

PECULIARITIES OF THE ELECTROTECHNICAL INDUSTRY AND THEIR IMPACT ON THE PRODUCTION COSTS

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Abstract

The electrotechnical industry is in the top branch within the industrial development and the technical progress, currently providing a wide range of innovative products and services, and as a result of this dynamic development, the electrotechnical industry has currently become a key industry for many other industrial sectors.

Electricity has established itself in most areas of activity due to its easy use, easy distance transport, the fact that it can be turned into other forms of energy and because it is the most suitable for the supply of automation processes.

Consequently, given that industry is the key factor for the recovery, modernization and economic revival of the country, we can say that the electrotechnical industry also has a crucial influence on Romania's social and economic evolution, and this evolution is in its turn the result of the production cost monitoring and control in this sector.

Cuvinte cheie: production costs, electrotechnical industry.

Clasificare JEL : L69, M41

1. Introduction

In the past decades, the electronic and electrotechnical industry in our country developed, thus providing today a wide range of innovative products and services. As a result of its dynamic development, the electrotechnical industry has become nowadays a key industry for many other industrial sectors.

2. Particularities of the electrical industry in Romania

The electronic and electrotechnical industry is responsible, among others, for the future modernization and development of various fields of the infrastructure. Due to its double role of manufacturer and user, this branch has the same special status among the other sectors of the industry: it is a user of the local infrastructure and of the infrastructural connexions in the international markets and at the same time, the most important manufacturer of the infrastructure of the following fields:

- > traffic and transport
- > energy
- > communication and computer technology.

Romania currently undergoes a complex transition and reform process much more difficult than it was initially assumed, which aims at implementing an efficient market economy, and for its integration, in the shortest possible time, into the European economy and into the world economic circuit. Due to the transition to the information, post-industrial society, the efficiency of the industrial activity and of the services for the industry determine the place of every country in the world economy, and reflect the ability to capitalize the creative potential and the labour. [1]

Given that industry is the key factor for the recovery, modernization and economic revival of the country, we can say that the electrotechnical industry also has a crucial influence on Romania's social and economic evolution. Therefore, at the moment, industry accounts for more than 30% of the GDP and more than 96% of the export export. In the economic context of our country, the industrial development starts from the assumption that all the developed countries, with high living standards and with an important share in the global trade, are countries with a strong and competitive industry, actually viewed as initiators of the technological innovation processes.

With Romania's adhesion to the European Union, the economic modernization requires restructuring the production system as a whole, and especially of the industry as a branch with the most important share and role in the national economy.

Keeping a labour productivity uptrend, based on the modernization of the manufacturing technologies and of the technological innovation, led to the increase of the industrial production, mainly as a result of the revival of the manufacturing industry (a higher rate than the one of the industry as a whole).

The electrotechnical industry, a part of the manufacturing industry, is currently, due to the value added to the manufacturing of a product, according to the European statistics, the third industry as percentage, and is among the industrial sectors with the highest productivities. In the Romanian electrotechnical and electronic industry, the electric machine and equipment production has increased 3.7 times in the last 10 years. Currently, the weight of the electrotechnical industry in the Romanian manufacturing industry is approximately 6% of the production, 7% of the total staff and more than 10% of the export.

The companies in the electrotechnical industry shifted towards products required on local and foreign markets, which led to the change in the structure of this sector of the national economy. Currently, in our country, changes are being made in the structure of the manufactured products, in order to shift from the “classical electrical engineering” towards one grafted on the new developments in electronics, solid state physics and information technology, and especially towards an accelerated modernization of the manufacturing technologies by import and by the implementation of new technologies.

At the external level, the Romanian electrical engineering industry is trying to adapt to the new world globalization policies, and to specialize in areas of influence of the electrotechnical industry in which there are real conditions to be competitive, giving up areas in which the development chances are reduced and giving more attention to the international collaboration meant to provide a high productivity, quality and outlets.

Currently, the problems faced by the Romanian electrotechnical industry are closely related to the staff training, productivity increase, quality issues, and also costs and competitiveness on the foreign markets. The areas where substantial increases are forecast in the near future are: electrotechnical materials, electrical machines and equipment, testing technique, industrial metrology, and electromagnetic compatibility. However, in order to substantiate these development perspectives of the electrotechnical industry, it is necessary to have not only technical solutions, for the use of a new economic vision, and a modern development strategy for this industrial sector, but also to manufacture at competitive costs both for the local and for the international markets.

