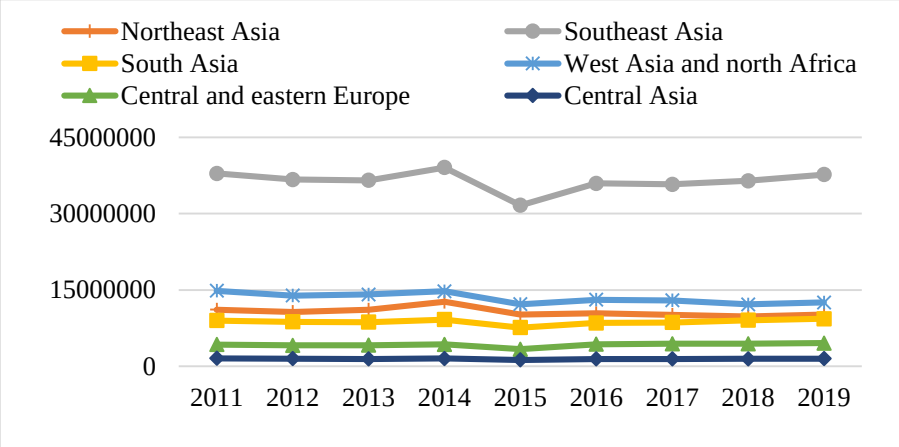

Figure 1: Export VA by region

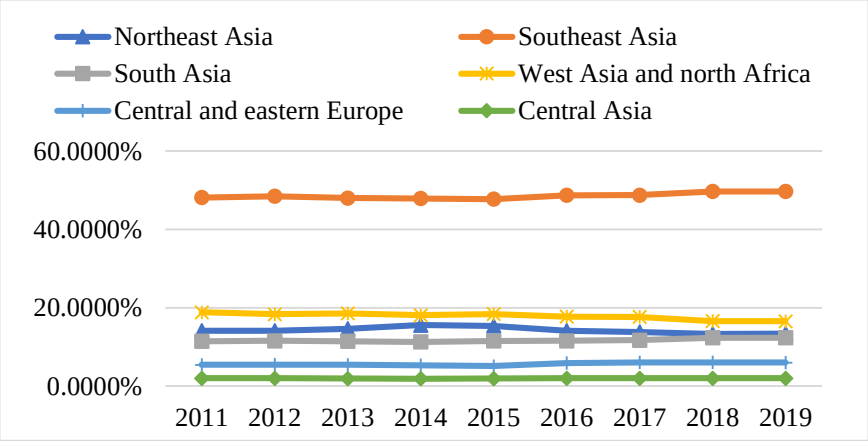

Figure 2: Proportion of VA exported to countries along the Belt and Road in VA exported to the world

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Figure 2 shows the ratio of China's export VA to countries in various regions and China's export VA to the world. It can be found that, except for small fluctuations in some years, the overall trend is relatively stable, and except for countries in Northeast Asia, West Asia and North Africa, other regions have a slight upward trend. In combination with the figure 1, although the absolute value of VA of China's export to Southeast Asia fluctuates greatly, the relative value of its export proportion is stable, indicating that the export relationship with Southeast Asian countries is relatively stable. However, West Asia and north Africa and Northeast Asia both showed a declining trend in the absolute value of export VA and in the relative value of export VA to the whole world, indicating that China's export relationship with them is constantly weakening.

2.2. Export Value-Added by Industry

The article takes manufacturing as an example. In order to explain the VA status of manufacturing export in different industries, China's manufacturing industry was classified according to the Input-Output Table, and combined with the customs classification data in the information network of the Development Research Center of The State Council. Finally, 15 manufacturing industries with the same classification were selected. For convenience, the article expressed in industry code for the industry and see table 2 for details.

Table 2: Industrial classification of manufacturing industry

Industry code	The name of the industry	Industry code	The name of the industry	Industry code	The name of the industry
01	Tobacco products	06	Paper and paper products	11	Plastic products
02	Textile industry	07	Printing and recording media reproduction	12	Metal and its products
03	The knitting industry	08	Toys, sports and sports entertainment products	13	Railway transport equipment
04	Leather, fur, eiderdown and related products	09	Chemical and chemical products	14	Ship construction
05	Wood, bamboo, rattan, palm, grass and other furniture and products	10	Rubber products	15	The generator

At the same time, Indonesia, Russia, India, Malaysia, Saudi Arabia, Iran, Thailand, Pakistan, Singapore, the Philippines and other top ten Export VA countries of China are selected as the base year of 2010. The export VA and export volume of China to these countries are shown in Figure 3.It can be seen from the figure that China's export is not proportional to its export VA. For example, China's export to India is the largest, but its export VA is not the largest, while its export to Indonesia ranks the fourth, but its export VA is the largest.

