

LIMITS OF SALARY COST ANALYSIS IN INDUSTRIAL COMPANIES

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Abstract. An investigation of this economic phenomenon supposes the existence of proper procedures, principles, methods and tools that are generally specific to science but also to the economic field. A scientific method assures, by procedures and tools, the detachment from the economic reality and the entrance in the scientific theory of regularities, principles and laws determining and governing the economic phenomena. To such respect, this article focuses within the general topical economic analysis of the industrial companies on a specific identification of analysis models used in this section of an analysis models management. Such investigation is required in order to have a right tool to avoid errors that are so frequent in industrial business regarding the salary costs cut down that happens so often to lead to a diminution in the employees' salaries or their lay off especially within economic crisis periods.

Keywords: analysis model, salary cost, industrial companies

1. Introduction

The personnel usually engages a special place within the total of operating costs, which supposes a particular attention paid to their analysis, as it reflects part of the newly generated value. To be considered that the existence of this kind of expenditure is a consequence of using human potential that is deemed to be the most dynamic production factor. Expenditure related to personnel includes personnel remuneration (known under the name of salary costs) and expenses for social security. Depending on the manner how they are included in the costs, the existing reserves are required to be located in view of increasing the efficiency of expenditure incurred with personnel.

2. Working method

Theoretical models of analysis are monitored and grouped for the personnel expenditure with an aim at identifying the advantages and the limits generated by their enforcement in the real economic environment. As a consequence, the problems encountered in analyzing expenses for personnel are structured depending on the targets followed-up in this article:

- Featuring the general status of salary costs;
- Analysis of the correlation between labor productivity dynamics and average salary dynamics;
- Salary factorial analysis;
- Salary cost-effectiveness analysis.

2.1. Featuring the general status of salary costs

The dynamic analysis of salary expenditure allows for their evolution to be pursued in time under the impact of a rise in business volume and

rate average salary per labor time unit. Featuring of the general status of salary expenditure may be carried out into absolute or relative parameters. Switching the salary costs on ΔC_s absolute parameter shall be determined as the difference between C_{s1} achieved salary costs and those related to the period taken for comparison basis standing for achievements within the previous period or levels scheduled for the current period, C_{s0} as in relation (1):

$$\Delta C_s = C_{s1} - C_{s0}. \quad (1)$$

There is a direct connection between the business volume and the dynamic of salary costs (that part corresponding to directly producing personnel); however consideration shall be due also to the fact that the prevailing part of the concerned expenses has variable feature. This aspect generated the occurrence and utilization in economic theory and practice of the notion of "relative change of salary costs" in the meaning of change referred to the business volume [9]. As for the business volume, that factor shall be chosen to cover the entire labor consumption and have material coverage for the concrete form of products, works and services.

The relative change of salary costs ΔC_{sr} , is established as the difference between the achieved salary costs C_{s1} and the allowable salary costs C_{sa} , namely:

$$\Delta C_{sr} = C_{s1} - C_{sa}, \quad (2)$$

$$C_{sa} = \frac{C_{s0} \cdot I_v}{100}, \quad (3)$$

where I_v stands for the index of the business volume (turnover or year production).

Putting such procedure into practice leads to

various situations in industrial companies, which could be broken down as follows:

- a) $C_{s1} < C_{sa}$, generates relative savings that are to be found in the operating result and company profit. As long as the sign of inequality maintains, no particular problems will occur in the area of human resource management of an industrial company.
- b) $C_{s1} > C_{sa}$, stands for a relative excess mitigating the financial results of the company. It cannot be accepted, therefore solutions shall be initiated that would cut down salaries up to the reversal of the inequality sign.
- c) $C_{s1} = C_{sa}$, basic requisite, respectively maintenance of the cost-effectiveness rate for salary costs per lei 1,000 business volume. The equality relation is theoretical, given that it is only randomly encountered in practical business [11].

Relatively simple, the analysis procedure allows demarcating the cases depending on human consumptions versus a maximum allowable threshold. In order to focus on some aspects of dynamics, the evolution of salary costs is correlated to the business volume. What is missing from this approach is the connection with the main parameter that capitalizes human resources – productivity. Therefore, need is to supplement it with other tools of analyzing human resources to the level of industrial companies.

