Competitiveness of Port of Rijeka
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Abstract: The Port of Rijeka is the most important port in the Republic of Croatia, and also the biggest port on the Adriatic sea. It is a port of national interest opened to national and international public traffic. The significance of the port of Rijeka has been recognized by the European Union, which considers it as a crucial point in strategy of the further development of multimodal European network. Important characteristic of the Port of Rijeka is its closeness to the capitals of neighbour countries while most of them are from countries with large overseas goods exchange. Considering that Croatia became the European Union Member state in July 2013, to the port of Rijeka - the biggest Croatian port - same conditions have been provided as to its greatest competitors - the ports of Koper and Trieste. In order to establish whether the Croatian membership in the European Union has had a positive effect on the competitiveness of the port of Rijeka, the safety indicators and the activity ratios for the period before and after the membership in the European Union, more precisely for the period from 2010 till 2016, will be analysed, based on the annual financial reports.

Keywords: Croatia, competitiveness, Pan-European corridors, Port of Rijeka, profitability.

1. Introduction

The maritime port industry is mature, capital-intensive, and dominated by a small number of large, global actors, yet, at the same time, it is characterized by high levels of public sector involvement in the regulation of the coastal zone and the provision of public infrastructure (Hall & Jacobs, 2010: 1104).

In the last 10 to 15 years, the liner shipping and terminal operating markets have been characterized by massive consolidation both vertical and horizontal (Notteboom, Winkelmans, 2001). Levinson (2016) remarks that over the past fifty years, the maritime transportation sector has been profoundly transformed through the processes of containerization and economic globalization. Likewise, moreover, due to expanded container shipping, maritime traffic is drawn to a small number of very large ports. The number of players in the deep-sea container transport market has decreased while the remaining companies have become larger through mergers and acquisitions and organic
growth (Wiegmans et al, 2008: 518). Many of Europe’s largest container load centres are to be found in the Hamburg-Le Havre range (Wiegmans et al, 2008: 520).

The business environment is becoming more and more complicated and its most characteristic features at the beginning of the new century can be described as changeability, impossibility to anticipate and instability (Mezak et al, 2006: 14). Increased port traffic may also lead to diseconomies as local road and rail systems are heavily burdened. Environmental constraints and local opposition to port development are also of significance (Notteboom & Rodrigue, 2005: 300).

Considering that Croatia became the European Union Member state in July 2013, to the port of Rijeka - the biggest Croatian port - same conditions have been provided as to its greatest competitors - the ports of Koper and Trieste. In order to establish wheather the Croatian membership in the European Union has had a positive effect on the competitiveness of the port of Rijeka, the safety indicators and the activity ratios for the period before and after the membership in the European Union, more precisely for the period from 2010 till 2016, will be analysed, based on the annual financial reports. The significance of the port of Rijeka has been recognized by the European Union, which considers it as a crucial point in strategy of the further development of multimodal European network.

2. Literature review

Wiegmans et al (2008: 517) have conducted research in aim to understand and analyse the decision-making process of deep-sea container carriers when selecting a container port and when selecting a container terminal in the port in which to invest or from where to buy handling capacity. Next to service and cost factors a carrier’s port choice behaviour might also be affected by the fit of the port in the trade, the requirements imposed by the alliance structure they operate in, by shippers/customers location and relations, by the strategic considerations of shipping lines, and by the arrangements between the shipping line and incumbent terminal operators. As well, most respondents indicated that port choice is far more important than terminal selection. For the terminal selection problem, speed, handling costs, reliability and hinterland connections are important criteria when the capacity and availability of terminal handling capacity is sufficient (Wiegmans et al, 2008: 532).

In 2005 Banomyong was investigating the impact of port and trade security initiatives on maritime supply management. He remarks that, as markets are becoming ‘globalized’, trading opportunities can be improved by implementing security initiative in global supply chains. As well, an efficient and secure maritime supply chain can help build and sustain the competitiveness of internationally traded products by reducing transit time, reducing transport costs, and increasing reliability and cargo security (Banomyong, 2005: 12).

Notteboom and Rodrigue (2005) have analysed port regionalization as a new phase of port development. They remarked that in this phase inland distribution becomes of foremost importance in port competition, favouring the emergence of transport corridors and logistics poles. The same authors concluded that the port itself is not the chief motivator for and instigator of regionalization. Regionalization results from logistics decisions and subsequent actions of shippers and third party logistics providers. With a more efficient access to the hinterland, mainly through modal shift, port competitiveness is thus increased. Finally, they
remarked the valuable role of port authorities who can play an important role through an active engagement in the development of inland freight distribution, information systems and intermodality. Direct and indirect forms of networking with nodes and market players constitute probably the most important role for port authorities in the regionalization phase, as gaining competitive advantage will more and more become a matter of going beyond the port boundaries both in terms of physical investments and managerial capabilities (Notteboom and Rodrigue, 2005: 311). These changes have been profoundly spatial, affecting the functional and strategic relationships between producers, consumers, and the numerous transportation intermediaries that connect them. It is clear that these changes have implicated ports in more spatially extensive yet increasingly integrated systems (Hall & Jacobs, 2010: 1104).

Twrdy and Batista (2014) have conducted research in aim to examine some characteristics of container throughput in northern Adriatic ports in the period from 1990 to 2013 and also to identify competitive dynamics among them. The total container traffic in the northern Adriatic ports has increased in recent years but still represents a negligible proportion in total throughput of the European ports (Twrdy & Batista, 2014: 370). As well, the same authors remark new trends in maritime transport which favour the use of bigger and bigger container ships and the ports in the North Adriatic will have to join forces to attract shipping lines to this part of the Mediterranean (Twrdy & Batista, 2014: 370).

