

LAND INFRASTRUCTURE AND PORTS

A CASE OF PORT OF DURRES

Osman Metalla 

Aleksander Moisiu University, Faculty of Professional Studies, Durres, Albania

o.metalla@gmail.com

Eli Vyshka

Aleksander Moisiu University, Faculty of Professional Studies, Durres, Albania

Stavri Risto

Aleksander Moisiu University, Faculty of Professional Studies, Durres, Albania

Abstract

The main function of a port is to transfer cargo from in a fast and efficient way and of course at a reasonable cost from maritime transport to inland transport. In order to achieve this a number of factors have to be considered starting with port navigational parameters, berth occupancy rate, berth space, technology involved etc. All these are port related variables. In order to measure port productivity and its performance it is not only the port variables that influence port performance, but land infrastructure that serves the port is of main importance too. Even though the distance between Durres port and Pristina is almost 12% shorter than the distance between Pristina and Port of Bar Montenegro, and, 21.2% shorter than the distance between Pristina and Thessaloniki the market share does not reflect the same. The main factor for this is the lack (or poor conditions) of rail service and other navigational limitations of the port. Rail and road services play an important role in port performance and productivity as well. Hence, reducing cargo handling time and cargo transfer time will play an important role in reducing cargo handling cost, therefore reducing cost of commodities. The purpose of this paper is to evaluate the role of the rail sector in the port overall performance.

Keywords: Port management, Container, Terminal, Performance, Operations

INTRODUCTION

Durres port is the main port of Albania. Almost 85% of all sea-born cargoes goes through this port. It is situated in the central western part of the Albanian coast, only 36km from the capital Tirana. It is the gateway of the Corridor VIII, which connects Durres port with other regional markets like Macedonia, Kosovo, and further. Its operational infrastructure is composed of 11 quays with a water depth varying from 7,5m – 11,5m. The main cargoes that are handled in this port are general cargoes, grain, containers, ferries and minerals. Traffic and market forecast, is based on the development perspective of Albania, Kosovo and Macedonia, as well as their market potentials, mainly on industrial products and bulk cargoes.

During the course of the last 20 years the Port of Durres has undergone a number of important changes. Therefore quays 4, 5, 6, 7, 9, 11, are renovated and offer a new quay wall, and renovated terminal back up area. Port is being divided into dedicated terminals and this has made the port more productive. The main terminals that are:

- Containers terminal: quay length 600m, area required 15 – 20 ha.
- Ferry and cruiser's terminal with a parking area of 5 – 10 ha
- Terminal of dirty dry cargoes
 - Cement and clinker export, quay length 240m, quay side about 3 ha, with railway connection
 - Coal import terminal, quay length 240m, quay area 2 ha, railway connection,
 - Scrap import quay, length 240m, quay area 2 ha, railway connection,

The development of the Port is characterized of the containers terminal position in the western part of the basin and the bulk cargoes and dry dirty cargoes on the east of the basin. Therefore the “clean” activities of the port are carried out next to the city of Durres, and “dirty” ones in most possible far end of the port. The principles of terminal foundation are: Demand for port services as defined in traffic forecast; All cargoes must be handled in the Durres port; Proper terminal infrastructure; Ships capacity.

Based on the configuration of port infrastructure, is determined the projected type of ships that can access the port: container ship up to 1700 TEU; bulk cargo ship up to 30,000 dwt. This is the biggest ship type that can have access to the port after investing in the port and basin and making the port according to the international standards. The following table No.1, gives a summary of the quay details.

Table 1: Characteristics of the quays of the Port of Durres

Quay No.	Quay length	Designed depth of the quay	Year of construction	Type of quay structure	Quay structure
0	78m	7.5m	1972	Deck on piles	Eroded,
1	178.5m	7.5m	1972 (renovated in 1994)	Deck on piles	Overall good condition
2	178.5m	7.5m	1951	Partly on piles and supporting wall	Overall good condition
3	30m	7,5m	1951	Idem	Overall good condition
4	173.5m	7.5m	1951 (renovated in 1994)	Concrete deck on supporting wall	Overall good condition
5	236m	9.85m	1996(renovated in 2000)	Deck on piles	Good condition
6	265m	405.8m	1996	Concrete deck on supporting wall	Good condition
7&8	406m	9.85m	1964 (renovated in 2005)	Partly on piles and supporting wall	Very good condition
9	122m	7.5m	1963 (renovated in 2009)	Partly on piles and supporting wall	Very good condition
10	250m	9.85m	1978	Deck on piles	Poor
11	250m	11.5m	1983	Deck on piles	Good

