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THE IMPACT OF GOVERNANCE ON THE EFFICIENCY OF THE BALTIC STATES' MAJOR PORTS

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ABSTRACT
The purpose of the present research is to evaluate port governance models within the Baltic States at European Union-level trans-European core network ports (TEN-T) following the principle of commercially-oriented corporations in public ownership and with the overall direction of independent port management for landlord configuration ports, quantitatively assessing the impact of governance on port performance results, analysing and comparing seaports and determining the best performer within the region. In the course of the work, port performance results were analysed from both an operational and a financial perspective, port authorities were ranked according to the results, and recommendations for better performance were proposed. The results of this research may be of value to port authorities, policymakers and scholars.
Keywords: Baltic ports, port performance, port governance, port authority, impact

INTRODUCTION

The research subject constitutes port authorities in the Baltic States which perform the functions of landlords. The landlord port is a model characterized by a mixed public-private orientation. In this model, the port authority typically acts as a landlord and as a regulatory body, while port operations, especially cargo handling, are carried out by private companies. The model is appropriate for ports with the characteristics of Riga, Ventspils, Tallinn and Klaipeda. Similar to other landlord ports, the port authorities of all four Baltic States' TEN-T ports manage real estate, carry out port development and planning, undertake marketing of the location, and provide maintenance and upkeep of port access and the waterside. The port authorities have retained responsibility for dredging and ice breaking, while the ports outsource some services, with regard to port security, safety of vessels and maintenance of infrastructure. A key responsibility of the landlord port is to manage the real estate, which includes economic exploitation/leasing out, long-term development, maintenance and improvement of basic infrastructure such as fairways, berths, access roads, and tunnels, and managing adjacent industrial areas as free zones. The terminal operators provide and maintain their own superstructure, including buildings (offices, sheds, warehouses, container freight stations, workshops). They acquire and install their own cranes and other equipment and arrange for stevedoring. Contemporary ports need to be efficiently managed and customer-oriented to compete successfully in an increasingly competitive market and in repositioning ports in becoming value-adders rather than value sub-contractors along the logistical supply chain (Koi et al., 2007). From the ports' perspective, the goal is to reinforce sustainable development to meet the objectives of commercially effective management. From the port authorities' perspective, the goal is to efficiently manage assets, land and infrastructure, by trusteeship, to cover port development costs. From the stakeholders' perspective, the port authorities' objective is to act in a socially responsible manner, pay dividends to shareholders, increase the regional

market share, increase passenger and operational cargo turnover figures, invest in new superstructure developments and increase operating profit. From the shareholders' perspective, the port authorities' objective is to increase net profit and total market share, invest in new development projects and increase operational and financial performance results.

The scientific concern of the researched agenda and research gap is to evaluate how the Baltic States' landlord ports are governed and how governance models impact port performance and its efficiency and, following the key performance indicator (KPI) principle, determine the port authority which outperforms others and under which governance principle it is managed, comparing this to other port authorities' performance results and governance models.

THEORIES AND CONCEPTS OF THE RESEARCH

A port is a land area with maritime and hinterland access that has developed into a logistics and industrial centre and plays an important role in global industrial and logistics networks (Notteboom et al., 2009). Port authorities tend to function as landlords, regulators, or operators (Baird, 1995), depending on their respective legal status (Brooks, 2006). The landlord function of port authorities has been defined in keeping with the literature on port governance models (Brooks, 2007). Strategically, the major seaports in the Baltic States and their port authorities (PA) act as triggers for national infrastructure development plans, such as railway and road network expansion, giving due consideration to social responsibility and the environment. Notteboom (2009) focuses on the logistics environment in ports and how port authorities should act in this challenging environment, stipulating that port authorities must be able to respond to fast-changing market needs and see networking as a central prerequisite for PA competitiveness. Chlomoudis and Pallis (2002) on the other hand have developed a "smart port authority" concept, in which the port authority takes responsibility for improving interconnectivity and interoperability among port users. Within the research, the author also followed the OECD (2004) guidelines for commercially-oriented corporations in public ownership and the World Bank (2001; 2010) port reform toolkit and guidelines for efficient port governance.

Governance is a historic term for the description, evaluation and comparison of state governance and was often used as a synonym for government in the political literature. In the 1970s, the concept of governance was revived in American business language in the concept of "corporate governance" with a focus on corporate responsibility. The World Bank introduced the term "good governance" and thus coined this phrase (Wouters and Ryngaert, 2005). Today, corporate governance defines the regulatory framework for the management and supervision of companies while the corporate governance framework is largely determined by legislators and owners (Spira, 2002) and the actual corporate governance design falls to the supervisory board of the board of directors. The company-specific corporate governance system consists of the totality of relevant laws, regulations, codes, letters of intent, mission statements, and habits of management and monitoring (OECD, 2010). The academic literature discusses "good corporate governance" and the improvement of existing corporate governance. Good corporate governance should ensure and guide a responsible, professional and transparent business administration in the interests of owners and also of external stakeholders such as creditors, debtors, society and employees (Felo, 2011; Rose, 2016). The characteristics of good corporate governance are

as follows: 1) appropriate risk management, 2) formal and transparent procedures for the proposal and election of board members, 3) a functional management organization, 4) management decisions focusing on long-term value creation, 5) transparency in internal and external corporate communications, 6) safeguarding mechanisms to secure the interests of different groups (stakeholders), and, overall, 7) a clearly defined management and control structure (Passenheim, 2010).

The corporate governance discourse aims at defining a self-regulating system of contracts to avoid agency problems resulting from distant or absent shareholders or owners who contract executives to act in their interests (Johnston, 2009). The problem of managerial self-interest is widely discussed in the framework of managerial power theory with its basic assumptions that management compensations are often excessive and do not correlate to performance and the increase of the company's value and thus of the owner's investment (Rappaport, 1981). Managerial power theory states that the executive will serve his interests rather than those of the owner or shareholder; to avoid such issues, the principal has to incur "agency costs" that arise from the necessity of creating incentives that align the executive's interests with those of the shareholder and costs for monitoring the executive's conduct to prevent the abuse of owner interests (Henry, 2010). Agency theorists do not explore the conduct, relationships and attitudes that generate board effectiveness; instead they examine the effectiveness of various mechanisms designed to canalize the executive's self-interest so that he serves the shareholders' interests (Firth and Rui, 2012). Agency theory is highly influential in shaping the corporate governance systems' reform in terms of board-based mechanisms and external, market-based governance mechanisms (Solomon, 2007). Governance relies for its effectiveness on the transparency of financial information and the transparency of management decisions so that external market mechanisms can be effective through disciplinary effects on the company and thus on executive performance (Berghe, 2012). The executive's self-interest must be aligned with the shareholders' interests, by value-based key performance indicator systems rewarding an increase of the economic value added (Zarbafi, 2011); therefore, corporate governance is understood in the context of institutional economics, which is to bring a balance of interests between stakeholders.

