Financial Snapshot Regarding the Naval and Land Transport in Constanta County

Marioara Mirea
„Ovidius" University of Constanta, Faculty of Economic Sciences, Romania
mm_mirea@yahoo.com

Abstract

This paper aims to examine some challenges related to the economic aspects of Naval and Land Transport companies in Constanta County. Specifically, it focuses on assessing the factors that determine the survival of naval and land transport companies.

Based on the empirical analysis performed, we used as a parametric method, the correlation method. With the help of the multiple correlation coefficient, we measured the intensity of the link the analyzed variables.

The paper shows that financial sustainability is related to the ability of companies to obtain considerable profits to facilitate the continuation of long-term business.

Key words: naval and land transport, turnover, gross profit, multiple correlation coefficient
J.E.L. classification: C10, M21, O10, P52, R40

1. Introduction

The main effect of the globalization phenomenon is the correlation between economic growth and the increase in the transport of goods and people.

The development of transport closely followed the world economic development, which required a continuous increase in the volume of goods transported.

International competition and geographic market expansion are forcing producers and exporters to focus on integrated production technologies and transport logistics in order to reduce costs and, at the same time, provide quality services.

The geographical area of Dobrogea benefits from seaports (Constanta, Mangalia, Midia, Sulina) and river ports (Tulcea, Brăila, Galati) as well as the connection with Central Europe through the Danube-Black Sea-Main Rhine Canal but also the seaport for the Asian basin, leading to an increase in the flow of goods worldwide. Our focus is set on the maritime transports of Constanta County, since this is a strategic sector of both the local region and of Europe due to the location possibilities and the harbors' infrastructure and facilities.

2. Literature review

Land transport is considered the most common mode of transport for goods and people (Rodrigue, 2020). Land transport covers all land transport systems that ensure the movement of people, goods and services. The importance of these elements depends on the level of performance they offer, as for example their transport capacity and traffic intensity.

The land transport system plays a vital role in connecting communities in one territory and connecting these communities with other regions.

Land transport infrastructure provides essential services for the functioning of a modern society. Road and railway structures are used every day by more and more people. (Patrman, 2019, p.1).

Sea transport is one of the most efficient modes of transport from an economic and ecological point of view (Hoen et al., 2014).

Maritime transport has gained importance for the transport of goods with the introduction of transport containers. This mode of transport is cost-effective and efficient (Gonzalez-Torre, 2013).

3. Research methodology

We used financial data collected from the annual financial statements of the companies with transport activity during a time horizon of 5 years, respectively 2014-2018. The considered study region is represented by Constanta County.

A series of terms and notions must be explained in order to understand the economic perspective of this study, respectively the way in which the final results were obtained.

The main factors are represented by the companies that carry out naval and land transport operations, selected according to the activities encoding system established by the National Office of the Trade Register-Classification of activities in the national economy - CAEN Rev.2.

The population of our study consists of a large number of financial statements reported by companies acting in the naval and land transports sector. The reporting companies have private or mixed private-public ownership, the common characteristic being the fact that they all reported profit during 2014-2018. The current study does not strive to assess performance and profitability by investigating the specificities of public management in the region (Munteanu, 2018, p.1247) in comparison to private entities. The focus is set on the predilection for profitable activities and on the most relevant financial indicators reported by companies, like salaries, turnover and number of employees, which reveal interesting incentives for public interest and involvement.

For land transport we chose the companies according to the following main activities (CAEN): CAEN 4920 - Class "Freight transport by rail"; CAEN 4931- Class "Urban, suburban and metropolitan passenger transport"; CAEN 4932- Class "Taxis transport"; CAEN 4939- Class "Other land passenger transport"; CAEN 4941- Class "Freight transport by road"; CAEN 4942- Class "Moving services".

For naval transport we chose the companies according to the following main activities (CAEN): CAEN 5010 - Class "Maritime and coastal passenger transport"; CAEN 5020 - Class "Maritime and coastal freight transport"; CAEN 5030 - Class "Passenger transport by inland waterways"; CAEN 5040 - Class "Inland waterway freight transport".

