Port Competition in North Adriatic

Konkurencija među lukama Sjevernog Jadrana

Elen Twrdy
University of Ljubljana
Faculty of maritime studies and transportation
e-mail: elen.twrdy@fpp.uni-lj.si

Milan Batista
University of Ljubljana
Faculty of maritime studies and transportation
e-mail: milan.batista@fpp.uni-lj.si

UDK 656.615 * 627.2(262.3)
Pregledni članak/ *Review*
Rukopis primljen / *Paper accepted*: 3. 6. 2014.

Summary

World trade has changes in the last decade and the container traffic flows are oriented in the several parts of European continent. European container port system is not a homogenous set of ports. It is established with a several big ports (Rotterdam, Hamburg, Antwerpen...) and a large number of medium and small sized ports. In this port category are also the North Adriatic ports (NA) and in this paper we analysed the container flows and the throughput made in this ports. In paper we present the state of the art in the North Adriatic ports regarding the container throughput, market share and container market characteristics.

KEY WORDS
container
throughput
North Adriatic ports

Sažetak

Svjetska trgovina se mijenja u zadnjem desetljeću, a tijekovi kontejnerskog prometa orjentirani su prema različitim dijelovima europskog kontinenta. Europski kontejnerski lučki sustav nije homogeni set luka. On se temelji na sedam velikih luka (Rotterdam, Hamburg, Antwerpen...) i na mnogo srednjih i malih luka. U ovu kategoriju spadaju također i luke Sjevernog Jadrana (NA), a u ovom radu analizirali smo tijek prometa kontejnera i teret koji je prošao ovim lukama. U radu iznosimo stanje u lukama Sjevernog Jadrana koje se odnosi na kontejnere, dionice na tržištu, ali i značajke kontejnerskog tržišta.

KLJUČNE RIJEČI
kontejner
obrtaj tereta
luke Sjevernog Jadrana

INTRODUCTION / *Uvod*

The phenomena of containerization lead to the increase of global container transport - it amounts to 8-10% on a yearly basis and reach according to the RMT [2] almost 602 million TEU in 2012. In Europe the growth has been very strong in last twenty years, but the growth was stopped in 2008 when the global financial and economic recession started to have full effect in ports and maritime industry. The ports of multi – port gateway region of North Adriatic (NA) did not followed the average of increase of container transport in the last 20 years (they had an increase of 7% on yearly base) but also the decline in container transport in NA ports in the years 2008 to 2009 was minimal. In this condition the fastest growth of container throughput was recorded at the Port of Koper, at an average of 14% per year, and reached 600.441 TEU in year 2013.

The ports of Koper, Trieste, Venice, Rijeka (NAPA – North Adriatic Ports Association) and Ravenna are located in the northern part of the Adriatic Sea, which penetrates deep into the middle of the European continent, providing the cheapest maritime route from the Far East, via Suez, to Europe. More than 100 million tons of water-borne cargo are handled in the NAPA seaports every year. Due to the tremendous variety of logistics services and the extensive traffic network, NAPA forms a perfect multimodal gateway to the key European markets [7]. The near-by fifth Pan-European transport corridor provides a quick link to 500 million European consumers. Large commercial and industrial hubs like Vienna, Munich and Milan are just few hours' drive away. The five entities combine their strengths in order to promote the northern Adriatic route and present themselves as an alternative to the northern European ports. In addition, the association anticipates cooperation in the development of maritime and hinterland connections, visits from cruise lines, environmental protection, safety and information technology. Perhaps the most phenomenal change has been the rapid increase in container traffic, which has increased almost exponentially in the northern Adriatic ports, on average 7% per year, though the rate has varied among ports [3].

North Adriatic ports of Koper, Rijeka, Trieste, Venice and Ravenna are located in proximity to each other. Due to their geographical characteristics they have special position in European ports system. They operate in relatively closed system in which the market and customers are limited and therefore the ports are forced to co-operate while they at the same time

