

# Indicators Used in the Dynamic Analysis of Turnover

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## Abstract

*The dynamic evolution of an indicator is an important aspect to be taken into consideration when analyzing the evolution in a company. Dynamic evolution uses a number of indicators that reveal aspects that the management of a company must introduce in the development strategy or in the rehabilitation process of a company.*

*The purpose of this article is to analyse the dynamic evolution of the turnover at a company that operates in the field of industry. The finality of this article will result in a number of conclusions concerning the evolution of turnover analysed in the light of absolute modification, indices, growth rates and annual average rate of growth.*

*The importance of the analysis of its evolution, stemming from the fact that it is in a relationship of perpetual interdependence with the main economic factors that participate in the activity of production and marketing.*

**Key words:** turnover, production, rate of growth, dynamic, annual rate of growth

**J.E.L. classification:** L1 - Market Structure, Firm Strategy, and Market Performance

## 1. Introduction

Turnover is the most important indicator on which one analyses the total sales of a company. It is useful in determining the size of the company and it is one of the main determinants of a company's strategy.

The location of turnover in the company's economic performance (performance of the company understood as the company's ability to increase the volume of activity) is enhanced by the connection between the general interests of the managers and the maximization of sales, the sales management option being, generally speaking, the maximization of turnover within limits to be achieved and a reasonable profit. (Bîrsan, 2010, p.47)

By using the dynamic analysis of turnover, the company management can determine strategies starting from issues such as: the company's market position, the chances the company has to develop and the possibilities of penetrating into other markets, the importance of the company in the field of activity, etc.

Given the importance of turnover as an indicator of the volume of activity and results (considering that it sums up the incomes from operations) its evolution should be monitored over several years, overall and on constituents, such highlighting the next trend but also internal or external factors, which put their mark on the evolution of turnover. An examination of turnover during several exercises enables establishing the trend of company's activity: strong or poor growth, stability, slow or rapid regression. (Bîrsan, 2010, p. 48)

## 2. Dynamic analysis of turnover at S.C. OMV PETROM S.A.

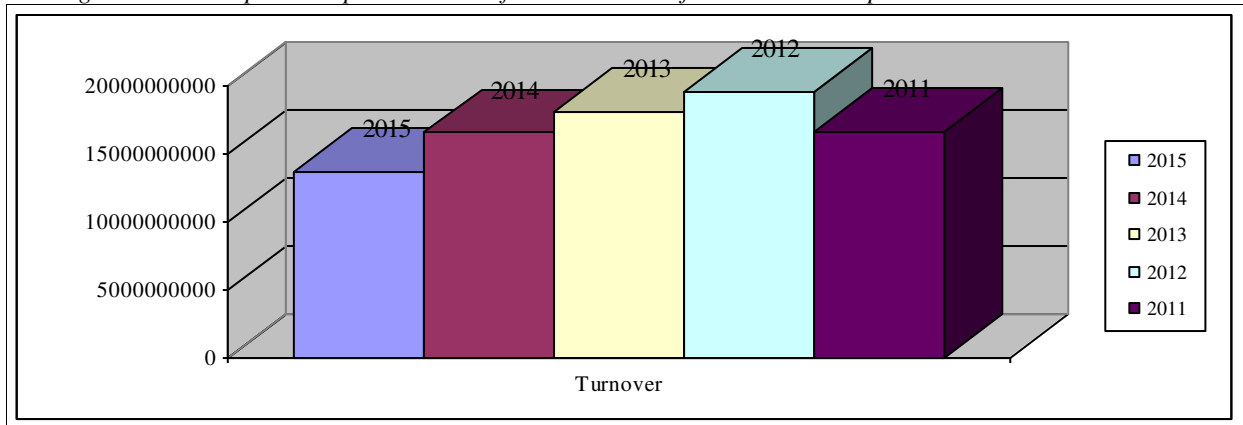
For a global appreciation of the activity of OMV PETROM company, all indicator in question must be analyzed in dynamics. In order to have the required relevance in the study of turnover, we synthesized information on turnover over a period of 5 years, 2011-2015, respectively. The dynamic analysis of turnover at S.C. OMV PETROM S.A. will be achieved on the basis of data published in the table below:

Table no. 1 Evolution of turnover at S.C. PETROM S.A.

