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AN ANALYSIS OF PERFORMANCE THROUGH THE RESULTS OF A COMPANY

Empirical Study

Keywords
Turnover
Performance
Productivity
Results
Enterprise

JEL Classification
M19

Abstract

The present paper aims to present a short analysis of the relevance that turnover, as an indicator of result manifests both upon human resource performance and upon performance management in general. Turnover thus represents an indicator of results with a fundamental role in characterizing the efficiency of the activity carried out by a company. The present paper aims at illustrating the relevance of turnover for the performance analysis of an enterprise, both by content analysis and also by processing real data regarding a sample of companies.

General aspects

Labor productivity can be defined in several ways (Buglea & Lala-Popa, 2009), but the main idea needed to be clarified is that it represents a relationship between the effect of the exploitation process, and the effort provided, for the first aspect being used indicators as the physical quantities, the quantities destined for sale, the value of turnover or the value added.

$$W = \frac{Q_{physical}; Q_{value}; Q_{production}; Q_{destined\ for\ sale}; turnover, VA}{N_p, N_m, N_h, N_z}$$

The objective of any organization, from this perspective, would be to increase productivity and streamline business activity (Buglea & Lala-Popa, 2009). An enterprise development is possible only through continued growth of this indicator. When referring to the analysis of the level and dynamics of labor productivity, this can be determined in several forms, as follows.

Comparing the three indicators in dynamics, there can be identified the following correlations (Lala-Popa & Miculeac, 2012):

$I_{Wz} > I_W$, the daily productivity index is greater than the annual productivity index, determining the daily productivity by eliminating waste of time for days

$I_{Wh} > I_{Wz}$, hourly productivity index productivity index is higher than daily index, because hourly productivity is determined at the actual time used.

The labor productivity is mainly influenced by:

- Technological and technical level of the company
- The organization operating
- The quality of the human factor.

The term "performance" is used or discussed increasingly in recent years in various fields, in literature, being also considered a goal by all enterprises. According to the findings in the literature, "in any socioeconomic system, performance becomes, in the current period, a term of reference for both managers and performers, being a form of manifestation of objectives and results obtained. A performing organization can better exploit the opportunities offered by the environment, moves more easily over obstacles that it can be put to it, it satisfies both quantitatively and qualitatively certain segment of social need, gains competitive advantage on the specific market where is acting. (Verboncu et al, 2013).

Generally, the term „performance" is meant to define "an outstanding achievement in a field", the Explanatory Dictionary of the Romanian language explaining the origin of the French word "performance" with the meaning of "particularly good result obtained in sport, in a practical field of activity " or " the best result given by a machine".

Performance is present in every area and can often be associated with efficiency, effectiveness and competitiveness. From economic point of view, performance at a company level "includes the ability to access resources, allocate and use them optimally in order to cover remuneration sufficient to justify the risk assumed and the interest, for a future sustainable developments path. The performance lies therefore in the efficiency and effectiveness of the resources consumed (effort) and generated results (effect) that would ensure and develop his sphere of interest." (Petcu, 2003). A more precise point of view, however, at the microeconomic level, characterized the performance as a state of competitiveness of the economic entity, reached by a level of productivity and efficiency which ensures a lasting presence in the market (Niculescu & Lavalette, 1999). On the other hand, the performance can be regarded as being a special result obtained in management, economic, commercial etc. involving efficiency, effectiveness and competitiveness of companies and their procedural and structural behaviors (Verboncu & Zalman, 2005) or a tool that demonstrates her ability to progress thanks to constant efforts (Albu & Albu, 2005).

Professors Bărbulescu and Bâgu (Bărbulescu & Bâgu, 2001) state that performance represents the level obtained at the best results. Performance is therefore met in any field, and may be associated with any activity. In the economical-financial field, the concept of "performance" gains different meanings, such as: growth, profitability, productivity, efficiency (Colasse, 1999), or even successful result of an activity or action (Bourguignon, 1995).

Relating to financial activity, performance has many facets: economical performance, economical and financial performance, financial performance.

Economical performance is considered being "the extent to which a sector can achieve the goals or objectives of companies operating within it. Performance meets multi-dimensional forms, covering aspects of profitability, innovation, product development, quality and growth "(Macmillan Dictionary of Modern Economics, 1999).

