

TURNOVER ANALYSIS

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ABSTRACT: *The purpose of any entity is the achievement of goods and services which meet certain social needs as well as obtaining economic and financial performances as results of the work carried out. The turnover represents an important objective of each business, the main form of income and also the most important value indicators of the entity's work. The main aspects discussed in the present paper are the following: conceptual approaches related to the turnover analysis (dynamics, structural and factorial analysis) and the main consequences of turnover on economic and financial indicators.*

KEY WORDS: *turnover, index, structural analysis, consequences on performance, factorial analysis.*

JEL CLASSIFICATION: *D24, M21, L11.*

1. INTRODUCTION

In the current changing economic environment, each entity has to face the changes and constraints, which could affect the entity's performances and through managerial decisions seeks to develop a profitable activity. The turnover is an important value indicator characterizing the volume of entity's work and it shows the economic performances.

Turnover represents the main form of sales income, generated by the commercial entity's activity over a specified period of time (typically one year). In the turnover are not included financial income and extraordinary income.

The level of turnover can indicate the importance and place of entity within its sector of activity (in comparison with the medium level of the sector), enabling its analysis and reporting the strategic position on the market. Each entity is interested to increase turnover and to achieve a profit with certainty in the future.

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The *turnover (T)* is a global indicator of sales, from the production and commercial entity's activity and one of the most important indicators in order to measure entity's global performance.

2. OPERATIONAL RATIOS USED IN THE TURNOVER ANALYSIS

The turnover expresses the revenues obtained by an entity from its current production and commercial activity and can be approached through some operational ratios as follows: net turnover, average turnover, marginal turnover and break-even point (Gheorghiu, 2004; Popescu, 2009).

Net turnover (T) – represents an indicator of the Profit and Loss Account, formed by total incomes obtained from the sale of goods and services from the current activity of the entity, including the subsidies from investments, after deducting the trade discounts (Popescu, 2009).

Average turnover (\bar{T}) – represents the revenue obtained from the sale of one unit of good or service:

$$\bar{T} = \frac{T}{q}, \quad (1)$$

where: q - the physical volume of sales

Marginal turnover (T_{mg}) – expresses the variation of revenues from sales generated by the variation with one unit of the physical volume of sales:

$$T_{mg} = \frac{\Delta T}{\Delta q} = \frac{T_1 - T_0}{q_1 - q_0} \quad (2)$$

Break-even point (T_{min}) – is the level of the sale revenues necessary for the total covering of the operating expenses; or the entity's profitability level.

$$T_{min} = \frac{Ef}{(1 - R_{Ev})} \quad (3)$$

$$R_{Ve} = \frac{Ev}{T} \quad (4)$$

where: Ef – fixed expenses;

Ev - variable expenses;

R_{Ve} – ratio of variable expenses;

The basic idea is to establish the moment of reaching the break-even point. At that moment the profit is null, from this point entity start producing benefits.

The turnover analysis can be detailed by categories of activities, by groups of products or until at the level of the product, offering an image about the consumers'

interest in entity's products or services. Also, turnover analysis offers information about the contribution of each product, activity or service to the formation of incomes.

3. TURNOVER DYNAMICS, STRUCTURAL AND FACTORIAL ANALYSIS

The analysis of turnover dynamics is done by using the classical statistical models, and offers information about entity's activity and its trend. In order to be relevant, the study must contain information afferent to at least a period of 3 to 5 years. On the basis of the conclusion drawn from this dynamics analysis, there can be established the development strategies of the entity for the next period of time.

The analysis of the turnover dynamics can be done using the classical method of comparison (Robu & al., 2014):

➤ *absolute changes of the turnover:*

- Fixed – base absolute changes:

$$\Delta T_{fb} = T_n - T_0 \quad (5)$$

- Chained - base absolute changes:

$$\Delta T_{cb} = T_n - T_{n-1} \quad (6)$$

➤ *Turnover's dynamics index(ratios):*

- Fixed – base index

$$I_{T_{fb}} = \frac{T_n}{T_0} \times 100 \quad (7)$$

- Chained – base index

$$I_{T_{cb}} = \frac{T_n}{T_{n-1}} \times 100 \quad (8)$$

➤ *relative changes of the turnover (increase ratios):*

- Fixed – base increase ratio

$$R_{fb} = I_{T_{fb}} - 100 \quad (9)$$

- Chained – base increase ratio

$$R_{cb} = I_{T_{cb}} - 100 \quad (10)$$

➤ *Annual average increase ratio*

$$I_{T_{cb}} = \left(\sqrt[n-1]{\frac{T_n}{T_0}} - 1 \right) \times 100 \quad (11)$$

In the decision making process of an entity, in order to establish the entity's development strategy, turnover dynamics should be compared with the dynamics of the market and of the activity sector. Those analyses are relevant in establishing the place of the entity on the market and its market share.

