



Volume XXI 2018

ISSUE no.1

MBNA Publishing House Constanta 2018



Scientific Bulletin of Naval Academy

SBNA PAPER • **OPEN ACCESS**

The Black Sea ports - the eastern maritime gates of Europe

To cite this article: [R. Bosneagu](#), *Scientific Bulletin of Naval Academy*, Vol. XXI 2018, pg. 583-592.

Available online at www.anmb.ro

ISSN: 2392-8956; ISSN-L: 1454-864X

doi: 10.21279/1454-864X-18-I1-088

SBNA© 2018. This work is licensed under the CC BY-NC-SA 4.0 License

The Black Sea ports - the eastern maritime gates of Europe

R. Bosneagu „Mircea cel Batran” Naval Academy Constantza, Romania
romeo_bosneagu@yahoo.com

Abstract: The port is a place situated on the shore of a sea, river or another waterway, protected by waves and currents, equipped with all the facilities necessary for the mooring, loading, unloading, and repairing of ships. Today, however, the modern seaport exceeds this classical definition, it is a specialized shipping infrastructure, being a complex economic unit with a wider commercial and industrial function than the production process of the major international commercial companies. Black Sea ports are the eastern maritime frontier of Europe, essential gates for entry and exit of imported and exported goods, the eastern maritime facade of Europe

1. Introduction

Seaports are commercial and passengers ports or combined, for freight and passengers. A seaport is a coastal or shore-side landing where ships can moor and unload cargo and have car and rail links to the hinterland. There are specialized terminals within or out of ports. Sea and river ports are the main gateways for import and export goods for many countries with a maritime facade. In the European legislation, the maritime port is defined as an area of land and sea that includes a set of specific activities and equipment to ensure, in particular, berthing of the ships, their loading and unloading, the storage of goods, their reception and delivery, and the landing of the passengers. Over time, the role of seaports has changed. In ancient times the harbors were regarded as a safe shelter against the dangers of the sea; they have contributed to the prosperity and cohesion of Europe and other major regions of the world. Old civilizations had their important ports, especially in the Mediterranean basin. Maritime powers have developed through the boldness and spirit of exploring its people. The great explorers have brought Europe to the map of the world's maritime trade. The maritime trade has grown through Atlantic and North Sea ports, bringing innovation to finance and maritime insurance. The Hanseatic League represented the force that secured the development of the ports of the North Sea and the Baltic Sea. With the economic development of human society, with the growth of trade, the role of port-cities as prosperity factors has increased sharply. The end of the 19th century and the beginning of the twentieth century is the romantic time of the seaport, perceived as a window to the world, and with a rich and intense human activity of loading and unloading ships to the quays. The second part of the 20th century and the beginning of the 21st century provide the predominant picture of the installations and containers as a symbol of the seaport [1]. The modern seaport is a complex concept that draws its sake from the past (safe haven, a gate to the world), which provides value-added and shelters a multitude of integrative industrial activities, an expert center with a high technologically qualified leadership. The port includes all aquaria, land, hydro-technical constructions, waterways, rails, buildings, warehouses, platforms, railways, roads, installations and equipment within its perimeter. Today, the seaports with adjacent port areas are ideal for industrial and logistics activities and provide conditions for fishing, leisure, and tourism. The port provides opportunities for practicing specific jobs. In a port works: dockers, container terminal operators, ship agents, brokers, sailors, merchants, port captains, captains, port authorities, ship pilots, shipbuilders, customs agents, bank agents, insurers, quality controllers, police officers, firefighters, lawyers, etc. [2].

2. Modern seaports functions

A modern seaport fulfills the following main functions:

- the role of receiving and sheltering ships by organized ships and safely berthing;
- the transshipment function of goods and products;
- temporary or durable storage of goods under optime conditions;
- the distribution function of the goods;
- industrial and productive capacity;
- the commercial role;
- logistics function, by performing various ship services: maneuvers, repair, supply;
- the cultural function.

The commercial activities of the seaports have become particularly profitable as a result of the increase in freight traffic through them, and the increase in the volume of goods produced in the port area. Maritime scholarships, investments in the development and modernization of maritime ports and maritime transport means, their productive regions, fiscal, customs, governmental facilities are the main elements that enhance the commercial function of modern maritime ports.