Quays 1, 2, 4, 5, 6, normally are dedicated to general cargo handling and there are three stevedoring companies, which are operating there. Quays 7 and part of quay 8 are dedicated to the containers terminal, which is being operated by the ACT Company. Quay 9 is ferry and passengers terminal. Quay 10 actually belongs to the former shipyard, and fishing port. Fishing port will be re-allocated to the new fishing port, which is being built in the western part of the port. Quay 11 is the dirty dry cargoes terminal and is being operated by a foreign operator as well. As it can be realized from the above table the overall conditions of the port infrastructure is in good conditions.

ROAD CONNECTION

Durres port has very good connection to the national road network. All terminals are connected in a direct way with the main port entrance/exit, which is connected with Durres –Tirana-Elbasan-Qafethane and Durres–Kukes- Prishtina-Nish highway. Durres port is well connected with the southern part of the country as well. Road transport remains the main transport mode for transferring the cargoes from Durres Port into their destinations.

Table 2 gives an overall, picture of the road connection and the road distances from the main regional markets.

Table 2: Distances in km from/to Durres port

Ports	Markets			
	Albania (Tirana)	Macedonia (Skopje)	Kosovo (Pristina)	Serbia (Belgrade)
Durres	40	320	264 (355)*	710
Tirana	40	0	0	0
Vlore	115	0	0	0
Shkoder	110	0	0	0
Korçe	205			
Thessaloniki	375	225	310	635
Burgas	900	665	710	810
Varna	950	665	755	860
Bar	205	380	335	520
Thessaloniki	375	225	310	635

*After the construction of the new Road Durres-Kukes-Prishtina, the distance is cut down from 355km to 264km due to the construction of the “Thirra” tunnel

The main road axes are in good conditions. The connection of Durres port from Durres to Elbasan is a four lane road, and the rest to Qafethana, and Korca, is a two lane road. The other axes from Durres to Vlora are a four lane road except two small segments that are under construction. The connection of Durres Port with north axes to Shkodra is a four lane road up to Milot and the rest is a two lane road, but in good conditions. The segment fro Milot to Pristina is a four lane road, except a short segment from Milot to Rreshen. Having good road infrastructure connection is one of the main strengths of the Durres Port.

RAILWAY CONNECTION

Railway sector in Albania is public. The overall situation of the rail network is very poor and this due to non-encouraging policies that are followed in that sector by the Albanian government. The standard gauge line was built in 1947. There is one international link with Montenegro via Shkoder, which is used for freight traffic only. In 1987 the total length of rail lines were 677 km, but later part of it was damaged and was out of service (the line Milot – Rubik – Rreshen). Because of this the volume of cargo being transported by rail has dropped dramatically from year to year. The rail is used for passengers as well, mainly moving from Durres-Tirana but in some other parts of the country as well. Albanian rail network has one international connection with Montenegro, but the overall rail conditions, is very poor. The international connection with Macedonia is missing and this is another limitation of the sector. The sector is facing severe financially difficulties and the last year have resulted in significant financial loss. The following table 3 gives an overall picture of the sector during the last 20 years.

Table 3: Cargoes Transported By Rail 1995 - 2013

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Cargo 000t	574	521	284	305	361	412	258	340	520	417
Cargo million t/km	53	42	23	25	27	28	19	21	31	32
year	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Cargo 000t	404	450	399	355	343	403	317	151	142	
Cargo million t/km	26	36	53	52	46	66	50	25	23	

As it can be seen from the above table, the volume of the cargo transported by rail, during the last years, has dropped dramatically, which in fact reflects the difficulties with which the sector is facing.