The key role of an integrated logistics system is to assist in the production, consumption and distribution, or the ‘supply chain’, of goods and services. This means that goods must be produced and delivered to the market (or customer) in the right quantity, required quality and at a competitive price. Integrated and seamless logistics can play an important role in facilitating global supply-chain processes (Banomyong, 2005: 3). Inland distribution is becoming a very important dimension of the globalization/maritime transportation/freight distribution paradigm (Notteboom & Rodrigue, 2005: 297). Trade is not possible without transport; therefore support for integrated transport will facilitate national and international trade by ensuring an uninterrupted and smooth flow of cargo and giving better control over the supply chain (Banomyong, 2005: 3). Maritime supply chains are structured by an integration of maritime services and transhipment functions to maritime distribution functions at hub centres (Frankel, 1999).

2.1. **Port and competitiveness – terminology**

Ports deliver value to shippers and to third party service providers; customer segmentation and targeting is at the basis of a clearly specified value proposition; and the port captures value for itself and for the chain in which it is embedded. It is a place that handles ships and cargo with operational efficiency (Robinson, 2002: 241-243). The seaports are absolutely vital for trade and business development as the most important international traffic corridors and commodity flows through them dictating global trend of economic development. The ports, as part of the national transportation system, do not belong to any particular branch of traffic but are rather collection points of goods transported by various traffic routes and means of transportation. The role of modern seaports is particularly important for the general economic prosperity of a certain region (Hlača et al, 2010: 380).

The port is a third party service provider, intervening in the supply chains of individual firms. Port is one element or a firm among a number of firms in the import and export supply chain
between producer and consumer. Ports are elements embedded in value-driven chain systems, in value chain constellations; they deliver value to shippers and other third party service providers in the value-driven chain; they will segment their customers in terms of a value proposition; and, in so doing, will capture value for themselves and for the chain in which they are embedded (Robinson, 2010: 250-252).

As a complex transport and economic system a seaport is made of three basic and mutually connected and interactive segments (Hlača et al, 2010: 382):

- natural or built-up and protected sea basin (harbour) suitable for cargo handling and other port operations,
- port hinterland connections with its catchment area, and
- port maritime connections with overseas destinations.

It can be said that every port has two sides, the one facing the land and the other facing the sea. Consequently, hinterland and maritime foreland are equally important for the operation of seaports (Hlača et al, 2010: 382).

When choosing a port, the most important criteria from a carrier’s perspective are: availability of hinterland connections; reasonable tariffs; and immediacy of consumers (large hinterland). One source of power that some dominant actors are able to exercise is the ability to choose between ports; when they can, they are able to extract value from place-bound actors, in particular, labour, terminal operators, port authorities and some shippers (Hall & Jacobs, 2010: 1107). When selecting a traffic route, i.e. an adequate transit port, the distance is not always critical, but the choice rather depends on logistic criteria of the given optimal conditions and the quality of port services (Vilke, 2006: 86).

Port authorities, railroad operators, road operators, stevedores, shipping lines, depot operations, customs agents and numerous other actors exist only on the basis of trade demand; if there is no demand there is no movement and no requirement for a third party service provider (Robinson, 2002: 246). The development of rail hubs and barge terminal networks in the hinterland aims at contributing to a modal shift from road transport to rail and barge, and as such enhances the regionalization phase in port and port system dynamics. Inland terminals might transfer a part of the collection and distribution function inland away from the ports, thus preventing a further overcrowding of limited seaport areas (Notteboom & Rodrigue, 2005: 302). A large number of inland ports have become broader logistics zones, as they not only have assumed a significant number of traditional port functions and services, but also have attracted many related logistical services (Notteboom & Rodrigue, 2005: 304).

The port itself is not the chief motivator for and instigator of regionalization. Regionalization results from logistics decisions and subsequent actions of shippers and third-party logistics providers. There are three major steps that can be identified in the port development process: setting, expansion and specialization. The three phases depict port development processes objectively, especially in large traditional ports. The model remains a valid explanation of port development. However, the model has some weaknesses in view of explaining contemporary port development (Notteboom & Rodrigue, 2005: 298-306).

Firms sustain competitive advantage not simply on the basis of operational effectiveness; but also on the basis of strategic positioning that involves the creation of a unique and valuable position involving a different set of activities (Robinson, 2010: 247). Understanding
the competition is crucial for the efficiency of the strategy which, in order to be successful, must be focused on the competition weaknesses aiming at neutralizing its advantages (Mezak et al, 2006: 9). A company’s competitiveness on the global market is limited by its ability to respond to immediate market changes and keep its position. The idea of competitive advantage begins with the creation and distribution of value. A company is considered competitive when its influence determines the economic changes in the market where it operates (Baublys et al, 2003). The ability to defend its competitive advantage position along with the ability to successfully respond to the competitors is of great importance (Piccoli, 2005).