In order to measure at the level of the whole community the intensity of the statistical type connections between two or more variables (indicators) that follow a normal or asymptotic normal distribution law, both parametric and non-parametric methods are used. Among the parametric methods, the most used in practice is the correlation method. The simple linear correlation coefficient is an indicator that measures only the intensity of the linear type connection between two variables x and y. It is calculated as an arithmetic mean of the product of the normed normal deviations of the 2 variables. The coefficient takes values between -1 and +1, the coefficient sign indicating the direction of the connection (plus for a direct connection and minus for a reverse connection). The closer the value of the Pearson correlation coefficient is to more than 1 (in absolute value), the higher is the "intensity" of the linear relationship between the 2 variables. (Aivaz, 2007a; Aivaz, 2007b)

The average values of the statistical indicators were processed with the SPSS statistical software (Field, 2009). The value of the indicators is expressed in RON. Thus, using the system of average indicators of the time series, we performed a quantitative research of the activities. (Aivaz, 2018, p.83).

4. Findings

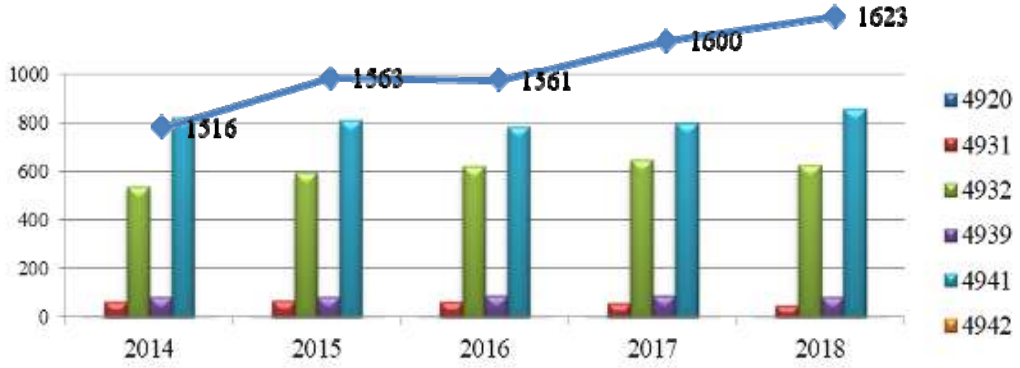
To begin with, we analyzed the number and structure of the companies from the selected population on the two types of transport analyzed: naval transport and land transport. I return with the specification that these are companies with private capital, that have made annual financial reports and that have a turnover higher than zero. The numeric synthesis of the number of companies analyzed by activity encoding during the targeted period is presented in Table no.1, with a visual representation in Figure no1.

Table no.1. The situation of the companies with land and naval transport activities in the period 2014-2018 at the level of Constanta County

	CAEN	2014	2015	2016	2017	2018
Land transport activities	4920	2	2	2	2	2
	4931	66	68	62	57	48
	4932	539	595	620	648	628
	4939	83	85	89	88	83
	4941	825	811	786	803	860
	4942	1	2	2	2	2
Subtotal		1516	1563	1561	1600	1623
Naval transport activities	5010	8	12	6	6	8
	5020	11	10	10	9	11
	5030	2	1	0	0	1
	5040	23	25	26	24	22
Subtotal		44	48	42	39	42
Total analyzed companies		1560	1611	1603	1639	1665

Source: Authors' study based on the INSE indicators

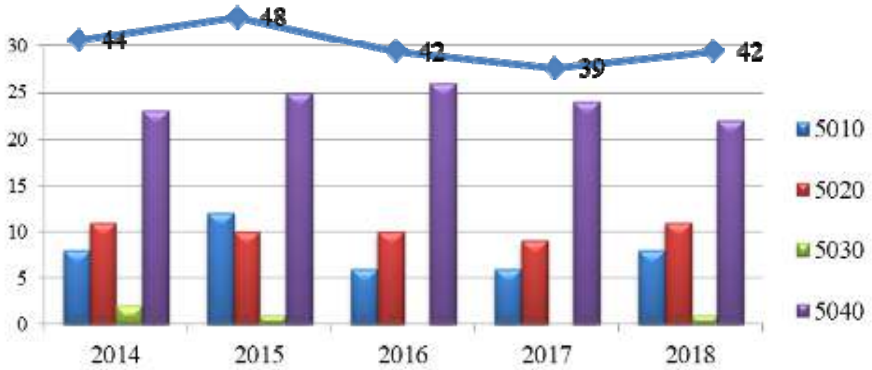
Figure no.1. The situation of the companies with land transport activities in the period 2014-2018 at the level of Constanta County



Source: The data in the table no. 1.