RESEARCH METHODOLOGY

The research presents the results of a synthesis of the literature on port authority governance models, with the aim of making a comparative analysis of existing governance models and those models' impact on the efficiency of trans-European core network ports in the Baltic States. Therefore, the scope of this research was eventually narrowed down to the governance and management of port authorities in the principal seaports of Tallinn, Estonia; Klaipeda, Lithuania; Riga, Latvia; and Ventspils, Latvia. The synthesis of the literature encompasses the governance, functions, and competitiveness of port authorities, and the results include an evaluation of the existing legislative framework in each of the Baltic States' major seaports. The research is based on bibliometric tools and publicly available quantitative and qualitative information on the governance models of Baltic States' port authorities and their efficiency and management, a legal framework analysis, yearly port statistics and an analysis of financial performance results.

The main methods used to achieve the research goals include theoretical and literary analyses, empirical observation, and monographic or descriptive methods; in order to

assess the impact of port governance on port authorities' efficiency, the methodology of Bilodeau et al. (2006) is used, which specifies that, in addition to the formal status change, corporatisation almost always involves a portfolio of other changes, such as narrower task domains, explicit performance measures and targets, a greater focus on the chief executive to deliver on targets and greater discretion to manage budgets and employees. To assess changes in organisational behaviour and the performance of corporatised government agencies, Bilodeau et al. (2006) have developed a series of hypotheses that are translated into performance indicators.

ANALYSIS OF THE RESEARCH RESULTS

In the European Union, both the European Commission and the European Sea Ports Organization (ESPO) have, since 2007, shown interest in setting up a port industry performance management platform in order to increase knowledge and awareness of port industry performance (Dooms, 2014). According to ESPO, in 2016, most port authorities in Europe remain publicly owned; full ownership by the state or by the municipality remains predominant. Only a few port authorities combine ownership of different government levels (e.g. state- municipality, province-municipality). Mixed public-private ownership is still very rare and exists only in a few countries, in Piraeus and Thessaloniki (GR), Koper (SI), CMP (DK) and since 2011 in Constanza (RO). In April 2016, China's Cosco Group acquired 67% of the shares of Piraeus Port Authority (PPA), a listed company that has a concession to operate the port until 2052. In these cases, the public sector owns the majority of shares and private shareholders' participation is rather limited. Port authorities listed in the stock exchange remain the exception in 2016. Full private ownership, where the port authority is fully owned by one or more private parties, is characteristic of some ports in the UK. Ports are moving towards more independent private-like management and while some port authorities are structured as independent commercial entities and operate in a commercially oriented manner (ESPO, 2016), others are still independent public bodies with their own legal personality and different degrees of functional and financial dependence on the public administration. These two main categories, while operating under different legal forms, may share similar principles such as self-financing and commercial and entrepreneurial behaviour to increase market share and attract private investment. They may also share the same levels of influence from public authorities through participation in the governing board of the port.

Klaipeda is the only seaport in Lithuania besides the oil terminal in Butinge. The port is an important node in the Lithuanian and international transportation system. Its major traffic consists of oil and oil products, bulk products, fertilisers, ro-ro cargoes and containers. The port of Klaipeda is managed by the Klaipeda State Seaport Authority (KSSA), a 100% owned government enterprise under the direct control of the Ministry of Transport and Communications of the Republic of Lithuania. The board of the KSSA is made up of representatives of the Ministry of Transport and Communications of the Republic of Lithuania, the Klaipeda county administration, the city of Klaipeda, the port authority, port users, and their associations and institutions.

The Port of Tallinn operates according to the landlord port model and is the only port authority within the Baltic's TEN-T ports which is governed according to good corporate governance guidelines. Since 1997 all superstructure and equipment are owned and operated by private companies, the supervisory board consists of six representatives of

the Estonian Ministries of Finance and of Transport and Communication, and the management board consists of three professional members. The supervisory board of the port of Tallinn formed an audit committee which is an advisory body to the supervisory body about exercising of supervision, including the management of the accounting function, the performance of the external auditors, the functioning of the internal audit system, the monitoring of the management of financial risks, the legality of activities, budget preparation, and approval of the annual report. The audit committee consists of three members of the supervisory board who are appointed for three years.

The port authorities of Ventspils and Riga are comprised of the board and the executive body (or administration). The executive is subordinated to the board and executes its decisions; it is headed by a CEO who is appointed by the board. In accordance with the 1994 Law on Ports, the boards of Riga and Ventspils are composed of eight members: four representatives of the government (of the Ministries of Transport, Finance, Economics, and Regional Development and the Environment respectively) and four representatives of the relevant municipal authorities. Ministry representatives are appointed by the Cabinet of Ministers, while municipal representatives are appointed by the city council. The boards do not have representatives from the business sector. Overall, the composition of the boards and the appointment system create a risk of political interference (while, paradoxically, there is limited accountability to the political oversight body, the Latvian Port, Transit and Logistics Council) and do not guarantee the independence of board members, which weakens the board's ability to act as an effective supervision authority. The port governance model developed in Latvia is a system which creates risks of both political interference and political domination over daily port management and decisions made for assigned lease and service contracts. Similar issues are seen in KSSA port governance, where the enterprise is under the direct control of the Ministry of Transport and Communications of the Republic of Lithuania, and the state and municipality representatives are nominated directly from their supervisors. Thus, in alignment with clear corporate governance principles, it would be advisable for board members to be elected in an open process, where professionality, industry experience and independence would stand as core elements for any representative appointed. The Tallinn Port Authority has made substantial progress towards the implementation of good corporate governance principles, though there is still room for improvement, as the supervisory board consists of six representatives of the Estonian Ministries of Finance and of Transport and Communication; thus, there is direct nomination from government-controlled ministries, which are controlled by politically elected persons. In order to increase transparency within this process, it would be advisable to organize a supervisory board nomination process through the defined criteria for board members and through an open board member election process, not direct nomination from government ministries. Thus, if the state feels that it needs to be represented within the supervisory board, it would be possible to adjust criteria for one or two supervisory board nominations for government-affiliated experience and also nominate a state representative for the audit committee, while the criteria of industry experience, professionalism and independence should stand above any short-term political needs. By applying such a methodology, the Tallinn Port Authority's supervisory board member election process would be the most advanced in the region, and eventually this would add value through increased port competitiveness and greater returns to shareholders.