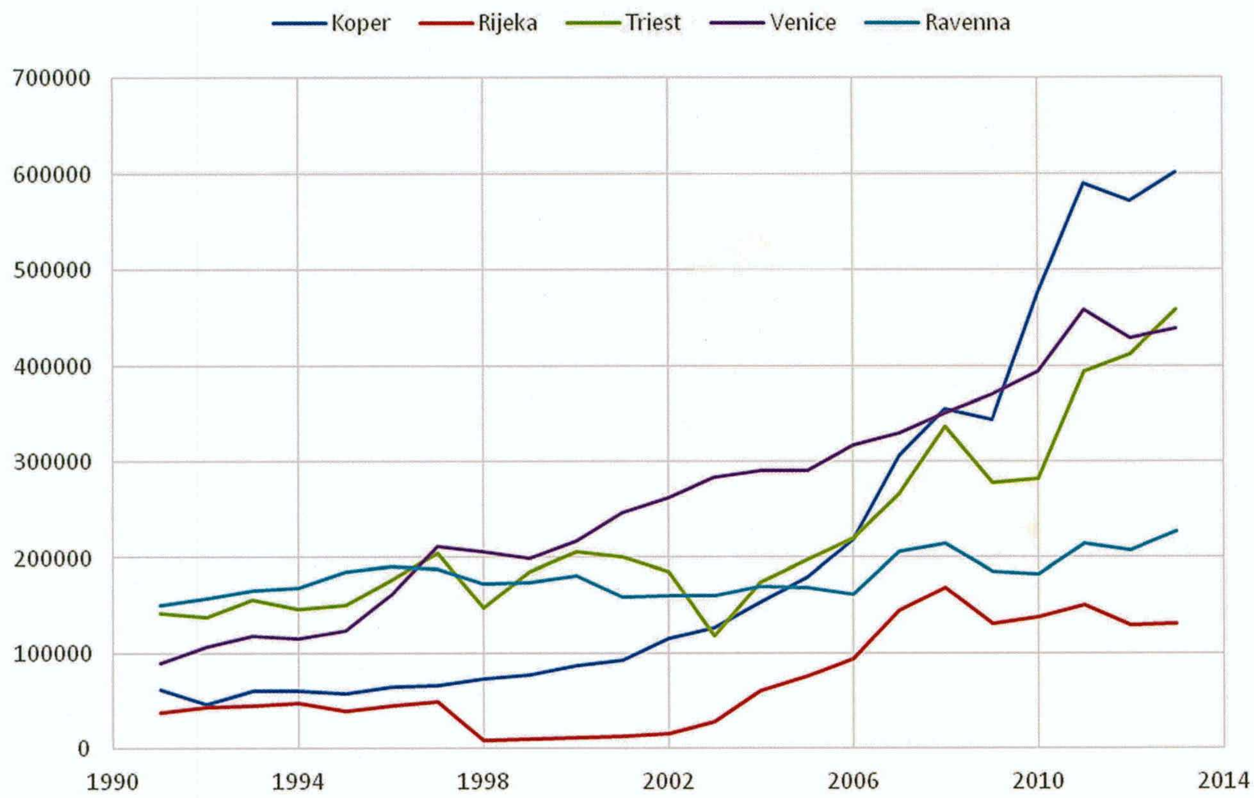

Figure 1. Containers throughput in 1000 TEU in period 1990-2013 at North Adriatic Ports
Slika 1. Kontejnerski obrtaj u 1000 TEU u razdoblju od 1990-2013 u lukama Sjevernog Jadrana

compete with each other. In addition they are located in the three countries, with different transport policy and different plans of development.

In this paper we will try to briefly outline the current twenty-year development of container traffic in the North Adriatic ports and then show some of the opportunities and threats in their further development. We used data on container throughput, which are available on the websites of the respective ports. The interaction between these ports is offering us a very interesting research topic.

THROUGHPUT IN THE NORTH ADRIATIC PORTS / *Obrtaj tereta u lukama Sjevernog Jadrana*

The data show (Figure 1) that in the last twenty years, the total container traffic in the North Adriatic ports have almost exponential increase on average 7% per year, but this growth wasn't the same for all ports. In this period, the fastest growth of container traffic was at the Port of Koper on the average by 14% per year, in the Port of Venice the growth was constant and the biggest loser in that period was the Port of Ravenna. The minimum throughput was and is still today in Port of Rijeka which is needed a lot of years to pick up the loss of traffic due to the state of war in Croatia and in last period the throughput slowly rise.

Interesting are the years 2008 and 2009 - years of the worst global economic and financial crisis. In Venice, during this period throughput is still steadily increasing by 5% per year, in all the other four ports fell by an average of 15%. The largest drop in traffic was recorded in Trieste, where it decreased by more than 58,000 TEU (17.5%), but if we compare the drop in percentage then the Port of Rijeka declined for a 22.5% (38 000 TEUs less).

