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The issue of evaluation of a competitive position of a port enterprise. A case study of Bulk Cargo-Port Szczecin

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Abstract: Competitiveness of seaports is a complex issue. It may be viewed from the level of the whole region, the port itself as well as an individual port enterprise. To assess competitiveness of a port, four elements should be accounted for: evaluation of competitiveness potential, identification of factors of competitive advantage, indication of instruments of competing, and evaluation of the port's competitive position. The article discusses the individual stages of the port's competitiveness assessment and proposes adequate factors and metrics of competitiveness. On that basis, competitiveness of the Bulk Cargo-Port Szczecin enterprise was evaluated.

Introduction

Competitiveness of seaports is connected with the idea of competitiveness that may be viewed in many aspects. On the one hand, it is considered to be competition between entities that are trying to reach analogous goals. In this approach, any actions taken by the entities to reach specified goals make it harder for the other entities to achieve the same goals (Stankiewicz, 2005). On the other hand, competitiveness may be understood as an enterprise's capability of creating continuous growth, increasing productivity and effective development of sales markets, while offering their customers new, improved and

cheaper products (Adamkiewicz, 1999). In this approach, competition is seen as a force that stimulates an enterprise to strive for development. It is the main factor that motivates an enterprise to improve the effectiveness of its operation (Wziątek-Kubiak, 2001).

Competition forces an enterprise to take actions in all areas, within the enterprise as well as outside, aiming at outrunning the competitors, meet the customers' needs and win their recognition (Lichtarski, 2003). Competition may be viewed in two ways (Gorynia, 1998):

- dynamically – when an enterprise is able to achieve and maintain or even enhance its competitive advantage,
- statically – when an enterprise has a competitive advantage in a given place and time.

According to Stankiewicz (2000), competitiveness of enterprises is a system composed of four elements:

- competitiveness potential, understood as the totality of tangible and intangible resources held by the enterprise, which are necessary for it to sustain and develop on the competitive market,
- competitive advantage, defined as the effect of using the enterprise's competitiveness potential, resulting in effective generating of an attractive business offer as well as effective instruments of competing,
- instruments of competing, described as means that are consciously created by an enterprise to win business,
- competitive position, understood as a result of competing, achieved by an enterprise in a given sector, and viewed against the background of results achieved by competitors.

Competitiveness is a relative category that may be evaluated by comparing with products or services of other enterprises (Flejterski, 2000, p. 60). Competition eliminates enterprises which are unable to meet the market requirements, therefore ports operating on the international market are bound to strive for continuous improvement of their competitiveness (Kotowska, Narętkiewicz, 2003, p. 109). It is a prerequisite for survival in the contemporary global environment.

Analogously to other enterprises, seaports operating in the market economy conditions are subject to the laws of competition and market verification processes. According to S. Szwankowski (2000), competition in port operations is found both in relation to seaports as a whole and to individual port enterprises operating within ports. It should be particularly emphasized that the process of creating the conditions that foster competitiveness of ports does not refer only to operations within the port itself (e.g. improving the quality of port services). Therefore, competition should be viewed broadly and analyzed in several aspects, as:

- competition from foreign ports,
- competition from other national ports,
- competition between enterprises operating in various ports,

- competition between enterprises located within the area of a given port,
- competition from other modes of transport (being the alternative for transporting the cargo).

The concept of competitiveness in the context of a port may be defined as a capability to offer and render various port services whose price and attractiveness are at least equal to those provided by other ports located in the vicinity (Salomon, 2000). The factors that determine the competitive position of Polish seaports include those that may be influenced by the ports as well as those which do not depend on the ports' activities (Pluciński, 2013). According to S. Szwanowski (1998), a port's competitiveness is affected by the level of the port infrastructure development as well as efficient road, railway and inland waterway connections, and also shipping connections with the foreland. No less important is meeting the global standards in terms of safety, reliability, timeliness, flexibility and prices of rendered services. H. Klimek (2006) emphasizes that nowadays there are two factors of the greatest importance: efficacy of transport connections with the hinterland and quality of port services.

The position of each port is determined by its business relations with its environment in the spatial, transport and commercial aspects (Klimek and Nowicki, 1998). This is because the process of improving the competitiveness is connected with activities of all the participants of the transport chain that links a given port with the hinterland and foreland.

Competitiveness of ports is a multi-faced and complex issue. In a geographical approach, competitiveness of ports may be viewed as:

1. Competitiveness between regions:

In the case of Polish seaports, competitiveness may be viewed as competitiveness between the ports of the Baltic Sea and those of the North Sea, or between the ports of the northern and southern Europe.

2. Competitiveness between ports in a given region:

This approach is most often used in the case of assessing competitiveness of Polish seaports that are compared to other ports located in the southern Baltic Sea.

3. Competitiveness between terminals in a given port. In this case it is possible to consider competitiveness between port enterprises operating within a given port.

1. Research Methodology

Converting the systematic approach to competitiveness proposed by Stankiewicz (2002) to competitiveness of a port, it is necessary to account for competitiveness potential, competitive advantage, instruments of competing, and competitive position.