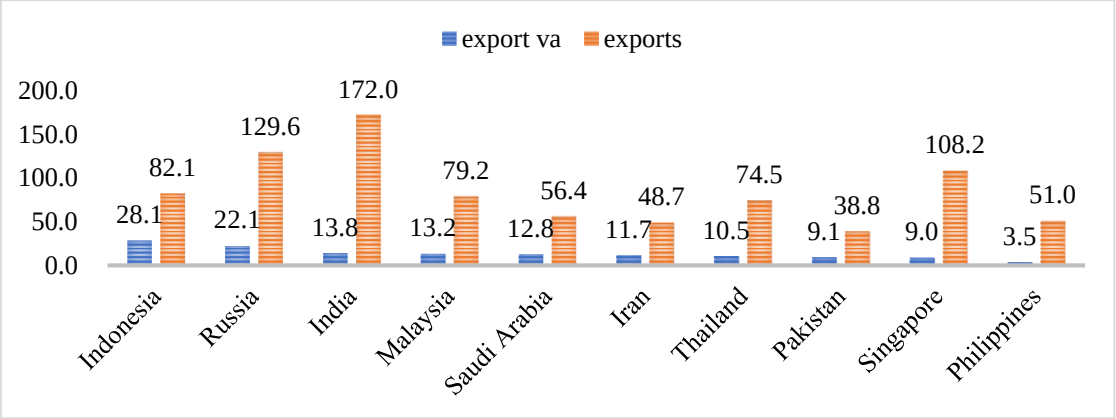

Figure 3: Top ten VA countries in China's export

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Data sources: according to "UNCTAD - Eora database and the State Council development research center, information network" http://www.drcnet.com.cn/www/int/ finishing.

The specific proportion of VA in manufacturing exports is shown in Table 3. According to the data in the table, VA in manufacturing exports accounts for 10%-20% of the total exports, indicating that the added value of China's manufacturing exports is not high and shows a slight downward trend year by year. From the commodity structure, that is, from the perspective of products with different proportion of export added value: a. the exports to India, though large, but exports VA accounted for around 10%, still low, explain in commodity exports to India, low-value commodities (such as 02, 12 products, etc.) is higher. Southeast Asian countries such as the Philippines, Singapore and other countries are in a similar situation.b. The proportion of VA in Indonesia, Pakistan and Russia is large, indicating that high value-added commodities account for a large proportion in China's exports to these countries. Specifically, China's exports to these countries in 04, 05 and other high value-added goods accounted for a high proportion. The VA of exports to Iran, Pakistan, Saudi Arabia and other countries decreases significantly year by year, indicating that the profit margin of exports to them is shrinking.

Table 3: Proportion of VA in manufacturing exports (Export VA/ Export, %)

countrie	year							
	2010	2011	2012	2013	2014	2015	2016	2017
India	8.1%	12.3%	10.0%	12.5%	11.6%	9.4%	11.6%	10.8%
Indonesia	34.2%	24.4%	16.2%	21.1%	20.4%	18.8%	21.9%	21.4%
Iran	24.0%	18.0%	14.2%	15.5%	10.7%	12.0%	15.1%	13.9%
Malaysia	16.7%	21.6%	10.0%	11.1%	11.3%	9.4%	12.7%	13.3%
Pakistan	23.4%	22.2%	16.3%	16.2%	13.9%	9.9%	11.3%	10.6%
The Philippines	6.9%	8.0%	4.9%	5.5%	5.1%	3.7%	3.6%	3.7%
Russia	17.1%	23.9%	15.0%	17.5%	18.9%	22.7%	39.6%	21.9%
Saudi Arabia	22.7%	11.0%	6.1%	8.9%	8.6%	7.3%	5.1%	8.8%
Singapore	8.3%	9.6%	5.7%	7.7%	8.6%	6.7%	7.5%	8.1%
Thailand	14.1%	15.9%	9.3%	13.5%	12.9%	9.8%	11.1%	11.2%
The mean	17.6%	16.7%	10.8%	13.0%	12.2%	11.0%	14.0%	12.4%

Data sources: according to "UNCTAD - Eora database and the State Council development research center, information network" http://www.drcnet.com.cn/www/int/ finishing.