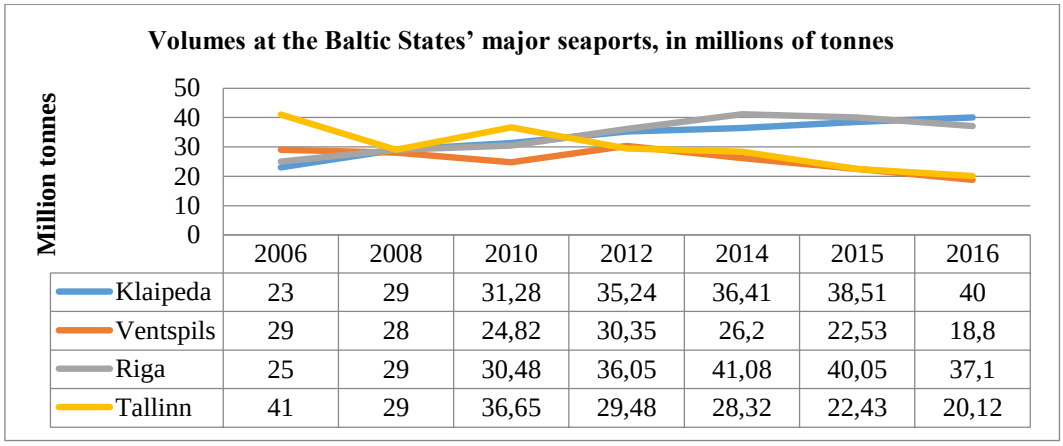
Port governance and its efficiency and effectiveness is widely measured using key performance indicators (KPIs), which are a critical tool for port management and for authorities in performing their oversight role. The government and municipalities assign objectives to ports as part of their overall strategy, which port management then needs to implement. The main tools used worldwide for the measurement of these objectives are KPIs. In order to measure the impact of governance on the performance of a port authority as an undertaking, a comparison of the evolution of output and revenue, profitability and productive efficiency has been made. In this study, the methodology of Bilodeau et al. (2006) is used, which specifies that, in addition to the formal status change, corporatisation almost always involves a portfolio of other changes, such as narrower task domains, explicit performance measures and targets, a greater focus on the chief executive to deliver on targets and greater discretion to manage budgets and employees. To assess changes in organisational behaviour and the performance of corporatised government agencies, Bilodeau et al. (2006) have developed a series of hypotheses that are translated into performance indicators.

Port management and ownership structures vary widely among countries, ranging from fully state-owned port authorities in Tallinn (Estonia) and Klaipeda (Lithuania) to port authorities established by the relevant municipality's decree and jointly governed by the municipality and state representatives in Ventspils and Riga (Latvia). The port authorities researched here are proprietary-type organizations; in addition to building, maintaining, and managing port facilities, including navigation channels, breakwaters, quay walls and other basic facilities, the port authorities formulate policies for basic development plans with consideration of the development of the inland regions. The port's functional facilities are leased to the private sector under the management of the port authority, and actual operations – port transport, storage, transport on land, etc. – are entrusted to the private sector in accordance with the relevant laws and regulations. Port authorities levy charges in the form of port dues and fees for use of port facilities and services provided. These fees are determined on a cost-accounting basis and fixed by the port authorities in regulations. Port dues are levied on all vessels in exchange for the use of the port as a whole; the port authorities levy these dues in accordance with enacted law. Port dues may be calculated and assessed based on the expenses necessary for managing the water area, the port's land facilities, and port development facilities. Port dues vary both among the different Baltic States and among ports within a state.

Bilodeau et al. (2006) measure the impact of port management at the level of the port authority itself, and if corporatisation decreases political control without significantly increasing market controls, it might, in the absence of regulatory oversight, lead to worse performance. Reforming port management should not be a goal in itself. The ultimate aim should be to contribute to the competitiveness of the port (Verhoeven, 2015). Goss (1990) stated that the economic function of a seaport is to provide benefits to the original producers of the exports and the ultimate consumers of the imports passing through it. This definition of the port product rightly implies that a port is an element in a wider logistics chain (Suykens and Van de Voorde, 1998). Goss further holds that improving the economic efficiency of a port will enhance economic welfare by increasing the producer surplus of the originators of the goods exported and the consumer surplus for the final consumers of the goods imported. This means that the contribution of a port authority exists in creating an environment in which (a) the port remains competitive, (b) the user

has to pay "acceptable" prices (compared to competing ports) and (c) the overall benefits for society are maximised. The benefit of the quality improvement is the increase in user satisfaction with the port, which consists of the increase in total revenue for the port authority and other providers of the port product and the increase in consumer surplus. The quality of the port product itself will not fully explain the competitiveness of the port; as ports are part of a wider logistics chain, there are other elements which determine competitiveness on which the port authority has no or only very limited influence, e.g. geographical location, proximity and connectivity to cargo generating hinterlands, structural changes in markets, etc. Reducing the general costs of moving cargo or passengers through the port is therefore but one element that will in the end determine the competitiveness of a port. Through governance, a port authority can seek to maximise its influence on general costs that influence the quality of the port product.