The maritime port sector is such a sector, in the sense that most critical technologies - the container, the cellular vessel, the straddle carrier, and double-stack trains - are now widely dispersed and standardized. It is a sector where competitive advantage often rests upon scale economies, especially as regards container ships and terminals. However, it is also a sector in which competitive advantage rests upon coordinated action, both within existing supply chains and between competing supply chains that share the same port–hinterland spaces and infrastructure (Hall & Jacobs, 2010: 1113). The development of global supply chains increased the pressure on the maritime haul, on port operations and, last but not least, on inland freight distribution. Inland accessibility as such has become a cornerstone in port competitiveness (European Conference of Ministers of Transport, 2001).

Actors in the port context include (Hall & Jacobs, 2010: 1107):

1. Those who directly transport the goods (ocean carriers, terminal operators, surface transporters, and labour),
2. Those who arrange goods movements (freight forwarders, shipping agents, and logistics providers),
3. The owners of the goods (termed shippers), infrastructure providers, regulators, and local polities.

Many of these actors are private operators seeking to increase the amount of value created through port activity, and to increase their share of value added. One source of power that some dominant actors are able to exercise is the ability to choose between ports; when they can, they are able to extract value from place-bound actors, in particular, labour, terminal operators, port authorities, and some shippers (Hall and Jacobs, 2010: 1107).

The importance of collective infrastructure to port innovation is another reason why public sector actors (port authorities and regulators) have remained responsible for most ports around the world, despite much rhetoric about privatization (Brooks, 2004). Also, moreover, environmental innovation has recently emerged as one of the most important arenas for competition between ports, especially those in major metropolitan areas in democratic societies (Hall & Jacobs, 2010: 1108).

Larger ships and terminals require considerable attention to infrastructure-related collective action problems in the port hinterland, while the rise of global supply chains requires constant attention to upgrading. Port actors need mechanisms that ensure inclusive and timely infrastructure planning and delivery, mechanisms that ensure mitigation and compensation for local externalities, and mechanisms to enforce stable rule-systems that discourage opportunism (Hall & Jacobs, 2010: 1113). The strengths of the port, its minimized weaknesses respectively, should be made the basis of every successful strategy (Mezak et al, 2006: 13).
In the port context where the product is a transportation service, innovation includes new technologies and organizational processes for handling cargoes that are embedded in global value chains. The four forms of value chain upgrading are all applicable in the seaport context (Hall & Jacobs, 2010: 1107-1108):

1. Process upgrading refers to improved efficiency of processes internal to the firm as well as to external relationships within the chain.
2. Product upgrading refers to the introduction of new or improved products or services.
3. Functional upgrading refers to value adding by changing the mix of firm activity through out- or in-sourcing various functions.
4. Chain upgrading refers to the successful insertion of the firm into more valuable chains.

Port competition also implicates institutional and functional levels of management (Bichou & Gray, 2005). The competitive ability of a seaport depends not only on its geographical position but primarily on the cargo handling rate inside a port system, where the promptness and capacity of shipments are particularly important (Hlača et al, 2010: 379).

2.2. Northern Adriatic Ports: Koper, Rijeka and Trieste

World trade has changed in the last decade such that container traffic flows are oriented towards more parts of the European continent. The European container port system is not a homogeneous set of ports; instead it consists of several big ports (e.g., Rotterdam, Hamburg, Algeciras...) and a large number of medium and small ports. Northern Adriatic ports 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 (Twrdy & Batista, 2014: 363-364). The primacy of the Northern European ports over the Mediterranean and Northern Adriatic ports is best evident in the fact that, in the year 2014, the total container traffic in the ports of Koper, Rijeka and Trieste (1.372,048 TEU) accounted for only 11.16% of the container traffic realised in the port of Rotterdam.

On one hand, the ports of Rijeka, Koper and Trieste compete with each other, each accentuating their advantages, benefits and abilities to attract as much freight as possible. On the other hand, they hold the position of common competition, acting as a joint port system in relation to other traffic routes through where goods from Mid European countries are transported (Vilke, 2005: 85). Northern Adriatic ports (Rijeka, Koper, Trieste, Venice and Ravenna) are small ports. Each of these ports have different development plans but, in varying degrees, common hinterlands and costumers (Twrdy and Batista, 2014: 363). All the ports in the North Adriatic region are those most deeply cut into the European mainland, which is not the case with the rest of the Mediterranean ports. The advantages of these geographical locations are in the fact that the shipping companies, by choosing the North Adriatic ports as their ports of discharge, choose the most cost-effective routes, since the goods that are shipped by means of sea or rivers have the lowest transportation costs in relation to other means of transport (Bendekovic et al, 2014: 271).

The North Adriatic ports of Koper, Trieste-Monfalcone and Rijeka share similar geo-traffic advantages. The advantage of the North Adriatic ports over those in the North and the Baltic Sea is in the shortest sea route between Europe and the Middle and Far East (Markovic et al,
The North Adriatic ports represent the closest sea exit for the continental countries in their hinterland, the Middle European countries in particular: Hungary, Austria, Slovakia and the Czech Republic, but, in relation to the overseas trade with the aforementioned markets east of the Suez Canal, they also attract attention of Serbia and Montenegro, southern Germany (Bavaria), Switzerland, southern Poland and western Ukraine. By navigating to the northern end of the Adriatic, cheaper route is used to reach the final destination and the usage of more costly land transport is minimized (Vilke, 2005: 87).

The role of the ports, as a hub of land and sea transportation routes as well as the transshipment places of cargo from one vehicle to another vehicle, significantly expands and diversifies. For business and development opportunities of ports transverse Pan-European corridors that ensure the ports uniform and modern way to plug in the connection between Central Europe and Middle East Europe are vital (Kesic et al, 2010: 94-98). 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 (Twardy & Batista, 2014: 364).

