A STUDY ON THE IMPACT OF EU MEMBERSHIP ON SINO-CEEC TRADE IN THE CONTEXT OF THE 17+1 COOPERATION MECHANISM

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ABSTRACT

This study examines trade relations between the 17 Central and Eastern European countries (CEEC) and China, which are members of the 17+1 Cooperation mechanism. Given that some CEECs are not members of the European Union, while others are, this study aims to examine the impact of EU membership on their trade relations with China. The analysis of the data shows that countries that are EU members tend to have a larger volume of trade, as well as a larger range of products that are traded. In contrast, higher growth rates of trade between non-EU CEEEs and China could indicate that EU membership is hampering Sino-CEEC trade. Finally, econometric analysis, based on the gravity model, suggests that EU membership has a positive and significant contribution to Sino-CEEC trade.

Keywords: 17+1 cooperation, Sino-CEEC trade, China, Eastern Europe

INTRODUCTION

In terms of foreign trade, the countries of Central and Eastern Europe are historically predominantly oriented towards Western Europe. However, the global financial crisis in 2008 revealed the need for diversification, therefore Central and Eastern European Countries turned to China seeking closer trade ties. Poland, Hungary, and Serbia were the first to approach China on a bilateral level, while some other countries later showed the same interest. The aspirations of the CEEC to establish closer trade cooperation with China were embodied through the 16+1 Cooperation platform, which was formed in 2012. The 16+1 cooperation became the 17+1 cooperation after Greece joined it in 2019.

Upon the establishment of the cooperation, the CEEC total exports to China rose from $ 9.5 billion in 2012 to $ 14.9 billion in 2020, which reflects a compound annual growth rate of 5.9%. At the same time, the CEEC imports from China increased from $ 58.2 billion in 2012 to $ 107.2 billion in 2020, which reflects a compound annual growth rate of 7.9% (International Trade Center). A closer look at the data reveals that most Sino-CEEC trade takes place between China and the CEEC that are EU members (12 out of 17 countries), however, imports and exports of the five non-EU CEEC grew at a higher rate than the imports and exports of the group of twelve EU member states. This raises the question of the impact of the EU membership on the Sino-CEEC trade exchange. Therefore, this study aims to investigate the impact of EU membership on Sino-CEEC trade relations. In other words, this paper investigates whether the EU membership promotes or impedes Sino-CEEC trade. To that end, we first present stylized facts on Sino-CEEC trade, and in the second step, we conduct a quantitative analysis. Quantitative analysis uses a gravity model and aims to capture the impact of EU membership through a set of dummy variables.

LITERATURE REVIEW

A number of studies have analyzed various aspects of the 17+1 Cooperation. Given that CEEC countries are relatively small compared to China, it was pointed out that a regional approach involving China on the one hand and the 17 CEEC on the other is the right way to institutionalize cooperation [1-3]. A series of studies highlighted the need for the 17 CEEC to diversify in terms of foreign trade and investment, which encouraged them to strive for closer economic relations with China [4-6]. A study by Stanojevic, Qiu and Chen (2020) [7] examined export competition between the EU15 (so-called old EU members) and China in the 16 CEEC markets (Greece was not a part of the cooperation mechanism at the time). They found a positive correlation between China's exports and exports from the EU15 when observing sectors of machinery and electronics while crowding out of exports from the EU15 by Chinese exports was detected in the sector of textile and furniture. Their study motivates this work in the sense that this analysis seeks to investigate whether the CEEC that are members of the EU tend to have more intensive trade relations with China, which would be expected given that their economies are much stronger compared to the CEEC that are not members of the EU. However, EU membership may diverge trade from other countries, including China, as the EU members enjoy all the benefits of the EU's common economic space. In addition, as a major trade bloc, the EU may show a tendency to impede its members' trade with China by promoting deeper trade relations within the bloc. Hence, this study builds on the existing literature, aiming to enlighten another perspective of Sino-CEEC trade, and thus contributes to a better understanding of this topic.

Quantitative analysis of this study is based on gravity modeling, which was first introduced by Tinbergen (1962) [8] and Poyhonen (1963) [9] as an empirical tool, while the appropriate theoretical foundation was provided by the work of Anderson (1979) [10]; Bergstrand 1985, 1989 [11, 12]; Anderson and Van Wincoop 2003 [13].

STYLIZED FACTS ON SINO-CEEC TRADE

Following the establishment of the 17+1 Cooperation, trade between China and the CEEC has grown significantly. Moreover, the diversity of imports and exports of the CEEC has increased. As can be seen from Table 1, the largest volume of trade is achieved by countries that are EU members. More precisely, 95 percent of the total imports and 95.9 percent of total exports of the CEEC with China is realized by the 12 countries that are EU members. Also, it can be noticed that the range of products imported and exported by the 12 EU members is much larger compared to the 5 non-EU countries. This creates an insight that EU membership has a positive contribution to Sino-CEEC trade.