Modern ports have adopted strategies for the fluidity of goods transit, and the disruption of this chain requires port authorities to develop logistics activities, which would be the second fundamental strategy to increase the competitive power of ports. A port is a central point of logistics and involves accepting the following specific objectives:

- the organization of ports and port infrastructures according to their logistics objective;
- renting and concessioning of the various spaces necessary for the implementation of logistic activities;
- active participation of specialists in the full use of the port area and the provision of facilities for logistics activities (shipping agencies, logistics operators, etc.).

In general, ports are divided according to their size and economic importance in major ports and small or minor ports.

The big ports can be [11]:

- the most numerous natural ports, almost half of the world's ports, formed by the shelter of a favorable coast, reef, cape or islands;
- artificial harbors, built entirely at the shelter of protective dikes or as a continuation of smaller natural ports, represent almost 20% of the world's ports; these are especially ports exposed to dominant winds, waves or high currents;
- natural river ports located along a river, usually with the banks parallel to the banks, over 18% of the total ports;
- artificial river ports with inland-built basins, most of them parallel to the river axis, 1-2% of all ports;
- sea and river ports situated along an artificial canal or river with a navigable waterway, approximately 1-2% of all ports.

3. Black Sea ports short geographic and economic characterization

The Black Sea is a natural inland water basin situated between Europe and Asia, and has the aspect of a deep basin, oriented from west to east, that is extending at approximately latitude six degrees and longitude five degrees, between the parallels: Lat. $40^{\circ} 55'N$, La. $46^{\circ} 37'N$ and the meridian lines: Long. $27^{\circ} 27'E$, Long. $41^{\circ} 47'E$. It is an intercontinental sea, being in connection with the Mediterranean Sea through the Bosfor Strait and with the Azov Sea through the Kerch Strait. The main physical – geographical data of the Black Sea (table 1, and figure1) makes it having an individual character into the Euro-Asian context, in other words, as an area with a particular specific.

Table 1 - The Black Sea - main physical-geographical data

1.	Surface: 413,490 km ²	12.	The distance to the North Sea: approx.1,300 km
2.	Volume: 529,955 km ³	13.	The distance to the Mediterranean Sea (Gibraltar): approx. 1,300 km
3.	The maximum depth: 2,212 m (the medium depth 1271 m)/2243 m	14.	The surface of the hydrographical basin: 2,405,000 km ²
4.	Maximum length, on the parallel of $42^{\circ}30'N$,	15.	The level difference between the Elbrus

	between Burgas and the Caucasian coast: 1,149 km (662 nautical miles - M)		peak (5,633 m) and the maximum depth: 7,878 m
5.	The maximum width (on the meridian of 31°12' E): 650 km (332 nautical miles)	16.	The continental platform: 133,000 km ² (40% from the total sea surface)
6.	The minimum width (on the Cape Sarici meridian – Crimea pen.): 267 km (144 M)	17.	The flow of the inlet water through Bosphorus Strait: 450 km ³
7.	The coasts length: 4,047 km (2,200 nautical miles)	18.	The flow of the fresh water: 400 km ³
8.	The distance up to the White Sea: approx. 1.300 km	19.	The distance up to the Suez Canal: approx. 650 km
9.	The distance up to the Persian Gulf: approx. 1,300 km	20.	The distance up to the Caspian Sea: approx. 350 km
10.	The extreme points: in the northern part 46°33'N at Berezan Estuary, near Oceakov, in the eastern part 41°42'E between Batumi and Poti, in the southern part 40°56'N at Giresun, and in the western part 27°27'E in the Burgas Bay.	21.	The presence of the hydrogen sulfide: from the depth of 150...200 m
11.	The Romanian coast: from Vama Veche to Musura mouth (225 km); the Ukrainian coast: from Musura mouth to Kerci Strait (1,200 km); the Russian coast: from Kerci narrow to Psou River mouth (239 km); the Georgian coast: from Psou River mouth to Chorotka River mouth (310 km); the Turkish coast: from Chorotka river mouth to Rezovka river mouth (1,695 km); the Bulgarian coast: from Rezovka river mouth to Vama Veche (378 km).	22.	The shelf represents 24% from the sea surface, (5...15 km on the largest part of the sea), it is extended up to the depth of 90...110 m (140...160 m at the south of Sevastopol and Yalta), the depression (36%) is delimited by the isobath of 200 m Area of northwestern shelf: 191,600 km ²

* The distances to the geographical areas presented above are measured in a straight line

In the Black Sea basin, there are six riparian countries: Romania, Bulgaria, Turkey, Georgia, Russian Federation, Ukraine, and the Republic of Moldova, and a 54 sea and river ports and (table 2 and figure 1).

