

An Empirical Analysis of the Industrial Trade Relationship between China and Central Asia from the Perspective of the Belt and Road Economic Belt

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Abstract. The Central Asian countries are very rich in mineral resources. They are an important production area of the world's energy resources and an export area of the world's energy industry, which greatly compensates for the shortage of China's overseas energy resources supply. China and the Central Asian countries have complementary industrial advantages and the continuous development of economic and trade between the two sides. Reached a new height. This article selects relevant statistics of import and export products of representative industries in China and Central Asia in recent years, and attempts to explore the industrial status of China's and Central Asian countries' industrial imports and exports from multiple perspectives, hoping to gain influence on China and Central Asian countries. Industrial import and export industry factors, and to these industrial factors to further put forward the development of China and Central Asian countries industry import and export related industries countermeasures.

1 Introduction

Since the reform and opening up, China has actively taken part in the wave of world economic development. The investment in education and scientific research has continued to increase, productivity has rapidly increased, and foreign economic exchange activities have continued to increase. Based on the current status of industrial trade between the two parties, the final selection of light industry, heavy industry and foreign economic cooperation, products of these three representative industries, textile, steel, contracted project turnover, import and export trade status data for China and Central Asian countries Detailed analysis of the trade.

2 An Analysis of the Status Quo of Industrial Trade between China and Central Asian Countries

2.1 Current status of import and export trade between China and Central Asian countries

From 2008 to 2017, the total import and export volume of China and Central Asian countries showed an upward trend,^[1] but the change in the import and export volume of China and Central Asian countries was significantly larger than that of China and other countries in the world. From 2009 to 2013, China's imports from Central Asian

countries increased year by year, but from 2013 to 2016, China's imports from Central Asian countries declined year by year, as shown in the blue histogram in Figure 1 (unit: ten thousand US dollars).

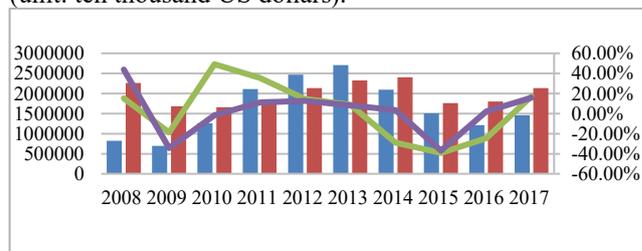


Fig1. China's total import and export volume and growth rate from Central Asian countries from 2008 to 2017

2.2 China's textile industry exports to Central Asian countries

From 2008 to 2017, the export value of China's textile industry to Central Asian countries increased slowly, showing an overall upward trend.^[2] From 2008 to 2012, the total amount of China's textile industry exported to Central Asian countries reached US\$57.334 million, and from 2013 to 2017 it reached more than US\$7229772 million, an overall increase of 20.68%,^[3] as shown in Figure-2 (unit: ten thousand US dollars) .

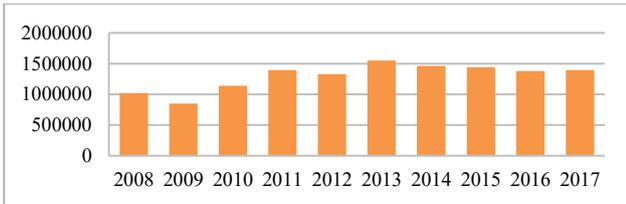


Fig2. China's textile industry exports to Central Asian countries from 2008 to 2017

2.3 China's textile industry exports to Central Asian

Since China and the Belt and Road Initiative, China and the Central Asian countries have cooperated more closely in the mineral energy industry, as shown in Figure 3 (unit: 10,000 US dollars), in 2013, the import value reached its peak during this decade, which was 131,234,700 US dollars. The impact of China's overcapacity in 2016 compared with 2013, China's imports of steel from Central Asian countries decreased by 74,565,800 US dollars.