Measuring the impact of port authority governance is a challenging task, given that several other internal and external factors influence the competitiveness of a port. To measure the impact of governance on the performance of port authorities, we compare the evolution of output and revenue, profitability and productive efficiency, using the previously discussed Bilodeau et al. (2006) methodology. Corporatised public agencies may be expected to seek an increase in output and revenue. As long as these are not related to input or costs, output and revenue tell us in fact very little about actual performance improvement. But both indicators have a high perceptive value towards principals and stakeholders. Improvement of output and revenue is often perceived as proof of more business-like behaviour, widely quoted in annual reports and other publications (Bilodeau et al., 2006). Taking into account port authorities' diverse functions, it is difficult to identify one single output indicator for a port authority. Most port authorities appear to measure their output "successes" by the volume of cargo or passengers moving through the port. Attributing growth in cargo volume to the performance of a landlord port authority would first of all assume that the port authority has persuasive powers to influence the performance of terminal operators and service providers and that it is, by itself or in cooperation with the port community, able to attract more business to the port as such. Figure 1 shows the evolution of cargo volumes handled at the Baltic States' TEN-T ports, demonstrating that the evolution of total volumes is to a large extent influenced by two tendencies; the ports of Ventspils and Tallinn have a rather negative cargo turnover tendency – the total volumes are declining on a year-on-year basis – whereas in the last decade the ports of Klaipeda and Riga have seen almost double-digit growth, which was powered by the increase in both liquid (oil and oil products) and bulk (coal) cargo.



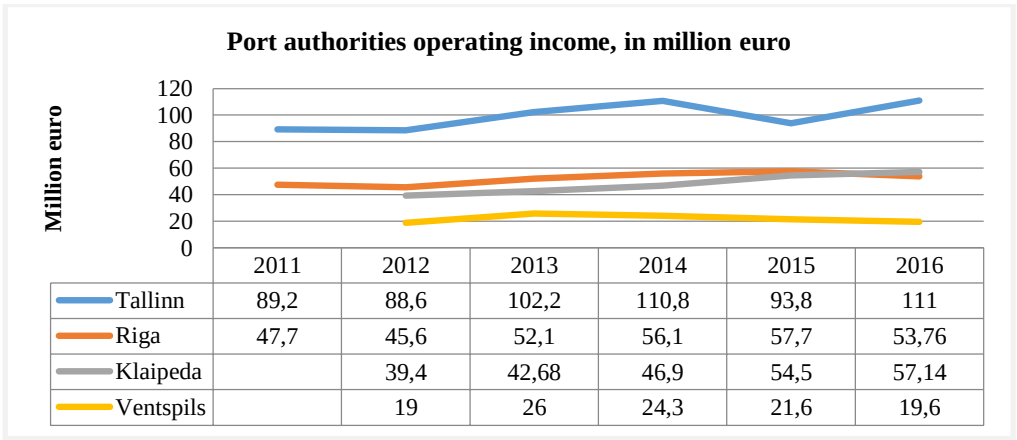
	2006	2008	2010	2012	2014	2015	2016
Klaipeda	23	29	31,28	35,24	36,41	38,51	40
Ventspils	29	28	24,82	30,35	26,2	22,53	18,8
Riga	25	29	30,48	36,05	41,08	40,05	37,1
Tallinn	41	29	36,65	29,48	28,32	22,43	20,12

Figure 1. Volumes at the Baltic States' major seaports, in millions of tonnes
Source: Annual reports of the corresponding port authorities, the author's research

The highest growth during the ten-year period took place in Klaipeda, from 23 million tonnes of cargo in 2006 to 40 million in 2016, which consisted primarily of liquid bulk (both crude oil and oil products), but also of dry bulk (mostly coal). Regarding the other ports, volumes grew considerably in Riga, from 25 million tonnes in 2006 to 37 million tonnes in 2016 on account of dry bulk (coal, fertilisers, grain, gritstone) and liquid bulk (oil products). In Tallinn, cargo volumes decreased mainly on account of liquid bulk, and in Ventspils, they decreased mainly on account of dry bulk (coal) and liquid bulk (oil products). Developments across the ports in recent years have come mainly through changes in dry and liquid bulk. Containerised cargo hasn't been of major importance for any ports, as on the eastern coast of the Baltic Sea major container volumes are handled through the largest container ports of St. Petersburg and Gdansk. The ports of Tallinn and Ventspils have experienced significant cargo volume shifts, as in 2006 the port of Ventspils handled 28 million tonnes, compared to 18 million in 2016, while Tallinn handled 41 million tonnes in 2006 and only 20 million in 2016. In summary, the biggest effect on the volumes at ports came from liquid bulk, and also from dry bulk for several ports. Container volumes grew or remained the same at all ports. The ports of Primorsk and Ust-Luga, the largest ports of the region, are the main competitors for all four of the Baltic States' TEN-T seaports, and are specialised in liquid bulk – oil and oil products – and coal; the growing volume tendency for both of these ports is explained by major Russian-origin cargo shifts to and from these ports.

The figure shown above offers a good view of Baltic ports' historical achievements. Meanwhile, there is another angle; from the governance perspective, the port of Tallinn, which ranks in the top position of the World Bank's Logistics Performance Index (LPI) and in the EU transport scoreboard, holds one of the last positions in the annual cargo turnover rankings of Baltic States' ports, which might lead us to a false conclusion on the port's governance. One should take into account the considerable governance and management efforts the port of Tallinn has made towards corporatization: it has established an independent professional board, elected a supervisory board, nominated an audit committee and transformed the port authority from a municipal office to a state-

owned company which was also listed on the Tallinn Stock Exchange. This is just one single element of the total logistics chain and proves that ports are more than piers; it is the entire logistics chain which is crucial for port users in choosing a port for their cargo operations. Meanwhile, considering merely cargo turnover and a port's ranking according to its achievements could lead to poor decisions on the part of policymakers; in fact, the truth lies not in millions of tonnes moved, but in value-added activities and in cargo of greater market value, which is afterwards reflected in port authorities' real operating income. A port authority should be treated as a business entity and managed like any other private company in a market; it should cancel all public functions and transfer these to relevant state or municipality entities, as has been done in the port of Rotterdam, where the port authority used to be a small department at the municipality level and today is an international corporation which manages ports on a global scale, including Oman, Brazil and several European countries.