PORT TRAFFIC

Durres port is the biggest and the most import port of Albania. During the course of the last 20 years, the port has undergone a number of infrastructures projects and reforms. Today the port offers a modern infrastructure and this has affected the performance of the port. Actually the port is divided into several terminals, dedicated to different kinds of cargoes. The port has successfully implemented the reforms of the World Bank in order to transform the port from a public one into a landlord port. Today private operators are operating the services and terminals. Because of these infrastructure investments, and reforms that the port has implemented, the output of the port has been increased. Another feature of the port is the increasing of the containerized cargoes and this has caused that the balance between containerized cargoes and other cargoes goes in favor of the first one. The containers terminal is being expanded and the number of TEU's handled in the port from year to year has been continuously increasing. Graph 1 gives a summary of the volumes of cargoes handled during years 2005 – 2013

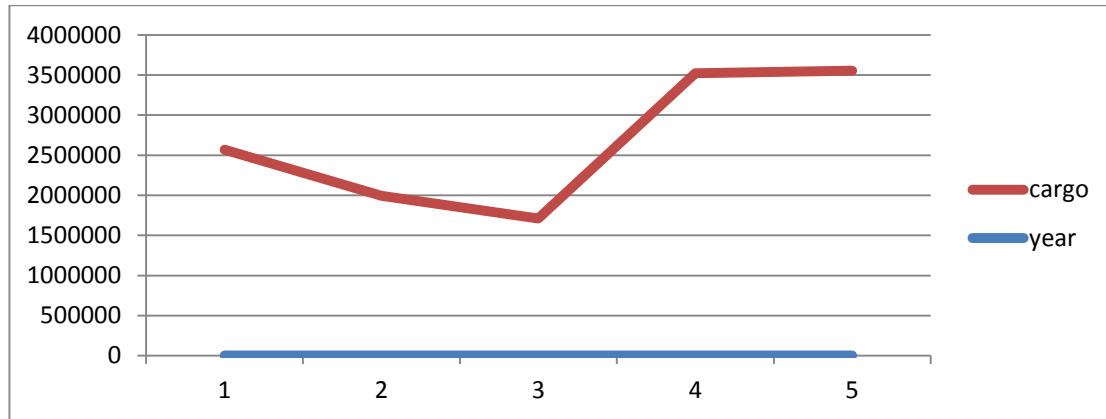
Table 4: Volume of Cargo in Port of Durres 2003-2011

	Kind of cargo	2003	2004	2005	2006	2007	2008	2009	2010	2011
Export	General Cargo	3,922	3,470	6,700	20,924	25,136	20,273	15,428	237,342	119,182
	Dry Bulk	150,068	182,135	157,268	272,309	493,336	249,931	106,155	348,620	189,703
	TOTALI Exp	153,990	185,605	163,968	293,233	518,472	270,204	121,583	585,962	308,885
Import	General Cargo	820,204	874,794	956,424	924,085	781,783	714,467	578,135	311,067	144,457
	Dry Bulk	734,933	856,208	890,022	894,518	521,112	466,775	514,485	487,126	252,181
	Liquid Bulk	220,892	208,004	223,157	225,166	270,447	263,363	159,141	8,650	-
	Cereals	349,860	414,215	331,545	349,977	362,429	276,291	276,291	313,977	171,495
	TOTALI Imp	2,125,889	2,353,221	2,401,148	2,393,746	1,935,771	1,720,896	1,528,052	1,120,820	568,133
Annual TOTAL	2,279,879	2,538,826	2,565,116	2,686,979	2,454,243	1,991,100	1,649,635	1,706,782	877,018	

Source: Durres Port Authority, Statistics department

The following figure 1 reflects the tendency of the cargoes handled in Durres port during the same period of time shown in the above table, including years 2012 – 2013.