Year	Turnover
2011	16.565.465.973
2012	19.510.054.765
2013	18.071.914.496
2014	16.511.641.600
2015	13.687.616.179

Source: <http://www.bvb.ro/FinancialInstruments/Details/FinancialInstrumentsDetails.aspx?s=SNP>  
<http://www.mfinante.ro/infocodfiscal.html>

Figure no. 1. Graphical representation of the evolution of turnover in the period 2011-2015



Source: personal processing based on data from table no. 1

Analysis of the evolution in time of the turnover is achieved using the following measurements of absolute indices of dynamics and average rates. (Hristea, 2015, p.40)

The main macroeconomic indicators used in the dynamic analysis of turnover are: absolute deviation with fixed-base and in chain deviation, indices with fixed-base and in chain base, rates of growth with fixed-base and in chain base, the annual average rhythm of growth. (www.mfinante.ro)

The absolute fixed-base deviation and ring -base of turnover (Robu, 2015, p.64) has the following values:

a) absolute fixed-base deviation of turnover will be calculated by the difference between the amount corresponding to the years 2013, 2014, 2015, 2012 and the turnover corresponding to the period, considered to be the basis of comparison, namely 2011:

$$CA_{2015/2011} = CA_{2015} - CA_{2011} = 13.687.616.179 - 16.565.465.973 = -2.877.849.794 \text{ lei} \quad (1)$$

$$CA_{2014/2011} = CA_{2014} - CA_{2011} = 16.511.641.600 - 16.565.465.973 = -53.824.373 \text{ lei} \quad (2)$$

$$CA_{2013/2011} = CA_{2013} - CA_{2011} = 18.071.914.496 - 16.565.465.973 = +1.506.448.523 \text{ lei} \quad (3)$$

$$CA_{2012/2011} = CA_{2012} - CA_{2011} = 19.510.054.765 - 16.565.465.973 = +2.944.588.792 \text{ lei} \quad (4)$$

b) the absolute ring-base deviation shall be determined by the difference between the amount of turnover corresponding to the current period and the amount of the turnover corresponding to the preceding period, namely 2015/2014, 2014/2013, 2013/2012, 2012/2011:

$$CA_{2015/2014} = CA_{2015} - CA_{2014} = 13.687.616.179 - 16.511.641.600 = -2.824.025.421 \text{ lei} \quad (5)$$

$$CA_{2014/2013} = CA_{2014} - CA_{2013} = 16.511.641.600 - 18.071.914.496 = -1.560.272.896 \text{ lei} \quad (6)$$

$$CA_{2013/2012} = CA_{2013} - CA_{2012} = 18.071.914.496 - 19.510.054.765 = -1.438.140.269 \text{ lei} \quad (7)$$

$$CA_{2012/2011} = CA_{2012} - CA_{2011} = 19.510.054.765 - 16.565.465.973 = +2.944.588.792 \text{ lei} \quad (8)$$

Synthetic absolute deviation of turnover at S.C. OMV PETROM S.A. is represented as follows:

Table no. 2 Absolute modification of turnover with fixed-base and in chain base

Year	Absolute modification of turnover with fixed-base	Year	Absolute modification of turnover in chain base
2015/2011	-2.877.849.794	2015/2014	-2.824.025.421
2014/2011	-53.824.373	2014/2013	-1.560.272.896
2013/2011	+1.506.448.523	2013/2012	-1.438.140.269
2012/2011	+2.944.588.792	2012/2011	+2.944.588.792
2011/-	-	2011/-	-