Although the total container traffic in the northern Adriatic ports increase in last years it still represents a negligible proportion in total throughput of the European ports. The data in Table 1 indicate that container traffic in North Adriatic ports and in the European biggest container ports Rotterdam, Hamburg and Antwerpen. We can see that throughput in NA ports shows slight increase as it present 5.2 percent in 2010 it amounted to 6.1 percent of total throughput of this ports in 2013. In the proportion - the throughput of all North Adriatic ports present just 16.3 percent of the throughput, which has created Europe's largest port Port of Rotterdam in 2013.

Table 1. Container throughput in some European ports (in million TEUs)
Tablica 1. Kontejnerski obrtaj u nekim europskim lukama (u milijunima TEUs)

	2010.	2011.	2012.	2013.
Rotterdam	11.1	11.9	11.9	11.6
Hamburg	8.5	9.0	8.9	9.3
Antwerpen	7.9	8.7	8.6	8.6
NA ports	1.5	1.8	1.7	1.9
Total	29.0	31.4	31.1	31.4

Source: based on traffic data of respective port authorities

Despite efforts of the North Adriatic ports to invest in recognition and promotion of common maritime routes the cooperation between them is still mostly in principle. With new investments in the various ports, with major activities in joint promotion a proportion of containers passing through the port are still small. Despite longer transport routes the cargo destined to Central and Eastern Europe still select Western European ports Rotterdam, Hamburg, Antwerpen.

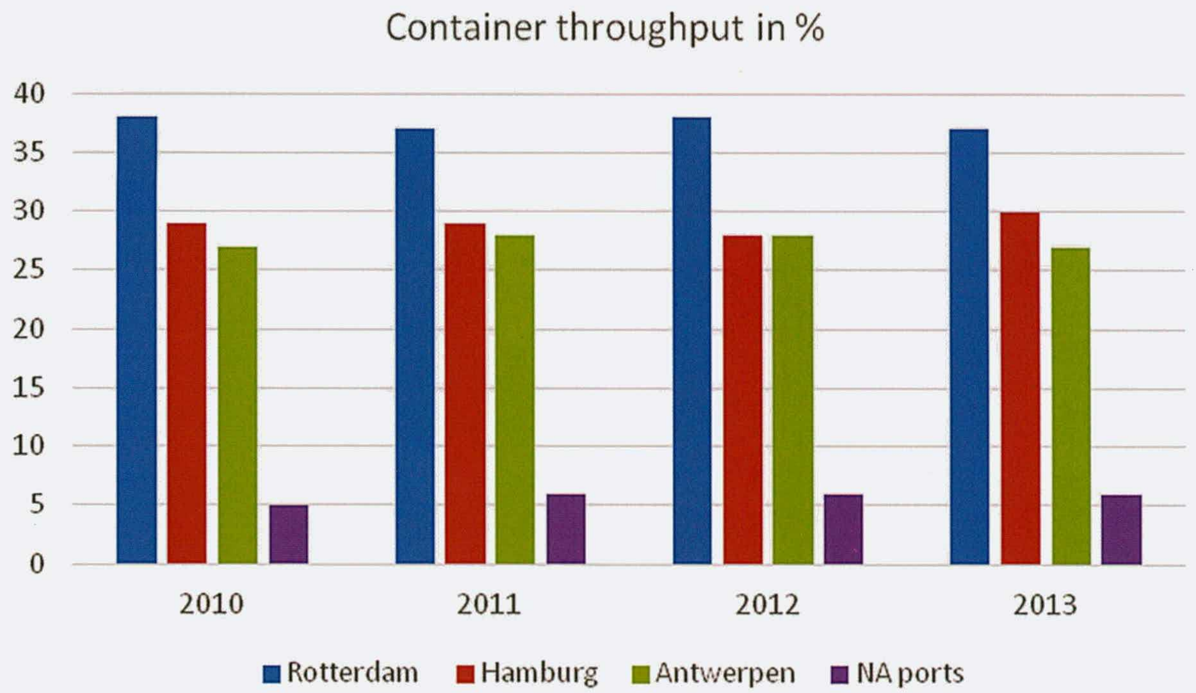

Figure 2. Comparison between containers throughput in NA port and some EU ports (in %)
Slika 2. Usporedba između prometa kontejnera u lukama Sjevernog Jadrana i u nekim EU lukama (u postocima)

MARKET SHARES AMONG THE NORTH ADRIATIC PORTS / *Tržišne dionice među lukama Sjevernog Jadrana*

With market share [1] we can show what fraction of the total container throughput at North Adriatic ports has fallen to a single port. Figure 2 shows that in 1991 the Italian ports have 80 percent of market share, but today it is around 60 percent. We can see almost a mirror image, which shows that the decline in market share of Italian ports is a reason for the increase in market share of Port of Koper. In the year 2012 there has been re-growth of Italian ports, as it had in 2011 and 2012, the highest growth the Port of Trieste.

