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**REDESIGN OF SEAPORTS MANAGEMENT
MODEL FOR THEIR TRANSFORMATION INTO
PROFITABLE CENTERS**

Review

UDK: 656.615:005

JEL classification: L92, M10

Abstract

Seaports and port systems have become the center of modern transport systems nowadays. For each country, including the Republic of Croatia, the development of ports and port areas is determined by the growth of economic activities with multiplier effects on the whole economy. The port authority is a public institution that is responsible for port management. The question is how to transform the seaport model management into a profitable entity and maximize its benefits for all stakeholders in a particular port area. Thereby, the financial capacity of the port authority is one of the major keys of the management factors that determine how the port authority can achieve its own goals and optimally perform their function. It follows that the profitable operation of the port authority is one of the fundamental elements for the optimal functioning of the whole port system.

Keywords: seaport, mangment, profitable

1. INTRODUCTION

Sea transport is one of the cheapest mode of transports where four fifths of the worlds' goods are being transported. Seaports, therefore, have a particular significance as being the primary source for the development of the maritime economy. They represent enormous economic strength and play an important role in national economy and international exchange. Their role is to benefit the development of the entire economy by providing complete transportation services, at the lowest cost possible. They are also a significant factor in the development of other activities such as trade, manufacturing, tourism and etc. For that reason, everyone who has either direct or indirect benefits from their business is interested.

Seaport as being the crucial subsystem of the maritime and transport system is also the accelerator for traffic flows and for the development of numerous economic activities. It should not be seen as separate, it should be seen as a essential component of a port system that is part of a country's transport system and has a high multiplying effect on the development of the state's overall economy. Therefore, seaports management is of national importance.

The main of this article is to define a sea port management model that, on the one hand, allows the use of ports with the maximization of social benefits as well as the benefits of all interest groups, and on the other hand, it allows ports to develop from their own resources and operate as profitable centers or companies. In accordance with the objective, the subject of this paper is to determine the criteria for optimizing the maritime port model to operate as a profitable center and to meet the principles of business efficiency.

2. LITERATURE REVIEW

Discussion about the appropriate port management model has encouraged the interest of the academic community (Brooks, Pallis, 2012). The Spanish port system is one of the most researched ports in the last two decades (Castillo-Manzano, Asencio-Flores, 2012; Castillo-Manzano et al., 2008; Gonzalez and Trujillo, 2008), thanks to the frequent changes in legislation related to the port management model (Gray, 2005). Van Langen and van der Lugt (2007) have been researching how changes in the port environment influence the changes in the strategy and management model of seaports in the Netherlands.

The study of the financial sustainability of the new model of management using the sample of 12 seaports in Greece (Pallis, Syriopolos, 2007) has shown that there is still room for modernization and restructuring, with a new role of port authorities and the public sector (Pallis, Vaggelas, 2005). ESPO's Report on Managing European Maritime Ports (2011) is based on a new conceptual framework that takes into account the evolution of the port concept and the new role of port. In this way ports have been placed more in the center of the attention than before. In the report it is discussed about the goals and

functions of port systems, compared to institutional frames and the financial potential of the ports is also analyzed.

During the last two to three decades, the port authorities have gone through organizational reform in a way that they have become more independent and more commercial (Brooks & Cullinane, 2007; Debrie et al., 2013). Due to the high competition and the transfer of authorities, port administrations have developed from the “Landlord” form of a public institutions into autonomous organizations with emphasized needs for profitable business.

The parallel between the ports of Latin America and Southern Europe, have been researched by Gonzalez Laxe et al. (2016) and he has established that the process of changes in port management is more significant in southern Europe in response to changes in the environment, unlike the ports of Latin America where the changes were triggered by the institutional framework (public policies).