The production capacities available to the Romanian electrotechnical and electronic industry are manufacturing units, having in their structure specialised factories/sections/workshops, for general processing, and specific assembly, generally organised, on groups of products, at each company in this field. Thus, the electrotechnical industry in our country makes more than 200,000 product version types, which implies the use of a very varied assortment of materials, as well as an extremely high number of manufacturing processes and technologies. Consequently, we can say that a feature of the electrotechnical industry in our country is the high heterogeneity and the fact that it makes full use of the development stimuli of the cutting-edge technologies. Therefore, the electrotechnical industry in Romania is, due to its potential, a medium- and long-term industrial development option, with an endogenous development potential.

The electrotechnical industry in Romania has experienced a continuous development and the companies in this area are supporting our country’s effort take part, with high-quality products, on the international markets. We will thus show below the situation of a few of the most representative companies in this field, based on the main information supplied by the balance sheet and the profit and loss account in the 2010-2011 period, where we can see the main trends recorded in the evolution of this industrial branch (see tables no. 1 and no. 2). For example the total debts of the companies in the electrotechnical industry recorded an uptrend from one year to the next, having in many cases significant increases compared to 2010 (see chart no 1). However, we can also see for most considered enterprises, an increase in equity capital. In relation to the evolution of the turnover, for most enterprises, this indicator has important values, with a few fluctuations from one year to the next. A special situation can be seen at Electroputere Craiova which has increasing losses from one year to the next, and the evolution of the debts is on an uptrend, unfortunately.

Tabel no.1. Enterprise representative of the electrical industry and key indicators of profit and loss

Societate	CAEN	Indicatori din contul de rezultate profit si pierdere			
		Cifra de afaceri		Profit / pierdere	
		2010	2011	2010	2011
Electrotel SA	Proiectare, producție, instalare și montaj Tablouri Electrice de Joasă și Medie tensiune (0.4-36kV); Tablouri de Automatizare	32.093.247	42.619.484	29.603	431.420

UMEB	Fabricarea motoarelor, generatoarelor si transformatoarelor electrice	22.474.736	23.708.630	502.493	835.501
ICPE Ecoenerg	Fabricarea aparatelor de control si distributie a electricitatii	1.048.021	2.548.850	47.852	366.956
ICPE Actel	Fabricarea aparatelor de distributie si control a electricitatii	28.178.235	25.336.817	2.171.001	264.362
Electroputere	Fabricarea motoarelor, generatoarelor si transformatoarelor electrice si a aparatelor de distributie si control a electricitatii	291.780.238	199.082.319	-7.335.655	-48.063.969
Electro Sistem	Fabricarea aparatelor de control si distributie a electricitatii	51.713.220	64.696.370	1.891.033	3.775.057
Electroaparataj	Fabricarea aparatelor de control si distributie a electricitatii	21.562.337	18.891.831	4.947.018	-3.778.037