Economic and financial performance is defined as "a qualitatively higher level of economic and financial activity carried out by undertakings which are assessed using several indicators, such as turnover, return on capital, labor productivity, return on capital, gross profit and the net annual rate of renewal of fixed capital, effective use of resources etc." (Bistriceanu, 2001).

Financial performance on the other hand, is the relationship between income and expenditure unit, as reported in the income statement. So,

performance or nonperformance of an enterprise is reflected in the income statement and is given by the ratio between the income that the achievement will generate future cash flows and expenses that arise by using the resources of the period.

Turnover as as indicator of result

We selected the turnover as a relevant results indicator for the expression of the level of performance. For this indicators dynamic analysis we selected 8 companies which are representative in Caras - Severin, following their evolution over four years (2010-2013), for which were calculated as follows:

- Absolute deviations with fixed-basis and chain basis

$\Delta CA_{BF} = CA_n - CA_0$

$\Delta CA_{BL} = CA_n - CA_{n-1}$

- indices with fixed basis and chain basis

$I_{CA} = CA_n / CA_0 * 100$

$I_{CA} = CA_n / CA_{n-1} * 100$

- Growth rates along the selected period

$R_{CA} = CA_n / CA_0 * 100 - 100$

$R_{CA} = CA_n / CA_{n-1} * 100 - 100$

Selected entities occupy the first eight positions in the Top Companies in Caras Severin, in the field of manufacturing food products. Data available on the website of the Ministry of Finance indicate the following situation on the 8 companies (As shown in table no.1)

After realizing the calculations for determining the absolute deviations, the indices and the growth rates, there were obtained the following results:

1. the absolute deviations with fixed basis and chain-basis (As shown in table 2 and table 3).

We find that absolute deviations calculated for the previous established timeframe varies from one enterprise to another. Some highlight an increase in turnover over time, others, on the contrary, a significant decrease.

Comparing the values at the end of the period with those of the basis year, the most significant increase is recorded in the case of the sixth enterprises, while the weakest progress is recorded in the second entity.

2. Indices with fixed and chain basis (As shown in table 4 and table 5).

3. Case study

The case study elaborated consists in determining the bond between three indicators, namely the profitability of the enterprise, the turnover and the labor productivity, respectively. For this, we have selected a number of 20 enterprises in the city of Resita, for which we illustrated the values of the above mentioned indicators (shown in Table 6).

The data was selected from the online web-platform of the Ministry of Finance (for the first two indicators), while the values representing the labor productivity were calculated individually by the authors. Using the EViews 7 software, we tried to determine the nature of linkage between the three indicators in the case of the 20 companies selected. All of these are active at present and obtained a positive return according to the balance sheet available for the year 2013. It is also important to mention that all of them are enterprises that operate in the field of food production or processing.

We further analyzed through Eviews 7, the influence of the labor productivity and turnover upon the result obtained by an enterprise. The enterprises selected were not only SME's but also big enterprises, with more than 250 employees.

The variables considered were the thus the turnover and the labor productivity as independent variables and also the variable profit, the latter being a dependent variable.

The relationship between the three variables can be illustrated by the following regression line (Figure no. 1)

Conclusions

We can state that the factors acting upon productivity exercise the following influences:

- The average number of hours worked by an employee directly determines the change in the level of labor productivity in proportion to the level of the base period hourly labor productivity.
- The variation of the average working day determines productivity change through the influence upon the average hours worked by an employee in direct proportion to the corresponding levels of the base period average number of days worked per employee and hourly labor productivity.
- Average number of days worked per employee affects the change through the influence of the change in the average number of hours worked by an employee in direct proportion to the level of the base period hourly labor productivity and the duration of the current period average working day.
- Changing hourly labor productivity directly affects labor productivity change in proportion to the current period average number of hours worked by an employee.
- Changes in production structure affects labor productivity change through the influence of hourly labor productivity change in the same direction and proportional to the current period, the average number of hours worked per employee.
- Changes in hourly productivity product generates productivity change through the

influence of hourly labor productivity change in direct proportion to the current period , the average number of hours worked per employee.