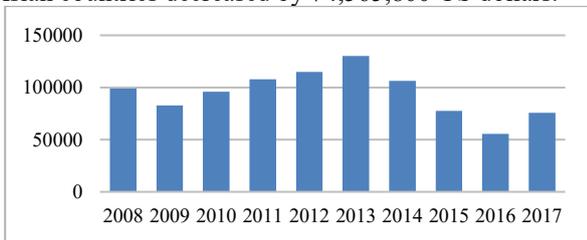


Fig3. Total imports of China's steel industry from 2008 to 2017 in Central Asian countries

2.4 China's Turnover Status of Contracted Engineering Industry in Central Asian Countries

China's contracted engineering industry with Central Asian countries is not only in oil mining, chemical engineering and other projects, but also in roads,

automobile assembly, construction, infrastructure construction, etc. From Figure 4 (unit: million US dollars), it can be seen from 2008 to 2017 The turnover of China's contracted projects with Central Asian countries in general showed an upward trend in 2014. It peaked at US\$686.68 million in 2013. China's Central Asian countries increased by US\$119.29 million from 2013 to 2017 compared to 2008 to 2012, an increase of 43.21%.

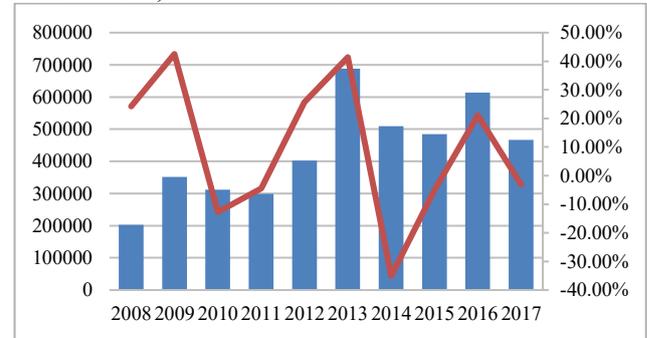


Fig4. China-Central Asia National Engineering Contracting Industry Turnover from 2008 to 2017

3 Factors influencing China's industrial import and export trade with Central Asian countries

This article will select relatively important factors such as China's tariffs, China's total population, Central Asian countries' per capita income, and the exchange rate of RMB against the US dollar to conduct an empirical analysis of China and Central Asian countries' industrial import and export.^[4]

3.1 The industrial import and export volume of China and Central Asian countries and their influencing factors are shown in Table 1.

Table1. China and Central Asian countries' industrial import and export volume and its influencing factors

Year	China and Central Asian countries industrial import and export volume (ten thousand US dollars)	Chinese tariffs (100 million yuan)	China's total population (Ten thousand people)	Per capita gross national income of Central Asian countries(USD)	Annual average exchange rate(/100 dollars)
2007	1968199	1432.57	132129	2326	760.40
2008	3082281	1769.95	132802	2920	694.51
2009	2376450	1483.81	133450	3338	683.10
2010	3015373	2027.83	134091	3790	676.95
2011	3967075	2559.12	134735	4296	645.88
2012	4596840	2783.93	135404	5026	631.25
2013	5029426	2630.61	136072	5926	619.32
2014	4503225	2843.41	136782	6302	614.28

2015	3263741	2560.84	137462	6198	622.84
2016	3007624	2603.75	138271	5664	664.23
2017	3589939	2997.85	139008	5432	675.18

3.2 Estimating the model with ordinary least squares

Table2. Ordinary least squares model

Dependent Variable: LNY				
Method: Least Squares				
Date: 05/07/19 Time: 20:55				
Sample: 1999 2017				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	418.7678	135.0588	3.100634	0.0078
LNX1	~43.03907	12.92343	~3.330313	0.0050
LNX2	1.384381	0.627513	2.206140	0.0446
LNX3	9.098214	2.555680	3.559997	0.0031
LNX4	3.499526	0.706010	4.956768	0.0002
R-squared	0.965373	Mean dependent var		14.07465
Adjusted R-squared	0.955480	S.D. dependent var		1.280008
S.E. of regression	0.270079	Akaike info criterion		0.440731
Sum squared resid	1.021199	Schwarz criterion		0.689268
Log likelihood	0.813051	Hannan-Quinn criter.		0.482794
F-statistic	97.57778	Durbin-Watson stat		1.156269
Prob(F-statistic)	0.000000			

Table 2 is obtained by using the ordinary least squares estimation model:

$$\ln(CAIE) = 418.767 - 43.039 \ln(T) + 1.384 \ln(P) + 9.098 \ln(I) + 3.450 \ln(e)$$

R-squared=0.965373, (R2) the goodness of fit is close to 1, and the Prob. values all pass the test, the fit is good, and, therefore, the overall linear relationship between China's and Central Asian countries' industrial imports and exports and the above explanatory variables is significant.

$$\ln(CAIE) = \beta_0 + \beta_1 \ln(T) + \beta_2 \ln(P) + \beta_3 \ln(I) + \beta_4 \ln(e) + u$$

Among them, CAIE represents the industrial import and export value of China and Central Asian countries; T represents Chinese tariffs; P represents the total population of China; I represents the gross national income per capita of Central Asian countries; e represents the average annual exchange rate level; u represents the random disturbance item.