Table 2 - The Black Sea ports

No.	Country	Ports	Co-ordinates	Type	Size
1	Romania	Braila	Lat. 45°15' N, Long. 027°59' E	Riverport	medium
2		Galatzi	Lat. 45°25' N, Long. 028°05' E	River port	medium
3		Tulcea	Lat. 45°10' N, Long. 028°49' E	Riverport	small
4		Sulina	Lat. 45°09' N, Long. 029°38' E	River and seaport	medium
5		Midia	Lat. 44°20' N, Long. 028°41' E	Seaport and Danube Black Sea canal port	small
6		Constantza	Lat. 44°10' N Long. 028°39' E	Seaport	Biggest port of the Black Sea
7		Medgidia	Lat. 44°15' N, Long. 028°16' E	Riverport	small
8		Mangalia	Lat. 43°48' N, Long. 028°36' E	Sea port	small
9	Bulgaria	Varna	Lat. 43°12' N, Long. 027°57' E	Sea port	major
10		Balchik	18 nautical miles north of Varna	Sea port	small
11		Nessebar	Lat. 42°39' N, Long. 027°44' E	Sea port	small
12		Bourgas	Lat. 42°30' N, Long. 027°29' E	Seaport	major

13	Turkey	Istanbul	Lat. 41 ⁰⁰ 1' N, Long. 028 ⁰⁵ 9' E	Seaport	major
14		Eregli	Lat. 41 ⁰¹ 8' N, long 031 ⁰² 7' E	Sea port	small
15		Zonguldak	Lat.41 ⁰² 8' N, Long. 031 ⁰⁴ 9' E	Seaport	small
16		Bartın	Lat. 41 ⁰⁴ 1' N, Long. 032 ⁰¹ 4' E	Seaport	small
17		Sinop	Lat. 42 ⁰¹ 1' N, Long. 035 ⁰⁸ 8' E	Seaport	small
18		Samsun	Lat. 41 ⁰¹ 8' N, Long. 036 ⁰² 1' E	Seaport	small
19		Giresun	Lat. 40 ⁰⁵ 5' N, long. 038 ⁰² 3' E	Seaport	small
20		Espiye	Lat. 40 ⁰⁵ 7' N, Long. 038 ⁰⁴ 2' E	Seaport	small
21		Tirebolu	Lat. 41 ⁰¹ 1' N, Long. 038 ⁰⁵ 0' E	Seaport	small
22		Trabzon	Lat. 41 ⁰¹ 1' N, long. 039 ⁰⁴ 6' E	Seaport	small
23		Rize	Lat. 41 ⁰³ 3' N, Long. 040 ⁰³ 2' E	Seaport	small
24		Hopa	Lat 41 ⁰² 3' N, long. 041 ⁰² 5' E	Seaport	small
25	Georgia	Batumi	Lat. 41 ⁰³ 9' N, Long. 041 ⁰³ 8' E	Seaport	major
25		Supsa	Lat. 42 ⁰¹ 1' N, Long. 041 ⁰⁴ 3' E	Oil Marine Terminal	small
27		Poti	Lat. 42 ⁰⁹ 9' N, Long. 041 ⁰³ 9' E	Seaport	major
28		Kulevi	Lat. 42 ⁰¹ 6' N, Long. 041 ⁰³ 8' E	Sea port	small
29		Sukhumi	Lat. 42 ⁰⁵ 7' N, Long. 041 ⁰⁰ 0' E	Seaport	medium
30	Russian Federation	Sochi	Lat 43 ⁰³ 5' N, Long. 039 ⁰⁴ 3' E	Seaport	small
31		Tuapse	Lat. 44 ⁰⁵ 5' N, Long. 039 ⁰⁴ 4' E	Seaport	small
32		Novorossiysk	Lat. 44 ⁰⁴ 3' N, Long. 037 ⁰⁴ 7' E	Sea port	major
33		Port Kavkaz	Lat. 45 ⁰² 0' N, Long. 036 ⁰⁴ 0' E	Azov Sea port	small
34		Taganrog	Lat. 47 ⁰¹ 2' N, Long. 038 ⁰⁵ 7' E	Azov Sea port	small
35	Ukraine	Kerch	Lat. 45 22' N, long. 036 ⁰² 9' E	Seaport	small
36		Mariupol	Lat. 47 ⁰⁶ 0' N, Long. 037 ⁰³ 5' E	Azov Sea port	small
37		Berdyansk	Lat. 46 45' N, Long. 036 47' E	Azov Sea port	small
38		Theodosia	Lat. 45 ⁰⁴ 4' N, Long. 035 ⁰² 4' E	Seaport	small
39		Yalta	Lat. 44 ⁰³ 0' N, Long. 034 ⁰¹ 2' E	Seaport	small
40		Sevastopol	Lat. 44 ⁰³ 7' N, Long. 033 ⁰³ 2' E	Sea port	major
41		Evpatoria	Lat. 45 ⁰¹ 1' N, Long. 033 ⁰² 3' E	Sea port	medium
42		Chernomorsk	Lat. 45 30' N,	Seaport	small