An interesting comparison is the market share evolution between ports (Figure 3), which is also reflected in the almost mirror movement of shares between the ports of Koper - Ravenna and Venice - Trieste. In the present period, the largest decline in market share (20 per cent) had obtained port of Ravenna, the greatest increase in throughput port of Koper. Due to an increase in the share of Venice is also almost mirror decline in the share of Trieste.

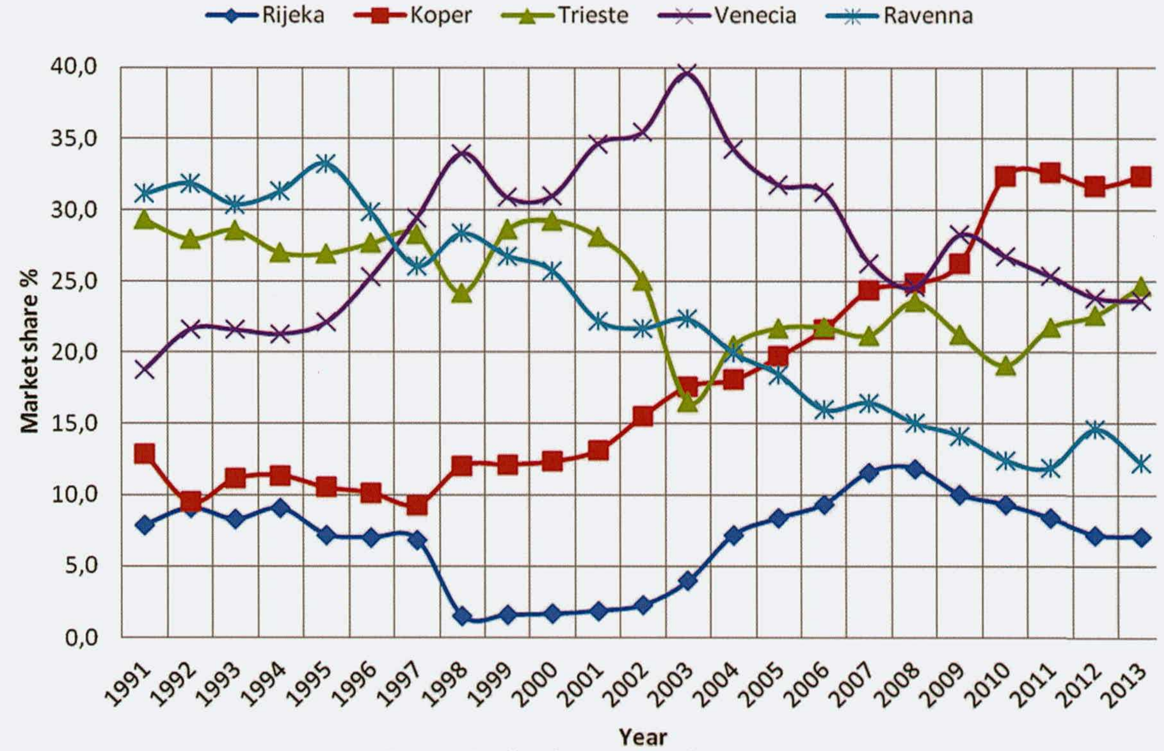

Figure 3. Market share among the NA ports
Slika 3. Tržišne dionice među lukama Sjevernog Jadrana