The dynamics of the numbers of transport activities shows interesting results. It sems that in the targeted region, most companies with land transport activities are registered with CAEN 4941- class "Freight transport by road" and with CAEN 4932- class "Taxis transport". The dynamics was between 1.4% and 3.1%.

Figure no.2. The situation of the companies with naval transport activities in the period 2014-2018 at the level of Constanta County



Source: The data in the table no. 1.

Most companies with shipping activities are registered with CAEN 5040 - Class "Inland waterway freight transport" and from CAEN 5020 - Class "Maritime and coastal freight transport".

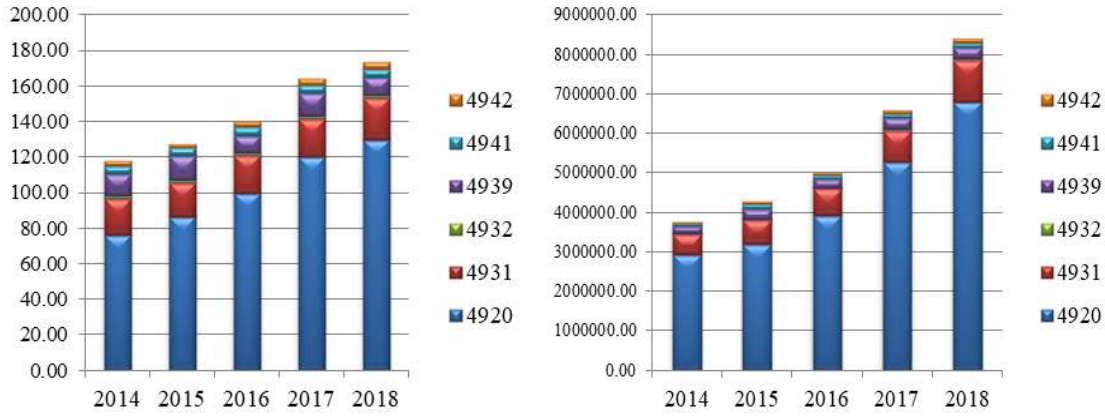
The dynamics was between 1.4% and 3.1%. It is important to follow the average number of employees and the salary expenses (average value) reported by these companies. They depend directly on the activity performed within the companies.

Table no. 2. The situation of the average number of employees and of the salary expenses (average value) for the land and naval transport activity in the period 2014-2018 at the level of Constanta county

CAEN	2014		2015		2016		2017		2018	
	1	2	1	2	1	2	1	2	1	2
4920	76.50	2941327	86.50	3208509	99.50	3924761	120.00	5282848	129.50	6797141
4931	19.92	509650	19.22	600937	21.34	680267	21.72	795764	23.90	1058585
4932	1.78	10758	1.48	21278	1.43	12875	1.39	17859	1.41	23215
4939	12.22	187606	13.51	269236	9.96	243377	12.77	296989	10.51	300003
4941	4.40	65149	4.77	119589	4.62	94963	4.63	115602	4.49	122062
4942	3.00	57158	2.00	77196	3.00	57141	4.00	93858	4.00	109670
5010	1.63	12385	4.00	187356	4.17	53266	2.33	35026	2.63	74066
5020	10.09	692932	12.30	826424	11.80	805259	11.33	857754	9.18	800700
5030	2.00	34373	3.00	124336	0.00	0	0.00	0	1.00	5357
5040	9.74	258832	9.52	344109	10.85	344689	12.54	434749	12.64	482536

Column no. 1. Average number of employees
Column no. 2. Salary expenses (average value)
Source: Authors' study based on the INSE indicators