			Long. 032 40' E		
43		Kerson	Lat. 46 ⁰ 37' N, Long. 032 ⁰ 37' E	Seaport	small
44		Nikolaev	Lat. 46 ⁰ 56' N, Long. 031 ⁰ 57' E	River port	medium
45		Dneprobugsky	Lat. 46 ⁰ 35' N, Long. 031 ⁰ 57' E	Riverport	small
46		Youzhny	Lat. 46 ⁰ 36' N, Long. 031 ⁰ 01' E	Seaport	small
47		Odessa	Lat. 46 ⁰ 32' N, Long. 030 ⁰ 54' E	Sea port	major
48		Ilicevsk	Lat. 46 ⁰ 19' N, Long. 030 ⁰ 40' E	Seaport	medium
49		Belgorod - Dnestrovsky	Lat. 44 ⁰ 05' N, Long. 039 ⁰ 04' E	Riverport	small
50		Ust Dunaysk	Lat. 45 ⁰ 28' N, Long. 029 ⁰ 42' E	Riverport	small
51		Kilia	Lat. 45 ⁰ 26' N, Long. 029 ⁰ 17' E	Riverport	small
52		Izmail	Lat. 45 ⁰ 20' N, Long. 028 ⁰ 51' E	Riverport	small
53		Reni	Lat. 45 ⁰ 26' N, Long. 028 ⁰ 18' E	Riverport	small
54	Republic Moldova	Giurgiulesti		Riverport	small

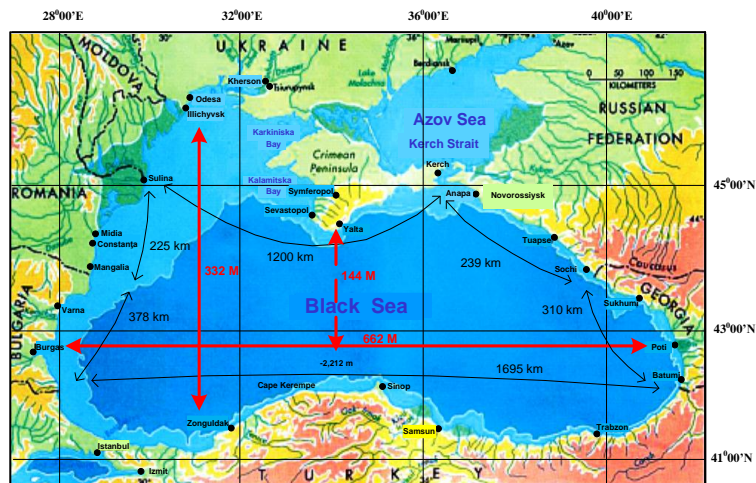


Figure 1 - The Black Sea dimensions, and its riverine countries and ports
Source: after Nicolaev and Bologna, GEO-ECO-MARINA Review 11/2005

The Black Sea represents an economic, cultural and socio-political entity that nowadays surpasses its known geographical area very much. In the last years, the geostrategic importance of the Black Sea basin is emphasized due to increased attention from the main political actors, if we take into consideration the recent political, diplomatic, economic, cultural, scientific researchers, military actions, etc. in this area.