2.2. Analysis of “Labor Productivity vs. Average Salary” link

The analysis of a correlation/link between the labor productivity dynamics and that of the average salary takes integral part to the company’s salary policy. A pre-empt of the average salary increase by the labor average productivity leads to savings that are achieved in salary costs which is positively shown in the level of such expenditure per lei (Romanian currency) 1,000 turnover and implicitly in the increase of the efficiency rate of total expenditure [12]. While analyzing the correlation between the increase in labor productivity and that in average salary, the correlation index I_c , is used that can be determined in two ways as in relations (4) and (5):

a) Dynamic Ratio:

$$I_c = \frac{I_{csa}}{I_{wa}}, \quad (4)$$

where I_{csa} is the index for annual average salary;

I_{wa} index for annual average productivity.

b) Increase Ratio (only applicable in case those indices are over100):

$$I_c = \frac{I_{csa} - 100}{I_{wa} - 100}. \quad (5)$$

In both one case and the other, the correlation is observed, provided that $I_c < 1$. The requirement for due observance of this correlation comes from the fact that while increasing labor productivity there are other production factors that contribute for whose reproduction premises shall be provided (out of profit).

It presents the advantage of connecting the evolution of salary expenditures to the business volume, however it has a limited information contents. The procedure frequently includes such information into factorial analysis models. The correlation between labor productivity dynamics (determined based on operational revenues) and that of average salary may be analyzed by means of the index of salary costs per lei 1,000 operational revenues. The analysis model is the following:

$$C_s^{1000 \cdot VE} = \frac{C_s}{OR} \cdot 1000 = \frac{C_{sa}}{W_a} \cdot 1000. \quad (6)$$

All the other aspects referring human resources of a company such as: working time, human resource management, structures of personnel with related salaries, as well as their evolution in dynamics cannot be featured with such procedures.

2.3. Salary cost factorial analysis

From factorial point of view, salary costs may be analyzed based on the following models present in literature (relations (7), (8) and (9)) [6, 7, 9]:

$$C_s = N_s \cdot \frac{OR}{N_s} \cdot \frac{C_s}{OR}, \quad (7)$$

where OR/N_s annual average productivity W_a calculated based on operating revenues; C_s/OR average salary costs per 1 leu of operating revenues.

$$C_s = \frac{\sum g_i \cdot c_{si}}{100}, \quad (8)$$

where g_i structure of operating revenues per products, works, services, etc.;

c_{si} salary costs per 1 leu of production on the considered structure, etc.

$$C_s = N_s \cdot \frac{T}{N_s} \cdot \frac{C_s}{T}, \quad (9)$$

where $T/N_s = t$ average number of hours worked by an employee during one year;

$C_s/T = c_{sh}$ hourly average salary.

Factorial models are frequently encountered in literature; this term is generated in order to

characterize salary costs and allow for establishing the influences exerted by various factors. Among the analysis models that are efficient in practical analysis activity there are the ones including influence factors, such as: average number of employees, annual average productivity, and salary expenditure reported to 1 leu of operating revenues or turnover, structures of salary revenues and other ones [2, 5].

As a consequence of structure application of real data collected out of financial statements of the company, solutions can be identified regarding the following:

- Correctly sizing the requisite of personnel;
- Labor productivity increase;
- Identification of revenue structures that shall be improved by cutting down salary costs related to them;
- Cutting down of salary costs to 1 leu of operating revenues or turnover;
- Better capitalization of working time for employees and other alike.

Although among the most performing analysis models used at the level of the company human resources, yet they may be improved. A limit of such comes from the lack of elements focusing on of included variables dynamics. In order to settle such drawback, the models may be applied on several subsequent periods of time, which procedure leads to more calculations, results and interpretations. Another limit is given by the relative number of influence factors. Some models are likely to be conceived that contain a greater number, however their application will turn to be difficult and there is risk of overlaying certain aspects related to human resources.