The structure of sales is relevant in turnover analysis. The structure of the turnover emphasizes the weight of certain elements in the total sales of the entity. Turnover structure changes must emphasize the changes of market and sales.

The structural analysis of the turnover means to determine the weight of certain elements in the total sales of the entity. The criteria according to which turnover can be analysed are various such as: markets, groups of products or merchandises, services, type of customers, types of activities, departments, phases of the life cycle of goods. The weight of different elements in the total turnover could be determined by using the relative measurements of the structure (Gheorghiu, 2004):

$$g_i = \frac{T_i}{T} 100 \quad (12)$$

where: g_i – the weight of “ i “ element in the total turnover;
 T_i - represents the turnover realized by “ i “ category;
 T – total turnover

The information provided by this analysis method refers not only to the main elements of the turnover but also their trend and consistency.

The analysis of the turnover structure in order to make comparisons between activities afferent to different financial periods can be made by using the *coefficient Gini-Struck* (most commonly the coefficient is used to assess the degree of concentration/diversification) (Robu, 2014). The formula used to calculate the Gini-Struck coefficient is the following:

$$G = \sqrt{\frac{n \sum g_i^2 - 1}{n - 1}} \quad (13)$$

Where: g_i – the structure of sales on types of activities, group of products, etc.;;
 n – the number of terms of the series.

Gini-Struck coefficient takes values in the interval [0; 1], with the following significance:

- If the level is close to 0, it means that the sales are relatively uniformly distributed between the categories of structure of the activity.
- If the level is close to 1, the concentration degree of activity is high; it means that in the sales structure there are a low number of elements that hold the largest weight in the turnover.

The factorial analysis of turnover is based on the determinist models of multiplicative type by using the decomposition in explicative indicators or rates.

The factorial analysis of turnover using a models which express the correlation between turnover and the physical volume of sales:

<ul style="list-style-type: none"> turnover is correlated with the physical volume of sales (qi) and the selling price of each unit (pi) (Gheorghiu, 2004): $T = \sum_{i=1}^n q_i \times p_i$	
Type of changes:	Absolute changes of turnover
The modification of turnover:	$\Delta T = T_1 - T_0 =$ $= \sum_{i=1}^n q_{i1} \times p_{i1} - \sum_{i=1}^n q_{i0} \times p_{i0}$
1. the influence of the physical volume of sales:	$\Delta_T^q = \sum_{i=1}^n q_{i1} \times p_{i0} - \sum_{i=1}^n q_{i0} \times p_{i0}$
2. the influence of the selling price of each unit:	$\Delta_T^p = \sum_{i=1}^n q_{i1} \times p_{i1} - \sum_{i=1}^n q_{i1} \times p_{i0}$

Another factorial analysis models express the correlation between turnover and human resources.

The main influence factors are:

- the average number of employees (\bar{E});
- the average annual labour productivity ($W_L = \frac{Q_d}{E}$);
- the degree of sales from production obtained intended for delivery ($\beta = \frac{T}{Q_d}$);

<ul style="list-style-type: none"> turnover is correlated with the number of employees, labour productivity and degree of sales from production obtained intended for delivery (Gheorghiu, 2004) $T = \bar{E} \times \frac{Q_d}{\bar{E}} \times \frac{T}{Q_d}$	
Type of changes:	Absolute changes of turnover
The modification of turnover:	$\Delta T = T_1 - T_0 =$
1. the influence of the average number of employee:	$\Delta_T^{\bar{E}} = (\bar{E}_1 - \bar{E}_0) \times \frac{Q_{d_0}}{E_0} \times \frac{T_0}{Q_{d_0}}$
2. the influence of the average annual labour productivity:	$\Delta_T^{W_L} = \bar{E}_1 \times \left(\frac{Q_{d_1}}{E_1} - \frac{Q_{d_0}}{E_0} \right) \times \frac{T_0}{Q_{d_0}}$
3. the influence of the degree of sales from production obtained intended for delivery:	$\Delta_T^{\beta} = \bar{E}_1 \times \frac{Q_{d_1}}{E_1} \times \left(\frac{T_1}{Q_{d_1}} - \frac{T_0}{Q_{d_0}} \right)$

4. TURNOVER CONSEQUENCES ON ECONOMIC AND FINANCIAL INDICATORS

The turnover variation has consequences on the main economic and financial indicators. In the turnover analysis it is recommended to discuss and quantify that consequences, using the following relations (Robu & al., 2014):

- on expenses related to turnover

$$\Delta_T^{E_t} = \frac{1}{1000} (T_1 - T_0) E_{t_0}^{1000}, E_{t_0}^{1000} = \frac{\sum q \times c}{\sum q \times p} \times 1000 \quad (14)$$

An increase of expenses has to generate an increase of incomes, so that the turnover index has to exceed the index of the expenses related to the turnover.

