

# The Dynamics of the Economic and Financial Efficiency, in Correlation with the Size of the Human Resources Used by Companies in the Services Sector in Constanța County, Romania

Ion Dănuț Jugănaru

"Ovidius" University of Constanta, Faculty of Economic Sciences

[juganarudan@yahoo.com](mailto:juganarudan@yahoo.com)

## Abstract

*The study presented in this paper represents a comparative and dynamic analysis of the activity recorded in four fields of activity (according to the CAEN classification): "Wholesale and retail trade; repair of motor vehicles and motorcycles", "Transport and storage", "Hotels and restaurants", "Professional, scientific and technical activities", using two economic and financial indicators: "value added" and "average number of employees".*

*A large database was consulted for the study, consisting of the information recorded in the financial and accounting balance sheets of the companies operating in Constanța County for the years 2016 and 2017.*

*The analysis started from a microeconomic approach, and the results provided support for meso-economic assessments. The study includes assessments of the importance of each analyzed field of activity, as well as the impact of the four fields as a whole on the economy of Constanța County in terms of their contribution to the creation of value added.*

**Key words:** balance sheets, indicators, companies, evolution, county

**J.E.L. classification:** C10, C40, M10, M20, M21, O11, O12

## 1. Introduction

The Classification of Activities in the National Economy (CAEN) is a step taken in the context of the concerns over achieving an integrated system of statistical classifications at international level. (National Institute of Statistics, 2007).

For over two decades, a complete revision of international statistical classifications has been undertaken. Regional organizations, such as the European Union or the North American countries have, to varying degrees, aligned their own classifications with the world classifications developed by the United Nations Statistical Commission (StatCom) and, furthermore, each country has aligned its national system to the international statistical classifications systems.

Currently, The International Standard Industrial Classification of All Economic Activities, developed by the United Nations Statistical Commission - ISIC Revision 4 is aligned to The Statistical Classification of Economic Activities in the European Community - NACE Revision 2. (National Institute of Statistics, 2007, p.3-4).

By using CAEN, statistical data are collected on the basis of the same classification structure (national and European), CAEN being transposed directly into ISIC Revision 4 with the help of correspondence tables. (National Institute of Statistics, 2007, p.5-6).

The Classification of Activities in the National Economy was last updated in 2007, ensuring the alignment of CAEN Revision 2 to NACE Revision 2 and ISIC Revision 4.

In order to provide as much information as possible on the main international statistical classifications used in various areas: economic analysis, environment, education, occupations, national accounts, etc., the Eurostat server RAMON was created (publicly accessible on the Web at the following address: <http://www.europa.eu.int/comm/eurostat/ramon/>). (National Institute of Statistics, 2007 p.4). The available information refers to the following aspects: general description;

structure of classifications (consisting of codes and headings); explanatory notes; correlation tables between classifications; methodological documents, other general classification information.

At national level, in Romania, SENIN was created, a server which includes the national classifications developed by the National Institute of Statistics (NIS). It is available to users on the NIS website under the heading Nomenclatoare statistice (Statistical Nomenclatures). (National Institute of Statistics, 2007, p.4).

## 2. Theoretical background

Value added is one of the most significant indicators (Peyrard, J., 1999) for quantifying the activity of a company. In the diagnostic analysis, the value added indicator has the role of highlighting the economic and financial performance of the company and expresses the size of the newly created value through the undertaken activity. (Niculescu, M., 2005). From this perspective, the value added indicator plays an important role for decision-making structures, at society's level, in the elaboration of feasibility studies and arouses the interest of the company's staff, shareholders, state institutions and financial institutions. (Petcu, M., 2009).

The value added indicator may be used to describe the economic and financial activity of a company, branch activity, or national economy.

At macroeconomic level, the indicator total gross value added (GVA) is used, at basic prices, as a main component for the calculation of Gross Domestic Product (GDP). Gross value added (GVA) is estimated as the difference between the value of production (measured at basic prices) and intermediate consumption (valued at purchase prices). (Robu, V. *et al*, 2001 ; Vîlceanu, Gh. *et al*, coord., 2005).