Competitiveness potential is defined by competitiveness factors. In the case of seaports, the following factors seem to be the most adequate:

- basic parameters of ports: port area, storage area, length of wharves (this parameter describes the port size and its development capabilities [investment reserves]),

- nautical accessibility of ports: permissible parameters of served vessels (this parameter defines the accessibility from the foreland, which is particularly important for ship operators; this significantly affects the cost of the whole transport chain),
- accessibility of ports from the hinterland by road, railway and inland waterways (similarly as the previous parameter, this has an effect on transport time and cost of the whole transport chain and determines the size of the port hinterland),
- comprehensiveness of transshipment service offer, which shows the universality of the port,
- comprehensiveness of the shipping services offered (in this case, an adequate measure is the quantity, type and (loop) routes of shipping lines calling at the port (ferry, ro-ro and container lines),
- intermodal offer (quantity, frequency, type of intermodal means of transport served by the port, intermodal train routes) affecting the size of the port hinterland for unitized cargo,
- costs of port services, both active and passive, although they affect the choice of the port only indirectly (because a decision on choosing a particular port is taken on the basis of the cost of the whole transport chain), they constitute a factor that is fully dependent on the port: they are set at the level of the port authorities, the port enterprise as well as other enterprises offering their services in the port (ship hauling, piloting),
- quality of port services which may be understood as promptness, safety, reliability, availability, large-scale service and eco-friendliness (Grzelakowski and Matczak, 2006).

The analysis of these factors enables determining the port's competitive advantage. The most adequate kind of analysis for this purpose seems to be the descriptive analysis, even though in practice competitive advantage is also quantified by assigning values to identified factors in the analyzed ports that are competitive to each other, and by applying weights to individual factors of competitiveness. Thus obtained weighted average provides a clear picture of whether or not any given port has a competitive advantage.

A port's (or a port enterprise's) instruments of competing include competitiveness factors that can be affected by the port and which the port can use to stimulate its competitiveness. The most important instrument of competing is investments, both within the port area and those to improve the accessibility of the port. While in the former case the investment policy is implemented by the entity itself, in the latter its activities must be limited to active lobbying, as decisions in this regard are made by regional or state authorities. Moreover, instruments of competing also include the above mentioned costs of port services, as well as all kinds of organizational or administrative facilities (e.g. possibility of clearing the cargo or checking availability of berths for barges using web-based applications).

The fourth element – the competitive position of a port may be identified by analyzing the measures of the port activity. The most objective and easily available measure

of the port activity is the turnover volume. However, the best measure of the competitive position is the share of turnover done in a given port in relation to the totality of turnover done in the ports included in the study. The ratio may be determined as per the formula:

$$WT_{ij} = \frac{P_{ij}}{\sum_{j=0}^n P_{ij}},$$

where:

- WT_{ij} – transport function ratio in cargo group i for port j [%],
- P_{ij} – turnover of cargo group i in port j [t],
- n – number of ports involved in the study.

Thus, the competitive position is not affected by economic fluctuations that in market conditions pertain to all the ports in a given region. Analyzing how the share changes over time, it is possible to evaluate the change in the port's competitive position. In order that the impact of instruments of competing on a port's competitive position is better identified, the analysis should be made separately for the individual cargo groups (also for passengers).

Another issue is evaluation of the competitive position of a port enterprise. An analysis of its competitiveness only among the port enterprises operating within a given port does not seem to be reliable. In fact, such an enterprise competes with other enterprises rendering similar services, but located in the neighboring ports. However, such an analysis is very difficult to make. Due to unavailability of detailed information regarding both the factors (technical parameters of the enterprise, prices offered for port services, etc.) and the measures (transshipment volumes) of competitiveness, such an analysis may be performed in two stages:

1. Stage I – at the level of ports (regional level). As not all the ports in a region are multi-terminal ports, the criterion for port selection should account for the nature of transshipment operations. The analysis should involve the ports that meet the following criteria:
 - their transshipment volumes are comparable or higher than those of the analyzed port enterprise,
 - their transshipment operations regard the same cargo groups as the analyzed port enterprise.
2. Stage II – the port level. The analysis should account for the competitiveness of a given enterprise and its position against the backdrop of the whole port.

The analysis should include only the factors that are relevant from the point of view of the port enterprise. For example, factors such as the number of regular liner services or intermodal connections in the hinterland are irrelevant for an enterprise that handles bulk cargo. Thus defined analysis makes it possible to evaluate in a reliable manner the

position of a port enterprise against the backdrop of other competing port enterprises, and it is plausible thanks to availability of data.

2. A Case Study of Bulk Cargo-Port Szczecin

2.1. Stage I. Analysis of the competitiveness of the port in Szczecin

Identification of the competitiveness potential of ports and characteristics of the competitive advantage of the port in Szczecin

In view of the location, the main competitors of Bulk Cargo-Port Szczecin are other terminals located in Szczecin and other ports of the southern Baltic Sea. At Stage I, the competitive position of the Szczecin port was evaluated against the background of the other Polish seaports and German ports located on the Baltic Sea coast. A detailed analysis was performed for ports showing transshipment volumes exceeding 1 million tonnes. The German ports included in the analysis were: Lübeck, Rostock, Sassnitz and Wismar, and the Polish ones: Świnoujście, Police, Gdynia and Gdańsk. The ports compete with each other within a similar area of hinterland.