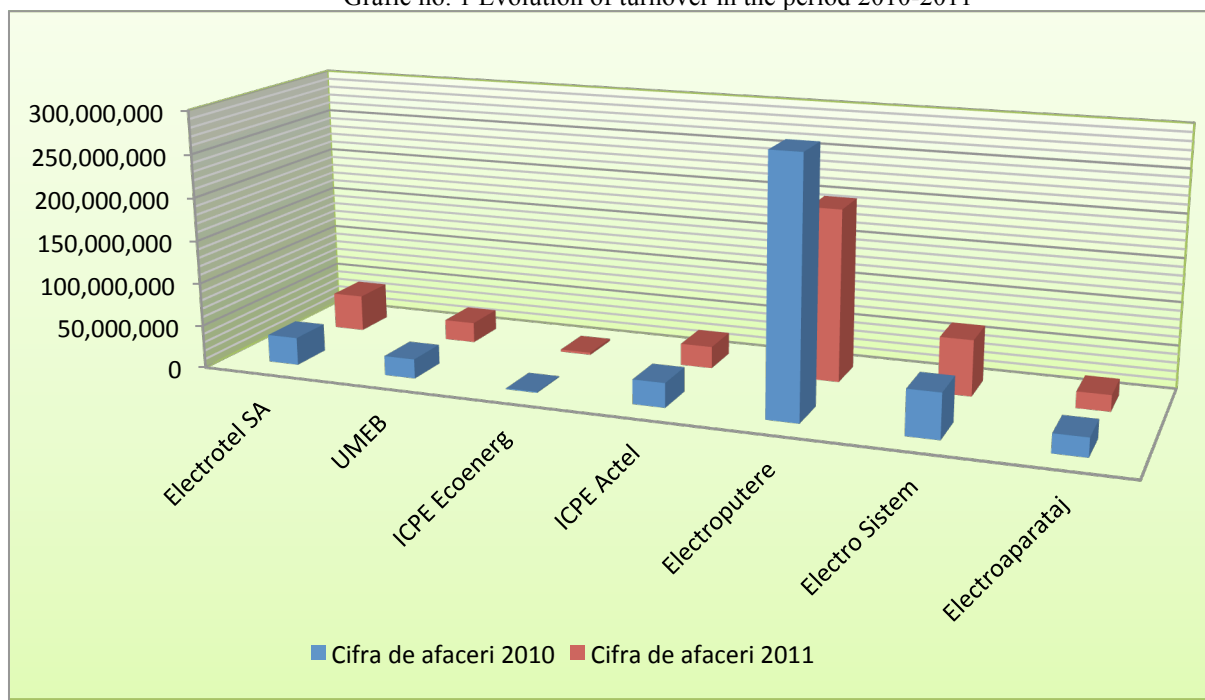
Source: [2], [3], [4], [5], [6], [7], [8].

Tabelul no .2 . Enterprise Electrical and key industry representative Balance Sheet

Societate	Indicatori din bilant					
	Capital propriu		Capital social		Datorii	
	2010	2011	2010	2011	2010	2011
Electrotel SA	21.056.666	22.914.937	2.185.086	2.185.086	20.961.661	24.910.820
UMEB	20.497.659	21.333.160	13.626.030	13.626.030	7.502.674	9.513.555
ICPE Ecoenerg	126.023	700.695	92.010	92.010	412.034	626.383
ICPE Actel	17.926.909	18.389.327	126.897	126.897	12.327.023	5.697.350
Electroputere	117.141.948	20.898.016	33.760.291	33.760.291	339.660.040	405.624.739
Electro Sistem	20.886.418	23.822.959	17.100	17.100	23.649.982	26.128.494
Electroaparataj	24.637.135	25.631.133	6.461.535	6.461.535	30.265.000	3.628.201