The Black Sea position between West and East, i.e. at the crossing of the civilisations, the importance of the nearby riparian states or the states that have political and economic interests in this area, developed an increased interest of the scientists from different fields of activity that are planning multidisciplinary researches that will take more years to be finished. At these researches will participate representatives of countries and scientific institutions that are situated far away from the Black Sea and whose interest in this area was lower a few years ago. As regards Romania, this supposes to intensify its presence in all these activities as well as to strengthen its position as a riparian

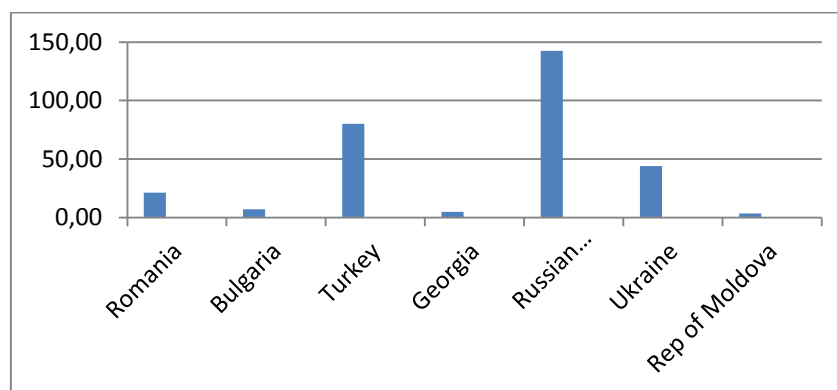
country by bringing into the spotlight its geostrategic position on political, economic, cultural, scientific, sports levels, etc.

The briefly economical power situation of the states bordering the Black Sea is presented as follows (by UNCTAD, 2017 and <http://www.tradingeconomics.com>):

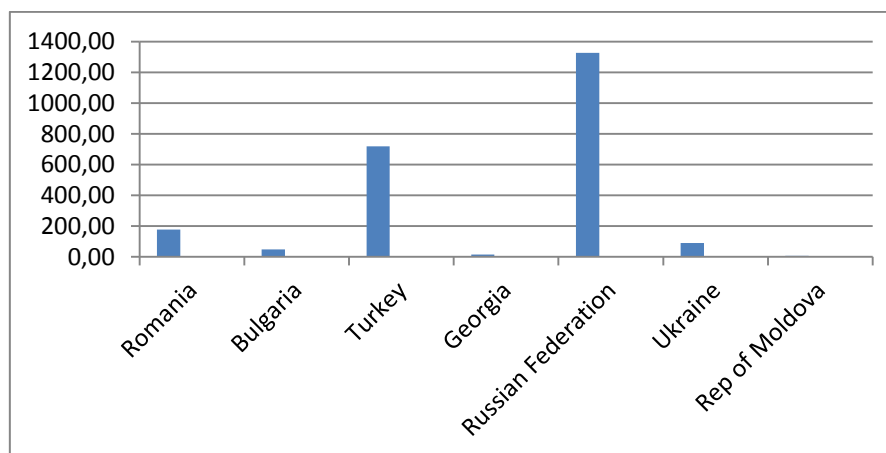
- a) population (table 3 and graph 1);
- b) GDP (table 3 and graph 2);
- c) GNI per capita - Atlas Method (table 3 and graph 3);
- d) merchandise trade (table 3 and graph 4).

Table 3 - Population, GDP, GNI, and FDI inflows for the Black Sea riparian countries in 2015/2016

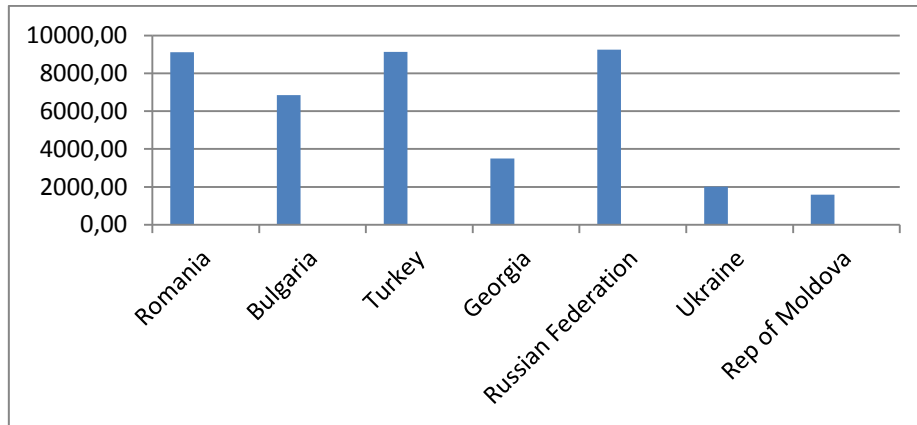
Country	Population (mil.) 2016	GDP (current billion USD) 2015	Percent of the world economy %	GNI per capita – Atlas Method (current USD 2015)	FDI inflows 2015 Mil. USD	Merchandise trade Exports/imports Mill.USD
Romania	21,600,000	177.956	0.29	9,121	3,388.88	60,590/69,874
Bulgaria	7,150,000	48.953	0.08	6,847	1,773.86	25,383/29,232
Turkey	80,275,000	717.888	1.16	9,126	16,508.0	143,829/207,395
Georgia	4,930,000	13.965	0.02	3,491	1,350.17	2,205/7,281
Russian Federation	142,360,000	1,326.016	2.15	9,246	9,842.93	341,465/192,952
Ukraine	44,210,000	90.615	0.15	2,022	2,961.0	37,859/36,317
Republic of Moldova	3,520,000	6.475	0.01	1,591	228.52	1,967/3,987
Total	303,955,000	2,381.868	3.86	Average: 5,920	36,053.36	613,298/547,028