In Table 1 there are presented the main factors of the seaports' competitiveness, including basic parameters of the port infrastructure (area and length of the wharves), permissible parameters of the ships served by the ports, transshipment services offered, port access infrastructure and connections to the hinterland. The analysis ignores, *inter alia*, the intermodal offer of the ports and the regular liner services, as they are irrelevant for enterprises that handle bulk cargo and conventional general cargo.

The port in Szczecin is the most remote seaport from the open sea. The fairway leading to the port is 70 km long, which means that it takes minimum 4 hours for a ship to get into the port. On the other hand, this location makes Szczecin the closest seaport for business centers such as Berlin, Wrocław and Poznań. Another factor that may have an adverse effect on the competitive position is the maximum permissible parameters of vessels that may be handled by the port. The parameters offered by the Szczecin port are similar to those of the ports in Lübeck and slightly greater than those of the Wismar port. Besides, the port in Lübeck handles mainly general cargo carried by ro-ro ships which do not require significant depths. Wismar, in turn, is a port characterized by relatively small transshipment capacities (total length of wharves is ca. 2.5 km). For the Szczecin port, where over 60% of transshipments accounts for bulk cargo, the fact that it is unable to handle e.g. panamax size vessels constitutes a significant factor reducing its competitiveness.

Within the limits of the port of Szczecin there are significant areas of land, located mainly on the islands of Ostrów Grabowski and Ostrów Mieleński. Making use of the areas requires significant financial outlays and time because of the need to stabilize and reinforce the ground. There are no areas that have been developed and prepared for construction projects.

Table 1. Characteristics of the competitiveness factors exhibited by the analysed ports of the southern Baltic Sea

Ports	Lubeck	Rostock	Wismar	Sassnitz	Police	Szczecin	Świnoujście	Gdynia	Gdańsk
Basic parameters of ports	land area 155 ha 24 wharves	land area 750 ha, 43 wharves, wharves length – 11 km	land area 56 ha, wharves length 2.5 km	area 80 ha	land area: 460 ha, wharves length: 1.8 km	land area: 901 ha, operated wharves length: 13 km	land area: 530 ha operated wharves length: 6 km	land area 507 ha, total length of wharves 17.7 km, length of oper- ated wharves 11 km	land area 3248 ha, operated wharves length 23.7 km
Maximum permitted vessels	draught: 9.5 m max. 15 k DWT	draught – 13 m, length – 295 m	draught: 8.5 m, length: 240 m	draught: 9.50 m, length: 365 m	draught 9.15 m with vessel length of 170 m and 8.40 m with vessel length of 215 m	draught 9.15 m with vessel length of 160 m and 8.1 m with vessel length of 215 m	Internal Port: draught - 13.2 m, length 270 m, External Port: draught 13.5 m, length 320 m	10.2 m, length 225 m External Port: draught 15.0 m, length 350 m, container ships: draught 16.5 m, length 385 m	Internal Port: draught 10.2 m, length 225 m External Port: draught 15.0 m, length 350 m, container ships: draught 16.5 m, length 385 m
Infrastructure	A1 three-lane motorway connects the port directly with Hamburg and the motorway network, A20	a kilometre-long flyover connects the ferry terminal with A19 and A20 motorways	connection with A14 and A20 motorways	connection with A20 motorway via a four- lane highway	regional roads no. 114 and 115	A6 motorway connecting Szczecin with Berlin, S3 expressway linking Szczecin to A2 motorway	national road no. 3, partially S3 expressway	A1 motorway – Gdańsk–Stryków	A1 motorway – Gdańsk–Stryków
Inland Shipping	connection with the European network of inland waterways via the Elbe–Lübeck Canal (Class IV)	unavailable	unavailable	unavailable	the Oder Waterway (Class II–V), connection with the European network of inland waterways via the Oder–Havel Canal	unavailable	unavailable	the Vistula waterway, connection with the European network of inland waterways via the rivers of Brda, Noteć and Warta (Class II)	the Vistula waterway, connection with the European network of inland waterways via the rivers of Brda, Noteć and Warta (Class II)
Railway Infrastructure	available	available	available	available, the railway terminal may handle rolling stock with 1,524 mm rail gauge	unavailable	available	available	available	available
Transshipment characteristics	general cargo port, handles mainly Finnish paper and wood products, conventional general cargo, ro-ro and containers	universal port, handles mainly bulk cargo, both dry and liquid, and general cargo carried by ferries	universal port handling mainly bulk cargo, i.e. grain, fertilisers, salt, chem- icals and aggregate, dry and liquid. Moreover, it handles wood and wood industry products, containers and steel mill products	general cargo port, adapted to handle general cargo carried by ferries. Terminal to handle sea ferries, ro-ro-vessels and cruisers. Marine terminal to handle bulk cargo, conventional general cargo. Offshore project cargo. Onshore terminal intended for transshipment, storage and assembly of wind turbines	the company port serv- ing the Police chemical plant, it consists of 4 terminals: a marine terminal to handle phosphorites (unload- ing) and fertilisers (loading), barge terminal to handle barges and inland marine vessels, Mjanika terminal to handle liquid cargo, and Jasienica (barge berth- ing terminal)	universal port, handles bulk cargo, conventional general cargo, containers	Świnoujście Commercial Port – handles mainly the bulk cargo, Swinoujście Ferry Terminal – the big- gest ferry terminal in Poland	universal port: handles liquid bulk cargo, dry cargo (BCT, GCT), conventional general cargo and ro-ro ships with bulk cargo; grain, coal and coke, ores	universal port: handles liquid bulk cargo, dry cargo (BCT, GCT), conventional general cargo and ro-ro ships with bulk cargo; grain, coal and coke, ores