Figure no. 3. The situation of the average number of employees and of the salary expenses (average value) for the land transport activity in the period 2014-2018 at the level of Constanta County

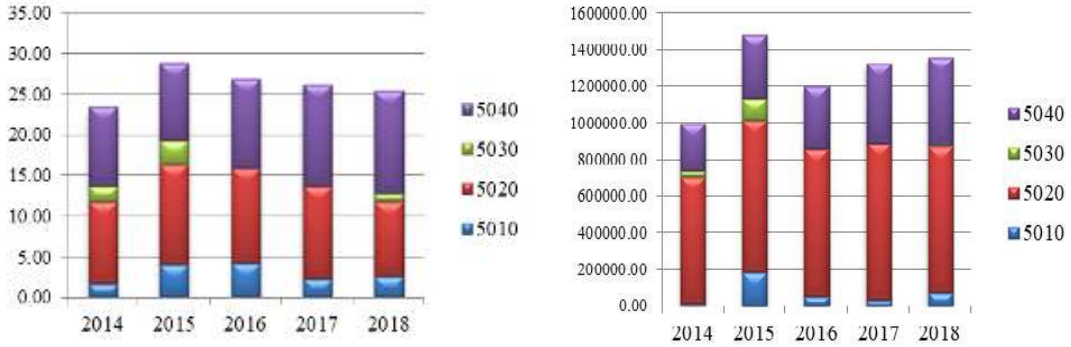


Source: The data in the table no. 2.

It is interesting to note in Figure 3 that despite the fact that only two companies registered with CAEN 4920 - Freight transport by rail, these two concentrate the largest numbers of employees in the region. The situation may be explained by the fact that the analysed profitable companies in question have majority public stakeholders, situation that has been studied as specific to developing countries in Europe (Munteanu and Condrea, 2018, p.525).

The activities related to the CAEN 5020- Class "Maritime and coastal freight transport" and related to the CAEN 5040- Class "Inland waterway freight transport" concentrate the largest number of employees with the related salary expenses.

Figure no. 4. The situation of the average number of employees and of the salary expenses (average value) for the naval transport activity in the period 2014-2018 at the level of Constanta County



Source: The data in the table no. 2.

From the indicators reported in the financial statements of companies with land and sea transport activity, I focused on turnover. It is an activity indicator that gives a global picture of the results and performances of an activity and represents the total amount of income from commercial operations performed by a company over a period of time.

For the reflection of performance assessment, I chose profit, which is the *raison d'être* of each entity and has the strength to synthesize the quantitative and qualitative aspects of economic processes.

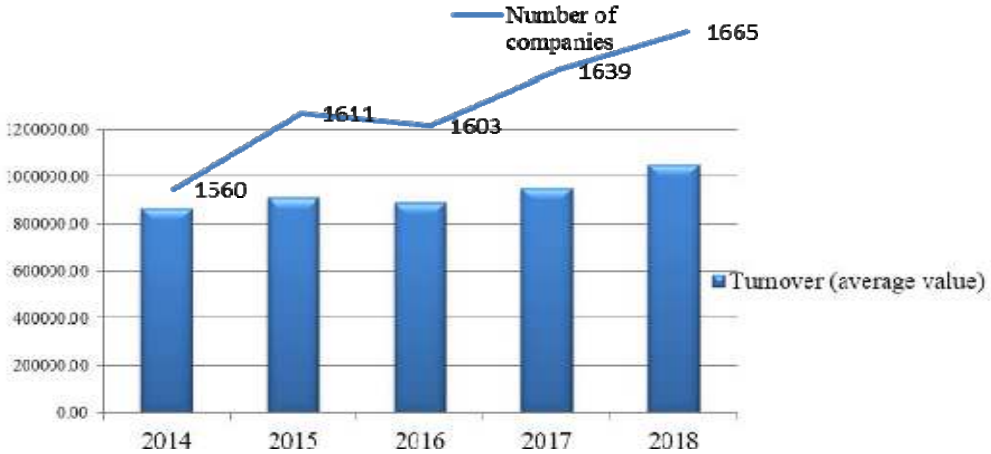
Regarding the registered turnover and the gross profit generated in the analyzed time horizon, the situation is presented according to the data in table no. 3.