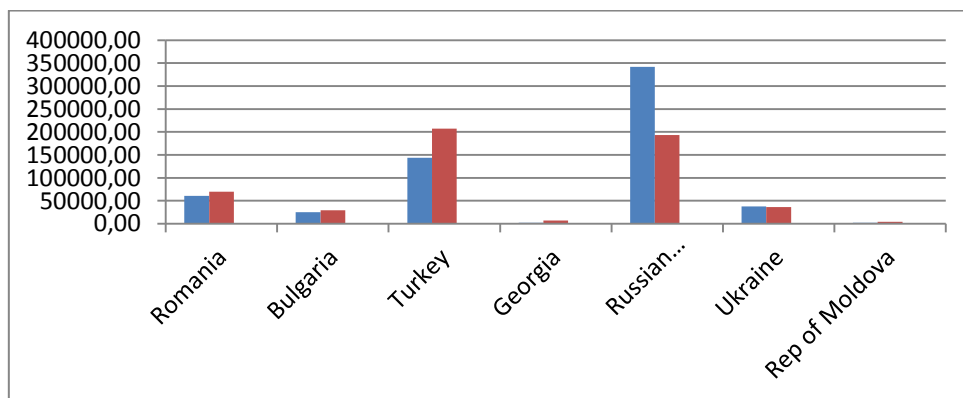
Graph 1- Black Sea riparian countries population (mil.2016)



Graph 2 - Black Sea riparian countries GDP (billion USD - 2015)



Graph 3 - Black Sea riparian countries GNI per capita (USD - 2015)



Graph 4 - Black Sea riparian countries merchandise trade (export/import USD - 2015)

For the Black Sea riparian countries, the global economy crisis and post-crisis has meant a particular period, politically, socially but also economical difficult, characterized by a prolonged transition required for adapting to the new imposed standards of the Euro-Atlantic integration of Romania and Bulgaria, but also for Turkey (NATO member with aspirations of European integration; Ukraine and Georgia act for development and modernization to assure the nominations for NATO and EU integration by meeting their requirements. The Russian Federation, after the illegal annexation of Crimea, is subject to a robust international embargo with strong politic-economical repercussions.

Because the necessary autochthonous capital is insufficient for investments and development, the economic evolution of the Black Sea states is not enough being in a tight relationship with the levels of foreign investment. Romania has a developed maritime and naval industry, with a strong infrastructure formed of maritime and river ports, naval shipyards, research institutions, medium and superior maritime education institutions. The main seaports are Constantza, Mangalia, Midia, and Sulina, Galatzi and Braila (fluvial and seaports). Bulgaria has a developed maritime and naval industry, with a strong infrastructure formed of maritime and river ports, naval shipyards, research institutions, medium and superior maritime education institutions. The main ports situated at the Black Sea are Burgas and Varna (to which Nesebar port adds). Turkey has a developed shipping and naval industry, owning a large number of commercial ships, many ports (at the Black Sea and the Mediterranean Sea), naval shipyards and research and education institutes. The Turkish port cities from the Black Sea area are: Eregli, Zonguldak, Inebolu, Samsun, Giresun, Trabzon, Hopa and Sinop, Rize; the export in these ports is represented by tea, metallurgical products, peanuts and so on and they import coal, ores, fertilizers, construction materials, etc. Georgia assures on its territory the shortest road, for the transit of goods, oil and natural gasses from Azerbaijan, Armenia and Central Asia Republics to the west, as well as between Russia and Turkey. The main ports of Georgia are Poti, Batumi, and Sukhumi. So that, the expansion of regional trade has caused the development of auto and railway transport but also the maritime one through the Poti port (from which a major part of export is

