

## THE INFLUENCE OF CHINA TO THE CONTAINER MARKET IN EUROPE

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**Abstract:** *European economy, which has been one of the most important ones for centuries, greatly depends on maritime transshipment. After the European Commission's data, 74 % of cargo, which arrives or departs from Europe, does so by sea and therefore, we can clearly see the importance of ports for economic growth. Over the past decades, container throughput (TEU) has become one of the most important means of transporting cargo, so ports have quickly adapted themselves – with the new equipment and better capacities. Thus, in 2000, the container handling in EU ports represented as much as 21 % of all transhipped containers in the world, meanwhile, this percentage was only 18 % in Chinese ports. Today, China has become a leading country in the container throughput, with an increase of 28 %, while the EU has fallen to 15 %.*

**Keywords:** *containers ports, container throughput, port competition*

### 1. INTRODUCTION

Europe, China and the USA (United States of America) are the most important players when we talk about international trade and economic influence. European (EU 28 countries) GDP (gross domestic product) in 2017 was 15,3 euro trillion. The population of EU countries present less than 7% of the world population, but trade with other countries presents 15,6% of global import and export. With this, we can see the importance of transport in the European economy. According to European statistics (2019), transport represents almost 5% of European GDP and offers more than 11 million jobs in this sector.

In Europe, there are more than 3000 ports and they represent the gateways to and from European network. Even if there are so many ports (such a high number of ports), 20% of cargo that comes to EU mostly goes to just three ports in the Northern part of the EU. In the last decades, container became one of the most important types of cargo and the ports adjusted their capacity to them. Today all major ports have new big container terminals with high productivity and good performance.

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In the article, is presented maritime container transport in European ports and the influence of China to it. Europe-Asia-Europe route has been increasing constantly over the last decade, reaching 24 million TEUs (twenty-foot equivalent unit) in 2017. This represents an annual increase of 6,9 % on Eastbound (Europe to East Asia) and 7,1% on Westbound (East Asia to Europe) or 7,6 million TEU on Eastbound and 16,4 million TEU on Westbound as is stated in the UNCTAD (United nations conference on trade and development) publication Review of maritime transport (2018). Most of the containers are directed to the Northern European ports (Figure 1) and a large number of European hinterland countries' maritime supply depends on them.



Figure 1. Large containers ships path density 2016-2017 in Europe (Marine Traffic)

## 2. CONTAINER THROUGHPUT

In 2017 the world containers throughput increased to 740 million TEU per year and presents in average 4% AGR (annual growth rate). We notice that the evaluation of container throughput in the period 2000-2017 was not steady because of the global financial crisis in 2008 (Figure 2). This crisis had a great impact on Europe and the USA but not on China. Europe needed about three years to reach container throughput from 2007, while the USA needed about two years. However, after the recovering period, European container throughput increased much faster than the container throughput in the USA. According to Shanghai International Shipping Institute (2019) China was impacted by the crisis in 2008, but they immediately started with the growth. The following year, they had a 30 % growth. The inertia of containers traffic was probably too big to slow down this development.

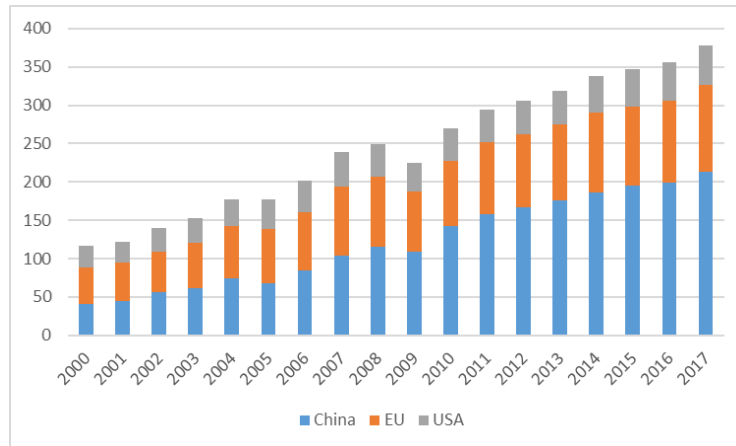


Figure 2. Container throughput in the period 2000 - 2017

In Figure 3 is presented the market share of EU, USA and China and in the last ten years, Europe lost 3,5 % of market share. Comparing with the USA which is one of the largest economies in the world, Europe has more than two times greater market share. China, which is the second largest economy in the world, in the last ten years, enlarged its market shares for 7 %.