The proportion of VA in export alone is not enough to explain the degree of VA contribution of each country to China's manufacturing export, so it should be analyzed in combination with Table 4. Table 4 shows the proportion of VA in China's export to each country and total VA in the manufacturing industry, from which it can be seen that in the ten sample countries, Indonesia, Iran, Pakistan, Saudi Arabia contributions to China's export VA of decreasing year by year, so that these countries exports to China from the side contact decreased year by year, India, Thailand, Malaysia, Russia's exports to China VA of basic increasing year by year, then contact China's exports is deepening. Among them, although VA accounts for a large proportion in China's exports to Pakistan, Saudi Arabia, Thailand and other countries, VA accounts for a small proportion in the total VA of the manufacturing industry, indicating that China has a huge potential in its export of medium-high value-added products.

Table 4: Proportion of VA in total VA of manufacturing industry (EXPORT VA/ Total VA of manufacturing industry, %)

countrie	year							
	2010	2011	2012	2013	2014	2015	2016	2017
India	10.3%	14.9%	15.7%	14.5%	14.6%	14.9%	15.0%	15.0%
Indonesia	21.0%	15.4%	18.0%	17.8%	17.5%	17.8%	18.3%	18.6%
Iran	8.7%	6.6%	5.9%	5.9%	5.7%	5.7%	5.7%	5.7%
Malaysia	9.9%	11.9%	10.7%	10.9%	10.5%	10.3%	11.0%	11.1%
Pakistan	6.8%	6.0%	6.4%	5.7%	5.3%	5.4%	5.4%	5.4%
The Philippines	2.6%	3.0%	3.0%	2.9%	2.9%	2.9%	3.0%	3.0%
Russia	16.5%	21.6%	20.8%	21.6%	23.0%	22.8%	21.7%	21.5%
Saudi Arabia	9.6%	4.5%	4.2%	4.4%	4.3%	4.4%	4.3%	4.4%
Singapore	6.7%	7.3%	7.0%	7.1%	7.3%	7.2%	6.3%	6.0%
Thailand	7.8%	8.8%	8.3%	9.3%	8.9%	8.5%	9.3%	9.3%

Data sources: according to "UNCTAD - Eora database and the State Council development research center, information network" http://www.drcnet.com.cn/www/int/ finishing.

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As shown in Table 5, it can be seen that the export VA of industries with codes of 01, 09, 13 and 14 is relatively small in the export volume. It indicates low added value of the products accounts for a relatively small proportion in the export value. In industries with codes of 04, 08, 11 and so on, the proportion of export VA in export volume decreases year by year. It indicates that the added value of middle and low industries has decreased in recent years. In industries with codes of 05 and 07, the proportion of VA in export of these two industries has been high for many years without significant fluctuation, indicating that these industries are China's comparative advantage industries.

Table 5: Proportion of VA in Exports by Industry (%)

industry	year							
	2010	2011	2012	2013	2014	2015	2016	2017
Tobacco products	1.3%	1.4%	1.1%	1.2%	1.1%	1.0%	0.5%	0.5%
Textile industry	4.4%	4.6%	4.0%	3.4%	3.3%	2.9%	3.1%	3.0%
The knitting industry	8.5%	9.0%	6.8%	5.5%	7.1%	4.1%	4.5%	7.0%
Leather, fur, eiderdown and related products	39.8%	39.3%	27.5%	22.3%	20.1%	19.5%	20.2%	19.5%
Wood, bamboo, rattan, palm, grass and other furniture and products	27.4%	31.4%	22.5%	18.3%	24.0%	16.8%	21.5%	24.0%
Paper and paper products	16.8%	14.7%	13.4%	9.7%	9.2%	8.0%	8.1%	9.0%
Printing and recording media reproduction	57.8%	66.9%	49.9%	38.8%	41.2%	43.0%	57.7%	59.5%
Toys, sports and sports entertainment products	75.5%	76.8%	58.8%	49.7%	41.4%	31.9%	31.0%	29.5%
Chemical and chemical products	1.0%	1.0%	1.0%	1.0%	0.9%	0.7%	1.0%	0.9%
Rubber products	9.4%	8.6%	7.7%	7.2%	8.6%	8.0%	10.8%	10.1%
Plastic products	16.8%	15.4%	11.7%	9.6%	9.1%	8.2%	9.7%	9.3%
Metal and its products	1.4%	1.3%	1.1%	1.0%	0.9%	0.9%	1.1%	1.1%
Railway transport equipment	2.0%	1.5%	1.5%	2.3%	2.2%	1.2%	1.7%	2.2%
Ship construction	1.2%	1.4%	1.1%	1.3%	1.8%	1.2%	1.8%	2.0%
The generator	10.3%	10.4%	9.6%	9.5%	9.7%	7.4%	9.3%	9.9%

Data sources: according to "UNCTAD - Eora database and the State Council development research center, information network" http://www.drcnet.com.cn/www/int/ finishing.