3. THE INSTITUTIONAL FRAMEWORK FOR THE DEVELOPMENT OF THE SEAPORTS IN THE REPUBLIC OF CROATIA

3.1. Strategic framework of the seaport policy in Croatia

Croatian seaports have a huge economic potential that is primarily based on a favorable geographic position. The main comparative advantage of Croatian seaports in relation to the other ports of the European Union is reflected in the deep penetration of the Adriatic Sea into the continent, which allows the shortest and most affordable traffic connections between the Croatian hinterland and the eastern Mediterranean and through the Suez Canal, between the countries of Asia and the East Africa. In this sense, multimodal TEN-T corridors extending across the Croatian territory confirm the fact that the territorial position of the Republic of Croatia is not only its advantage but also the obligation towards the European Union. The Mediterranean corridor, the Baltic - Adriatic corridor, the Rhine – Danube corridor like the future Adriatic - Ionian route undoubtedly integrate the Republic of Croatia into the European transport and economic system of the European Union.

Strategic goals of the development of the Croatian port system are part of the overall maritime and thus the traffic or economic strategy of the Republic of Croatia. In order to improve the implementation of maritime policy, the Government of the Republic of Croatia in July 2014 has adopted the Strategy for Maritime Development and Integral Maritime Policy of the Republic of Croatia for the period 2014-2020 (hereafter: the Strategy for Maritime Development), for whose implementation, the Ministry of Maritime Affairs Transport and infrastructure is in charge, in cooperation with other sectors of the state and public authorities with jurisdiction in maritime affairs. Based on the above mentioned potential, and with the vision of Croatia as a developed

and recognizable maritime state, the Strategy sets two fundamental strategic goals: sustainable growth and competitiveness of the maritime economy and safe, environmentally sustainable maritime transport, maritime infrastructure and the maritime space of the Republic of Croatia.

The foundation for achieving the positive effects of the Strategy consists of economic and efficient public services provided to the citizens and businesses, as well as the continuous development of knowledge on sea and maritime affairs and the values of maritime heritage. In this segment, the goals of the strategy are very ambitious, and they anticipate:

- an increase in revenue from the basis of the concession on the maritime domain from the current 80 million to 160 million through the establishment of an integrated maritime management system,
- an increase in the number of individual public services provided per employee by 10 percent,
- an increase in the number of public electronic services by the maritime administration by 100 percent,
- a multiple increase in the engagement of the Republic of Croatia in the work of international maritime institutions and organizations and significant improvements in scientific field of maritime affairs.

With regard to these strategic goals of the development of the Croatian Port System, it would be realized through:

- establishment of a consistent port policy, based on legal solutions with realistic and clearly defined goals, as well as port system financing models.
- modernization of technologically outdated port facilities by attracting new investors to the port, which would enable port terminals for a more competitive approach to maritime services market.
- improvement of the port management system through the establishment of modern management and marketing in the maritime market.
- establishment of a coordinated approach for all participants in the realization of traffic services in the traffic directions with the goal of raising the provided service quality and achieving competitive prices.
- improvement of the port work processes and incensement of the port efficiency
- establishment of the priority investments for transport infrastructure and improvement of traffic links with the hinterland.

Looking at the big European picture there have been significant changes in the port system development that can be divided into three main groups (Dundović et al., 2006):

- legislative changes,
- changes in financing mode and
- traffic changes.

Considering these crucial changes in the management of port systems in developed European countries, as well as the following basic principles for port operations according to the recommendations of the European Union (Communication on European Ports Policy, SEC, 2007, An Integrated Maritime Policy for the European Union):

- availability and modernization of port facilities,
- free and fair competition,
- port integration based on common port and general traffic policy,
- social acceptability (development in accordance with the needs of environmental protection),

a port management model needs to be chosen which will enable the maximum valorization of existing capacities, the development of new capacity in line with the potential of the port area, with the intensive development of the port's traffic function and the maximization of the business efficiency which means covering the expenditures with their own revenues without relying on financial support from the state budget.