3.3 Modeling

Set the function of China's and Central Asian countries' industrial import and export volume

3.4 Statistical inspection

Table3. White test results

Heteroskedasticity Test: White				
F-statistic	2.145033	Prob. F(10,8)		0.1459
Obs*R-squared	13.83877	Prob. Chi-Square(10)		0.1805
Scaled explained SS	5.825444	Prob. Chi-Square(10)		0.8297
Test Equation:				
Dependent Variable: RESID^2				
Method: Least Squares				
Date: 05/07/19 Time: 21:16				
Sample: 1999 2017				
Included observations: 19				
Collinear test regressors dropped from specification				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	436.9132	791.7203	0.551853	0.5961
LNX1	-36.92595	79.94390	-0.461898	0.6565
LNX1*LNX2	7.417269	11.36631	0.652566	0.5323
LNX1*LNX3	-0.294821	1.499077	-0.196668	0.8490
LNX1*LNX4	-0.531420	2.605740	-0.203942	0.8435
LNX2	-72.15907	92.21577	-0.782502	0.4565

LNX2^2	-1.393519	1.378049	-1.011226	0.3415
LNX2*LNX3	-1.418199	6.635512	-0.213729	0.8361
LNX2*LNX4	1.490269	1.783743	0.835473	0.4277
LNX3*LNX4	1.097072	3.965201	0.276675	0.7890
LNX4^2	-0.667806	0.864023	-0.772903	0.4618
R-squared	0.728356	Mean dependent var		0.053747
Adjusted R-squared	0.388801	S.D. dependent var		0.068763
S.E. of regression	0.053758	Akaike info criterion		-2.715743
Sum squared resid	0.023120	Schwarz criterion		-2.168962
Log likelihood	36.79956	Hannan-Quinn criter.		-2.623206
F-statistic	2.145033	Durbin-Watson stat		2.665372
Prob(F-statistic)	0.145907			

Goodness-of-fit test: In the above regression, $R^2=0.965373$, indicating that the model has a high degree of goodness and good fitting effect. F test: The critical value of the query in the F distribution table is 3.49, the F statistic is greater than the critical value 3.49, and the accompanying probability of the F statistic is also less than 0.05. Therefore, the null hypothesis H_0 : is rejected, indicating that the equation exists significantly. T-test: See Table 2 at a 5% significance level, indicating that these variables have rejected the null hypothesis and are significant and have passed the T-test. Heteroscedasticity test: According to the White test results in Table 3, the probability is at a significant level of 5%, the P value is greater than 0.05, and the null hypothesis that there is no heteroscedasticity is accepted, indicating that the model has no heteroscedasticity and no correction is required.

Based on the above test, it can be concluded that, under other conditions that remain unchanged, when T increases by 1 unit, it will cause a reduction of 43.039 units in the industrial import and export volume of China and Central Asian countries; when P increases by 1 unit each, Will increase the import and export volume of China and Central Asian countries by 1.384 units; each time I increases by 1 unit, it will increase the import and export volume of China and Central Asian countries by 9.098 units; when e increases by 1 unit, it will It will cause the import and export volume of China and Central Asian countries to increase by 3.450 units.

4 Conclusions

There is a positive correlation between the total amount of import and export industries between China and Central Asian countries and China's total population, Central Asian countries' per capita gross national income, and exchange rate. Among them, changes in the Central Asian countries' per capita gross national income affect China and Central Asia. National imports and exports have a relatively large impact, and Chinese tariffs have a negative correlation with the imports and exports of China and Central Asian countries.

China's tariffs have a relatively large impact on the total import and export industries of China and Central Asian countries, and have a negative correlation. This is mainly because China is one of the top three important trade partners of Central Asian countries. The changes in China's tariffs directly affect the number of commodities in the import and export industry, and influence and interact with each other. Under the condition that other

conditions remain unchanged, the degree of increase and decrease of China's tariff rate is inversely related to the development speed of Central Asian countries' trade. However, tariffs can protect domestic industries and markets. After imposing tariffs on imported commodities, they increase the cost of imported commodities, weaken its competitiveness with similar domestic commodities, affect the sales of imported commodities, and thus protect domestic industries and The role of the market. The increase in the price of imported commodities will increase the price of similar domestic products and bring more profits to the relevant manufacturers. For exporting countries, import taxes imposed by importing countries will affect the reduction of export commodities, the quantity of exports, and the decline in prices, causing losses to exporting countries. It is necessary to dialectically view the impact of Chinese tariffs on trade between China and Central Asian countries.