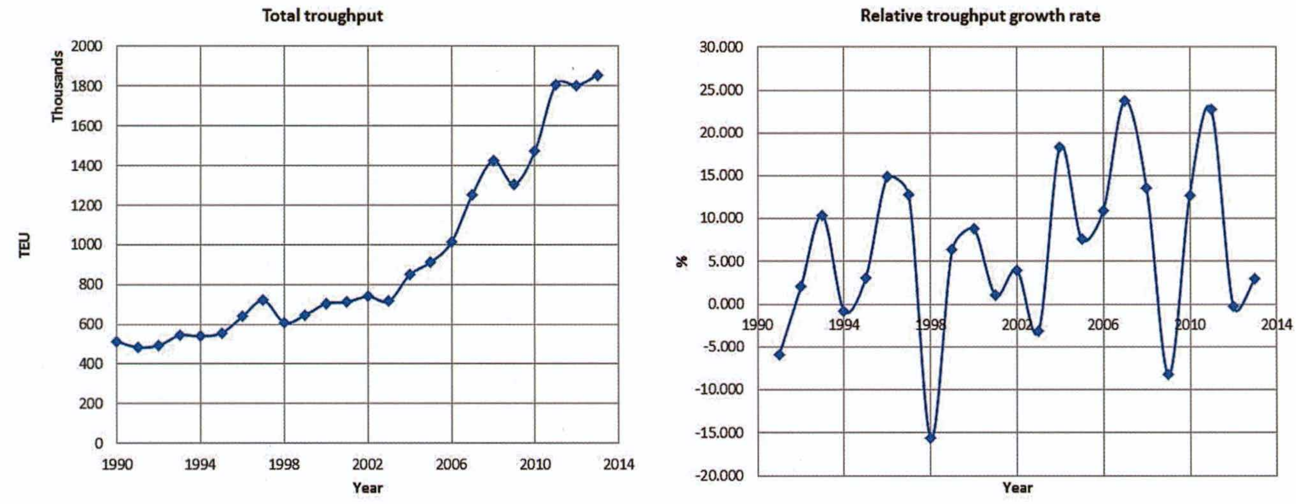

Figure 4. Evaluation of the characteristics in NA ports (1)
Slika 4. Procjena značajki u lukama Sjevernog Jadrana

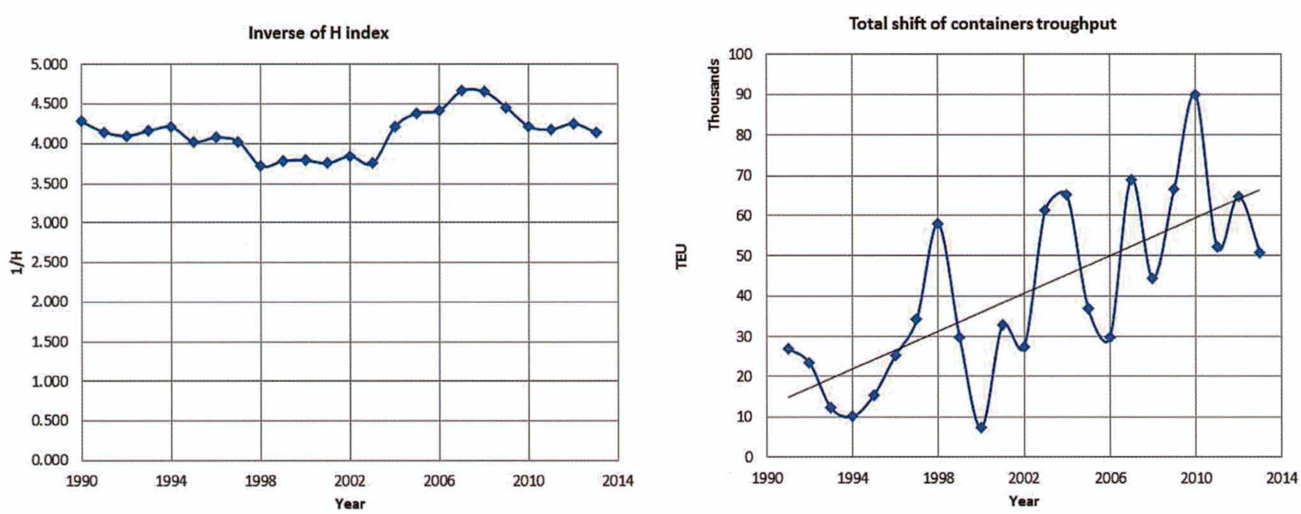

Figure 5. Evaluation of the characteristics in NA ports (2)
Slika 5. Procjena značajki u lukama Sjevernog Jadrana (2)

EVALUATION OF THE CONTAINER MARKET IN THE NORTH ADRIATIC PORTS / *Procjena kontejnerskog tržišta u lukama Sjevernog Jadrana*

The evaluation of the characteristics of all NA ports is shown on the graph on Figure 4 and Figure 5. As it is seen from the graph total conteiner troughput has steady growth until 2003 - the trafic increase. We can see a fall in the traffic in the period of economic crisis in 2008, after that the growth start to decrease. If we look on the second graph on this figure which repersent evaluation of relative troughput rate we can see very periodic behavior. However the growth rate was negative only in years 1991, 1998, 2003, 2009 in all other yera the growth rate was positive. The higher growth rate was in recent time 2007 an 2011 with approx 25.