According to data obtained in Eviews, the value of the Student test (t-statistic) to C (1) is 2.114041, C(2) is 1.477831 and C(3) is -0,368900. Following these calculations, and based on the values of the coefficient, the equation will be:

RETURN=203661.9 + 0.007006*turnover + (-0.083609)*W_LPROD

We observe that the value for C(2) and C(3) respectively are different. While the first one is higher than 0, indicating a direct relationship between the turnover and profitabilitaty, this linkage is still a weak one, the coefficient tending to 0. At the same time, the C(3) coefficient gains a negative value, of -0,083609, which indicates a weak and indirect linkage between the labor productivity and profitability.

The tabular value of the standard variable (T critical) is determined from the table of the Student distribution, according to v=n-1 degrees of freedom and the probability /2. In our case, v=20-1=19 degrees of freedom and probability 0.05/2=0.025. According to the Student repartition quintiles, the tabular tcritic value corresponding to the error 0.025 of degrees and 19 degrees of freedom is 2,093< tc (1), 2,093 > tc (2), tc(3). The three parameters, c (1), c(2) and c (3) are significantly different from 0, the model is therefore statistically correct, rejecting the null hypothesis.

According to available data, the value of Durbin Watson test (Durbin Watson stat) is 1.857817. We determine two tabular values, one lower and one upper, depending on the level of significance of the test the number of observations (20) and the number of k factorial variables (in our case 2, since this a multiple factor regression model). Values are tabulated dL=1.10 and du=1,54. In this case, d=1.857817 >dL and >du, which means that the random variable autocorrelation hypothesis is based on indecision, being suggested the acceptance of positive correlation.

According to data obtained in Eviews, Fisher test value (Fstatistic) is Fc=1.205727. Table or critical value chosen from the table distribution Fisher - Snedecor according to the levels of significance (0.05) and the number of degrees of freedom (19) is Ft = 4.38. By comparing the calculated value Fc to the tabular value Ft results that Fc< Ft, and the null hypothesis is rejected with probability *p = 1 –* = 0.95%, which means that the model needs to be revised in order to draw a pertinent conclusion regarding the influence of a variable upon the other.

R-squared regression coefficient in calculations acquires the value of 0.124228, value> 0, demonstrating a direct but weak linkage.

We thus consider the above obtained equation as adaptable to other samples of enterprises, through the following changes:

RETURN = α + β* TURNOVER + γ* w_LPROD

References

[1] Albu, N., Albu, C., *Soluţii practice de eficientizare a activităţilor şi de creştere a performanţei organizaţionale*, Editura CECCAR, Bucureşti, 2005

[2] Bourguignon A., *Peut-on definir la performance?*, Revue Francaise de Comptabilite, nr. 269, 1995

[3] Bistriceanu Gheorghe D., *Lexicon de finanţe, bănci, asigurări*, vol. III, Editura Economică, Bucureşti, 2001

[4] Bărbulescu, C., Bâgu, C., *Managementul producţiei, vol. II – Politici manageriale de producţie*, Editura Economică, Bucureşti, 2001

[5] Buglea Alexandru, Lala Popa Ion, *Analiză economico – financiară*, Timişoara: Editura Mirton, 2009

[6] Colasse B., *L'analyse financiere d'entreprise*, La Decouverte, Paris, 1999

[7] Coteanu Ion, Seche Luiza, Seche Mircea, coordonatori, Academia Română, Institutul de Lingvistică „Iorgu Iordan", *Dicţionarul explicativ al limbii române (DEX)*, Editura Univers Enciclopedic, Bucureşti, 1998

[8] Niculescu, M., Lavalette, G., *Strategii de creştere*, Editura Economică, Bucureşti, 1999

[9] Petcu Monica, *Analiză economico-financiară a întreprinderii. Probleme, abordări, metode, aplicaţii*, Editura Economică, Bucureşti, 2003

[10] Verboncu, I., (coord) *Management. Eficinţă. Eficacitate. Performanţe*, Editura Universitară, Bucureşti, 2013

[11] Verboncu, I., Zalman M., *Management şi performanţe*, Editura Universitară, Bucureşti, 2005

[12] Colectiv de autori, *Dicţionar macmillan de Economie Modernă*, Editura CODECS, Bucureşti, 1999