### Table 1. Traffic in Northern Adriatic ports, 2008-2015

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</thead>
<tbody>
<tr>
<td>Koper</td>
<td>Liquid bulk</td>
<td>2,875,365</td>
<td>2,667,298</td>
<td>2,727,013</td>
<td>2,922,891</td>
<td>3,194,636</td>
<td>2,840,588</td>
<td>3,073,620</td>
<td>3,297,225</td>
<td>1,15</td>
</tr>
<tr>
<td></td>
<td>Dry bulk</td>
<td>7,900,610</td>
<td>5,575,403</td>
<td>6,363,557</td>
<td>6,769,845</td>
<td>7,280,490</td>
<td>6,987,806</td>
<td>6,724,354</td>
<td>7,295,426</td>
<td>0,92</td>
</tr>
<tr>
<td></td>
<td>General Cargo</td>
<td>1,468,723</td>
<td>1,418,124</td>
<td>1,445,631</td>
<td>1,383,354</td>
<td>1,438,833</td>
<td>1,659,405</td>
<td>1,643,552</td>
<td>1,475,076</td>
<td>1,00</td>
</tr>
<tr>
<td></td>
<td>Total throughput (Tons)</td>
<td>12,246,706</td>
<td>9,662,834</td>
<td>10,538,211</td>
<td>11,078,101</td>
<td>11,915,971</td>
<td>11,489,812</td>
<td>11,443,540</td>
<td>12,069,742</td>
<td>0,99</td>
</tr>
<tr>
<td></td>
<td>Container traffic (TEU)</td>
<td>353,880</td>
<td>343,165</td>
<td>476,731</td>
<td>589,314</td>
<td>570,744</td>
<td>600,441</td>
<td>674,033</td>
<td>790,736</td>
<td>2,23</td>
</tr>
<tr>
<td>Rijeka</td>
<td>Liquid bulk</td>
<td>6,364,164</td>
<td>6,030,822</td>
<td>5,623,427</td>
<td>4,887,749</td>
<td>4,042,771</td>
<td>5,085,459</td>
<td>4,882,695</td>
<td>6,595,537</td>
<td>1,04</td>
</tr>
<tr>
<td></td>
<td>Dry bulk</td>
<td>3,653,617</td>
<td>3,094,462</td>
<td>2,254,858</td>
<td>2,269,178</td>
<td>2,243,288</td>
<td>1,247,353</td>
<td>1,981,504</td>
<td>2,154,493</td>
<td>0,59</td>
</tr>
<tr>
<td></td>
<td>General Cargo</td>
<td>2,373,810</td>
<td>2,112,870</td>
<td>2,305,019</td>
<td>2,233,453</td>
<td>2,267,942</td>
<td>2,354,867</td>
<td>2,158,577</td>
<td>2,150,391</td>
<td>0,91</td>
</tr>
<tr>
<td></td>
<td>Total throughput (Tons)</td>
<td>12,391,591</td>
<td>11,238,154</td>
<td>10,183,304</td>
<td>9,390,380</td>
<td>8,554,001</td>
<td>8,687,679</td>
<td>9,022,776</td>
<td>10,900,421</td>
<td>0,88</td>
</tr>
<tr>
<td></td>
<td>Container traffic (TEU)</td>
<td>168,761</td>
<td>130,740</td>
<td>137,048</td>
<td>150,677</td>
<td>171,945</td>
<td>169,943</td>
<td>192,004</td>
<td>200,102</td>
<td>1,19</td>
</tr>
<tr>
<td>Trieste</td>
<td>Liquid bulk</td>
<td>37,268,454</td>
<td>35,025,452</td>
<td>36,208,303</td>
<td>35,229,638</td>
<td>35,967,976</td>
<td>41,992,066</td>
<td>42,400,894</td>
<td>41,286,761</td>
<td>1,11</td>
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<tr>
<td></td>
<td>Dry bulk</td>
<td>1,805,533</td>
<td>1,541,324</td>
<td>1,634,998</td>
<td>1,720,095</td>
<td>1,778,471</td>
<td>986,614</td>
<td>790,057</td>
<td>1,607,232</td>
<td>0,89</td>
</tr>
<tr>
<td></td>
<td>General Cargo</td>
<td>9,205,120</td>
<td>7,826,546</td>
<td>9,790,887</td>
<td>11,284,244</td>
<td>11,460,423</td>
<td>13,607,028</td>
<td>13,962,980</td>
<td>14,288,885</td>
<td>1,55</td>
</tr>
<tr>
<td></td>
<td>Total throughput (Tons)</td>
<td>48,279,107</td>
<td>44,393,322</td>
<td>47,634,188</td>
<td>48,237,977</td>
<td>49,206,870</td>
<td>56,585,708</td>
<td>57,153,931</td>
<td>57,132,878</td>
<td>1,18</td>
</tr>
<tr>
<td></td>
<td>Container traffic (TEU)</td>
<td>335,943</td>
<td>276,957</td>
<td>281,643</td>
<td>393,186</td>
<td>408,023</td>
<td>458,597</td>
<td>506,011</td>
<td>501,222</td>
<td>1,49</td>
</tr>
</tbody>
</table>

Source: calculated by the author based on the statistical data of the ports observed