It follows that the basic function of the port is to stimulate the economic growth of the port and its environment, but also of the whole region, with the task of providing quality services at lower cost possible, supporting the development of traffic, trade and other economic activities. Therefore, when developing a seaport management model, it should not be considered separate as an independent economic entity but as an integral part of the national economy with extremely high economic multiplier effects (World Bank, 2007).

3.2. Harmonization of the Maritime Policy of the Republic of Croatia with the Maritime Policy of the European Union

In terms of the integration of the economy of the Republic of Croatia into the EU transport processes, it is important to harmonize Croatia and European maritime and transport policies with each other and integrally, not with the necessity of adaptation and integration with the world's transport and maritime processes. Violić, Debelić (2014) have prepared a SWOT analysis of the harmonization of maritime and transport policies of the Republic of Croatia with maritime and transport policies of the EU, as shown in Table 1

Table 1

SWOT analysis of the harmonization of maritime and transport policy of the Republic Croatia with maritime and transport policy of the European Union

Strengths (S)	Weaknesses (W)
<ul style="list-style-type: none"> • reduction of external costs • modernization of work processes • flexibility 	<ul style="list-style-type: none"> • until now, the abandoned system with indented coastline represents rich natural resource seeking for knowledge and great financial tools for a new start
Opportunity (O)	Threats (T)
<ul style="list-style-type: none"> • propulsion of the market • geographic location within the most active micro-region • the ability to absorb financial resources from EU funds 	<ul style="list-style-type: none"> • increase of port and maritime regulation • strong EU competition for the entrepreneurship attractiveness of the micro-region

Source: Violić, A., & Debelić, B. (2014). Uloga pomorske i prometne politike u funkciji održivog razvitka prometa i pomorstva

The development of seaports in line with the recommendations of the European Union should be focused in the direction of the Short Sea shipping and the Motorways of the Sea. This implies maximum use of the sea as a traffic route and redirecting passenger and freight traffic from land to sea to a greater extent. Thus, in the port area under the jurisdiction of the port authority, more activities can be performed (Maritime Domain and Seaports Act, 2003):

- mooring and rowing boats, yachts, fishing boats and other boats and floats facilities,
- boarding, unloading, transshipment, transfer and storage of goods and other materials,
- boarding and disembarking of passengers and vehicles,
- other economic activities which are related to these activities in the immediate economic, transport or technological context.

Legal or physical persons may perform these activities only on the basis of a concession granted by the port authority tender. Concession is the right to exclude part of the maritime property from general use and to be for special use or economic use for legal or physical person that is registered for the purpose of carrying out crafts (Maritime Domain and Seaports Act, 2003)

In the long run, the development of ports should be, for the most part, left to the market. The state should certainly keep the control of the ports, the development of maritime affairs and their related economic activities, in order to achieve the strategic goals.

4. MANAGEMENT MODEL OF THE SEA PORTS

4.1. Review of the management model regard to different measurements

Port system management and individual seaports within this system are unthinkable without knowing the theory and basic features of the system and management system. Various criteria can be considered when selecting a management model. The most commonly used measure is the form of ownership, so the following bow management model differs (Jugović, 2012):

- nationally operated ports,
- a port under the management of a city or region,
- autonomous authority of ports,
- public-private partnership and
- private ports.

From the organizational structure's viewpoint, we can talk about the decentralized and uncoordinated type of organization and also about the centralized or coordinated type of organization.

Over time, four basic port management models have been developed (World Bank, 2007):

- service port,
- tool port,
- landlord port
- fully privatized port or private service port.

Service and Tool port are mainly directed towards the realization of public interests. Landlord ports have a mixed character and their goal is to create a balance between public (port authority) and private (port industry) interests. Fully privatized ports focus on private (stakeholder) interests.

The results of the research are based on the 'renaissance' of port management, with the revision of traditional functions (Landlord - businessman function, Regulator - regulator functions, and Operator - the role of port operator) and the development of a new function Community Manager which is closely related to changes in nature of the Port communities and interest groups. Depending on the degree of development of these functions and the way of their operationalization, we get three basic hypothetical types of port authorities:

- conservator,
- facilitator and
- entrepreneur.