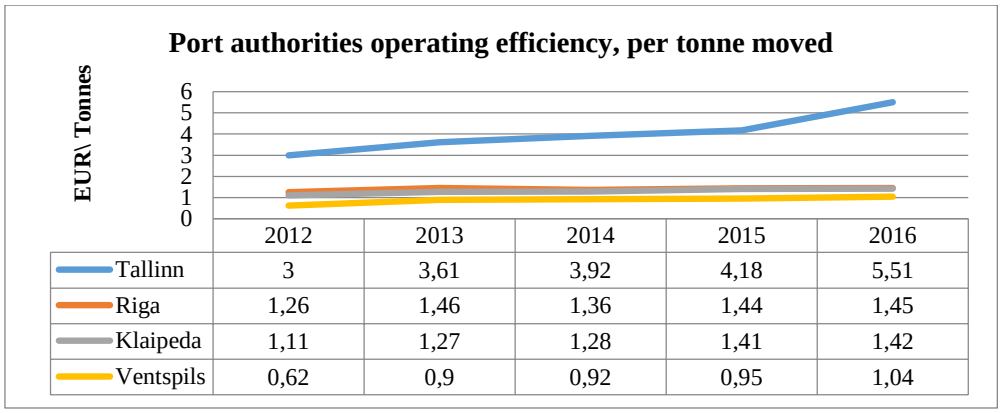
	2011	2012	2013	2014	2015	2016
Tallinn	89,2	88,6	102,2	110,8	93,8	111
Riga	47,7	45,6	52,1	56,1	57,7	53,76
Klaipeda		39,4	42,68	46,9	54,5	57,14
Ventspils		19	26	24,3	21,6	19,6

Figure 2. Port authorities' operating income, in millions of euro
Source: Annual reports of the corresponding port authorities, the author's research

The revenue collected by a port authority may be more directly attributable to its own performance, although revenue from port dues in particular will also be influenced by overall evolution in cargo volume and the number and size of ships calling at the port, elements which are themselves influenced by trade and other factors. Next to revenue from port dues, revenue from land leasing to terminal operators, industrial companies and passenger fees forms the main source of revenue for the Baltic States' major port authorities. Figure 2 shows the evolution of port authorities' total operating income. In 2015, the Tallinn Port Authority's turnover in cargo volumes reached 22.43 million tonnes, while the Freeport of Ventspils managed 22.53 million tonnes, almost exactly the same amount; in fact, both ports have experienced the same cargo volume decline tendencies throughout the analysed period, but the ports' operating income reflects a very different situation. The port of Tallinn's revenue exceeds twice the revenue of the port of Riga or Klaipeda, despite the fact that these ports' cargo turnover is two times the size of Tallinn's. The Freeport of Ventspils managed in 2015 to achieve exactly the same cargo turnover results as the Tallinn Port Authority, yet the latter's income is 4.3 times greater for the year 2015 and 5.6 times greater for the year 2016. In 2016, port of Tallinn cargo flow decreased

by 10 percent, the number of passengers increased by 4 percent, total revenue amounted to EUR 111 million and operating profit amounted to EUR 49 million, which is 11 percent more than a year earlier, and return on assets grew from 7.8 percent to 8.2 percent year-on-year (POT, 2016). Port of Tallinn revenue was also affected by cargo flow; the volume of containerised goods, ro-ro, dry bulk goods and mixed cargo increased, whereas the biggest cargo group – liquid bulk – decreased. The port of Tallinn is one of the ports that lost the most volume within the last decade, yet it is also the port that has managed to generate the most income compared to other major seaports of the Baltic States. According to Bilodeau et al. (2006), port authorities are demanding greater operating income results, which can be seen in Figure 2, whereas port authorities tend to not only increase their market share but also their operating revenue results. The port of Tallinn exhibits the greatest growth in this respect, as discussed above; meanwhile, the port authorities of Riga and Klaipeda deliver very similar operating revenue results: in 2015, the Riga Port Authority published 57.7 million euro, compared to Klaipeda's 54.5 million euro, with a cargo turnover of 40.05 million tonnes for Riga and 38.51 million tonnes for Klaipeda. The Freeport of Ventspils generates the least amount of income: 21.6 million euro in 2015, with a cargo turnover of 22.53 million tonnes. The operating income results for the year 2011 for the port authorities of Klaipeda and Ventspils were not available and are therefore not included in Figure 2.

Port authorities' operating efficiency is calculated by dividing operating income by yearly cargo turnover, which reflects the value in euros of each tonne shipped through the port, as shown in Figure 3.



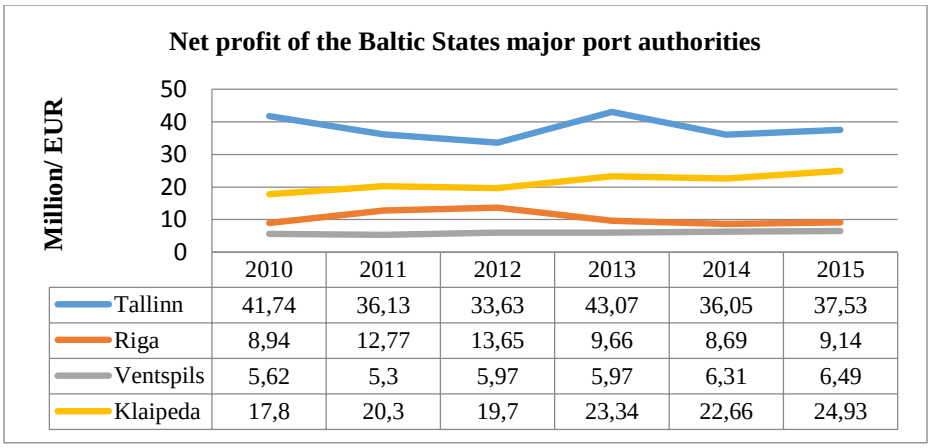
	2012	2013	2014	2015	2016
Tallinn	3	3,61	3,92	4,18	5,51
Riga	1,26	1,46	1,36	1,44	1,45
Klaipeda	1,11	1,27	1,28	1,41	1,42
Ventspils	0,62	0,9	0,92	0,95	1,04

Figure 3. Port authorities' operating efficiency, per tonne moved
Source: Annual reports of the corresponding port authorities, the author's research