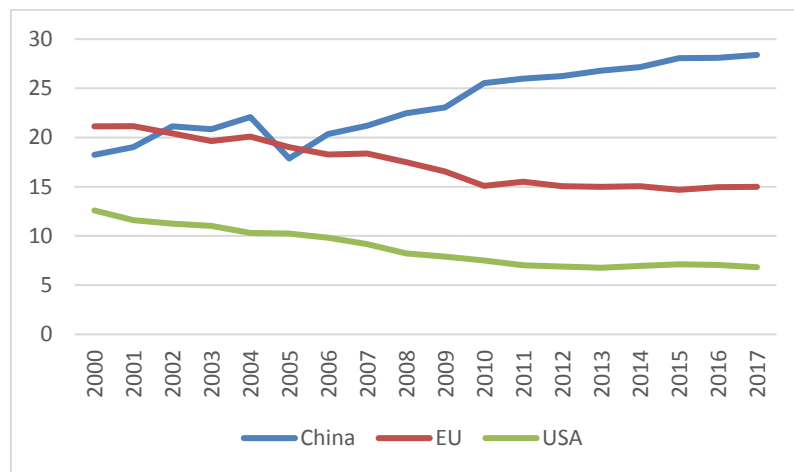


Figure 3. Container market share in the period 2000 - 2017

### 3. ONE BELT ONE ROAD (OBOR) INITIATIVE

One Belt, One Road (OBOR) is a strategy of the People's Republic of China (PRC) to form the so-called initiative of the economic belt of the new Land silk route and Maritime Silk Road of the Twenty-first Century (Jiang et al., 2018). The strategy was formed at the critical point of China's economic transformation. In recent years, Chinese overseas direct investment (ODI) has rapidly increased as a result of China's structural transformations and overcapacity of domestic production. OBOR is generally defined as a means of strengthening the power and expanding the Chinese enterprises in the global economy, especially in countries covered by the OBOR strategy. OBOR is focused on linking (Figure 4):

- China with Central Asia, Russia, Central and Eastern Europe and Western Europe (Land Silk Road)

- China with the Persian Gulf and the Mediterranean Sea through Central and Western Asia (Maritime Silk Road)

The Maritime silk route comprises a large maritime area that begins with the Chinese coast and extends to Europe and East Africa through the South China Sea and the Indian Ocean and reaches the South Pacific through the South China Sea. It is estimated that OBOR regions cover over 60 countries with a total population of more than 4 billion and a large share of world production (65% for the landlocked part of the Silk Road and 30% for the maritime silk route).



Figure 4. OBOR (<https://safety4sea.com>)

OBOR is a comprehensive economic integration plan for China with various parts of the world, in which transport infrastructure such as ports, roads, airports, railways are under development. And this all in a way that complements the interests of Beijing to develop its own infrastructure. Since the beginning of the initiative, China has become the primary source of funding for many countries in the OBOR area. According to Peng et al. (2018), the most interesting ports are located in Mediterranean, Suez Canal and Hormuz Strait. The European ports that are located in the Mediterranean, Adriatic Sea and the Black Sea will have an important role in Maritime Silk Road.

The influence of China and OBOR on Europe will be visible in the next years. Firstly, in the port throughput selected by the Chinese, and secondly in the connections with those ports and the hinterland. An example of this is the port of Piraeus in Greece.

Port of Piraeus is the first port in Europe that is controlled and wholly-owned by COSCO (China Ocean Shipping Company). In 2009 they got the Concession Agreement for Piers II and III and now they are an operator at the Piraeus Container Terminal S.A. which in 2018 reported a container throughput of 4,4 mio TEU, 19,4% more than in 2017. In the last 9 years, they invested 1 billion Euro in the modernization of the container terminal and now they plan to construct a new warehouse and to invest in the cruise terminal. As Port of Piraeus has a strategic location and could be used as a hub for Central and East Mediterranean and for the Black Sea, all investments are connected with the construction of modern infrastructure in the hinterland. Rail connection allows them a weekly train transport to Belgrade, Pardubice and Bucharest.

COSCO Shipping ports also have container terminals in some other European ports, such as Antwerp, Zeebrugge, Rotterdam, Valencia and all of them had an increase of throughput in the last year. The biggest terminal is in Piraeus, with a throughput of 833.947 TEU in 2017, followed by Euromax Terminal in Rotterdam with 666.033 TEU. In the last year, they investigated the ports in the North Adriatic – Venice and Trieste, to become one of the entry ports of Maritime Silk Road in Europe.

#### 4. DIFFERENCE BETWEEN CONTAINER PORTS IN EUROPE AND CHINA

To define the catchment area of the ports in Europe and East Asia, we used Thiessen polygons. We used ArcGIS program to create straight line segments to connect individual port into a triangulated network. Each polygon defines an area of influence around a selected port. By creating Thiessen polygons of each port, any location inside a given area is closer to that port than to the other ports (Figure 5). We take into consideration ports in the region and population in the observed area, just to see if there are any common characteristics. In Europe, the biggest container ports are situated in northern Europe and the competition between these ports is very high as they are located close to each other and have the same catchment area. Ports in the Mediterranean area have a bigger catchment area but with a smaller population.