If the data in Table 1 is inspected, one can conclude that only the Port of Trieste has achieved higher level of liquid, dry and general cargo traffic, as well as the container traffic, than the one in the year 2008. So, the container traffic in 2015 increased by 49%, while the level of liquid, dry and general cargo traffic was raised by 18%. On the other hand, the Port of Koper increased the container traffic by 123% in 2015 in comparison to 2008; but, the level of liquid, dry and general cargo still remained under the traffic level of 2008. From the ports in question, it can be observed that the Port of Rijeka recorded poorest results for the period. Thus, the container traffic in 2015 was higher by only 19% than in 2008 and the level of liquid, dry and general cargo traffic was 12% lower than the level in 2008. The positive aspect regarding the Port of Rijeka is that liquid, dry and general cargo traffic in 2015 increased by 27.4% compared to the year 2012 (before the membership in the European Union), and the container traffic went higher by 16.4%, which points to the conclusion that
accession to the European Union had a positive effect on the traffic in the Port of Rijeka, both container and liquid, dry and general cargo traffic.

To make plans for the port strategy means to set the business operation on the course of the basic long-term objectives, bringing it into line with both, internal, material and intangible resources and external conditions of the environment (Mezak et al, 2006: 10). The North Adriatic ports are located in close proximity to each other and they hold a special position in the European ports system, operating in a relatively closed system in which the market and customers are limited and therefore the ports are forced to co-operate while they compete with each other at the same time (Twrdy & Batista, 2014: 364). The need for cooperation among the ports of Rijeka, Koper and Trieste lies in the fact that their geographical and traffic position has not yet been properly utilized, or their role in the traffic of goods in Middle European markets is secondary in relation to North European ports. The ultimate goal of cooperation among the ports of Rijeka, Koper and Trieste should be the formation of the unique North Adriatic port system area (Vilke 2005: 105).

With organizing and implementing a regional railway carrier along the Northern Adriatic traffic route, many advantages could be gained which would, consequently, result in increasing the speed and lowering the costs of transport. By achieving a combined, or multimodal international traffic chain on the Northern Adriatic route from the Ports of Rijeka, Koper and Trieste to traffic nodes of Middle Europe, preconditions for a successful and competitive emersion on the European and world market would be determined (Vilke 2005: 108).

2.3. The Port of Rijeka

The Port of Rijeka is the most important port in the Republic of Croatia, and also the biggest port on the Adriatic sea. The Port of Rijeka is a port of national interest opened to national and international public traffic; it is conveniently oriented toward the world's seaborne routes. The city of Rijeka provides the shortest connection either inland or sea way between Central and East Central Europe to overseas destinations. The North Adriatic traffic direction is the shortest way by which Europe is connected with the Mediterranean, the Suez Canal and the Strait of Gibraltar with the world seaports (Kos et al, 2010: 190).

Important characteristic of the Port of Rijeka is its closeness to the capitals of neighbour countries (Austria, Bosnia and Herzegovina, the Czech Republic, Hungary, Serbia, Slovakia...) while most of them are from countries with large overseas goods exchange. Due to Croatian accession to the EU on the 1 July 2013, the Port of Rijeka finally has equal market conditions as her major competitors and it will have possibility to enter new business transactions.

The development of every port depends to a large extent on the advantages of its geographical and traffic position (Hlača et al, 2010: 381). The geographical position of the Adriatic Sea, which cuts deeply into Central Europe, with the Rijeka Port basin deep enough to accommodate the biggest vessels, offers considerable possibilities and creates outstanding preconditions for traffic-economic assessment of a wider significance (Hlača et al, 2010: 379). Comparative advantage of the Port of Rijeka with respect to other North Adriatic ports is:
• Mooring of vessels with a draught up to 20 m, therefore capable of receiving new generation ships in terms of technical and technological achievements (Kos et al, 2010),
• The possibility of using the Sava-Danube-Rhine river route, which is not the feature of other North Adriatic ports (Bendekovic et al, 2014: 272).

The sea route between the Suez Canal and the Port of Rijeka in the northern Adriatic extends to a distance of only 1,254 km, while the routes to the ports of the North Sea match nearly three times the distance. Therefore, the navigation from the Suez to the ports of the North or the Baltic Sea is 10 to 14 days longer (one direction only). Distances from the Port of Rijeka to the Mid and East European ports are shorter than those from Koper or Trieste (Mezak et al, 2006: 17).

Unique disadvantage of its geo-traffic position is that majority of road and rail connections pass through the center of the town, as the Port of Rijeka is situated practically in the center of the City of Rijeka. There are three Pan-European corridors passing through Croatia: the B and C branches of corridor V, corridor VII and corridor X. The major traffic corridors for the Port of Rijeka are branch B of corridor V and corridor X. Highways connect Rijeka through Slovenia with Austria (Salzburg) and Italy (Trieste); and with Hungary through Zagreb (Bendekovic & Vuletic, 2013: 75). Favourable geographical position near the important traffic corridors was degraded by the poor quality of traffic routes, their inadequate capacity and functional obsolescence of the port equipment and facilities (Hlača et al, 2010: 381).

Long-term strategic development of the Port of Rijeka can be defined as opting for a port dislocated in the port basins specialized to handle different types of cargo, concession from the side of highly-motivated and quality operators capable of acquiring adequate quantities of cargo necessary for putting the modern and technically advanced harbor capacities to a maximum use (Mezak et al, 2006: 11).