If, at microeconomic level, the value added reflects the measure of the wealth actually created by the economic units, regardless of the specific form of their activity at macroeconomic level, Gross Domestic Product (GDP) is the domestic supply of goods and services to meet (internal and external) demand of final consumption in the private and public sectors.

There are several methods for calculating the value added indicator, but perhaps the most commonly used is:  $VA = \text{commercial margin} + \text{output} - \text{intermediate consumption}$ . (Niculescu, M., 2005 ; Petcu, M., 2009; Robu, V. *et al*, 2001 ; Vîlceanu, Gh. *et al*, coord., 2005).

For companies with production activity, value added is determined as the difference between output and intermediate consumption. (National Institute of Statistics, 2007).

For retail companies, value added is represented by the commercial margin, determined as the difference between the revenue from the sale of the goods and the expenses incurred. Commercial margin is, in fact, the value of commercial revenue resulting from the goods' trading activity. (National Institute of Statistics, 2007).

We note that "value added is the basic indicator, used to determine the core activity of a unit, according to CAEN Revision 2. ... The main activity is the activity that contributes the most to the value added of the unit ... Representing the difference between production and intermediate consumption, value added is a measure of the contribution of each economic unit to gross domestic product (GDP). The calculation of this contribution is performed by relating the gross value added to the factor cost. Gross value added at factor cost is the sum of wages and other items related to the cost of labor factors, profit, operating subsidies, fixed capital write-off, minus production taxes." (National Institute of Statistics, p. 10).

## 3. Research methodology

For this study, a large database was used, that of the Chamber of Commerce, Industry, Navigation and Agriculture Constanta (CCINA), resulting from processing the information recorded in the financial and accounting balance sheets from 26,978 companies in 2016 and from 28,292 companies in 2017 Constanta Chamber of Commerce, Industry, Navigation and Agriculture, 2017 and 2018; County Statistics Directorate Constanta, 2018; Ministry of Public Finance). According to the legal framework, companies have the obligation to report a series of economic indicators regarding their work. (Accounting Law no. 82, 1991; Ministry of Public Finance, 2014). The study is a quantitative research (Jugănar, M., 1998), in which the processed

database was made up of two economic and financial indicators (selected from the financial and accounting balance sheets), i.e. "value added" and "average number of employees", reported by the companies operating in Constanta County in the years 2016 and 2017.

The companies that reported zero turnover and declared a number of zero employees were excluded from the initial database in order to ensure that the results obtained through processing are correct. After this filtering, 11,186 companies for the year 2016 and 11,945 companies for the year 2017 were kept in the study. The next step was to group the indicators by the fields of activity of the companies (kept in the research), according to the CAEN, Revision 2. From the twenty-one fields of activity, four were selected: "Wholesale and retail trade; repair of motor vehicles and motorcycles", "Transport and storage", "Hotels and restaurants", "Professional, scientific and technical activities". The database obtained was processed using the system of absolute, relative and mean indicators of chronological series (Aivaz, K., 2007a ; 2007b), while the SPSS software program was used for information systematization and statistical indicators calculation (Field, A., 2009).

#### 4. Data, results and discussion

The statistical description of the two selected economic and financial indicators ("value added" and "average number of employees" over the 2016-2017 period), grouped into the four activity fields analyzed, was made using the following statistical indicators: the average level (mean), the number of companies (N), the aggregate value of the financial indicators (Sum), the lowest value of the analyzed financial indicator (Minimum), respectively the highest (Maximum), amplitude variation (Range), the structure of the financial indicator - value added (% of Total Sum) and the structure of the number of firms (% of Total N).

The results obtained by processing the database, are presented in the table below.