Table no. 3. The situation of the turnover (average value) and of the gross profit (average value) for the land and naval transport activity in the period 2014-2018 at the level of Constanta County

	2014	**2015**	**2016**	**2017**	**2018**
Turnover (average value)	867950.73	912583.05	893886.91	947344.67	1048695.96
(year n/ year n-1)*100= %		105.14	97.95	105.98	110.70
Gross profit (average value)	53846.87	79823.26	93195.62	101067.10	104333.51
(year n/ year n-1)*100= %		148.24	116.75	108.45	103.23
Number of companies	1560	1611	1603	1639	1665
(year n/ year n-1)*100= %		103.26	99.50	102.24	101.58

Source: Authors' study based on the INSE indicators

Figure no. 5. The situation of the turnover (average value) for the land and naval transport activity in the period 2014-2018 at the level of Constanta County

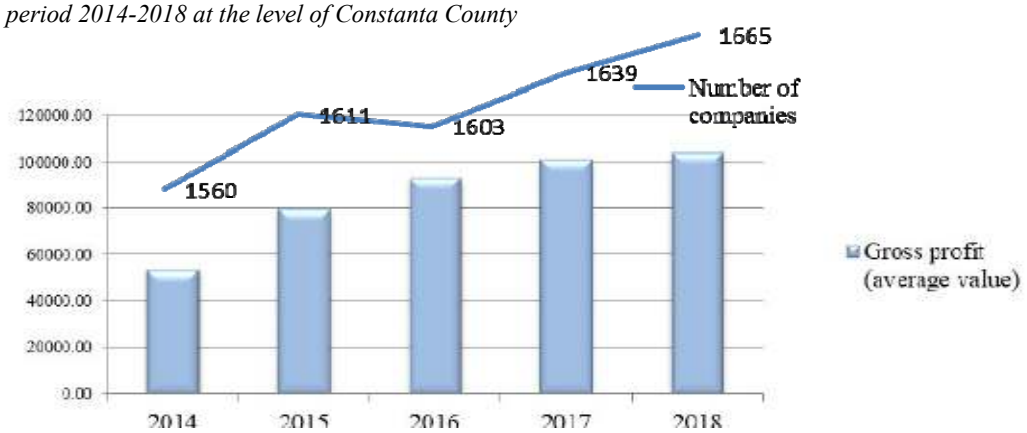


Source: The data in the table no. 3.

We find that except for 2016 when the number of companies decreased by 1.5% compared to 2015 and turnover (average value) decreased by 2%, in the rest of the analyzed period turnover increased by 5% in 2015 and 2016, and even 10% in 2018.

For the gross profit, we find that the analyzed companies with activity in the field of land and naval transports registered on average annual increases, except for 2016.

Figure no. 6. The situation of gross profit (average value) for the land and naval transport activity in the period 2014-2018 at the level of Constanta County



Source: The data in the table no. 3.

I chose to establish the links between statistical variables using the correlation technique, which will show how strong the link is, the dependence between variables.

In this paper, the variables introduced in the study are: y = Gross profit (average value), x1 = Turnover (average value), x2 = operating costs (average value) and x3 = Average number of employees.

Correlation coefficients whose estimate is presented in Table no. 4, are partial correlations.

Coefficients that measure the influence of Turnover (average value) (x1) on Gross profit (average value) (y), as well as the influence of operating costs (average value) (x2) on Gross profit (y), and to a lesser extent the influence of Average number of employees (x3) on Gross profit (y)).

The positive value of the coefficients and their size indicate a strong relationship, directly proportional to the relevant connections.