Graphs on Figure 5 represent inverse of H-H index [1] on total container shift dynamics. From the first graph in Figure 5 we see that almost all the time in the period from 1990 to 2013 there was only 4 major players in container traffic. Exception was year 2007 and 2008 where almost all the ports in NA system contributes in container market. The second graph represent total shift of containers. It shoes growth over the analysed years and in last eight years oscillate around the value 50 thousands of TEU. This last graph shows all the competition dynamics of NA system where obviously the annually shift of containers is far from zero i.e. from equilibrium state. In fact, as it can be seen from the graph, competition on container market among ports increase on average over last twenty years.

CONCLUSION / *Zaključak*

Port competition is very often analysed and it depends of the criteria that we take in consideration. In this article we analysed the container throughput in North Adriatic ports. Good location, especially for the containers that came from Far East and are designed to the market of Central and South-East Europe, is the biggest advantage if we compare this ports with the North European ports of Rotterdam, Hamburg and Antwerpen. The market potential for the NA ports in the container market in 2030 appears to be ambitious in terms of the absolute growth it implies +348% traffic growth from 2010 compared to 73% growth in the market as a whole and in terms of market share growing from the current 4.3% to reach 11.3% in 2030 [3]. Every port in NA port region is trying to increase throughput but not all are successful in this.

Co-opetition but in the same time competition in this multi port gateway region is very present as these ports share a same hinterland. It is also seen that shift of container throughput and market share is strongly emphasized between them.

In the article we conduct analyses that help us to understand a state of NA ports in the EU market and the relationship between them. Although the total container traffic in NA ports increased in recent years it still represents a negligible proportion in total throughput of the European ports. The data indicate that container traffic in northern Adriatic ports in the European Common throughput shows a slight increase - in 2008 it was 1.6 percent and it amounted to almost 2 percent in 2011. In the proportion - the throughput of all North Adriatic ports present just 15.2 percent of the throughput, which has created Europe's largest port Port of Rotterdam in 2011, but in 2013 it was already 16.3 percent.

REFERENCES / *Literatura*

[[1] Farris, P., (2009) Key marketing metrics : the 50+ metrics every manager needs to know, New ed. Financial Times Prentice Hall, Harlow, England ; New York.

[2] UNCTAD, (2013), Review of maritime transport

[3] NAPA Container Market Study, MDS, Transmodal limited, (2011) (http://www.its-napa.eu)

[4] Bichou, K., Gray R., (2005), A critical review of conventional terminology for classifying seaports, Transportation Research Part A: Policy and Practice 39 (1)

[5] Yap W.Y., Lam J.S.L., Notteboom T., (2006), Developments in Container Port Competition in East Asia, Transport Reviews, Vol.26, No.2

[6] Yeo G., Roe M.,Dinwoodie J., (2008), Evaluating the competitiveness of container ports in Korea an China, Transport Research Part A 42

[7] Ducruet, C. and Notteboom, T., (2012), The worldwide maritime network of container shipping: spatial structure and regional dynamics, Global Networks, 12(3)

[8] Notteboom, T., (2010). "Concentration and the formation of multi-port gateway regions in the European container port system: An update". Journal of Transport Geography, vol. 18

[9] Branderburger A., Nalebuff B., Co-opetition, (1996), Doubleday, New York

[10] Martin, S., (2002), Advanced Industrial Economics, Blackwell Publishers Ltd, Oxford, UK

[11] Notteboom T., (1997), Concentration and load centre development in the European container port system, Journal of Transport Geography 5 99-115

[12] Twrdy, E., Batista, M., (2013) A dynamical model of container throughput of the North Adiatic multiport gateway region. Pomorstvo, ISSN 1332-0718, vol. 27, no. 2, pp. 361-367.

[13] Twrdy, E., Trupac, I., Kolenc, J. (2012), Container boom in the Port of Koper. Promet, ISSN 0353-5320, vol. 24, no. 2, str. 169-175.

[14] Krile, S., (2013) Planiranje plovidbe s više luka ukrcaja i iskrcaja, Naše more, ISSN: 0469-6255 vol. 60, no 1-2, pp. 21-24, Dubrovnik