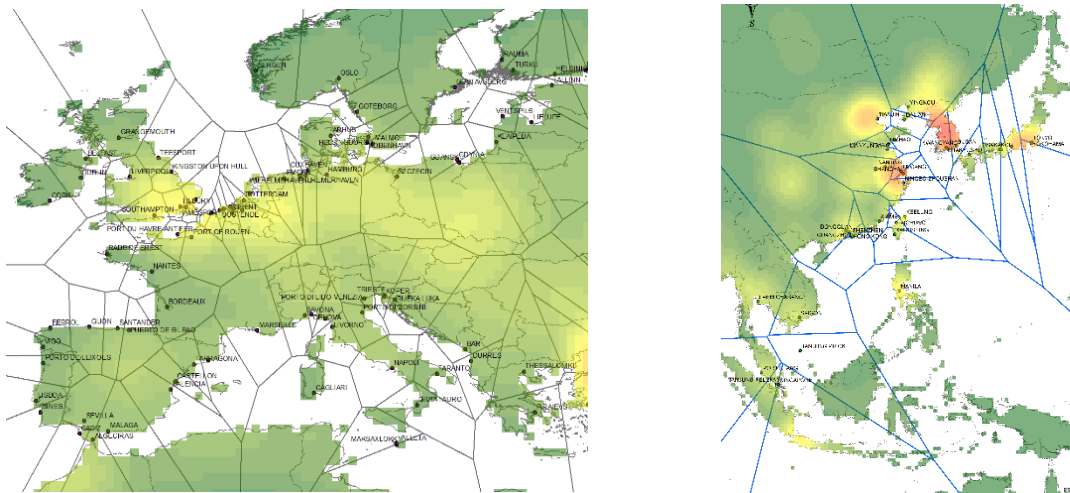


Figure 5: The port catchment area in Europe and China by using Thiessen polygons.

The biggest container ports on the world are located in China and the population of the coastal area is much higher than in Europe. The catchment area of ports in Europe and China is different and therefore it is very difficult to compare ports. This is the reason that we compared all ports together to see the difference in the period of 16 years. In figure 6, the red colour represents the total throughput of container ports in 2001, while the blue colour represents that of 2017.



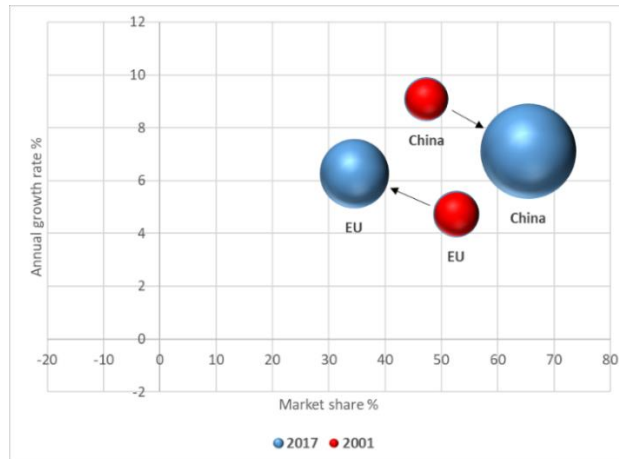


Figure 6. Position of container ports in the EU and China

In the observed period, container ports in the EU lost its market share and increased growth rate, but not enough to obtain a leadership position. Chinese container ports had a lower growth rate, but a higher market share. In the last year (2017) container throughput in EU ports was just 52% of Chinese throughput.

## 5. CONCLUSION

In the article is presented the analysis of container throughput in the EU and in China and the influence of China on European ports. As the OBOR initiative is an integrated scheme with an emphasis on infrastructure, it is expected that Chinese investments will increase in the silk-crossing countries. Given that major infrastructure projects are mainly initiated and coordinated by government and state-owned enterprises, Chinese state-owned enterprises are expected to be the primary force in investing in infrastructure sectors in the countries OBOR.

It is also expected that the improvement of infrastructure in the countries at OBOR will enhance the development of trade and that OBOR will facilitate international trade with government policies, in particular through the trade liberalization policy. As the container traffic is one of the most important in the trade between China and EU it is expected that this cargo will continue to increase also in the future. The importance of ports for the European economy is well known and therefore it will be necessary to pay close attention to the integration of the ports into the OBOR initiative. Future research will focus on the more detailed analysis of the port competition and on suggestions of the infrastructure investment to the port and to the hinterland connectivity.

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