The Freeport of Ventspils reports the lowest operating efficiency results of the researched authorities, while the Tallinn Port Authority is the most efficient, followed by Riga and Klaipeda. For instance, the efficiency ratio of the biggest European seaport, the Rotterdam Port Authority, ranges from 3.3 to 3.5 euros per tonne moved (POR, 2012; POR, 2013; POR, 2014; POR 2015) through its port, which is a solid figure; still, this lags behind the achievements of the Tallinn Port Authority. The author will explain the reasons for this in the following paragraph (Table 1). The ports of Riga and Klaipeda operate with similar

cargo turnover and revenue figures, and both ports rely on solid bulk and liquid cargo, as does Ventspils, but the Ventspils results are somehow surprising, as the port operates with almost the same cargo types as Riga and Klaipeda, yet the ability of the port authority to collect corresponding revenues raises the question of port authorities' efficient management and ability to finance development projects in the near future. The efficiency figure in the range of 1.5 euro per tonne moved through the port is neither good nor bad; this reflects the ports' actual cargo breakdown. Both ports, Klaipeda and Riga, rely on transit cargo, and the business model is very simple: ports receive cargo volumes and immediately transport these amounts further; only the liquid cargo terminal operators have the value-added activity of storing some amounts of oil and oil products. In order to increase port authorities' revenues, cargo with greater market value should be attracted. Any extra operation with cargo within the port area would be highly beneficial, and cancellation of any duties which are not port authorities' core business should be evaluated; for instance, the port authority of Riga is financing buoys' and beacons' setup, maintenance and operating expenses, which is a government responsibility, not the port authority's business, and, as discussed before, containerized and general cargoes typically have the highest VAL potential and GLS and LCIS have the best opportunity to serve these cargoes. Therefore, logistics and integrated services along with the logistics chain should be of paramount importance for port authorities in facilitating the increase of their revenue and operating efficiency figures.

The net profit of the Baltic States' major port authorities differs from states and within the state. The group is led by the Tallinn Port Authority, which reported a net profit of 37.53 million EUR in 2015 and 49 million EUR in 2016. Taking into account the significant investments the port authority is putting into infrastructure, the net profit ratio from the total revenue of 111 million EUR in 2016 represents the port authority's heavy investments in its assets. The Klaipeda State Seaport Authority has also reported significant net profit results: 24.93 million EUR for the year 2015, with total operating revenue of 54.5 million EUR, which indicates that the port authority is rather cautious about investment initiatives or raising its net portfolio to raise capital for bold future investment projects. Figure 4 compares the net profit results of the Baltic States' major port authorities.



	2010	2011	2012	2013	2014	2015
Tallinn	41,74	36,13	33,63	43,07	36,05	37,53
Riga	8,94	12,77	13,65	9,66	8,69	9,14
Ventspils	5,62	5,3	5,97	5,97	6,31	6,49
Klaipeda	17,8	20,3	19,7	23,34	22,66	24,93

Figure 4. Net profit of the Baltic States' major port authorities
Source: Annual reports of the corresponding port authorities, the author's research

The Riga Port Authority has reported moderate average net profit results in the range of 9.16 million EUR for the years 2013 to 2015, which is a rather marginal result, taking into account that in the years 2013 to 2015 the port was operating with very good cargo turnover results; financial statements show that in 2015 the port authority's operating revenue reached 57.7 million EUR, administrative expenses reached 10.14 million EUR and costs of services reached 35.62 million EUR, with total liabilities of 148.62 million EUR as well as investments in investment property of 99.08 million EUR in 2015 alone. Taking into account that the Riga Port Authority's reported yearly cargo turnover is similar to the Klaipeda State Seaport Authority's results, while there is an average net profit of 9.16 million EUR compared to Klaipeda's average of 23.64 million EUR in the years 2013 to 2015, the Riga Port Authority's considerable weakness in the port's governance, management and financial planning becomes evident. Ventspils Freeport's net profit results of 6.26 million EUR in the years 2013 to 2015 can be considered as very low, taking into account that Ventspils port is a deep sea port with the considerable advantage – compared to any other seaports of the Baltic States – of a direct oil and oil product pipeline connection to Russia through the territory of Belorussia. According to a SWOT analysis, today the pipeline can be considered as an opportunity, not a strength of the port, as the pipeline hasn't been used for oil and oil product shipments for years, and if slated to be opened any time soon, considerable investments would be needed in maintenance work and pumping buffer oil into the pipeline system. Ventspils port was a major oil and oil product transit point during Soviet times and also after Latvia restored its independence, until March 2003, when shipments of oil and oil products through the pipeline were closed. Port authorities' operating and financial results are the direct reflection of ports' management and governance; thus, there is still room for improvement in Latvia. In recent years, port authorities of the Baltic States have invested considerable funds in superstructure development, maintenance work, dredging work and technology; thus, the port authorities do hold a significant investment and liabilities portfolio. Therefore the financial performance of a port authority is of major importance, to cover investments already made and plan new projects in the future.

The Tallinn Port Authority has reported significant net profit and operating efficiency results, shown in Figures 3 and 4; therefore, there is a need for an additional analysis of financial performance phenomena and what the factor is behind such diverse performance results, taking into account that from the perspective of cargo handling volumes, the Tallinn Port Authority has reported very moderate results, slightly more than the achievements of Ventspils Freeport.

Table 1

AS Tallina Sadam (Port of Tallinn), performance results analysis

Year	Total cargo turnover in mill. tonnes	Number of passengers in mill.	EBITDA in mill. EUR	Net profit, in mill. EUR	Operating income, passengers in % of total	Operating income from passengers, in mill. EUR	Operating income without passengers, in mill. EUR
2010	36.65	7.92	86.8	41.74	34%	29.51	57.29
2011	36.47	8.48	89.2	36.13	35%	31.22	57.98
2012	29.48	8.84	88.6	33.63	38%	33.67	54.93
2013	28.25	9.24	102.2	43.07	36%	36.79	65.41
2014	28.32	9.57	110.8	36.05	35%	38.78	72.02
2015	22.43	9.79	93.8	37.53	42%	39.40	54.40

Source: Annual reports of the corresponding port authority, the author's research