Table no. 4 Calculation of Pearson correlation coefficients

		Turnover (average value)	**Operating costs(average value)**	**Gross profit (average value)**	**Average number of employees**
Gross profit (average value) year 2014	Pearson Correlation	.702**	.663**	1	.221**
	Sig. (2-tailed)	0.000	0.000		0.000
	N	1560	1560	1560	1560
Gross profit (average value) year 2015	Pearson Correlation	.754**	.712**	1	.208**
	Sig. (2-tailed)	0.000	0.000		0.000
	N	1611	1611	1611	1611
Gross profit (average value) year 2016	Pearson Correlation	.693**	.646**	1	.207**
	Sig. (2-tailed)	0.000	0.000		0.000
	N	1603	1603	1603	1603
Gross profit (average value) year 2017	Pearson Correlation	.752**	.684**	1	.353**
	Sig. (2-tailed)	0.000	0.000		0.000
	N	1639	1639	1639	1639
Gross profit (average value) year 2018	Pearson Correlation	.797**	.757**	1	.569**
	Sig. (2-tailed)	0.000	0.000		0.000
	N	1665	1665	1665	1665

Source: Table processed in the SPSS programme

5. Conclusions

The analysis of the indicators of the companies involved in the market economy, brings before the analyst their common problems but makes it impossible to formulate general conclusions.

This paper finds that good prospects are presented that allow the development of companies engaged in shipping and land transport.

The obtained results allow us to establish business profiles, to estimate the social and economic effects produced by a certain activity, in a certain geographical area.

We emphasize, however, that the simple highlighting of the multiple relationships that are created between the mentioned indicators does not completely elucidate the degree to which they respond to the rigors of reflecting such a complex economic category.

The transport economy has a dynamic character, the relations between the economic-financial indicators must be presented and analyzed in the dynamics of the phenomena they mirror, because in this way conclusive results can be reached.

Transport is a strategic economic sector with incremental synergistic effects for capital investing and business dynamics. Efficient transportation resides in a good flow of commercial operations, local development through diversity of trade, tax efficiency and touristic potential.

Romania's maritime potential is strategic not only for national grounds, but also for European interests. Romanian harbours are gateways of trade to Europe, so attention and care to this sector are of paramount importance. Our brief investigation creates a visual framework of Romania's maritime transport infrastructure and economic dynamics, showing inextricable links with the land transportation businesses. The land and maritime transport are strongly related when it comes to development. It is less probable to develop one without the need to invest in the other.

Also, public interest in the sector has multiple economic inflections that stimulates employment, creates infrastructure and sets targets for performance. The development of studies in similar financial directions and finding ways to contribute to literature with visual economic frameworks for the development of local transport stimulates comparison and leads to significant benefits not only to local businesses, but also for wider regional trade with a global dynamic.

6. References

- Aivaz, K., 2007a. *Statistică Economică[Economic statistic]*. Constanta: Muntenia Publishing House.
- Aivaz, K., 2007b. *Econometrie-studii de caz [Econometrics-case studies]*. Constanta: Muntenia Publishing House.
- Aivaz, K., 2018. Dynamics of the Profit Rate of Companies Grouped by Activity Fields. Constanta *"Ovidius" University Annals, Economic Sciences Series*, 18(2), pp. 82-87.
- Field, A., 2009. *Discovering Statistics Using SPSS*. London: Sage Publications Ltd.
- González-Torre,P., Sarkis,J., Adenso-Díaz,B., 2013. Shipping agents and container management: An exploratory analysis of infrastructural and cost concerns. *Int. J. Shipping Trans. Logist*., 5(3), pp.322-349.
- Hoen,K., Tan, T., Fransoo, J., Van Houtum, G., 2014. Effect of carbon emission regulations on transport mode selection under stochastic demand. *Flexible Services Manuf. J.*, 26(1–2), pp.170-195.
- Munteanu, I., 2018. The challenges of performance assessment in Romanian state-owned enterprises. *Challenging the Status Quo in Management and Economics*, pp.1247-1259.
- Munteanu, F.I., Condrea, E., 2018. Reflections on Quality and Internal Control in Public Entities. *Proceedings of New Trends in Sustainable Business and Consumption*, pp.525-531.
- Patrmana,P., Splichalovaa,A., Rehaka,D., Onderkova,V., 2019. Factors Influencing the Performance of Critical Land Transport Infrastructure Elements. *Transportation Research Procedia*,40, pp.1518-1524.
- Rodrigue,J.P., 2020. *The Geography of Transport Systems, Chapter 5.1 Transportation Modes, Modal Competition and Modal Shift*, Fifth Edition. New York: Routledge.