The "Conservator" type of the port authority represents the lowest developmental form and is characterized by a passive attitude toward the realization of the traditional functions of the businessmen, regulators and

port facility operators while the function of the Community Manager is not represented.

The “Facilitator” type of the port authority is characterized by a much more active attitude towards the management of the port area in terms of maintenance and development in accordance with the development plans. The functions of the regulator and the operator are represented through independent design, application and control of the application of the regulatory basis for managing the assortment of services according to the requirements.

The function of Community Manager has also been developed through the coordination of port development with local and regional development plans with emphasized sustainability and taking into account the demands of all stakeholders. The type of port management of an “Entrepreneur” besides the activities inherent in the “moderator“ develops new forms of entrepreneurship in terms of commercialization and sales of expert expertise in the field of management and regulation of the port system. The function of Community Manager is accomplished by solving narrow holes in the hinterland, creating partnerships, lobbying, marketing management and applying corporate governance principles. This type of organization is also promoted, through the role of consultant for individual port management areas, globally (ESPO, 2011).

The organizational structure of the port authority, including the way of managing and investing in the development of the port will be crucial in making a long-term, completed and designed port policy of the Republic of Croatia and the business policy of the sea port. The reversal effect that will make this modern port harmoniously embedded in the maritime port system will be reflected in the promotion of hinterland economic growth and the development of the entire country’s traffic and economic activities. Figure 1 shows the organization of port authority as corporate organizational structure.

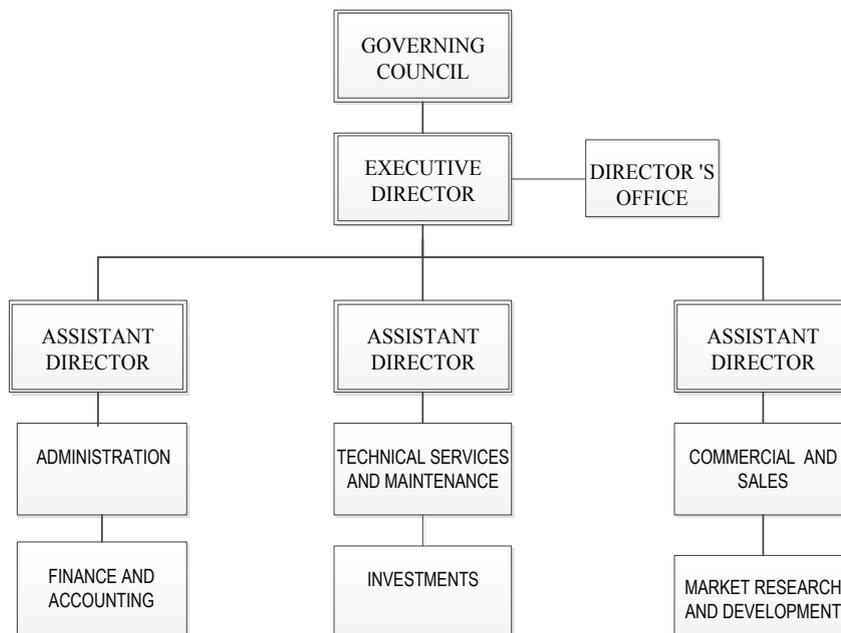


Figure 1 Organization of port authorities

Source: Authors

4.2. Selection of the management model – selecting a port authority organization

The method of port management, organization and structure of the port authorities, in other words the hierarchical structure in which they are included, depends on the classification of the ports considering their importance in the traffic and port system of the Republic of Croatia, depending on the size and type of port traffic, the condition and the size of port capacity and also depending on the connection of the port with hinterland. Through the management of ports, strategic goals of maritime development should be achieved, which is also the main reason for the establishment of state port authorities, while the economic functions have been taken over by numerous concessionaires, in the means of private capital, regarding the best practices of maritime countries.