Tables

Table no. 1 – The turnover of companies

	2010	**2011**	**2012**	**2013**
1	2.438.537	2.972.476	3.000.242	4.353.830
2	5.315.713	5.364.529	4.993.114	4.730.891
3	8.546.415	9.193.297	11.838.809	12.119.108
4	-	1.189.408	3.040.225	4.861.746
5	8.060.340	6.903.915	6.709.876	7.575.051
6	27.835.217	25.880.044	26.988.843	34.134.403
7	18.586.539	19.826.641	21.381.376	22.660.023
8	617.372	391.611	435.840	351.776

Source: Balance sheets available on the website of the Ministry of Finance

Tabel no. 2

$\Delta T_{2011/2010}$	**$\Delta T_{2012/2010}$**	**$\Delta T_{2013/2010}$**
ΔT_{FB}		
533.939	561.705	1.915.293
48.816	-322.599	-584.822
646.882	3.292.394	3.572.693
-	1.850.817	3.672.338
-1.156.425	-1.350.464	-485.289
-1.955.173	-846.374	6.299.186
1.240.102	2.794.837	4.073.484
-225.761	-181.532	-265.596

Tabel no. 3

$\Delta T_{2011/2010}$	**$\Delta T_{2012/2011}$**	**$\Delta T_{2013/2012}$**
ΔT_{CB}		
561.705	27.766	1.353.588
48.816	-371.415	-262.223
646.882	2.645.512	280.299
-	1.850.817	1.821.521
-1.156.425	-194.039	865.175
-1.955.173	1.108.799	7.145.560
1.240.102	1.554.735	1.278.647
-225.761	44.229	-84.064

Tabel no. 4

$I T_{2011/2010}$	$I T_{2012/2010}$	$I T_{2013/2010}$
$I T_{FB}$		
121,89%	123,03%	178,54%
100,92%	93,93%	89%
107,57%	138,52%	141,80%
-	255,61%	408,75%
85,65%	83,25%	93,98%
92,98%	96,96%	122,63%
106,67%	115,04%	121,92%
63,43%	70,6%	56,98%

Table no. 5

$I T_{2011/2010}$	$I T_{2012/2011}$	$I T_{2013/2012}$
$I T_{CB}$		
121,89%	100,93%	145,12%
100,92%	93,08%	94,75%
107,57%	128,78%	102,37%
-	255,61%	159,91%
85,65%	97,19%	112,89%
92,98%	104,28%	126,48%
106,67%	107,84%	105,98%
63,43%	111,29%	80,71%

Table no. 6

RETURN	TURNOVER	W_LPROD
150405	4353830	94648.5
612	4730891	84480.2
270775	2973185	228707
937034	12119108	216413
337800	2833723	97714.6
776360	4861746	303859
1481	762362	42353.4
44078	7575051	145674
1137530	34134403	310313
132682	337969	112656
10380	790650	131775
46605	126432	63216
173285	22660023	276342
20502	121382	60691
4218	1116745	1116745
351776	15757296	1313108
4532	246690	61672.5
279023	79328305	1101782
80869	1388173	198310
189871	6079067	506589

(Source: Balance sheets published on the official web-platform of the Ministry of Finance)

Figures

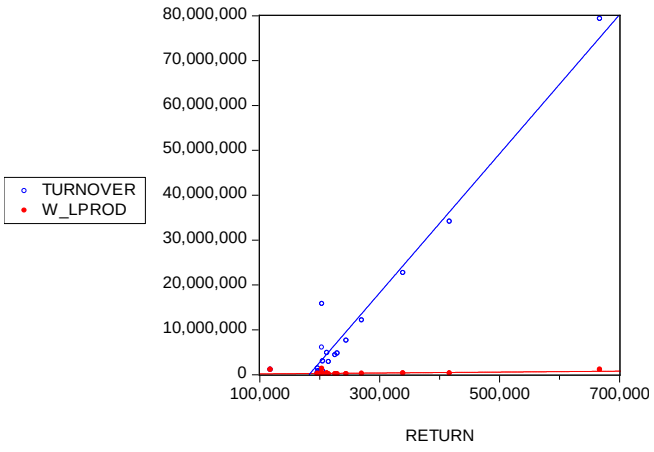

***Figure no 1* – linear regression for the above listed variables**
(Source: Eviews 7 processing data provided by the online web-platform of the Ministry of Finance)