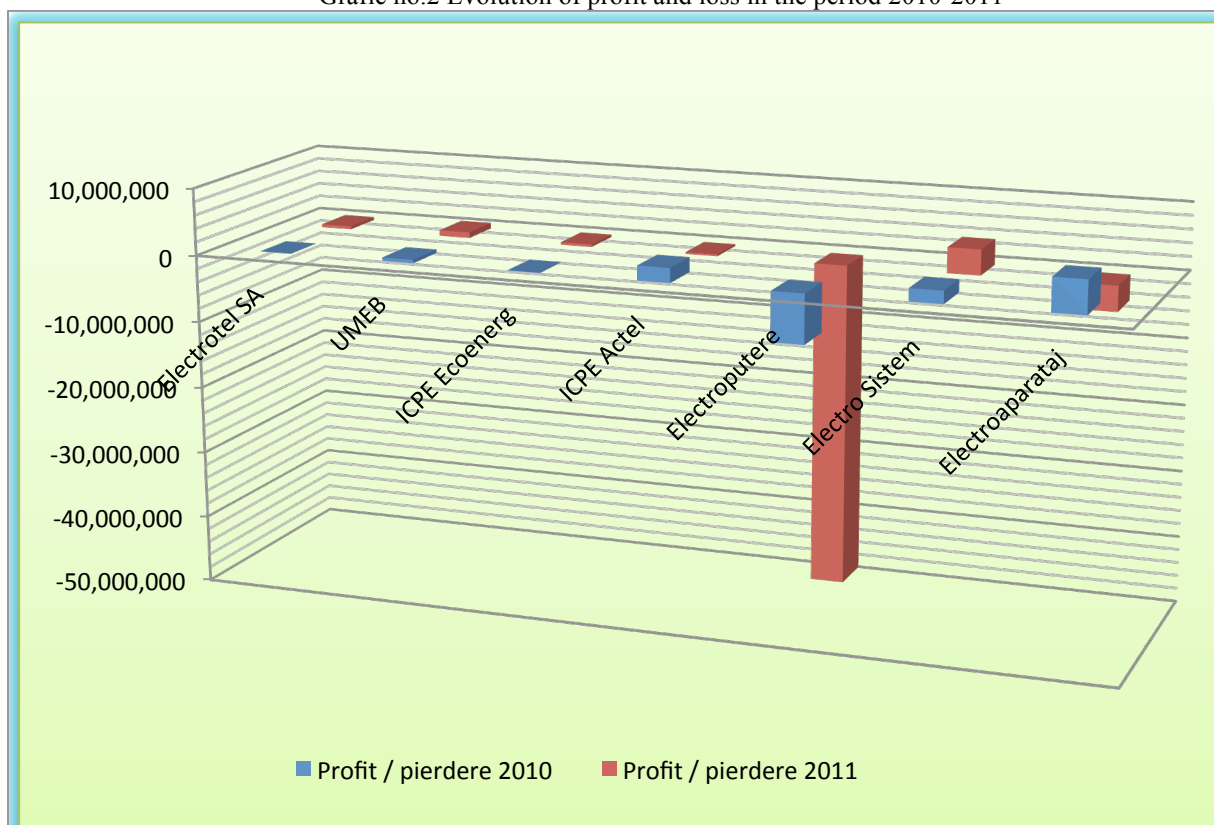
Source: [2], [3], [4], [5], [6], [7], [8].