Source: own study based on informational materials obtained from the ports.

An undoubted advantage of the Szczecin port is its location at the Oder estuary, and access to inland shipping. Unfortunately, the parameters of the Oder Waterway considerably restrict the possibilities of upstream navigation from the junction with the Oder-Havel Canal. This means that although the Szczecin port has a relatively good inland transport connection with western European waterways, at the same time there are very limited possibilities of using inland shipping for cargo haulage from Lower Silesia, Silesia or Wielkopolska regions. The situation is much worse in the case of land connections. All the ports included in this study, apart from the ports located at the Oder estuary: Szczecin, Police and Świnoujście, have a direct access to motorways linking the ports with their hinterland. Although Szczecin has access to A6 motorway in the direction of Berlin and to S3 expressway leading to A2 motorway, the port itself is located in the middle of the agglomeration, which means that trucks must go through the urban traffic to get to or out of the port.

The proposal for a synthetic evaluation of the competitive advantage of the port in Szczecin is presented in Table 2, whereas the weights of individual factors were determined taking into account the main line of business of Bulk Cargo-Port Szczecin – bulk cargo handling.

Table 2. Evaluation of the competitive advantage of the port in Szczecin

Ports	Lübeck	Rostock	Wismar	Sasnitz	Police	Szczecin	Świnoujście	Gdynia	Gdańsk	Weight (%)
Port area	2	4	1	1	3	4	3	3	5	15
Maximum permissible parameters of vessels	2	4	1	2	2	2	4	4	5	30
Road infrastructure	5	5	4	4	1	3	2	4	4	10
Inland shipping	3	0	0	0	3	3	3	0	1	15
Railway infrastructure	3	3	3	4	3	3	3	3	3	20
Transshipment service offer	3	4	2	3	2	4	4	4	5	10
Weighted average	2.45	2.9	1.45	1.95	2.2	2.55	2.9	2.65	3.4	100

Source: own elaboration.

Analysis of the competitive position of the port in Szczecin and identification of the instruments of competitiveness

The analysis of the competitive position of the port in Szczecin takes into account only the cargoes that are handled by the company Bulk Cargo-Port Szczecin: dry and liquid bulk cargo and conventional general cargo.

All the ports included in this study handle bulk cargo. In 2014, the transhipped bulk cargo volume totaled nearly 20 mln tonnes, which was over 10 mln tonnes less than in