For the development of Port of Rijeka, whose market-share in the port catchments area is a small one, it is necessary to work out a strategy suitable for companies with a small market-share. The small market-shares, if competently managed, can be as profitable as the large-ones. Taking a long-term view, the Port of Rijeka will not manage to increase its market-share unless bearing in mind the following (Mezak et al, 2006: 13):
• Reduction of prices is not a good solution for the increase of the market-share since the competition (Trieste, Koper) will do the same thing and this could only lead to a lower income of both the port and its associated industries.
• It is necessary to become aware of own strengths and create such market segments (market niches) where these can be successfully implemented.
• The available resources should be used for the realization of a small number of chosen cost-effective projects and business activities.
• It is not easy to make managers acting like that.

The evaluation of the Port of Rijeka’s geographical and traffic position is of interest to the entire country, national economy and transport sector in particular (Hlača et al, 2010: 381). Long-term strategic development of the Port of Rijeka can be defined as opting for a port dislocated in the port basins specialized to handle different types of cargo, concession from the side of highly-motivated and quality operators capable of acquiring adequate quantities of cargo necessary for putting the modern and technically advanced harbor capacities to a maximum use. The port’ long-term strategy planning is an absolute priority for a successful integration into the global economic trends. The strategic objectives and, through that, the
business policy and its implementation can be set up only after a clear definition of the port vision and mission framework. The far reaching idea of a desired long-terms strategic development of the Port of Rijeka, in other words the port vision, can be defined as opting for a port dislocated in the port basins specialized for handling different types of cargo, given in concession to highly motivated and quality operators capable of acquiring the necessary quantities of cargo so that the modern and technically advanced harbor facilities can be put to a maximum use (Mezak et al, 2006: 11-20).

No adequate connection of the Port of Rijeka to its catchment area is possible without a modern rail and road traffic. The Port of Rijeka is connected to its hinterland by two railway lines constructed in the 19th century, in accordance with the then prevailing possibilities and standards (Hlača et al, 2010: 379).

Croatia should stimulate construction of the new railroads with modernization of the existing ones, focusing on the international transport corridors (Hlača et al, 2014: 382). For better utilization of prosperous geo-traffic position of the Port of Rijeka, it is necessary to modernize the Rijeka-Zagreb railway in the near future and also to build multipurpose Danube-Sava canal. Favourable geo-traffic position is not sufficient to create a significant port hub. Key role in exploiting the advantages of geo-traffic position have measures of traffic and economic policy (Bendekovic & Vuletic, 2013: 76). Present condition of the Croatian railway infrastructure and capacity, especially the Rijeka traffic route, reveals their inadequacy to meet a more demanding volume and quality that freight transport will impose in the future. The modernization of the Rijeka-Zagreb railway section is particularly important for the promotion of railway traffic on the Rijeka-Zagreb-Central Europe direction. Only the construction of a level railway track Rijeka-Josipdol-Karlovac-Zagreb would create significant preconditions for the Port of Rijeka. In order to make significant improvements in the freight transport, it should increase its volume and safety by reducing the operating time (Hlača et al, 2010: 387-388).

3. Analysis of financial statements of the Port of Rijeka

Analysis was conducted on the base of two groups of indicators - safety indicators and activity ratios. The bases for analysis of the mentioned indicators for the Port of Rijeka were annual reports (balance sheet, income statement and cash flow statement) of the Port of Rijeka for the period from 2010 to 2016. In 2011, the Port of Rijeka has sold its proprietary share to the strategic partner on the Container terminal of the Port of Rijeka which had strong positive impact on financial result.

3.1. Safety indicators

Safety indicators have been observed through liquidity ratios and leverage ratios. Liquidity ratios are used in aim to determine a company's ability to pay off its short term liabilities (Brealey et al, 2007: 460).

If the value of the current ratio, that shows a company’s ability to pay short-term obligations from current assets (Zager & Zager, 2008: 248), is observed, it can be seen that in 2015 and 2016 its value is satisfactory and that in 2016 the Port of Rijeka was able to cover the liabilities 3,90 times greater than those it has. As well, all other analysed liquidity ratios have improved its value in 2015 and 2016, but, even though the value of coefficient of current
**Liquidity** is much higher in 2016 than in previous years, it is still not on satisfactory level due to the fact that its value should be more than 1 in order for company to be able to settle its current liabilities that run out of charge. In 2016, the Port of Rijeka was able to cover just 5.8% of its current liabilities.

### Table 2. Liquidity ratios of the Port of Rijeka 2010-2016

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<tr>
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</thead>
<tbody>
<tr>
<td>Current ratio</td>
<td>0.792</td>
<td>1.358</td>
<td>1.309</td>
<td>0.971</td>
<td>0.283</td>
<td>5.010</td>
<td>3.903</td>
</tr>
<tr>
<td>Quick ratio</td>
<td>0.768</td>
<td>1.334</td>
<td>1.292</td>
<td>0.952</td>
<td>0.272</td>
<td>4.991</td>
<td>3.888</td>
</tr>
<tr>
<td>Coefficient of current liquidity</td>
<td>0.013</td>
<td>0.005</td>
<td>0.009</td>
<td>0.014</td>
<td>0.007</td>
<td>0.047</td>
<td>0.058</td>
</tr>
<tr>
<td>Working capital (000 HRK)</td>
<td>-16.840</td>
<td>33.983</td>
<td>25.359</td>
<td>-2.061</td>
<td>-71.822</td>
<td>219.791</td>
<td>169.594</td>
</tr>
<tr>
<td>Long term liquidity ratio</td>
<td>0.616</td>
<td>0.699</td>
<td>0.715</td>
<td>0.743</td>
<td>0.630</td>
<td>0.637</td>
<td>0.774</td>
</tr>
</tbody>
</table>