accomplished). Russian Federation is a rich country with mineral resources, situating Russia among worlds top producers of coal, iron ore, oil, natural gas, nickel, chrome, asbestos, diamonds. Russia has a developed naval and maritime industry, many ports, naval shipyards and research and education institutes in the field. The main ports on the Black Sea are Novorossiysk, Tuapse, and Sochi. Ukraine has a developed maritime industry, important naval shipyards and research and education institutes in the maritime field. The main Ukrainian ports, situated in the Black Sea area are Ilichevsk, Odessa, Yujny, Kerson and Belgorod-Dnestrovsky, Nikolayev, Yalta, Chernomorets, Evpatoria, Sevastopol, Theodosia, Nikolaev, Kerchi, Mariupol, Berdiansk, Reni, Izmail, Kilia, Ust-Dunaysk. The Republic of Moldova is situated in the Eastern Europe, at the northeast of Romania, it has a surface of 38,851 km² and a population of 3,520,000 inhabitants (2016). It is entirely a continental country; therefore, it has not any coastline. The major port is Giurgiulesti; the entire area of the Giurgiulesti Free International Port has a free economic zone status until 2030. Thanks to its location, respectively on the Lower Danube, with available water depths of up to 7 m, this port can receive both river and maritime ships.

In 2014 the fleet of Black Sea riparian countries amounted to 3,868 vessels with a total displacement of over 53 million tdw, accounting for about 1% of the world's merchant fleet. Note that most of these fleets are under the foreign flag, 72% (table 4) [4,5,6,7].

Table 4 - Ownership of the world fleet, as of 1 January 2014 (dwt)

Country	Number of ships	Dead-weight (thousand dwt)	Percent world total (dwt)	National flag, deadweight tonnage (thousand dwt)	Foreign flag, deadweight tonnage (thousand dwt)	Foreign flag as % of total dwt
Bulgaria	81	1,279	0.076	254	1026	80%
Georgia	3	8	0.000	3	5	64%
Romania	94	1,044	0.062	55	989	94.7%
Russian Federation	1734	18,883	1.126	5,559	13,324	70.56%
Turkey	1547	29,266	1.745	8,600	20,666	70.61%
Ukraine	409	3,081	0.184	450	2,631	85.39%
Total	3,868	53,561		14,921	38,640	72 %

The latest data (Review of Maritime Transport 2017) shows the position of the Turkish and Russian Federation (2017) in the top 25 world rankings (table 5):

Table 5 - Top 25 Black Sea riparian countries Merchant National Fleets - 2017

Position	Country	Number of ships	Dead-weight tons	Foreign flag	Rank	Rank (million USD)
19.	Russian Federation	1707	22,050,283	67.38%	19	9,081
15.	Turkey	1563	27,732,948	71.57%	20	9,055

It is worth mentioning that Turkey is present in the top 25 Ownership of container-carrying world fleet (2017) with a fleet of 512 container ships, with a total of 262,955 TEU and a market share of 1.18%.

4. Conclusions

In the present maritime transport system (the Black Sea transport is an integrated subsystem of his own) we will consider four subsystems on which we can make the following considerations: the goods as object of maritime transports; the field in which the maritime transports take place, is the economic and judicial specific one, both intern and international; the ship is the particular sea mean of goods transportation; the port is the main means of export and import of goods, storage, and processing of the goods

In the Black Sea exist a large number of commercial ports of different categories (small, medium, large and important) which ensure the transfer and the processing of the goods and raw

materials. Again, we must mention that Constantza port is the most important one in the Black Sea area, and one of the biggest in Europe and worldwide, too.