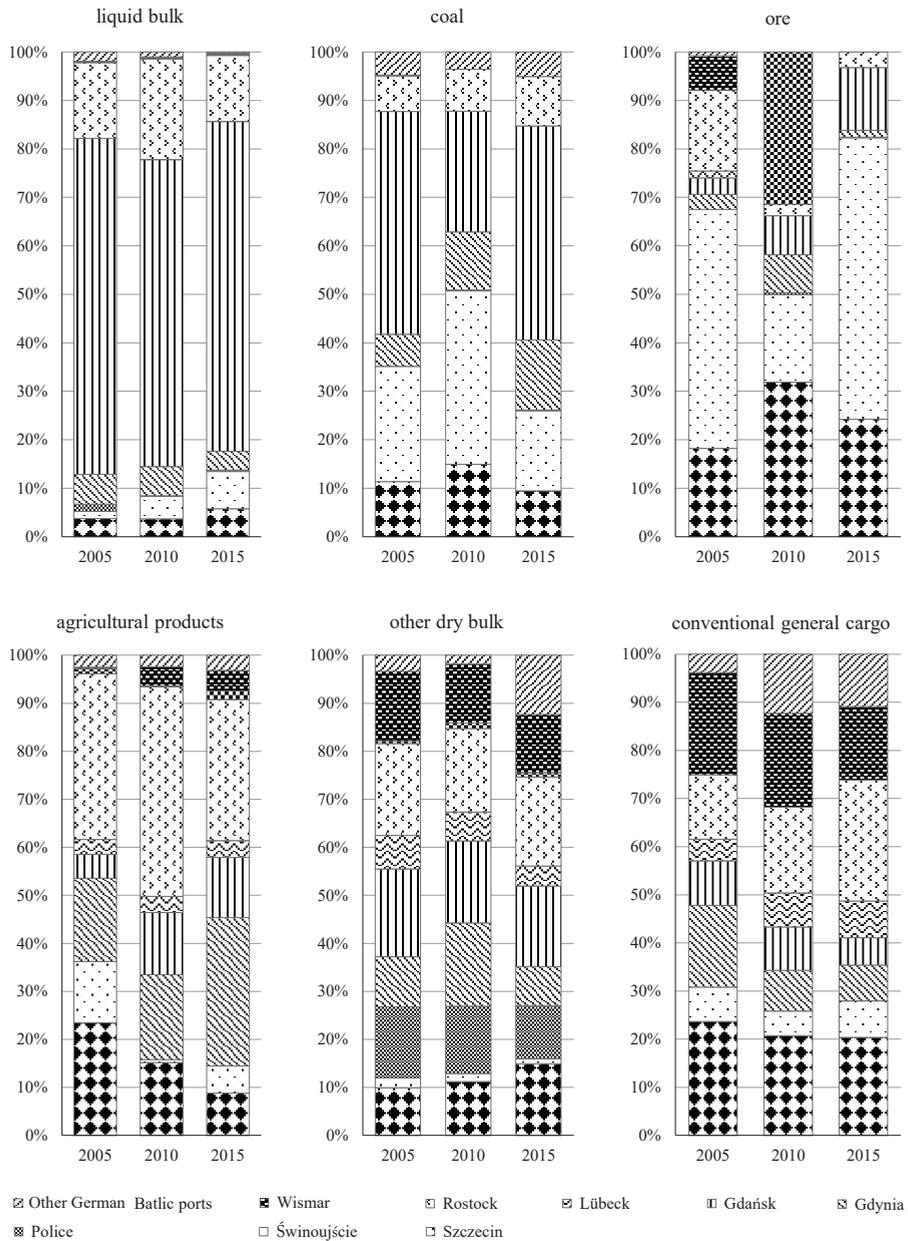


Figure 1. Share of the southern Baltic Sea ports in handling the selected cargo groups in the years 2005, 2010, 2015

Source: own study on the basis of Eurostat Database.

2005. Almost half of it (20 mln tonnes) was transhipped in Gdańsk. In 2015, more than 15 mln tonnes of liquid cargo (mainly petroleum and its products) was handled in the Gdańsk port, and its share in liquid cargo handling was almost 70%. In Szczecin, liquid cargo transshipment volume is negligible, over the years 2005–2015 it increased from 600 to 1200 thous. tonnes, and its share in transshipments performed by the ports in question rose from 4 to 6%. However, in the period covered by this study the position of the port of Świnoujście strengthened significantly: its share in transshipment volume increased from 2 to 8% in the years 2005–2014. That was mainly due to the investments made by PKN Orlen and Baltchem.

A different trend is shown by transshipment of coal: in the ports of the southern Baltic Sea its volume slumped by 37% over the 10 years covered by the analysis. At the moment (2015) more than 9.5 mln tonnes of coal are transhipped, more than a half in the ports of Gdynia and Gdańsk, and a quarter in the Świnoujście port. The competitive position of the analyzed ports is closely linked to the implemented investments (instruments of competitiveness). In Świnoujście, as a result of purchasing (in 2009) Liebherr LHM 500 cranes with lifting capacity of 140 tonnes each, there was a considerable increase in coal transshipment volume. The share of the port increased to 36% in 2010. Due to the investment, the Świnoujście port began handling imported coal. Despite the overall drop in coal transshipment volume in the studied period, the amount more than doubled in Gdynia. This resulted mainly from the improved accessibility from the sea, as in the period 2009–2011 the port canal was deepened from 11.5 to 13.5 m, and, inter alia, the Dutch and French Quays were dredged down to 13.5 m. As for the Gdańsk port, a surge in its competitiveness in 2015 resulted from, inter alia, the commissioning of the Sea Invest coal transshipment terminal in the Northern Port in Gdańsk. Over the years 2005–2015, the position of the port in Gdańsk decreased insignificantly, even though the transshipment volume halved.

In the years 2005–2015, transshipment of ores dropped by ca. 20%. The vast majority of ores is transhipped in Świnoujście. In the worst year (2010) the ore transshipment volume totaled slightly more than 1 mln tonnes. The change in direction of supply of this raw material to Poland, caused by the main steel producer in Poland, AccelorMittal and the producers from Germany and Slovakia (US Steel Kosice, Riva Stahl in Germany), has contributed to reappearance of this cargo in Świnoujście. The port in Szczecin handles non-ferrous metal ores, i.e. copper and zinc concentrates. The transshipment volumes in the Szczecin port have remained on a stable level of 300–600 thous. tonnes. The share of the Szczecin port in handling metal ores is now relatively big and amounts to 24%.