Source: authors calculation based on annual financial statements of the Port of Rijeka

The value of quick ratio that measures a company’s ability to ensure certain amount of money in short period, in 2015 and 2016 indicates that the Port of Rijeka has improved managing of its inventories. After the unsatisfactory value of quick ratio in 2013 and 2014, its value has been improved and in 2015 and 2016 was much higher than the satisfactory border of 1. As well, positive value of working capital in the last two observed years show that the Port of Rijeka is able to finance current business activities. Finally, the long term liquidity ratio, whose value should be less then 1, is at satisfactory level in all the observed years.

Leverage ratios can be used for defining how much company is in charge and whether there is possibility for new debt. Leverage ratios show whether the company is able to manage its current liabilities. Those ratios are related to the structure of sources of assets and represent how much assets are financed from own sources and how much from external sources (Brealey et al., 2007: 459).

### Table 3. Leverage ratios of the Port of Rijeka 2010-2016

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Financial leverage</td>
<td>1,498</td>
<td>1,400</td>
<td>1,362</td>
<td>1,311</td>
<td>1,606</td>
<td>1,215</td>
<td>1,196</td>
</tr>
<tr>
<td>Coefficient of funding</td>
<td>0.492</td>
<td>0.374</td>
<td>0.337</td>
<td>0.311</td>
<td>0.550</td>
<td>0.197</td>
<td>0.179</td>
</tr>
<tr>
<td>Debt ratio</td>
<td>0.32849</td>
<td>0.267</td>
<td>0.247</td>
<td>0.237</td>
<td>0.342</td>
<td>0.162</td>
<td>0.149</td>
</tr>
<tr>
<td>Time interest earned</td>
<td>1,269</td>
<td>24,522</td>
<td>1,828</td>
<td>1,643</td>
<td>-0.168</td>
<td>-0.695</td>
<td>1,252</td>
</tr>
<tr>
<td>Indebtedness factor</td>
<td>17,838</td>
<td>1,318</td>
<td>11,680</td>
<td>12,874</td>
<td>37,140</td>
<td>10,362</td>
<td>10,250</td>
</tr>
<tr>
<td>Cover rate I</td>
<td>0.835</td>
<td>0.956</td>
<td>0.944</td>
<td>0.914</td>
<td>0.704</td>
<td>1.307</td>
<td>1,212</td>
</tr>
<tr>
<td>Cover rate II</td>
<td>0.984</td>
<td>1,093</td>
<td>1,077</td>
<td>1,046</td>
<td>0.867</td>
<td>1,447</td>
<td>1,309</td>
</tr>
</tbody>
</table>

Source: authors calculation based on annual financial statements of Port of Rijeka

**Financial leverage** puts in relation balance capital and total asset. It is one of major leverage ratios as it defines whether it is valid to use external sources of funding until business activity realizes the rate of return higher then the weighted average interest rate on which it pays interest on loan capital (Orsag, 2003: 514). In table 3 it can been seen that its value was decreasing in all observed years, except in 2014. As well, the coefficient of funding that puts in relation total liabilities and owner’s capital, is decreasing in all observed year (except 2014). It can be seen that in 2016 total liabilities of the Port of Rijeka constitute 17.9% of its capital.
The debt ratio reflects how many times total liabilities are bigger than total assets. For a company and especially for investors, it is desirable that value of debt ratio is lower. In the observed period its value was decreasing in all years, except in 2014. Due to its value of 0.149 in 2016 it can be concluded that the Port of Rijeka does not have large debts. The time interest earned defines how many times company can cover interest expense from gross income. In 2011 its value was extremely high as a result of high gross income. While in 2014 and 2015 its value was negative, in 2016 the Port of Rijeka can settle 1.25 times its liabilities based on interest expense. The indebtedness factor reflects how many periods are necessary for a company to settle its liabilities. The value from 2016 shows that the Port of Rijeka needs 10.25 years to pay all liabilities if the level of income is equal to this from 31/12/2016. The cover rate 1 shows the rate between capital and long term assets, while the cover rate 2 puts in relation capital enlarged for long term liabilities to long term assets. When its value is growing, then company's liquidity is increasing while indebtedness is decreasing. The value of both coefficients was much higher in 2016 than in 2010 and that implicates that liquidity of the Port of Rijeka is increasing.

In general, when studying the values of liquidity indicators and indebtedness as shown in Tables 3 and 4, it can be concluded that all the values are at acceptable levels, being significantly better than in 2010.

3.2. Activity ratios

Based on activity ratios, it can be concluded how many units of revenue are produced from each unit of total or part of asset. Activity ratios present us with information about the rapidity of asset circulation during the business activities (Brealey et al., 2007: 462).

The total asset turnover ratio that is calculated as a relation of total revenues and total asset is crucial activity ratio. As its value in 2016 was 0.243 it can be defined that the Port of Rijeka through one year inverts its total asset 0.24 times through total revenues. It is of particular concern that the level of this coefficient was lower in 2016 than in 2010. The same can be noticed in the current asset turnover ratio and the accounts payable turnover ratio. The current asset turnover ratio reflects that in 2016 the Port of Rijeka inverted its current assets just 0.785 times through total revenues.