Table 1 analyses the financial and operational performance results of the Tallinn Port Authority. Prior to reviewing this, some introductory remarks on the port's management and governance will be useful. AS Tallinn Sadam (Tallinn Port Authority) was founded in 1992 and in 1996 it was reorganised into a limited company defined under Estonian legislation (AS). The core business of AS Tallinna Sadam is rendering port services in the capacity of a landlord port whose tasks involve managing and developing infrastructure as well as organising navigation in the port basin. The parent holds five harbours: the Old City Harbour in the centre of Tallinn, together with the Old City Marina for small vessels (opened in 2010); the cargo harbour in Paljassaare; Estonia's largest cargo harbour in Muuga; the cargo and passenger harbour in Paldiski (Paldiski South Harbour); and the harbour in Saaremaa, built mostly to receive cruise liners. Cargo flows at the ports are handled by cargo operators who own the buildings, structures and equipment necessary for cargo handling. However, the buildings and structures necessary for servicing passengers belong to AS Tallinna Sadam. The sole shareholder of AS Tallinna Sadam is the Republic of Estonia. Like any other limited company, AS Tallinna Sadam operates pursuant to its articles of association, the Commercial Code and other laws and regulations of the Republic of Estonia. At the end of 2012, AS Tallinna Sadam purchased a multi-functional icebreaking vessel, and since the beginning of 2013 the icebreaker Botnica has been used for rendering icebreaking services to the state of Estonia for Estonian ports in the Gulf of Finland under a 10-year contract. Outside icebreaking season, the multi-functional icebreaker is leased out for various maritime support operations (POT, 2013).

One of the reasons for the financial performance success of AS Tallina Sadam is the development of the passenger shipping route Tallinn-Helsinki, which today is one of the world's busiest passenger traffic shipping lines; in addition to the passenger ship traffic with Finland, AS Tallinna Sadam also regularly services passenger ship traffic between Estonia and Sweden. But even aside from the fact that the Tallinn Port Authority is the leader among the Baltic eastern coast ports in passenger traffic volumes, the port authority

has managed to perform extremely well; for instance, from the years 2012 to 2015, it achieved a total operating income of 395.4 million EUR or 98.85 million EUR on average, and within those years the port handled 108.48 million tonnes of cargo or 27.12 million tonnes of cargo on average. The operating income without passengers amounted to 246.76 million EUR or 61.72 million EUR on average (Table 1), and net profit amounted to 150.28 million EUR or 37.57 million EUR on average from 2012 to 2015. The port of Riga achieved the record high cargo handling volume of 152.65 million tonnes, which is 44.17 million tonnes more than Tallinn; at the same time, net profit amounted to 41.14 million EUR, which is 109.14 million EUR less than Tallinn (Table 2). Table 2 compares the port authorities' average performance results for a four-year period, from 2012 to 2015.

Table 2

Average operational and financial performance results analysis for the period of 2012-2015

	Tallinn	**Klaipeda**	**Riga**	**Ventspils**
Handled volumes of cargo, in millions of tonnes	108.48	143.56	152.65	107.85
EBITDA, in millions of euro	395.4	183.48	211.5	90.9
Net profit, in millions of euro	150.28	90.63	41.14	24.74
Revenue-to-expenditure ratio	1.61	1.97	1.24	1.37
Revenue-to-employee ratio, in millions of euro	1.49	0.65	0.52	0.33
Net profit per employee, in millions of euro	0.56	0.32	0.10	0.09
Average turnaround time for ocean-going vessels, in hours	3.7	3.8	4.4	3.5
Average turnaround time for container vessels, in days	1.2	1.0	1.1	1.2
Average operating margin	3.64	1.27	1.38	0.84
Average profit margin	2.63	2.02	5.14	3.67
Number of dock strikers' days	Not applicable	Not applicable	Not applicable	Not applicable

Source: Annual reports of the corresponding port authorities, Lloyd's List Intelligence, the author's research

The Tallinn Port Authority is a financial leader among the Baltic States' major port authorities; within the researched period it handled similar amounts of cargo, 108.48 million tonnes of cargo compared to Ventspils Freeport's 107.85 million tonnes, but at the same time the Tallinn Port Authority achieved a total operating income of 395.4 million EUR, while Ventspils achieved 90.9 million EUR. Total net profit was 150.28 million EUR for Tallinn and 24.74 million EUR for Ventspils Freeport, which reflects considerable financial performance differences between the port authorities. Table 1 offers a good view of Tallinn Port Authority's operating income without passengers, which in the researched period of 2012 to 2015 amounts to 246.76 million EUR, while competitor Ventspils, with exactly the same cargo throughput amounts, achieved 90.9 million EUR

and Riga, with 50% more cargo volumes than Tallinn, achieved 211.5 million EUR. The Klaipeda State Seaport Authority (KSSA) is the second-best performer among Baltic States' seaports, not in cargo volumes, as the volumes compared to Riga are similar, but from a financial perspective; KSSA's net profit compared to Riga was 49.49 million EUR greater, while it handled less cargo than Riga and operating income was also lower compared to Riga's results. In the researched period, the Riga Port Authority delivered the highest cargo turnover volume: 152.65 million tonnes, with a total operating income of 211.5 million euro compared to KSSA's 183.48 million euros and total handled volume of 143.56 million tonnes of cargo. The Riga Port Authority handled and earned more than KSSA did while lagging in net profit results: 41.14 million euro respectively for the researched period compared to KSSA's 90.63 million euro.

The revenue-to-expenditure ratio compares total revenue to operational expenditure, which, from the productive efficiency perspective, is considered as the cost efficiency factor, which compares expenditure to output. The Klaipeda Port Authority has the highest cost efficiency factor of 1.97 on average, followed by Tallinn with 1.61, Ventspils with 1.37 and Riga with 1.24.

Productive efficiency has two components: technical efficiency, which compares output to input, and cost efficiency, which compares expenditure to output (Lypczinski et al., 2009). In this paragraph, the author will focus on technical efficiency, as cost efficiency was discussed in previous paragraphs. Port authorities traditionally have three input factors, their employees, the port land they own or administer and rent out to third parties, and the investments they make; in this paragraph the limits will be set to compare revenue to employees. The revenue-to-employee ratio is measured with the total revenue within the given period and the total number of people employed at the end of the year. In the researched port authorities, the corresponding employee figures for the given period of time were as follows: Tallinn, 265; Ventspils, 269; Riga, 405; and Klaipeda, 280 employees. The highest revenue-to-employee ratio, in millions of euro, was recorded at Tallinn Port Authority, leading the pack with an impressive 1.49 million, followed by Klaipeda with 0.65 million, Riga with 0.52 million and Ventspils with 0.33 million euro. De Langen and Heij (2014) also compare net profit per employee, where Tallinn leads with 0.56 million euro per employee net profit, followed by Klaipeda with 0.32, Riga with 0.10 and Ventspils with 0.09 million euro.