The worst situation is in the case of grain and feed transshipment: the competitive position of the Szczecin port has been weakening gradually for several years. Although over the past 10 years the ports covered by this study have shown an almost 50% increase in transshipment volume of agricultural products, the port in Szczecin experienced an almost 40% slump. Most of cargoes that previously had been handled in Szczecin were taken over by the ports of Gdynia and Gdańsk, where since the beginning of the 2000s investments have been systematically made to increase the transshipment and storage capacity for grain

and feed. Major investments implemented in the ports of Gdańsk, Gdynia and Świnoujście since the onset of the 2000s include:

- 2001 – construction of flat storage facilities for grain and feed in the Baltic Grain Terminal,
- 2010 – starting the transshipments of grain and feed in the Baltic General Cargo Terminal in Gdynia (OT Port Gdynia),
- 2011 – commissioning the Bunge terminal in Świnoujście,
- 2013 – opening the Gdańsk Bulk Cargo Terminal,
- 2015 – conversion of the Swedish Quay to serve panamax size vessels in the Marine Bulk Cargo Terminal in Gdynia,
- 2015 – commissioning the meal and grain storage facility of the capacity of 60 thous. m³ in the Marine Bulk Cargo Terminal in Gdynia on the Silesian Quay,
- 2015 – dredging and extending the berthing line on the Bytom Quay in the Gdańsk Bulk Cargo Terminal, which enabled handling fully loaded vessels with a capacity of 15 thous. DWT.

Another factor contributing to the deterioration of the competitive position of the port in Szczecin was the decommissioning of “Ewa” grain elevator in 2013. The position was not improved by the investments implemented at that time, i.e. construction of the flat storage facility on the Slovakian Quay and the warehouses built by Bulk Cargo-Port Szczecin. In the future, the competitive position of the Szczecin port may deteriorate even further as a result of constructing the transshipment terminal for grain and feed with the transshipment capacity of 2.8 mln tonnes in the Gdańsk port by the OT Logistic company (the terminal is to be commissioned in 2018), as well as the construction of the Agro terminal on the Chemików Quay in Świnoujście. The quay will be modernized and adapted for transshipment of grain, grain products and biomass, there are also plans to adapt the warehouse to store agricultural products, with the storage capacity of 82.5 thous. tonnes, modernization of the barge quay in Trymerski Basin, and to construct another warehouse with a system of facilities for grain drying and sorting (Turlejski, 2016).

With regard to transshipment of other dry bulk cargoes, the competitive position of the Szczecin port is very good. Within the discussed period, transshipment volume in the ports in question rose only by 30%, whereas in the port of Szczecin the volume more than doubled to the level of 2.2 mln tonnes. Following Gdańsk and Rostock, Szczecin is the third biggest port in terms of handling this cargo group which is very diversified. It involves cargoes that make smaller consignments compared to e.g. coal (and need smaller ships). Therefore, its competitive position is not adversely affected by the fact that its accessibility from the sea is worse than in the case of the other ports. The cargoes require special conditions of transshipment and storage and often they need dedicated storage yards. The ports handle, inter alia, fertilizers and chemicals, cement, ilmenite, aggregate, wood chips, biomass, and limestone.

As for conventional general cargo, the port of Szczecin handles mainly steel mill products and wood processing industry products. In the years 2005–2010, the transshipment

volume of this cargo group fell by 23%. Within the area of general cargo handling, a new line of business in the ports' operations is transshipment of wind turbine components: towers, generators and rotor blades, as well as elements connected with the off-shore industry. The German ports included in this study are starting to specialize in transshipment of this type of cargo. Both ports have also been developing the industrial function in connection with this transshipment (Wehrmann, 2012).

2.2. Competitiveness of the Bulk Cargo-Port Szczecin company against the backdrop of other stevedoring enterprises in Szczecin

The competitiveness potential of Bulk Cargo-Port Szczecin against the background of the other stevedoring enterprises in Szczecin is relatively high. It is the biggest stevedoring enterprise in Szczecin that handles bulk cargo. It operates on wharves of the total length of 3.3 km (which accounts for ca. 25% of the total length of the wharves in Szczecin) and in the area of 101 ha (10% of the port area), and it handles more than 50% of the cargo. The area leased by the Company includes 6 out of 11 quays that may handle vessels with the maximum draught that is permissible in the port of Szczecin. As a result of universalization of the handling, most quays have been adapted to handle road vehicles.

Bulk Cargo-Port Szczecin is the biggest coal and ore stevedore, its share in transshipment volume of these cargoes in 2015 amounted to, respectively: 93% and 89%. The company transships mainly exported coal, also providing cargo handling services such as e.g. coal sorting or mixing the coal sorts. In the area of coal and ore handling, Bulk Cargo-Port Szczecin has virtually no competition in Szczecin. Small amounts are transhipped at Alfa Terminal Szczecin Sp. z o.o. which also transships fertilizers, urea and methanol. Ores are also transhipped by Cronimet.

In historical terms, coal transshipment volumes at Bulk Cargo-Port Szczecin reflected the trends observed in the Polish foreign trade. By the year 2000, the company transhipped nearly 4 mln tonnes of coal per year. From the onset of the 2000s there was a drop in that amount, which was a result of the shrinking exports of coal. The pier dedicated for coal loading started to serve barges heading to Germany (Table 3).

Metal ores are handled as imported goods. These include: magnesite, chromium, copper and zinc concentrates, ferromanganese, ferrosilicon, magnetite. In the first years of the company operation, in the years 1992–2000, metal ores transshipment volumes fluctuated from 500 to 800 thous. tonnes. As a result of the changes in the economy, inter alia, the changes in the direction of supply and a downturn on the market of steel mill products, the transshipment volume fell to the level of 200–400 thous. tonnes.