Table no.1. The statistical description of "value added" and "average number of employees" in the companies operating in Constanta County, in the 2016-2017 period, grouped into four fields of activity

Report 2016			Report 2017		
CAEN group		Value added	Average number of employees	Value added	Average number of employees
<b>Wholesale and retail trade; repair of motor vehicles and motorcycles</b>	Mean	222386.65	4.71	256469.37	4.51
	N	5702	5702	5775	5775
	Minimum	-71294771	1	-42720006	1
	Maximum	69653601	565	87501460	565
	Range	140948372	564	130221466	564
	Sum	1268048652	26860	1481110611	26021
	% of Total Sum	15.1%	20.0%	16.6%	19.4%
	% of Total N	30.7%	30.7%	28.9%	28.9%
<b>Transport and storage</b>	Mean	772193.84	8.07	830895.65	8.94
	N	2144	2144	2180	2180
	Minimum	-1186471	1	-2509518	1
	Maximum	160257169	939	204379117	1940
	Range	161443640	938	206888635	1939
	Sum	1655583601	17306	1811352514	19490
	% of Total Sum	19.7%	12.9%	20.3%	14.5%
	% of Total N	11.5%	11.5%	10.9%	10.9%
<b>Hotels and restaurants</b>	Mean	317302.53	7.13	368129.34	7.08
	N	1640	1640	1737	1737

	Minimum	-5112008	1	-299231	1
	Maximum	25944578	354	23022992	322
	Range	31056586	353	23322223	321
	Sum	520376146	11693	639440663	12297
	% of Total Sum	6.2%	8.7%	7.2%	9.2%
	% of Total N	8.8%	8.8%	8.7%	8.7%
<b>Professional, scientific and technical activities</b>	Mean	142837.09	2.68	174858.34	2.56
	N	1916	1916	2051	2051
	Minimum	-4399905	1	-228064	1
	Maximum	12093709	142	19672256	178
	Range	16493614	141	19900320	177
	Sum	273675862	5136	358634447	5241
	% of Total Sum	3.3%	3.8%	4.0%	3.9%
	% of Total N	10.3%	10.3%	10.3%	10.3%

Source: Data obtained by processing the information from the financial and accounting balance sheets of companies operating in Constanta County

1. For the field of activity "Wholesale and retail trade; repair of motor vehicles and motorcycles" over the 2016-2017 period, a positive evolution of the economic activity can be noticed. The value added indicator increased in total absolute value from 1,268,048,652 lei in 2016 to 1,481,110,611 lei in 2017, and in terms of mean value the increase was from 222,386.65 lei in 2016 to 256,469, 37 lei in 2017. While the number of companies in this field of activity increased from 5,702 in 2016 to 5,775, in 2017 the share of these companies declined in the total number of companies operating in Constanta County, from 30.7% to 28.9% over the same period. There were also decreases in the number of employees indicator, both in absolute terms (from 26,860 in 2016 to 26,021 in 2017), and as average (the decrease was from 4.71 to 4.51 employees in the 2016-2017 period). CAEN Revision 2, Section G, presents the activities included in the field of "Wholesale and retail trade; repair of motor vehicles and motorcycles". These activities are Wholesale, Intermediate Wholesale and Retail trade for all types of goods: motor vehicles; motorcycles; parts and accessories for motor vehicles; industrial equipment, ships and airplanes; furniture, household articles and smithery; food, beverages and tobacco; raw agricultural goods and live animals; consumer goods (textiles, clothing, household electrical appliances, radio and TV sets, ceramics, glassware, maintenance goods, cosmetics and perfumery, pharmaceuticals, furniture, carpets, lighting, watches and jewelry); computer and telecommunication equipment; solid, liquid and gaseous fuels; motor fuels; cultural and recreational goods, etc. (National Institute of Statistics, 2007, p.43).