Grafic no. 1 Evolution of turnover in the period 2010-2011



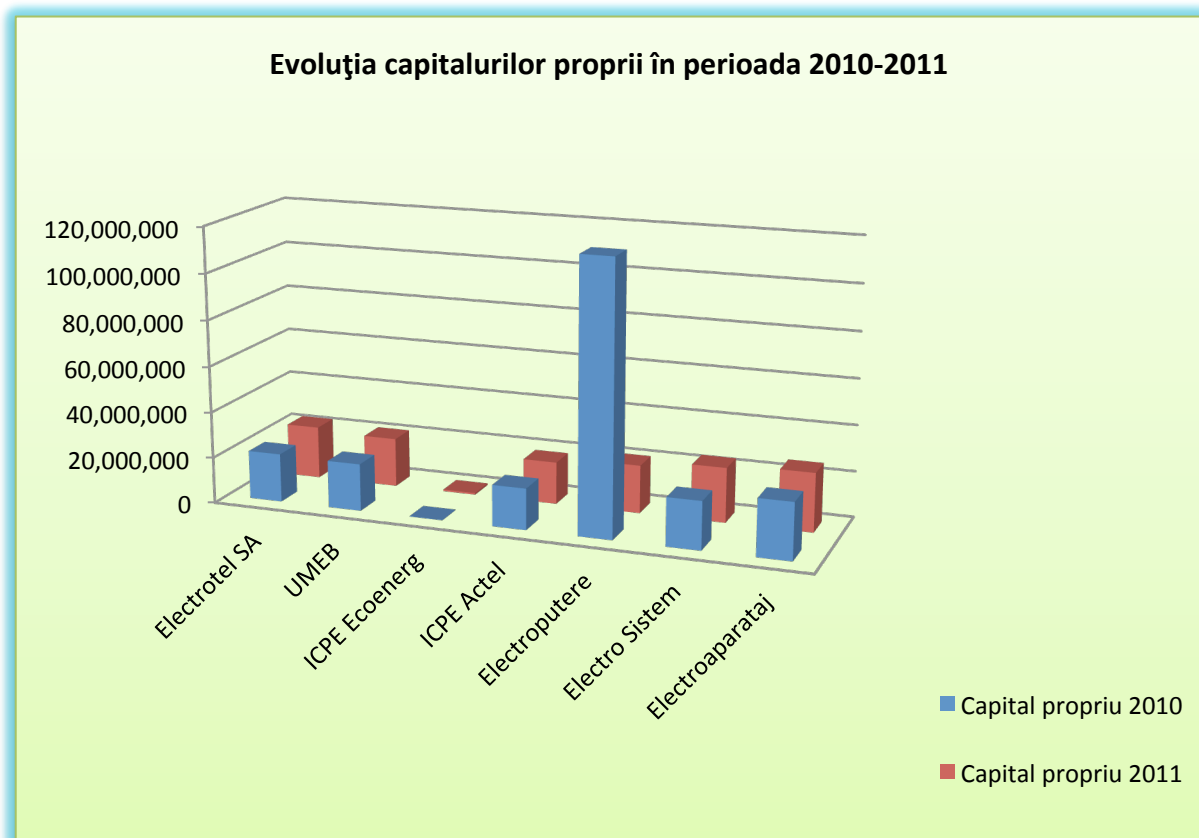
Source: own research

Grafic no.2 Evolution of profit and loss in the period 2010-2011



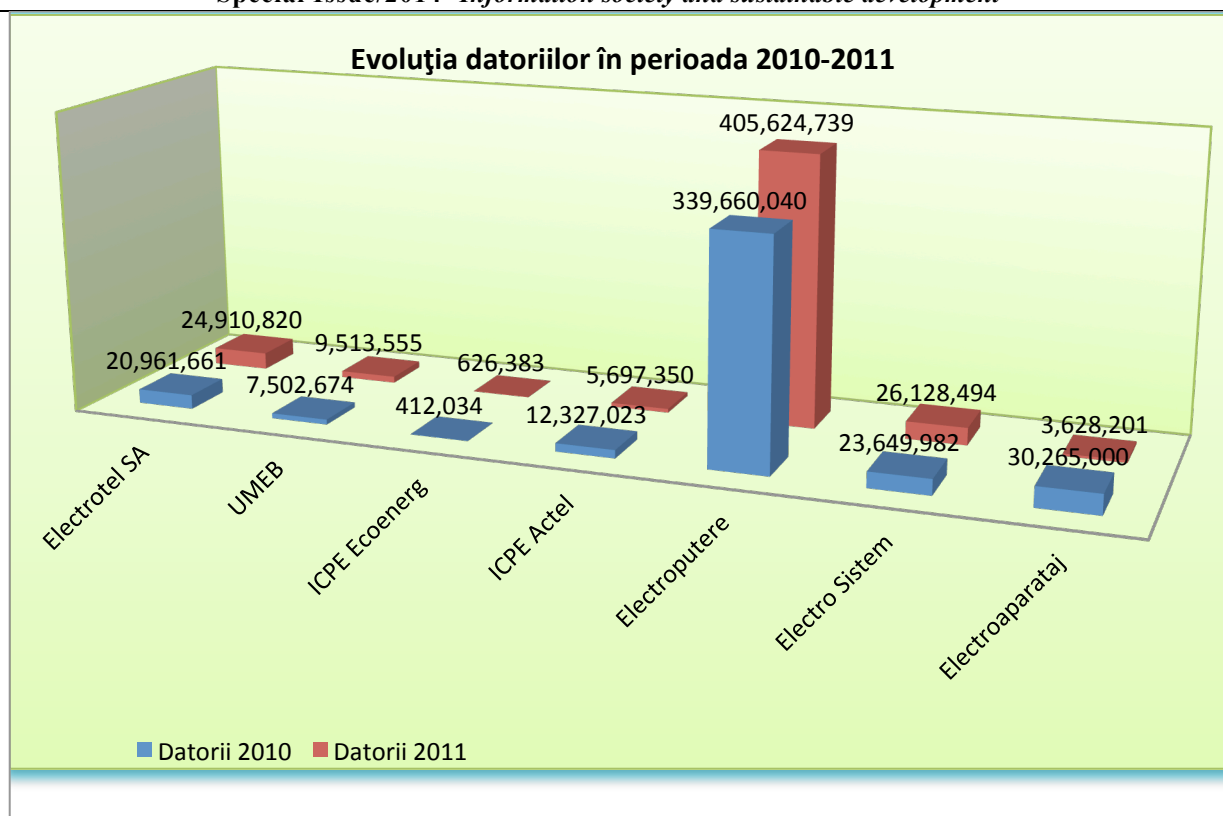
Source: own research

Grafic no 3. Developments in equity in the period 2010-2011



Source: own research

Grafic no. 4 Debt developments in the period 2010-2011



Source: own research

3. Impact on the production costs

For the application of the principle of economic efficiency, involving the comparison of the costs incurred with the incomes obtained, for the control of the achievement of the efficiency indicators provided in the production cost budget and mainly for the calculation of the cost effectiveness, the electrotechnical company management must always take into account the production cost calculation on each and every item (product, service, work, order, phase, activity, function, cost centre, etc.). Only thus the management can make decisions for: setting the product selling price, the control of the economic efficiency of the business centres, the organization and execution of the production process, etc.

Consequently, the information on the production costs is absolutely necessary for the management work, because it underlies the control of the business, the decisions made so that the future activities can be performed under optimum conditions and the control of the implementation of the decisions made.

As we know, the production cost is not a given measure and does not have a constant nature. Moreover, it is influenced by a multitude of factors, such as: the volume of the production, the production structure, the production factor price (nature, labour and capital), the product quality and features, the quality level of the labour and of the technical production equipment, the organization of the production, etc., and through the optimization of the use of these factors, the production cost can be reduced, thus leading to the desired results concerning the profit, cost effectiveness of the products made.

Under the current market economy conditions, in which the economic calculation has become a money calculation, the well-determined purpose of any electrotechnical company management is to make profit, which is why the old activity methods, based on customs and traditions, have been replaced with accurate methods of managing the economic means in a rational way. Consequently, the concern of any company is to cover its production costs and to make a profit as high as possible, but under the conditions of the market economy, the companies that fail to cover their production costs, and thus are not profitable, waste their capital, and eventually go bankrupt.

Therefore, the reduction of the production cost is a crucial aspect for the electrotechnical company management, with major implications in the profit maximization. In a competitive economy, in order to withstand competition, manufacturers must sell their goods at a lower price than the average price charged in the respective market and for this purpose, they must manage production factors effectively, because the selling part of the selling price which is the manufacturer's profit can be increased at the expense of the continuous reduction of the part representing the production cost.