2.4. Personnel expenditure cost-effectiveness analysis

The efficiency of personnel costs in respect of total salary costs can be analysed by using both correlation and factorial models of the following indices:

a) Personnel costs per lei 1,000 operating revenues:

$$C_p^{1000-OR} = \frac{C_p}{OR} \cdot 1000 = \frac{N_s}{OR} \cdot \frac{C_p}{N_s} \cdot 1000; \quad (10)$$

b) Personnel costs per lei 1,000 turnover:

$$C_p^{1000-TO} = \frac{C_p}{TO} \cdot 1000 = \frac{N_s}{TO} \cdot \frac{C_p}{N_s} \cdot 1000; \quad (11)$$

c) Personnel costs per lei 1,000 added value:

$$C_p^{1000-AV} = \frac{C_p}{AV} \cdot 1000 = \frac{N_s}{AV} \cdot \frac{C_p}{N_s} \cdot 1000, \quad (12)$$

where C_p/OR , C_p/TO and C_p/AV stand for reverse forms of reflecting annual average productivity calculated based on operating revenues, turnover and added value;

C_p/N_s average personnel costs per employee, respectively annual average salary and the other elements of expenses assimilated or determined depending on such.

The impact of factors is quantified by applying the chain substitution method (variant in which there are product relations between factors) [8, 10]. Based on personnel cost-effectiveness indices their contribution is confirmed in respect of their reduction up to lei 1,000 operating revenues, turnover and added value, whenever the level achieved is lower than the scheduled one [1].

These are like the previously signalled analysis procedures. Unlike the beforehand, these ones are composed by considering all salary costs and tax elements accompanying them. The fact that personnel expenditure is seen at an overall level stands for an indisputable advantage. However this does not include any elements of salary expenditure dynamics or tax elements that are frequently modifiable in the laws of Romania. Nevertheless, as the number of factor is low, that does not allow for a detailed featuring of causes determining the evolution of salary costs. Moreover, the correct construction of models assumes maintenance of factor $C_p/N_s \cdot 1000$. The area of all models included in this category is quite restricted, and the difference occurs by considering a different value index by means of which salary costs are judged. The factors of impact are various models of expression for the annual average productivity and the level of expenses incurred with each employee.

3. Conclusions

The analysis models submitted in literature and used in the practical activity of diagnosing and sizing salary costs at the level of industrial companies are broken down into four categories. Per each category the most efficient models were herewith exemplified so that to focus on their content and area of coverage. The analysis carried out results in the following conclusions:

- There is no theoretical model easy to apply in the practice by means of which to correctly size the salary expenditure of all industrial companies;
- The analysis models shall be applied during several subsequent periods of time in order to focus on their evolution in time which makes them inoperable in practical business;

- Most of procedures pursue the evolution of labour productivity as it is deemed to be the main parameter of human resource management of a company. At the same time other main aspects or capitalizing human resources are missing;
- The calculation of the maximum allowable salaries is done correctly when considering the evolution (increase, hold on or cut down) or the business volume. However such models lead to determining the total amount of resources allocated to employees and to the state for coverage of salary contributions;
- There is no minimum limit below which the analysis of salary costs would not be of interest, given that the generated savings, if any, are not the ones insignificant, and their effect on profit is low.

An aspect like herewith presented shows high interest in the real economic environment as it would allow professional practitioners to remove from calculation the area of human resources whenever seeking for solutions to cut down various categories of expenses [3, 4]. A low consumption of human resources compared to the volume of production may be identified by relative parameters such as: salary costs (with personnel) per 1 leu operating revenue or turnover. Studies carried out on a longer term show that in case of industrial companies of Romania below lei 0.1 consumptions are encountered per 1 leu operating revenues (turnover). For such companies, the analysis of human resources is not opportune, given that the possible savings that can be got have insignificant effect on the company profitability. Moreover there is risk that the savings obtained be exceeded by expenses generated by such a study in case of it being carried out by experts from outside the company.

In the author's option, cutting down of salary costs does not stand for a target itself but a particular one that is required in certain situations the company may face. In most of the cases, in order to cut down expenditure they are subject to analysis. Expenditure will always be referred to revenues and not reversely as expenses generate occurrence of revenues. Consequently some procedures of analysing salaries are required to be conceived that should observe such procedure. For

industrial business recording salary costs per 1 leu operating revenues or turnover that are over the minimum level may envisage the implementation of some procedures in order to cut down the level of such.

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