Figure 1: Volume of the cargoes handled in Durres port

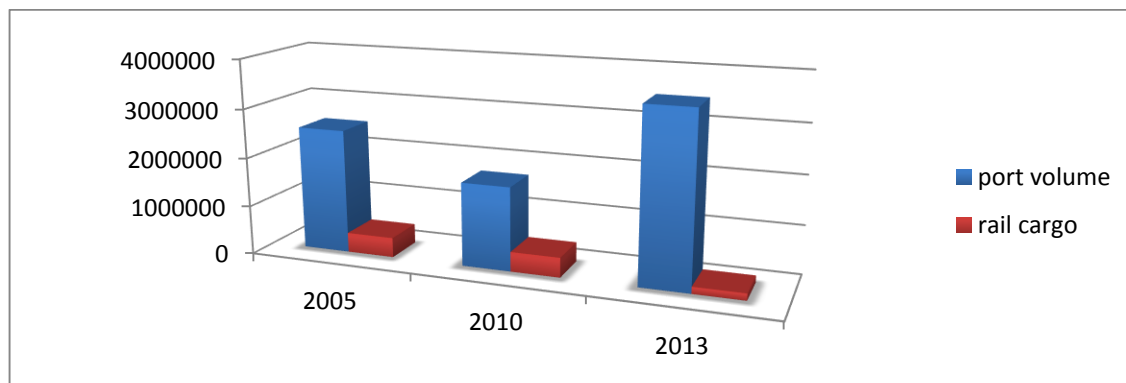


As it can be observed from this graphic, the tendency of the volumes of cargoes has been increasing during the last 5 years. That reflects the effect of the investments and the reforms carried out in the port. The overall volume of the cargo handled in the port is slightly over 3, 5 million of tons per year.

DISCUSSION

In previous paragraphs we discussed about the port of Durres in general, road and rail connections, volumes of cargoes that are being transferred by rail and the difficulties that rail sector is facing. The volume of the cargo being handled in the port has been increased continuously, but in the contrary the volume of the cargo transported by rail, has dropped down significantly.

Figure 2: Port and Rail Volume of Cargo handled



In year 2013 the port has handled 3.5 million of tons of cargo. The percentage of cargoes transported by rail versus the overall cargo handled in the port of Durres in 2005 was 15,8%, while in 2010 this percentage was 23,6%. The overall volume of cargo that was transported by rail during this year was 142 thousand tons of cargo. Let assume that all this cargo has been transported from/to the port of Durres. This figure represents only 4,057% of all the cargo handled in Durres port. These figures demonstrate the increasing of the port traffic from one side and the reduction of the cargo transported by rail from the other side. Actually not all the cargoes that are transported by rail originate from Durres Port, therefore the real percentage of the cargoes transferred from/to the port via rail, is lower than 4,057%. The only terminal that is having direct rail connection in Durres port is eastern terminal or dirty dry cargo terminal where the main cargoes that are being handled are minerals, scrap, coil, clinker and other bulk cargoes. Containers terminal, which actually covers the main share of all the cargoes that goes through this port has no rail connection, consequently all container traffic is handled through road trucks. Other terminals of the port as well have no rail connection (ferry terminal, and general cargo terminal).

Considering the limitations of the port of Durres apart of some navigational limitations such as the limited water depth of Durres bay, shallow waters at the access channel, limited maneuvering area for bigger vessels, the lacking of rail connection of port terminals is one of the main limitations that this port presents in respect of cargo transfer.

CONCLUSION

Throughout this paper we underlined the capacities of Durres Port, the infrastructure developments, as well as the reforms undertaken by this port in order to achieve its finale objective in order to become a landlord port.

Port of Durres has a very strategic position, being situated close to the capital Tirana, at the entrance of Corridor VIII. This port has very good road connection with Albanian road network, and through corridor VIII has a good access to the European road network. The nation's road, Durres – Pristina – Nish, connects this port with corridor X.

The port terminals are not connected to Albanian rail network except of eastern terminal where dirty dry bulk cargoes are handled. The lack of rail connection at the containers terminal is one of the main handicaps of the port.

Rail sector is in general poor conditions and improving technical standards of the rail network, as well as completing the missing links with Montenegro will enhance the flexibility and cargo transferring capacities of Durres port, making this port more competitive. Rail sector

should be one of the priorities of the Albanian Government in the transport sector as one of the sectors that will contribute to the economic growth of the country.

REFERENCES

D.O. Noteboom T.J, and Leschine T.M (1990), "Container Terminal Productivity a Perspective"

Drejtoria e Pergjitheshme e Hekurudhes Shqiptare (Albanian General Railway Directorate)

Durres Port Authority, statistical department

F.Bramo, Sh. LLaci, Academic Journal of Interdisciplinary Studies "Albanian Railway in the framework of EU Integration. An overview and development opportunities in the future"

L. Berger S.A. Albanian National Transport Plane

Noteboom T.E. (2004) Container Shipping and Ports. Review of the Networks Economics

www.apdurres.com.al/ Retrieved April 2015

www.seetoint.org/seetodocuments/ Retrieved April 2015