Making a profit, however, depends on the ability of the electrotechnical companies to manufacture higher-quality goods at a cost as low as possible, and to sell such goods at competitive prices, thus exploiting the production

factors available to them in an appropriate manner, since they cannot influence the prices of the production factors they purchase, or the selling prices for their own products. For this reason, in order to make a profit as high as possible, they seek to reduce production costs, which is the safest way to increase economic effectiveness.

Electrotechnical companies, like any company irrespective of its business sector, must always take into account, its activity, "the cost efficiency", which implies achieving the objectives proposed taking into account the available resources, the production conditions available at a given moment, in the context of economic constraints. Under these circumstances, the minimization of the production costs in electrotechnical companies is very important when production factors are limited and exhaustible. Therefore, any company has certain financial means, which it can use in the production process, and in this respect, in order to make the production cost effective, it is necessary to obtain maximum production and profit for a given production cost.

The reduction of the production costs in electrotechnical companies is an acute issue, if we take into account the fact that one of the global problems of the contemporary world is the limited nature of the raw material and energy resources, which calls for increased rationalization and the responsible use of such resources. For the achievement of such conditions actions can be taken in the phases of conception and design of the goods and technologies for the reduction of their size, the replacement of the scarce materials with others that are cheaper and for which there is no risk of immediate exhaustion, provided that this does not affect quality. Taking these conditions into account, the reduction of the cost per product unit – a decisive requirement for increasing profitability, should not affect the quality of the goods, and implies the supply of goods and products that incorporate advanced science and technology.

4. Conclusions

We can thus conclude that the degree of horizontal and vertical integration of the electrical engineering industry production is determined by the realities and conditionings between the electrical engineering industry and the branches of the Romanian economy and industry, and the future of any company depends on the capacity of each to increase its profit, by preserving a turnover as high as possible and on an uptrend, and at the same time, the companies who have debts should consider the permanent decrease of such debts.

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- [7] *** <http://firme.efin.ro/q/%20Electro%20Sistem>
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