- on the gross profit:

$$\Delta_T^{Pr} = (T_1 - T_0) \overline{pr}_0 \quad (15)$$

Where: \overline{pr}_0 - average profit to 1 currency unit of sales.

Entity's profitability is measured through size of the gross profit, in order to give consistency and credibility in requesting and granting credits, capital investments by potential shareholders and creating its own development resources. Increase in turnover favourably influences the increase of the gross profit (when the turnover index exceed the index of the expenses related to the turnover).

- on current assets turnover (expressed by average period of one rotation)

$$\Delta_T^{Dz} = \frac{AC_0}{T_1} t - \frac{AC_0}{T_0} t \quad (16)$$

Where: AC - current assets;
t - period of time (days);

Increase in turnover influences the speed up of the current assets period leading to a release of capital. Also, current assets period show how well the entity is using its current assets to generate sales.

- on return on total assets

$$\Delta_T^{ROA} = \frac{(T_1 - T_0) \overline{pr}_0}{AT_1} \cdot 100 \quad (17)$$

where: AT - total assets;
 \overline{pr}_0 - average profit to 1 currency unit of sales;

- on labour efficiency through the average profit per employee:

$$\Delta_T^{\bar{E}} = \frac{(T_1 - T_0) \times \overline{pr}_0}{E_1} \quad (18)$$

➤ *on assets efficiency*

- release or immobilization of working capital due to changes in assets turnover:

$$\Delta_T^{Ac} = \left(\frac{AC_0}{T_1} t - \frac{AC_0}{T_0} t \right) \frac{T_1}{t} \quad (19)$$

- the efficiency of fixed assets:

$$\Delta_T^{Af} = \frac{T_1}{Af_1} 1000 - \frac{T_0}{Af_1} 1000 \quad (20)$$

where: Af - fixed assets;

- the efficiency of operating assets:

$$\Delta_T^{Ao} = \frac{T_1}{Ao_1} 1000 - \frac{T_0}{Ao_0} 1000 \quad (21)$$

where: Ao - operating assets;

➤ *on commercial margin:*

$$\Delta_T^{Cm} = \frac{1}{100} \times (T_1 - T_0) \times \overline{Cm}_0 \quad (22)$$

where: \overline{Cm}_0 - commercial margin ratio - $\overline{Cm}_0 = \frac{Cm}{T} \times 100$

Cm - commercial margin;

5. CONCLUSIONS

Turnover analysis is a tool in the decision making process. Turnover expresses the revenues from an activity in a period of time, its dynamics indicate the sales trend but it is more relevant and useful when discussing on a comparative base in accordance within happened on activity sector.

A major goal for each entity is the increase of the turnover. Using turnover analysis as a tool allows to draw findings regarding: the market position of an entity; information about the dynamics of the activity; information about the chances of development; about the entity's self-financing capacity, about the chances to develop profitable activities in the future, or about the importance of the entity within its sector of activity.

REFERENCES:

- [1]. **Bușe, L.; Siminică, M.; Simion, D.** (2010) *Analiza economico-financiară*, Editura Sitech, Craiova
- [2]. **Căruntu, C.; Lăpăduși, L.** (2010) *Analiza economico-financiară la nivel microeconomic*, Editura Universitaria, Craiova
- [3]. **Colasse, B.** (2009) *Analiza financiară a întreprinderii*, Editura Tipo Moldova, Iași
- [4]. **Gheorghiu, A.** (2004) *Analiza economico-financiară la nivel microeconomic*, Editura Economică, București
- [5]. **Mărgulescu, D.; Vâlceanu, G.** (2007) *Analiză economico-financiară*, Editura Fundației România de Mâine”, București
- [6]. **Monea, M.** (2012) *Analiză financiară. Noțiuni teoretice și studii de caz*, Editura Sitech, Craiova
- [7]. **Popescu, D.D.** (2009) *Enterprise Analysis*, Editura ASE, București
- [8]. **Robu, V.; Anghel, I.; Șerban, C.** (2014) *Analiza economico-financiară a firmei*, Editura Economică, București
- [9]. **Ștefea, P.** (2002) *Analiza rezultatelor întreprinderii*, Editura Mirton, Timișoara
- [10]. **Vâlceanu, G.; Robu, V.; Georgescu, N.** (2005) *Analiză economico-financiară*, Editura Economică, București
- [11]. **White, G.; Sondhi, A.; Fried, H.** (2001) *The Analysis and Use of Financial Statements*, Second Edition, Wiley & Son, USA