Table 1. Values (million USD) and varieties (HS 6 digits) of imports and exports of the 17 CEEC in 2012 and 2020. (Non-EU countries are bold)

No	Country	Imports				Exports			
		2012		2020		2012		2020	
		value	variety	value	variety	value	variety	value	variety
1	**Albania**	**310**	**1512**	**500**	**1792**	**53**	**87**	**46**	**165**
2	**BiH**	**536**	**644**	**793**	**1083**	**6**	**146**	**15**	**238**
3	Bulgaria	974	2069	1,785	2321	764	550	1,052	827
4	Croatia	1,488	1995	1,213	2141	46	301	97	445
5	Czech Republic	15,673	2250	30,974	2522	1,671	1345	2,670	1613
6	Estonia	1,413	1823	1,647	1757	138	316	283	491
7	Greece	2,945	2391	4,275	2680	491	472	975	720
8	Hungary	5,412	2023	9,017	2511	1,811	1068	2,063	1213
9	Latvia	447	2006	726	1988	60	234	175	380
10	Lithuania	682	2303	1,337	2366	86	324	358	670
11	**Montenegro**	**375**	**845**	**600**	**932**	**159**	**14**	**164**	**30**
12	**North Macedonia**	**168**	**708**	**249**	**1164**	**5**	**124**	**25**	**173**
13	Poland	17,258	2835	36,790	3186	1,749	1398	3,060	1761
14	Romania	2,688	2320	5,745	2603	494	835	943	1029
15	**Serbia**	**1,385**	**1626**	**3,249**	**2189**	**20**	**196**	**369**	**444**

No	Country	Imports				Exports			
		2012		2020		2012		2020	
		value	*variety*	value	*variety*	value	*variety*	value	*variety*
16	Slovakia	4,884	*1556*	5,596	*1762*	1,733	*703*	2,351	*927*
17	Slovenia	1,547	*2064*	2,676	*2357*	174	*686*	319	*900*
	Total	58,184		107,172		9,459		14,965	

Source: Authors' illustration based on International Trade Center Data

Table 2 illustrates the growth rates of imports and exports of the CEEC in the period from 2012 to 2020. It can be noticed that countries that are not members of the EU have experienced faster growth in trade with China, especially in the case of exports. Therefore, from this perspective, EU membership seems to be hampering Sino-CEEC trade.

Table 2. The compound annual growth rate of exports and imports from 2012 to 2020

	Imports	Exports
All CEEC (17 countries)	7.93%	5.90%
EU members (12 countries)	7.90%	5.69%
Non-EU (5 countries)	8.66%	12.46%

Source: Authors' illustration based on International Trade Center Data

QUANTITATIVE ANALYSIS AND DISCUSSION

To assess the impact of EU membership on Sino-CEEC trade, we use gravity modeling, which some authors call the "workhorse" of econometric analysis of international trade [14]. We aim to capture the impact of EU membership on the volume of trade (exports and imports), as well as the variety of products traded, so we conduct several regressions changing the dependent variable. First, we estimate the impact on trade volume, using it as the dependent variable; and in the second step, we use the variety of products traded as the dependent variable. In addition to the standard gravity variables, and in order to capture the effect of EU membership, we create a dummy variable that takes the value 1 if a country i (CEEC) is a member of the EU in the year t, otherwise the variable takes value 0. We also use the PPML estimator developed by Santos Silva and Tenreyro (2006) [15] and highly praised by many authors for its practicality [16][17][18]. Hence, our baseline model can be presented in the following way:

$$X_{iChnt} = \exp[\beta_0 + \beta_1 Y_{it} + \beta_2 Y_{Chnt} + \beta_3 Dis_{iChn} + \beta_4 EU_{it} + \beta_5 Wto_{it} + \beta_6 Port_{it}] + e_{iChnt} \ (1)$$

where: X_{iChnt} represents exports/imports (variety of exports or imports) from country i (CEEC) with China in year t; Y_{it} denotes GDP of country i in year t; Y_{Chnt} stands for China's GDP in year t; Dis_{iChn} refers distance from i CEEC to China; EU_{it}, the variable of interest is a binary dummy which is unity if i CEEC is a member of the EU in year t, otherwise zero; Wto_{it} is a dummy variable that takes value 1 if i CEEC is a member of the World Trade Organization (WTO) in year t, otherwise 0; $Port_{it}$ is also a dummy variable and it takes value 1 if i CEEC has access to the sea, otherwise zero; finally, e_{iChnt} is the error term.

The data on trade is obtained from the International Trade Center Data. The data on GDP is from the World Bank database. Bilateral distance measures the distance between capital cities of the two countries in a country pair and it comes from the CEPII database. Three dummy variables were constructed by the authors.