3. Problems Existing in China's Export to Belt and Road Countries

The proposal of "One Belt and One Road" has not only increased China's total foreign trade, but also increased exports and investment to countries along the routes and deepened economic cooperation with Asian, African and European countries. It has brought positive impact to countries along the routes and promoted the rational allocation of global resources. However, there are still some problems.

3.1. Weak Links with Countries along the Belt and Road in Terms of Export Trade

According to the General Administration of Customs and the Commercial Data Center of the Ministry of Commerce, China's total foreign trade export in 2020 was 25,985.79 billion US dollars, among which, the exports to the United States, the European Union, ASEAN, Japan and South Korea accounted for 17.4%, 15%, 14.8%, 5.5% and 4.3% respectively. Exports to Germany and the U.K. each accounted for about 3 percent of the total. Obviously, China's exports to these countries (organizations) account for more than half of its total exports, and they are the main export destination countries. Therefore, China should strengthen its economic and trade links with the "Belt and Road" countries and reduce its dependence on some countries and regions to enhance its ability to resist risks.

3.2. High Proportion of Low Value-Added Finished Goods Exported

The backward participation rate of China's Global Value Chain (GVC) is greater than the forward

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participation rate, and has been declining since the 2008 financial crisis. In the manufacturing industry, the forward and backward participation rates are significantly higher than the overall value, and the backward participation rate is also higher than the forward participation rate. This directly shows that China, as a big manufacturing country, has long been focusing on processing trade and exporting a large proportion of low value-added finished products. The drawback of this trade model is that China participates too much in downstream production links, which makes less profit on the one hand. On the other hand, it is difficult to develop high-tech industries by focusing on low-end manufacturing for a long time and easy to cause the "low-end locking" dilemma.

3.3. The Advantage of Labor-Intensive Products Has Weakened

In recent years, with the economic growth and the improvement of people's material life, China has no significant advantage in labor cost. While Southeast Asian countries such as Indonesia and Thailand "embed" the low-end link of GVC processing and manufacturing with the advantage of low labor cost. (From 2010 to 2018, Indonesia's export value added (DVA) grew by 36.45 percent and Thailand's by 95.56 percent, according to the UNCTAD-Eora Global Value Chains database.)For example, in industries with codes of 04, 08, 11 and other industries mentioned above, the proportion of VA in export decreased year by year, which is squeezed by the advantage of low labor cost in Southeast Asia and other countries.

4. Conclusion

From the perspective of export VA, this paper sorted out China's export trade to "Belt and Road" countries by region and industry respectively. It found that China's export VA showed a slight upward trend on the whole. But in terms of specific countries and industries, there are still some phenomena such as low and medium value-added products, processing trade, narrow export VA, and extrusion of labor-intensive industries by Southeast Asian countries.

References

[1] Caldara D.,M. Iacoviello,P. Molligo,A. Prestipino,A. Raffo. The Economic Effects of Trade Policy Uncertainty. Manuscript Presented at the 91st Meeting of the Carnegie-Rochester-NYU Conference on Public Policy, April 2019.

[2] Pituch K A, Whittaker T A, Stapleton L M. A comparison of methods to test for mediation in multisite experiments. Multivariate Behavioral Research, 2005, 40(1):1 - 23.

[3] Grossman GM, Helpman E. Outsourcing in a global economy. The Review of Economic Studies, 2005, 72(1):135 - 159.

[4] Flento D. and S Ponte. 2017. Least-Devel oped Countries in a World of Global Value Chains: Are WTO Trade Negotiations Helping? .World Development. (94).

[5] Jong HS., HB Jun., C Catteneo, and D Kiritsis. 2015. Degradation Mode and Criticality Analysis Based on Production Usage Data .International Journal of Advanced Manufacturing Technology. 78(9-12).

[6] Koopman R.,Z Wang,and SJ Wei.2014.Tracing Value-added and Double Counting in Gross Exports .The American Economic Review.104(01).

[7] Johnson, R.C., Noguera, G., 2012, "Accounting for Intermediates: Production Sharing and Trade in Value Added", Journal of International Economics, Vol.86, No.2: 224-236.