Average turnaround time for ocean-going vessels is measured for ships with a minimum length of 150 metres, while the average sailing time is measured in hours from sea to berth and vice versa. The average turnaround time (TAT) indicates the average time vessels need to access their destination inside the port (the berth) and return to sea and excludes the actual time spent at the berth. Ventspils has the best TAT of 3.5 hours, followed by Tallinn with 3.7 hours and Klaipeda with 3.8 hours, which is explained by the fact that compared to other seaports, Ventspils is specified as an open deep sea port, without any restrictions for approaching channel or mooring facilities. Ventspils possesses very clean and easy access from the Baltic Sea compared to Riga, which has the longest TAT of 4.4 hours, a result of the long approaching channel and the limited approaching speed and manoeuvrability.

Average turnaround time for container vessels is calculated in days, measuring the average date of departure and date of arrival among all container vessels calling at the port within one month of navigation, expressed in number of days per call. Average turnaround

time for container vessels includes the time spent at berth, which is contrary to standard TAT measurement. The final decisions in choosing a container terminal are based on the cost-revenue relationships of the possible permutations of vessel deployments and cargo generation of port calls, but time is a very important constraint (Notteboom, 2006). The data were drawn from Lloyd's List Intelligence (LLI), which is considered to be among the most comprehensive databases of maritime information related to ports, companies and vessels. The database records over four million movements made by the world's merchant fleet every year. LLI also reveals that the average vessel stay is 25.54 hours, which indicates a fairly high level of performance overall, and confirms the remarkable improvements in ship turnaround times achieved as a result of containerisation. Average turnaround time for container vessels in the Baltic States is 1.125 days, which, expressed in hours, amounts to 27 hours. The most efficient container handling is in the ports of Klaipeda and Riga, followed by Tallinn and Ventspils.

Average operating margin is calculated as the operating income divided by the net volume during a period. Tallinn Port Authority has the greatest average operating margin of 3.64, followed by Riga with 1.38, Klaipeda with 1.27 and Ventspils with 0.84. The average profit margin of the researched port authorities is calculated as the net income divided by the profit. Riga has the greatest profit margin with 5.14 points, followed by Ventspils with 3.67, Tallinn with 2.63 and Klaipeda with 2.02.

In this research, following the Bilodeau et al. (2006) methodology, the impact of port governance on ports' efficiency was assessed, measuring ports' performance from different perspectives and for different indicators, including port authorities' financial performance and operational achievements with a set of different KPIs. The results have been outlined in a logical manner, comparing all four Baltic States' TEN-T ports for a set of KPIs to measure and indicate the most and the least efficient port authorities within the region.

CONCLUSIONS

The following conclusions can be made from the research:

1. Port authorities governed according to good corporate governance principles report greater port performance results and perform better financially than those that do not follow the same objectives.
2. Ports governed through a landlord function are influenced by three factors: competitive pressure to invest in infrastructure, financial pressure and the competition for land use.
3. This research outlined the differences among port authorities' governance models and board election and selection criteria. In all four major seaports of the Baltic States, the board election and selection criteria are solely managed by represented ministries and controlled by corresponding ministers (Tallinn, Klaipeda) as well as the corresponding municipality (Klaipeda) and a mix of both (Riga, Ventspils), which is considered as lack of independence of port boards due to political appointment processes, emphasis on the political accountability of each individual to its appointing authority, and uneven consideration of professional criteria in appointments.
4. The research also outlined that the port of Tallinn, compared to the other three ports of the Baltic States, has moved towards greater independence and financial

autonomy and is directly involved with its impact within the logistics chain. The Tallinn Port Authority is also governed according to good corporate governance guidelines and possesses the most transparent port governance and management model, with a very simple management hierarchy, supervisory board and audit committee.

5. The Baltic States' TEN-T ports focus their services plans on servicing East–West transit flows and are operated as landlord ports. The ports are managed by port authorities, who have the right to rent out their land, piers and relevant infrastructure for a long-term period, and most of the revenues are collected from port dues and fees for the services the port authority offers. The port authorities' income flows come from land rents, port dues and other services; a port authority that has more land in its trust gains financially by accommodating more companies and maximising its rent.

RECOMMENDATIONS

The theoretical and practical results obtained in this research contributed to establishing the following recommendations for policymakers, port management bodies, executive managers, regulators, port users and service providers, as well as scholars and researchers:

1. Introducing good corporate governance, financial transparency and autonomy of maritime port authorities will improve the quality and efficiency of the service provided to port users and contribute to a climate that is more favourable to investment in ports.
2. The governments of the Baltic States should amend the relevant bylaws to clarify the required qualifications for board members, which should encourage authorities to ensure that selected board members have adequate experience and skills to fulfil their mandate. The bylaws should provide a board member's profile, including general attributes, for example, independence, accountability, integrity, leadership and specific professional qualifications for some of the board members such as port economics or port management. The governments should introduce term limits for board members, which should include a standard period of tenure as well as a maximum number of terms.
3. The Government of Latvia should consider changing the legal status of Latvian ports to public companies according to the law on public corporations. The change of legal status would not only allow for better alignment with the operations of a corporation, but also change the incentives structures for board and management members and bring port management and governance practices under the discipline of corporate law. It is strongly recommended that an oversight function be established to hold the boards of Latvian ports accountable and to carry out an annual evaluation of their performance.
4. The Government of Lithuania should revise the port board member selection and election process according to greater transparency, political independence and professional criteria. It is possible and advisable to have both state and municipality interests represented within the port authority, but it would be best to seal those interests within the port authority's shareholding percentage and appoint a professional supervisory board and executive board to run the port.

5. The Government of Estonia should amend the relevant regulations to exclude the two ministries' direct dominance in appointing supervisory board members; it would be better to have a professional supervisory board without any direct political nominee.
6. The governments of the Baltic States ought to secure board independence as a vital principle and evaluate board size, as large boards enhance inefficiencies in the decision-making process.

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