In the Black Sea, the line transportation is also practicable, in particular for the seaborne oil, ferry, and container seaborne. That's why in Constantza, Burgas, Novorossiysk, Odessa, Tuapse ports develop modernization plans, petroleum terminals are getting bigger. Now In Constantza, Burgas, Novorossiysk, Odesa, Poti, Batumi, Samsun ports new container terminals are built. Moreover, in Constanța, Samsun, Batumi, Poti, Burgas, Illichevsk new ferry terminals were developed and modernized. In the most important and large port of Black Sea (Constantza, Burgas, Varna, Samsun, Poti, Batumi, Novorossiysk, Odessa) several programs for the implementation of some systems for the manufacture of a multimodal transport are in development, in order to ensure the link between sea and land in a unitary, continuous and in a efficient way. Also, in the Black Sea, all another type of goods is transported. The medium and the large ports in the Black Sea (including the Romanian ones) are equipped with the technical port equipment necessary for the manipulation of these goods. The Black Sea routes and ports, the same prices of the products and freight are implemented like the ones on the international market. The container traffic through the Black Sea ports during the period 2011-2013 shows a significant increase from 11.4 million TEU to 12.9 million TEU(table 6, 7) [8, 9].

Table 6 - Container port throughput for Black Sea riparian countries for years 2011, 2012 and 2013 (TEUs)

Country	2011	2012	2013
Turkey	5990103	6 736 347	7 284 207
Russian Federation	3 954 849	3 930 515	3 968 186
Ukraine	696 641	748 889	808 051
Romania	414 096	423 081	399 372
Georgia	239 004	256 929	277 226
Bulgaria	150,740	162,045	174,846
Total	11,445,433	12,257,806	12,911,888

Table 7 - Container turnover in the Black Sea Ports (Bulgaria BG, Georgia GE, Moldova MD, Romania RO, Russia RU, Turkey TR, Ukraine UA) in 2012, 2013 in TEUs including empties and transshipment [9]

No.	Port	2012	2013	Growth (TEU)	Growth (%)
1	Novorossiysk (RU)	651 140	722 716	71 576	11,0
2	Constantza (RO)	680 360	661 124	-19 236	-2,8
3	Odessa (UA)	462 933	505 640	42 707	9,2
4	Poti (GE)	284 600	331 324	46 724	16,4
5	Ilychevsk msp (UA)	219 915	227 347	7 432	3,4
6	Varna (BG)	128 390	132 066	3 676	2,9
7	Batumi (GE)	73 126	72 123	-1 003	-1,4
8	Bourgas (BG)	41 532	48 380	6 848	16,5
9	Yuzhny (UA)	30 660	46 305	15 645	51,0
10	Samsun (TR)	27 734	36 671	8 937	32,2
11	Trabzon (TR)	26 032	22 105	-3 927	-15,1
12	Rostov (Zapadniy port) (RU)	5 504	10 500	4 996	90,8
13	Taganrog (RU)	17 000	7 200	-9 800	-57,6
14	Mariupol (RU)	10 006	8 590	-1 416	-14,2

15	Giurgiulesti (MD)	2 100	6 840	4 740	225,7
16	Ilichevsk (UA)	12 092	0	-12 092	-100,0
	TOTAL	2,673,124	2,838,931	16, 807	6.2

As for total container throughput, the list of top five container terminal was: DPW Constantza (Romania), APMT Poti (Georgia), Novoroslesexport (Russia), NUTEP (Russia) HPC Ukraine (Odessa) falling from the 2nd to the 5th position. As for operators of Black Sea lines, the list of leaders did not change in 2014: MSC, Maersk Line, CMA CGM, ZIM and ARKAS with only CMA CGM and ZIM having changed their positions. The above lines control 71.58% of the market of loaded containers in the Black Sea region [10].

References

- [1] Bosneagu, R., 2017, Geografia maritima, EX PONTO Publishing House, Constantza
- [2] Bosneagu, R., 2017, Geoeconomia maritima, EX PONTO Publishing House, Constantza
- [3] ***GEO-ECO-MARINA Review No.11/2005
- [4] ***Review of Maritime Transport 2012, UNCTAD/RMT/2014/UNITED NATIONS PUBLICATIONS
- [5] ***Review of Maritime Transport 2013, UNCTAD/RMT/2014/UNITED NATIONS PUBLICATIONS
- [6] ***Review of Maritime Transport 2014, UNCTAD/RMT/2014/UNITED NATIONS PUBLICATIONS
- [7] ***Review of Maritime Transport 2015, UNCTAD/RMT/2014/UNITED NATIONS PUBLICATIONS
- [8] ***<http://data.worldbank.org/indicator/IS.SHP.GOOD.TU>,
- [9] ***<http://summit.portsukraine.com/en/node/289>, Data of ports & terminals BlackSeaTrans
- [10] *** <http://en.portnews.ru/comments/1930/>
- [11] ***<https://people.hofstra.edu/geotrans/eng/ch4en/conc4en/harbortypes.html>