In the case of Bulk Cargo-Port Szczecin, coal transshipment volume depends mainly on the energy policy of Germany. The recent drop was mainly due to the changes in the direction of coal supply to Germany which has increased imports of Russian coal directly via their ports instead of imports from Poland. However, this change in direction of supply could be viewed as an opportunity for the Company which might handle a part of the cargo in an indirect chain vessel – storage yard – barge. That would, however, require

improvement of the Szczecin–Berlin waterway parameters, which would enable operation of larger barge combinations, and dredging of the fairway to Szczecin (Pluciński et al., 2016), at the same time ensuring greater depths at BC-PS wharves and appropriate efficiency of transshipment facilities. This will make it possible to handle bigger ships in the port, thus extending the service offer of the enterprise.

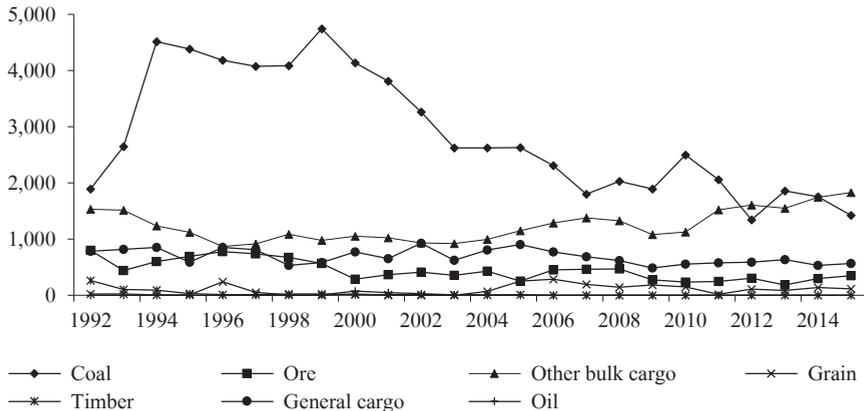


Figure 2. Transshipment at Bulk Cargo-Port Szczecin in the period 1992–2015 ('000 tonnes)

Source: materials provided by Bulk Cargo-Port Szczecin.

In the case of metal ores, due to the extensively varied range, we should expect a stabilized level of transshipment volume with a possible downward trend that results from, inter alia, the EU policy regarding reduction of greenhouse gases emissions and the expected migration of heavy industries to countries where legal regulations are less restrictive in that regard.

The Company's considerable share in handling the cargo described as "Other bulk cargo" exceeds 55%, which proves the high quality of its services and being responsive to customers' needs. It is a very diversified cargo group. Bulk Cargo-Port Szczecin tranships and stores cargoes such as e.g. fertilizers, phosphorites, pitch, aggregate, soot, gypsum, sodium silicate, magnesite. All the cargoes have specific requirements for transshipment and storage, and some of them need extra distribution and logistics services, e.g. bagging. Majority of stevedoring companies in Szczecin specialize in handling one type of cargo from this group, e.g. Fosfan SA – fertilisers, Cemex Polska Sp. z o.o. – cement, Coronimet – scrap metal. There are few exceptions, e.g. Baltchem and above mentioned Alfa Terminal, who handle several kinds of bulk cargo.

Over the operation period of Bulk Cargo-Port Szczecin, the transshipment volumes in this cargo group changed dynamically. Following the slump in transshipment volume, which reached 47% (from 1.5 to 0.87 mln tonnes) in the years 1992–1996, since the onset of the 2000s a stable growth has been observed, with a peak of 16% (2005) per year.

In the years 1996–2015, the transshipment volume more than doubled. That was a result of the cargo diversification policy implemented by the Company, and handling all cargoes, even those requiring very specific conditions of transshipment and storage and small consignments. That group includes fertilizers which, as opposed to those handled in other port enterprises, are unloaded from ships as bulk cargo and then bagged and dispatched as general cargo to the hinterland. In the future, this cargo group handling is expected to grow steadily. Due to the extensive diversification of cargoes, transshipments will depend on the general condition of the Polish economy on the one hand, and the marketing and investment policy of Bulk Cargo-Port Szczecin on the other.

The enterprise enjoys a relatively high competitive position in the area of conventional general cargo handling. The enterprise, which was established in the area where bulk cargoes are handled, holds a 30% share in the transshipment volume of conventional general cargo in the port of Szczecin. Bulk Cargo-Port Szczecin handles mainly exports of steel mill products, and small amounts imported from Russia. Its biggest competitor in this regard is DB Port Szczecin, and, to a lesser extent, Fast Terminal and Alfa Terminal. Unfortunately, the transshipment volume in this cargo group has been falling. In the period preceding Poland's accession to the EU, the general cargo transshipment volume fluctuated from 500 to 900 thous. tonnes. Although in 2005 the volume reached 900 thous. tonnes, it slumped afterwards and now it fluctuates around 500–600 thous. tonnes. This is mainly due to the trends observed in general cargo transport, inter alia, an increase in cargo containerization, a decrease in transshipments and change in the directions of steel mill products handling.