Successful managing of the seaports of the Republic of Croatia states the definition of:

- How to finance and invest in port infrastructure.
- The construction of roads towards the land hinterland.
- Method of determining the port area and appropriation of concessions in means of improving the economic activity.

- Managing ports for the international interest of the Republic of Croatia, within the Croatian port system, which means defining an optimal model for managing seaports.

From the above, it follows that the optimum number of port authorities will be found in the optimum management maritime port model, especially the ones that are financially sustainable.

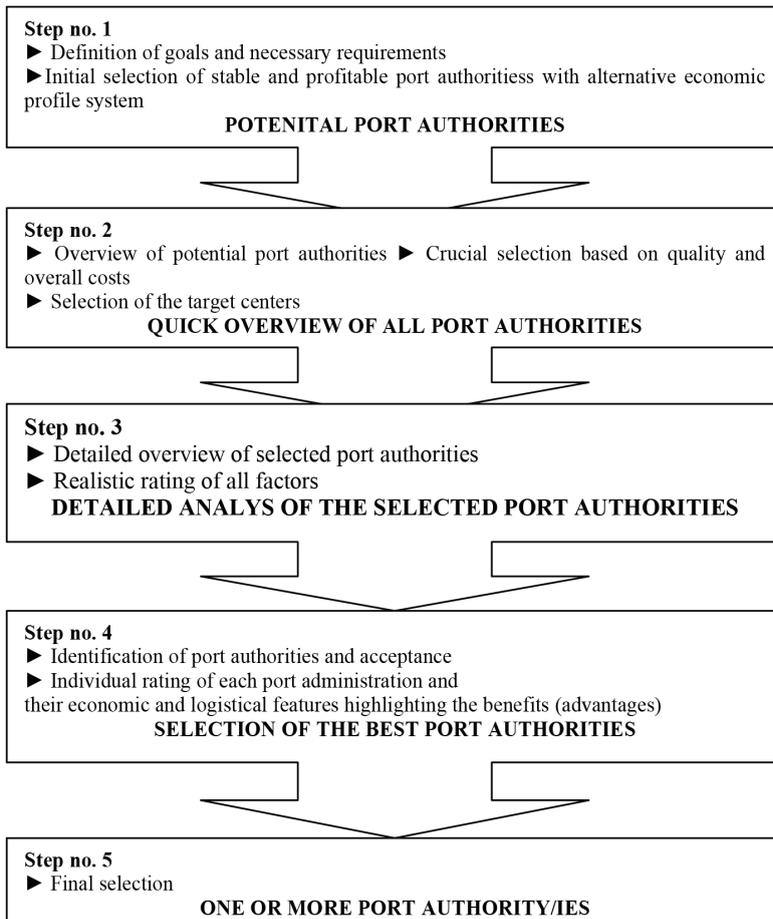


Figure 2. The procedure for systematic selection of the organizational port model

Source: Jugović, A. (2012) *Upravljanje morskom lukom (modified)*

4.3. Redesign of seaports management model for their transformation into profitable centers

In Croatia, port administrations are established as non-profit legal entities in which institution and non-profit accountings regulations are applied. The question is how to set up a port management model in terms of their organization, in a way that they do business as a profitable center, taking into the consideration of cost reduction and revenue growth, in other words creating more efficiency in business operations.

Some of the port authorities because of their passivity and dependency on state budget may become redundant, which could lead to an optimal number of these governing entities which should in future be self-sustaining, efficient and ultimately profitable. This would create the conditions for greater investment and support for the concessionaires, which would eventually lead to increased revenues. In addition to profitability, important determinants are responsible as the ethical behavior of managers is (and management structures: governing council, executive director) as is the case with supervisory boards and management of companies, so basically management models of port management should put the already mentioned corporate governance principles (Tipurić et al., 2008):

- Disclosure and transparency
- The responsibilities of the management structures
- Avoid conflict of interest of relevant persons (members of the governing council, management)
- Establish effective internal controls and
- Effective system of accountability

Corporate governance has developed on the basis of so-called agency problem that occurs when the owner-agent (state, port authority) handles management of another person - principal (concessionaire). The relationship between the port authority (the owners of social interests) and the concessionaire (private interest manager) should be the basis for developing a management model that will protect the interests of both sides and contribute to the development of the port and the port area. The current surveys of port management models (Verhoeven, 2006, World Bank, 2007, De Langen, Heij, 2014) goes hand in hand with the incorporation of port administrations, putting into focus the profitable business characteristically to corporations or companies.