The total population of China is constantly increasing. China has superb technology, abundant capital and a large number of talents. Central Asian countries have very rich natural energy resources. Cooperation between the two sides can complement each other's strengths, solve needs, and maximize benefits. However, in the past two or three years, the import and export volume between China and Central Asian countries has decreased. Although it is affected by the adjustment of China's domestic economic structure, the greater impact is that it is affected by European and American countries in the process of trade cooperation with Central Asian countries. Squeeze. Therefore, respecting the differences between the two sides, understanding the national conditions of China and Central Asian countries, and maintaining friendly exchanges between the two sides have an important role in the import and export of relevant industries between China and Central Asian countries.

The gross national income per capita of Central Asian countries has a positive correlation with the import and export of related industries between China and Central Asian countries. The economies of scale in Central Asian countries are relatively small, and their development is slow. Central Asian countries have also joined the trend of international division and reorganization in recent years to strengthen their economies within Central Asian countries. Therefore, China should pay attention to the development situation of Central Asian countries, break the limitations of traditional import and export trade between China and Central Asian countries, develop towards diversified trade methods, and increase the trade demand of Central Asian countries for China.

The import and export of China and Central Asian countries are greatly affected by changes in exchange rates. The appreciation of the renminbi will increase the price of products exported from China to Central Asian countries, leading to a decrease in the demand for Chinese exports from Central Asian countries, and the trade value of China's exports to Central Asian countries will be much larger than that of Central Asian countries. Thus inhibiting the development of export trade. Although the import and export volume of China and Central Asian countries has generally maintained an upward trend, the growth rate is gradually slowing down. Therefore, it is very important to change the trading methods of China's exports to Central Asian countries.

5 Countermeasures and Suggestions

All countries in Central Asia have completed the transformation from planned economy to market economy, but the planned economy in Central Asia is still strong, and the economic environment and international investment of Central Asian countries are threatened by terror. Therefore, it is necessary to know the political situation and strategic guidelines of Central Asian countries, and can make more use of the construction of the Belt and Road Economic Belt,^[5] inviting high-level intergovernmental governments to strengthen policy communication. An effective communication mechanism between various governments has been provided to provide a strong support for bilateral economic and trade cooperation.

China mainly exports textile-, electromechanical and other labor-intensive and low-value-added products to Central Asian countries, and mainly imports raw materials such as oil, natural gas, and steel to Central Asian countries. Most of the reasons for this are that China's economic structure is still dominated by processing and manufacturing industries, while Central Asian countries are dominated by abundant energy resources. In order to break this situation that may cause trade friction in the future and optimize the economic and trade structure of both sides, China can use the "Silk Road Fund" and "Asian Infrastructure Investment Bank" to increase its focus on the petrochemical industry and labor-intensive industries in Central Asian countries. The industry's investment efforts, the establishment of factories, the transfer of China's surplus production capacity, and industries with low value-added commodities, helping the Central Asian countries to complete infrastructure construction also promote the upgrading of China's economic structure. Improve China's status in Central Asian countries, reduce trade frictions, and enhance bilateral economic and trade relations.

The geographical location of Central Asian countries is very important. It is a bridge between China and Europe and a starting point on the Belt and Road Economic Belt. Maintain the complementary advantages of both sides, help Central Asian countries complete infrastructure construction, improve the interconnected transportation and communication unified transportation system, establish a comprehensive multi-level and wide-ranging transportation network, so that Central Asia and Central

Europe trains can border and build a global Banli China Circle plays a fundamental role in China's import and export development.

The trade between China and Central Asian countries is highly complementary. The establishment of a free trade zone can speed up the flow of production factors and promote the efficiency of resource allocation. The establishment of a China~Central Asian country free trade zone can not only reduce tax rates for both parties, but also cooperate. The development of humanities exchanges, tourism, education, medical and health care. It can also draw on past experience and establish economic and trade cooperation parks, science and technology industrial parks in Central Asian countries, etc.,^[6] to provide a platform for the exchange of talents and technologies and promote the common development of China and Central Asian countries.

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