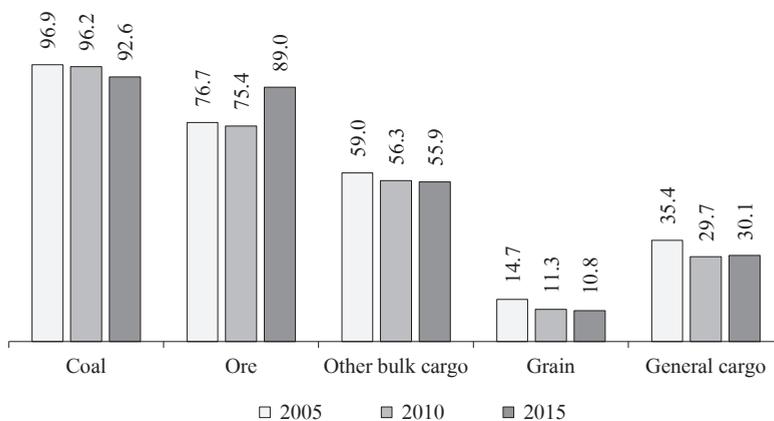


Figure 3. The share of Bulk Cargo-Port Szczecin in cargo handling in the port of Szczecin (%)

Source: materials provided by Szczecin and Świnoujście Seaports Authority.

The weakest competitive position is held by Bulk Cargo-Port Szczecin in the agricultural products cargo group. The Company's share in this cargo group is 10%. This group is mainly represented by imported soybean meal (in 2015, BC-PS handled 44.8 thous. out of 230 thous. tonnes handled in Szczecin). Apart from that, the Company handles, inter alia, wheat, rapeseed, maize cake, maize and rapeseed meal (exported) and maize meal (imported). Agricultural products are also handled by the following enterprises: Elewator Ewa, Andreas (ca. 40% of transshipments in the port of Szczecin) and Państwowe Zakłady Zbożowe. Transshipments in this group are very unstable and differ from trends observed on the market. However, throughout the years of operation of Bulk Cargo-Port Szczecin the volume never exceeded 300 thous. tonnes. This is mainly due to the weakening competitive position of the port of Szczecin as a whole in relation to the ports of Gdańsk and Gdynia. To have a chance to increase the volume of agricultural products, it would be necessary to improve the accessibility of the Szczecin port to panamax size vessels, without the need to lighten/load up a significant part of the cargo in other Polish seaports.

Conclusion

Evaluation of seaport competitiveness is a multi-faceted analysis. Selection of factors applied in evaluation of competitive potential depends on the level of the analysis (level of a port enterprise, one port or a group of ports located in a given region). However, regardless of the level, the most important factors include accessibility from the foreland and hinterland, the service offer and its quality. For a port, the most important instruments of competing include investments implemented directly within the port area as well as outside of it, made to improve the accessibility of the port. The performed analysis of competitiveness has shown that the port of Szczecin is characterized by very poor accessibility from the foreland and insufficient (road and railway) accessibility from the hinterland. Its advantage, in turn, is the accessibility of inland waterways, even though any resulting benefits will be palpable only after the Oder Waterway has been made fully navigable. Despite such unfavorable conditions, Szczecin has managed to achieve a high competitive position in handling metal ores, other bulk cargoes and conventional general cargo, a considerable part of which is transhipped by Bulk Cargo-Port Szczecin. These cargoes are transported in smaller (than e.g. coal) consignments and they require special conditions for transhipment and storage, as well as additional services.

The Bulk Cargo-Port Szczecin enterprise is a leader on the Szczecin market in the area of coal, metal ores and other dry bulk cargo handling, and it plays a relatively large role in conventional general cargo handling. The Company has obtained an advantage in handling these cargo groups due to providing customized services that meet the customers' needs. Bulk Cargo-Port Szczecin has a weaker competitive position in the area of agricultural products handling.

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**PROBLEMATYKA OCENY POZYCJI KONKURENCYJNEJ
PRZEDSIĘBIORSTWA PORTOWEGO.
STUDIUM PRZYPADKU BULK CARGO-PORT SZCZECIN**

Słowa kluczowe: konkurencyjność portów, terminale portowe, pozycja konkurencyjna

Streszczenie: Konkurencyjność portów morskich jest zjawiskiem złożonym. Można ją rozpatrywać zarówno z poziomu całego regionu, portu, jak i pojedynczego przedsiębiorstwa portowego. Dokonując oceny konkurencyjności portu, należy: rozpatrzeć potencjał konkurencyjności, zidentyfikować czynniki przewagi konkurencyjnej, wskazać instrumenty konkurowania i ocenić pozycję konkurencyjną portu. W artykule zidentyfikowano poszczególne etapy oceny konkurencyjności portu, zaproponowano adekwatne czynniki i mierniki konkurencyjności i w oparciu o nie dokonano oceny konkurencyjności przedsiębiorstwa Bulk Cargo Port Szczecin.

Cytowanie

Kotowska, I. (2017). The issue of evaluation of a competitive position of a port enterprise. A case study of Bulk Cargo-Port Szczecin. *Ekonomiczne Problemy Usług*, 3 (128), 47–63. DOI: 10.18276/epu.2017.128-04.