Port administrations should definitely be more transparent about their business and it should also apply international accounting standards when preparing financial statements. The research carried out by PriceWaterhouseCoopers and Pantheia for the needs of the European Commission, the Mobility and Traffic Management Board (PWC, Pantheia 2013) found that the application of accounting standards is going to vary depending on the geographic position and the structure of the port ownership:

- approximately half of the port authorities that were involved in the research have adopted International Financial Reporting Standards (IFRS) or International Public Sector Accounting Standards (IPSAS), while the other half uses national accounting standards or other standards based on IFRSs or IPSAS;
- one third of the port authorities did not have their financial report publicly available or provided as part of the survey.

Recent literature explores new functions of port administration, primarily its role in the society, but based on its traditional functions such as infrastructure management, regulatory function and operator functions (Verhoeven, 2010). Port authorities are organizations with public and private characteristics (Parola et al., 2013). Ports have an important social role, because in some countries they contribute to their their economy and employment. In total, about three million people are employed in ports in 22 maritime EU countries. The data also shows how nearly as 75% of the trade between EU and the rest of the world takes place across the ports (ESPO, 2011).

Port authorities are the key factors responsible for the development and management of ports and the port area. Rapid changes in the environment of the port, whether it is about ecological, economic, social or technological, places emphasize on the management of port administrations. All this leads to institutional change and acceptance of profitable behavior and the search for an optimal strategy and port management organization (Peeters et al., 2015). The importance of securing port efficiency is linked to the ability of the EU to be competitive on an international level (PWC, Pantheia, 2013).

The function of a port is usually observed in two ways: First, they perform public function in a way that contributes to social benefits and the economic development of the whole environment and the state as a whole. Second, it also performs a private function by creating a business environment for private entrepreneurs in the port area. Therefore, port management has two basic goals (Van der Lugt, De Langen, 2007):

- to encourage a competitive, sustainable and secure economic development of the port as a whole;
- become an efficient and effective organization that generates revenue for covering costs and investments, and in some cases, return the investments to the owner or shareholder.

By having tendency for greater efficiency in operations and increasing port authority revenue, it turn to commercialization and more transparent financial operations (such as Spanish ports), corporatization, although they remain state-owned (such as ports in the Netherlands, Australia, South Korea), and some fully privatized ports (as ports in the UK). Notteboom and Winkelmans (2001) have put out the hypothesis that the port (port authority), in order to be successful, must be ready for constantly adopting new roles that bring changes in the market environment. In the last few decades, port management has

experienced significant reforms in the sense of its organization. They are based on public institutions, which are transforming into independent, financially sustainable organizations.

Finally, all interested parties: port authorities, users, employees, service providers, shipping and concessionaires (operators) should have their representatives in the management structures - management and supervisory boards, in order to have a fair representation of their interests. This would also lead to the corporatization of the port authorities.

5. CONCLUSIONS

The formation or establishment of port administrations is a process determined by a series of conditions with respect to the complex function of the port in the traffic and economic system. Each of these conditions has a greater or lesser impact on the port management model:

- Port authorities are ‘hybrids’ in the sense of having public and private goals and taking an action in a competitive environment, but often (partly) depending on a state funding. Over the last decades, general movement has been in the commercialization, corporatization and even in privatization of some port authorities (Verhoeven, 2006).
- All interested parties: port authorities, users, employees, service providers, shipowners and concessionaires (operators) should have their representatives in the management structures - the Governing Council and management of the port authority in order to have an even representation of their interests. This would also lead to the corporatization of the port administration.
- Involvement of all stakeholders in management is often referred to as one of the basic functions of port authorities. On the other hand, maximizing profits is not the only and/or key goal for the public function it performs. Port management therefore needs to take an account for the needs of all stakeholders, by doing socially responsible business as one of the principles of corporate behavior.