<table>
<thead>
<tr>
<th>Table 4. Activity ratios of Port of Rijeka 2010-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total asset turnover ratio</td>
</tr>
<tr>
<td>Current asset turnover ratio</td>
</tr>
<tr>
<td>Receivables turnover ratio</td>
</tr>
<tr>
<td>Accounts Payable Turnover Ratio</td>
</tr>
<tr>
<td>Inventory turnover ratio</td>
</tr>
<tr>
<td>Accounts receivables collection period</td>
</tr>
<tr>
<td>Accounts Payable Days</td>
</tr>
</tbody>
</table>

Source: authors calculation based on annual financial statements of the Port of Rijeka
It is preferable that value of the **receivables turnover ratio** is higher than value of competitors. If a company can charge its receivables it has enough money for launching new businesses, that final influence on increase of value of total asset turnover ratio and current asset turnover ratio. Its value for the observed company is more than satisfactory. It can be seen that the value of this coefficient has increased in the observed period and that in 2016 it was 7.116. The value of **accounts receivable collection period** shows that the Port of Rijeka in 2016 needed 51.3 days to charge its receivables. It is encouraging that its value has decreased by 18% when comparing the values in 2016 and 2010. On the other hand, the **inventory turnover ratio** that represents how many times a company has ordered inventories from its suppliers, has improved its value in the observed period. If its value is much higher than the value of industry average it can be concluded that company has certain problems during the purchase of inventories. On the contrary, if the value of inventory turnover ratio is lower than the value of industry average, it is possible to have problems in business transactions with the clients. In 2016, its value was higher by 181% than in 2010.

4. Conclusion

The seaports are absolutely vital for trade and business development as the most important international traffic corridors and commodity flows through them dictating global trend of economic development. The role of modern seaports is particularly important for the general economic prosperity of a certain region.

All the ports in the North Adriatic region are those most deeply cut into the European mainland, which is not the case with the rest of the Mediterranean ports. Northern Adriatic ports (Rijeka, Koper, Trieste, Venice and Ravenna) are small ports. Each of these ports have different development plans but, in varying degrees, common hinterlands and costumers. As these ports are located very close to one another, they have to cooperate, but, at the same time, they are competing for their market share. With organizing and implementing a regional railway carrier along the Northern Adriatic traffic route, many advantages could be gained which would, consequently, result in increasing the speed and lowering the costs of transport. By achieving a combined, or multimodal international traffic chain on the Northern Adriatic route from the Ports of Rijeka, Koper and Trieste to traffic nodes of Middle Europe, preconditions for a successful and competitive emersion on the European and world market would be determined.

The Port of Rijeka is the most important port in the Republic of Croatia, and also the biggest port on the Adriatic sea. It is a port of national interest opened to national and international public traffic. The significance of the port of Rijeka has been recognized by the European Union, which considers it as a crucial point in strategy of the further development of multimodal European network. Important characteristic of the Port of Rijeka is its closeness to the capitals of neighbour countries while most of them are from countries with large overseas goods exchange. Favourable geographical position near the important traffic corridors was degraded by the poor quality of traffic routes, their inadequate capacity and functional obsolescence of the port equipment and facilities. For better utilization of prosperous geotraffic position of the Port of Rijeka, it is necessary to modernize the Rijeka-Zagreb railway in the near
future and also to build multipurpose Danube-Sava canal. Without that a favourable geotraffic position is not sufficient to create a significant port hub.

Considering that Croatia became the European Union Member state in July 2013, to the port of Rijeka - the biggest Croatian port - same conditions have been provided as to its greatest competitors (Koper and Trieste). In order to establish whether the Croatian membership in the European Union has had a positive effect on the competitiveness of the port of Rijeka, it has been conducted analysis of financial statements for the period from 2010 to 2016 on the base of two groups of indicators - safety indicators and activity ratios.

In general, when studying the values of liquidity indicators and activity ratios it can be concluded that almost all observed ratios are at acceptable levels, being significantly better than in 2010. Exception are:

- coefficient of current liquidity. Even tough it is much higher in 2016 than in previous years, it is still not on satisfactory level due to the fact that its value should be more than 1 in order for company to be able to settle its current liabilities that run out of charge. In 2016, the Port of Rijeka was able to cover just 5.8% of its current liabilities.
- The total asset turnover ratio that is calculated as a relation of total revenues and total asset is crucial activity ratio. As its value in 2016 was 0.243 it can be defined that the Port of Rijeka through one year inverts its total asset 0.24 times through total revenues. It is of particular concern that the level of this coefficient was lower in 2016 than in 2010.
- The current asset turnover ratio and the accounts payable turnover ratio which level in 2016 was also lower than in 2010. In 2016 the Port of Rijeka inverted its current assets just 0.785 times through total revenues.
- Accounts Payable Days which value also increased in the observed period. While in 2010 Port of Rijeka needed 67.3 days to settle its accounts payable obligations, in 2016 it needed 108.1 which represent increase of almost 40%.

Finally, due to conducted analysis of traffic and financial statements for the period from 2010 to 2016 it can be concluded that Croatian membership in European Union had positive effect on the competitiveness of Port of Rijeka but still there is much space for further increase. Precondition for achieving even greater competitiveness is investment in modernization of the Rijeka-Zagreb railway in the near future as well in the building of multipurpose Danube-Sava canal. Those will enable positioning Port of Rijeka as a crucial point in the European multimodal network and will strongly impact on its traffic.

References