2. A positive evolution of the activity was also registered in the field of "Transport and storage". The value added achieved by the companies increased from a total level of 1,655,583,601 lei in 2016 to 1,811,352,514 lei in 2017, and in terms of mean, the increase was from 772,193.84 lei in 2016 to 830,895.65 lei in 2017. The increase in the number of companies (2.180 in 2017, compared to 2,144 in 2016) was accompanied by an increase in the total number of employees (19,490 in 2017, compared to 17,306 employees in 2016), and in the average number of employees (8,94 in 2017, compared to 8,07 in 2016). It should be noted, however, that the share of the number of companies active in this field of activity, in the total number of companies in Constanta County, decreased from 11.5% in 2016 to 10.9% in 2017. CAEN Revision 2, Section H - "Transport and storage" presents the activities specific to this field, namely the passenger transport activities (by rail, air, water and road), freight transport (by rail, air, water, road and pipelines), storage and auxiliary transport activities. (National Institute of Statistics, 2007, p.50).

3. In the field of "Hotels and restaurants", the activity, analyzed in its dynamics, shows an ascending trend. With a larger number of companies (1,737 in 2017, compared to 1,640 in 2016), but also with a larger number of total employees (12,297 in 2017, compared to 11,693 in 2016), in

this field of activity a higher value added was achieved (639,440,663 lei in 2017, compared to 520,376,146 lei in 2016). In terms of the mean level, an increase in value added from lei 317,302.53 in 2016 to lei 368,129.34 in 2017 is noticed. Over the analyzed period, the average number of employees decreased (from 7.13 to 7.08). The "Hotels and restaurants" field of activity is presented in CANE Revision 2, Section I, and the main activities it includes refer to Hotels and other accommodation facilities; Restaurants and other food service activities. (National Institute of Statistics, 2007, p.52).

4. With regard to the last analyzed field, "Professional, scientific and technical activities", the positive evolution registered in 2017, compared to 2016 is to be noted. The total value added achieved by the operating companies increased from 273,675,862 lei to 358,634. 447 lei, between 2016 and 2017. The mean level of the value added indicator increased from 142,837.09 lei in 2016 to 174,858.34 lei in 2017. The increase in the total number of companies (to 2,051, in 2017, compared to 1,916 in 2016) was also reflected in an increase in the total number of employees (5,241 in 2017, compared to 5,136 employees in 2016). On average, the number of employees was lower in 2017 (2.56), compared to the 2016 level (2.68 employees). In CAEN Revision 2, section M - "Professional, scientific and technical activities", the specific activities within the structure of this field are stated: Legal and accounting activities; Activities of departments (headquarters), centralized administrative offices; management and management consulting activities; Architectural and engineering activities; Testing and technical analysis activities; Research and Development; Advertising and market research activities; Other professional, scientific and technical activities. (National Institute of Statistics, 2007, p.58).

## 5. Conclusions

The results of this study show that in all four analyzed activity fields, which are part of the services sector, there was a positive evolution of the economic activity over the analyzed period.

If we consider the increase recorded in the total "value added" volume in 2017, compared to 2016, the four fields can be ranked as follows: "Wholesale and retail trade; repair of motor vehicles and motorcycles" (with an increase of 213.061.959 lei) is the first, the second place belongs to the "Transportation and storage" field (with 155,768,913 lei), the third place belongs to the "Hotels and restaurants" field (119.064.517 lei), and the last to "Professional, scientific and technical activities" (84.958.585 lei). One can see that between the fields on the first and the second place there is the greatest increase in value added, of 57,293,046 lei, between the second and third place the increase (the difference) is of 36,704,396 lei, and between the third and fourth place it is of 34,105,932 lei.

Another hierarchy can be done according to the increase in the volume recorded by the average level of the "value added" indicator. This time, the "Transportation and storage" sector occupies the first place (with an increase of 58,701.81 lei, obtained in 2017, compared to 2016), the second place belongs to the "Hotels and restaurants" field (50,826.81 lei), the third place to the field "Wholesale and retail trade; repair of motor vehicles and motorcycles" (an increase of 34.082,72 lei), and the last to the field "Professional, scientific and technical activities" (increase of 32,021.31 lei).

It should be noted that these four fields of activity contributed with a 44.3% share to the creation of the total "value added", at the Constanta County level in 2016 and 48.1% in 2017. Under these conditions, one can say that almost half of the development of Constanta county's economy was supported by activities in the services sector.

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