Columns (1) to (4) of Table 3 illustrate the results of the baseline estimation, while columns (5) to (8) the results obtained after the introduction of time fixed effects. Columns (1), (2), (5), and (6) present the results of the estimation of exports and imports, while columns (3), (4), (7), and (8) show the results of the estimation of varieties of imports and exports, respectively. It can be noticed that the model fits data well and that signs of the gravity variables are consistent with theoretical expectations. However, in some cases, coefficients of the variable Dis_{iChn} are not significant, which could be caused by the relatively small variations in the distance given the geographical location of the 17 CEEC and their bilateral distance from China. As for the variable of interest, which is EU membership, the results show a positive and statistically

significant impact. In other words, the EU membership has a positive contribution to CEEC's trade with China. This means that, after controlling for the size of the economies, their distance from China, WTO membership, and access to the sea, EU member states tend to trade more with China, as well as to have a wider range of products that are traded.

Table 4 contains the coefficients of the variable of interest obtained in the robustness check, which is conducted in two ways: (i) by estimating the longer period (from 2001 to 2020); and (ii) by estimating the same period (2012 to 2020) but after including an additional variable representing the stock of foreign direct investments. The robustness test largely confirms the previously obtained results.

Table 3. Estimation results

VARIABLES	(1) import	(2) export	(3) impvar	(4) expvar	(5) import	(6) export	(7) impvar	(8) expvar
Y_{Chnt}	1.367***	1.273**	0.647***	0.258***	-	-	-	-
	(0.326)	(0.551)	(0.193)	(0.0733)				
Y_{it}	0.220***	0.346***	0.164***	0.0614***	0.224***	0.357***	0.166***	0.0618***
	(0.0628)	(0.0772)	(0.0279)	(0.0131)	(0.0619)	(0.0765)	(0.0275)	(0.0129)
Dis_{iChn}	-1.267	-4.192**	-0.0139	-0.587***	-1.261	-4.228**	-0.0144	-0.586***
	(1.147)	(2.081)	(0.106)	(0.0439)	(1.141)	(2.053)	(0.105)	(0.0433)
EU_{it}	2.222***	1.656***	1.575***	0.415***	2.211***	1.634***	1.573***	0.415***
	(0.259)	(0.342)	(0.123)	(0.0666)	(0.254)	(0.337)	(0.121)	(0.0657)
Wto_{it}	1.735	5.263*	-0.493***	0.360***	1.733	5.319*	-0.492***	0.359***
	(1.504)	(2.797)	(0.140)	(0.0732)	(1.495)	(2.759)	(0.139)	(0.0723)
$Port_{it}$	-1.524***	-0.668***	-0.505***	0.117***	-1.520***	-0.665***	-0.505***	0.118***
	(0.100)	(0.114)	(0.0570)	(0.0299)	(0.0996)	(0.113)	(0.0570)	(0.0298)
Constant	-24.38**	-1.207	-17.59***	2.730	16.64**	37.14***	1.855*	10.48***
	(11.91)	(19.19)	(5.942)	(2.183)	(8.063)	(14.41)	(0.972)	(0.467)
Observations	153	153	153	153	153	153	153	153
R-squared	0.748	0.351	0.684	0.745	0.751	0.584	0.761	0.732

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Authors' calculation.

Table 4. Robustness check

	(1) import	(2) export	(3) impvar	(4) expvar	(5) import	(6) export	(7) impvar	(8) expvar
(i)	0.773***	0.230	0.736***	0.200***	0.786***	0.233	0.725***	0.201***
	(0.243)	(0.173)	(0.102)	(0.0637)	(0.250)	(0.173)	(0.102)	(0.0633)
(ii)	1.443***	0.734***	0.811***	0.313***	1.681***	0.739**	0.936***	0.280***
	(0.228)	(0.260)	(0.103)	(0.0439)	(0.207)	(0.301)	(0.105)	(0.0454)

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Authors' calculation.

CONCLUSION

Following the establishment of the 17+1 Cooperation, trade between China and the CEEC has grown significantly. Bearing in mind the heterogeneity of the 17 CEEC in terms of their EU membership, this study was designed to investigate the impact of EU membership on Sino-CEEC trade relations. To that end, a set of stylized facts about the Sino-CEEC trade was presented, followed by quantitative analysis.

The huge volume of trade and the diversity of products traded between the twelve CEEC that are members of the EU and China indicate the positive contribution of membership in the EU to Sino-CEEC trade. However, faster growth of trade between the five non-EU CEEC and China may indicate that staying outside the EU is actually beneficial for deeper trade relations with China.

Quantitative analysis, based on gravity modeling, was conducted to address the impact of EU membership on trade. The estimation results suggest that EU membership promotes trade between the

CEEC and China. The positive impact is found in all segments of the estimation, i.e. (i) the volume of CEEC exports; (ii) the volume of CEEC imports; (iii) the variety of CEEC exports; and (iv) the variety of CEEC imports. We allow the possibility of exceptions for some countries to deviate from this conclusion, as the focus of this study was not on individual performances of the CEEC. Therefore, we call for future research in this area to make the complete picture of Sino-CEEC trade relations clearer.

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