By changing the management model, taking into account the principles of corporate governance, actions should be taken to remove the disadvantages in order to achieve maximum social and economic benefits for each function of the port authority as a seaport operator.

REFERENCES

Brooks, M. R., Pallis, A. A. (2012). Port governance. The Blackwell Companion to Maritime Economics, 491-516.

De Langen, P. W., Heij, C. (2014). Corporatisation and performance: A literature review and an analysis of the performance effects of the corporatisation of port of Rotterdam authority. *Transport Reviews*, 34(3), 396-414.

European Sea Ports Organisation, (2011). Report of an Enquiry into the Current Governance of European Seaports., <http://app.regiaocentro.net/UserFiles/espofactfindingreport2010.pdf>, [accessed 5.6.2016].

Jugović, A. (2012). Upravljanje morskom lukom. Pomorski fakultet Sveučilišta u Rijeci, Rijeka.

Jugović, A., Seršić, V., Debelić, B. (2009). Gospodarsko-interesno udruženje lučkih uprava. *Pomorstvo: Scientific Journal of Maritime Research*, 23(2), 459-476.

Kesić, B., Jugović, A. (2006). Menadžement pomorskoputničkih luka. Pomorski fakultet; Liber doo.

Notteboom, T. E., Winkelmanns, W. (2001). Structural changes in logistics: how will port authorities face the challenge?. *Maritime Policy & Management*, 28(1), 71-89.

Parola, F., Van der Lugt, L., Dooms, M., (2013). Strategy making by hybrid organizations: The case of the port authority. *Research in Transportation Business & Management*, 8, 103-113.

Peeters, C., Reijling, J., Verbrugge, A. (2015). The governance structure of port authorities: Striking a balance between economic, social and environmental goals.

PWC & Pantheia (2013). Final report: Impact assessment on: Measures to enhance the efficiency and quality of port services in the EU. Retrieved February 12, 2016 <http://ec.europa.eu/transport/modes/maritime/studies/doc/2013-07-ia-port-services.pdf> [accessed 3.8.2016].

Strategija pomorskog razvitka i integralne pomorske politike RH za razdoblje od 2014. do 2020. godine. http://www.mppi.hr/UserDocsImages/JS%20MAR%20%20STRAT%20FINAL%20MPPI%2021-2_14.pdf; [accessed 30.4.2016.].

Tipurić, D. i suradnici (2008) *Korporativno upravljanje. Sinergija*, Zagreb

Van der Lugt, L., De Langen, P. W. (2007). Port authority strategy: beyond the landlord—a conceptual approach. In *Proceedings of the 2007 IAME Conference*

Verhoeven, P. (2006). Port management reform in Europe: is there a role for the EU. Ports are more than piers—Liber Amicorum presented to Prof. Dr. Willy Winkelmanns, De Lloyd, Antwerpen, 35-55.

Verhoeven, P. (2010). A review of port authority functions: towards a renaissance?. *Maritime Policy & Management*, 37(3), 247-270.

Violić, A., Debelić, B. (2014). Uloga pomorske i prometne politike u funkciji održivog razvitka prometa i pomorstva. Pomorski zbornik, 47(1.), 13-26.

World Bank (2007). "Port Reform Toolkit, Modules 1-8, PPIAF; <http://ppp.worldbank.org/public-private-partnership/library/port-reform-toolkit-ppiaworld-bank-2nd-edition> [accessed 1.5.2016.].

Zakon o pomorskom dobru i morskim lukama, NN br. 158/03, 100/04, 141/06, 38/09 i 123/11.