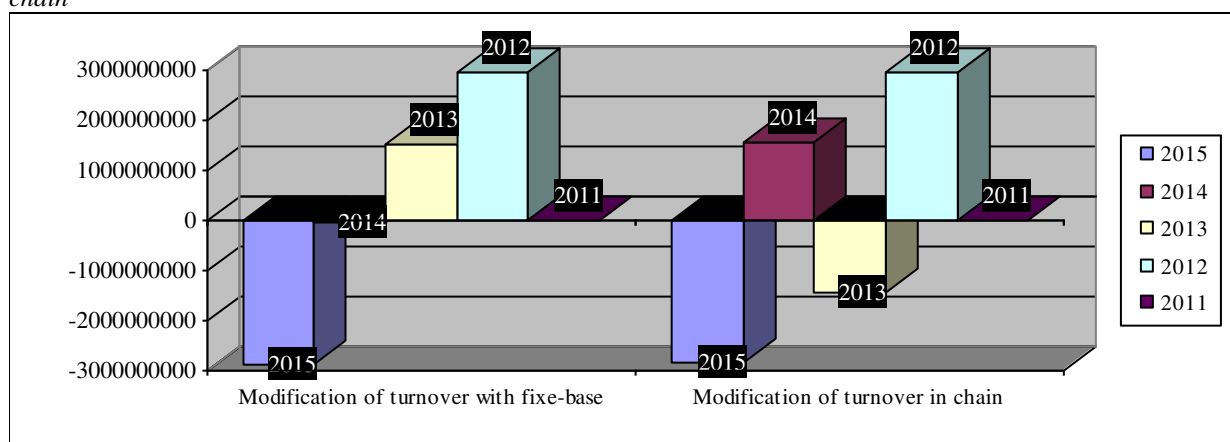
Source: personal processing based on data from table no. 1

The table above shows that in the first case we have examined the level of turnover from periods previous to 2011, taken as the base year, whereas in the second case we have changed the turnover corresponding to two successive periods.

From these calculations we can draw the following conclusions:

- in 2015 the turnover registered a negative deviation both in comparison to 2011 and in comparison to 2014;
- in 2014 the turnover registered a negative decrease with -53.824.373 lei by 2011, and compared to 2013 the turnover decreased approximately three times more, respectively -1.560.272.896 lei;
- in 2013 turnover increased compared to 2011 with + 1,506,448,523 lei and decreased compared to 2012 with -1.438.140.269 lei;
- in 2012 the turnover increased by + 2,944,588,792 lei toward 2011; this year the fixed-base modification coincides with changes in chain.

Figure no.2 Graphical representation of the absolute modification of CA with fixed-base and in chain



Source: personal processing based on data from table no. 2

In this graph we notice how much the turnover at OMV PETROM has increased or decreased each year (2015, 2014, 2013, 2012) in comparison to the year taken as a basis of comparison (2011) and how much it has increased or decreased from one period to another, as follows: 2015 as compared to 2014, 2014 as compared to 2013, 2013 as compared to 2012 and 2012 as compared to 2011.

In order to assess the way in which it has evolved, the turnover indices can be used and they can be expressed as either simple ratios, either as percentage ratios. In the case of commercial society OMV PETROM turnover indices shall enter the following values:

a) indices with fixe base:

$$ICA=CA_{2015}/CA_{2011}=13.687.616.179/16.565.465.973*100=82,62\% \quad (9)$$

$$ICA=CA_{2014}/CA_{2011}=16.511.641.600/16.565.465.973*100=99,67\% \quad (10)$$

$$ICA=CA_{2013}/CA_{2011}=18.071.914.496/16.565.465.973*100=109,09\% \quad (11)$$

$$ICA=CA_{2012}/CA_{2011}=19.510.054.765/16.565.465.973*100=117,77\% \quad (12)$$

The evolution of turnover indices with fixed base at OMV PETROM company shall be assessed as follows:

- $I_{CA_{2015/2011}} < 100$  respectively  $82,62 < 100 \Rightarrow$  turnover decreased in 2015 with 17,38% as compared to 2011
- $I_{CA_{2014/2011}} < 100$  respectively  $99,67 < 100 \Rightarrow$  cifra de afaceri a scăzut în 2014 față de 2011 cu 0,33% turnover decreased in 2014 towards 2011 with 0,33%
- $I_{CA_{2013/2011}} > 100$  respectively  $109,09 > 100 \Rightarrow$  cifra de afaceri a crescut în 2013 față de 2011 cu 9,09% turnover increased in 2013 towards 2011 with 9,09%
- $I_{CA_{2012/2011}} > 100$  respectively  $117,77 > 100 \Rightarrow$  cifra de afaceri a crescut în 2012 față de 2011 cu 17,77% turnover increased in 2012 towards 2011 with 17,77%

b) indices in chain:

$$ICA=CA_{2015}/CA_{2014}=13.687.616.179/16.511.641.600*100=82,89\% \quad (13)$$

$$ICA=CA_{2014}/CA_{2013}=16.511.641.600/18.071.914.496*100=91,36\% \quad (14)$$

$$ICA=CA_{2013}/CA_{2012}=18.071.914.496/19.510.054.765*100=92,62\% \quad (15)$$

$$ICA=CA_{2012}/CA_{2011}=19.510.054.765/16.565.465.973*100=117,77\% \quad (16)$$

The evolution of turnover indices with base in chain at OMV PETROM shall be assessed as follows:

- $I_{CA_{2015/2014}} < 100$  respectively  $82,89 < 100 \Rightarrow$  turnover decreased with 17,11% in 2015 as compared to 2014
- $I_{CA_{2014/2013}} < 100$  respectively  $91,36 < 100 \Rightarrow$  turnover decreased with 8,64% in 2014 as compared to 2013
- $I_{CA_{2013/2012}} < 100$  respectively  $92,62 < 100 \Rightarrow$  turnover increased in 2013 with 7,38% as compared to 2012
- $I_{CA_{2012/2011}} > 100$  respectively  $117,77 > 100 \Rightarrow$  turnover increased with 17,77% in 2012 as compared to 2011

The evolution of turnover indices at company OMV PETROM shall be assessed as follows:

*Table no. 3 Turnover indices with fixe-based and with base in chain*

Year	Turnover indice with fixed base	Year	Turnover indice with base in chain
2015/2011	82,62%	2015/2014	82,89%
2014/2011	99,67%	2014/2013	91,36%
2013/2011	109,09%	2013/2012	92,62%
2012/2011	117,77%	2012/2011	117,77%
2011/-	-	2011/-	-

Source: Personal processing based on data from table no. 3

Also, the rates of growth of the turnover have registered the following values:

*Table no. 4 Rates of growth rates of turnover with fixed base and base in chain*

Year	The growth rate of turnover with fixed base	Year	The growth rate of turnover with base in chain
2015/2011	-17,38%	2015/2014	-17,11%
2014/2011	-0,33%	2014/2013	-8,64%
2013/2011	+9,09%	2013/2012	-7,38%
2012/2011	+17,77%	2012/2011	+17,77%
2011/-	-	2011/-	-

Source: Personal processing based on data from table no. 3 (ICA - 100)

A final indicator used in the dynamic evolution of turnover at S.C. OMV PETROM S.A. is the annual average rhythm of growth. Therefore, OMV PETROM will record the following values:

a) average annual rhythm of growth with fixed base:

$$\bar{R}_{2015/2011} = \left( \sqrt{\frac{CA_{2015}}{CA_{2011}}} - 1 \right) \cdot 100 = \left( \sqrt{\frac{13.687.616.179}{16.565.465.973}} - 1 \right) \cdot 100 = -9,10\% \quad (17)$$

$$\bar{R}_{2014/2011} = \left( \sqrt{\frac{CA_{2014}}{CA_{2011}}} - 1 \right) \cdot 100 = \left( \sqrt{\frac{16.511.641.600}{16.565.465.973}} - 1 \right) \cdot 100 = -0,16\% \quad (18)$$

$$\bar{R}_{2013/2011} = \left( \sqrt{\frac{CA_{2013}}{CA_{2011}}} - 1 \right) \cdot 100 = \left( \sqrt{\frac{18.071.914.496}{16.565.465.973}} - 1 \right) \cdot 100 = +4,44\% \quad (19)$$

$$\bar{R}_{2012/2011} = \left( \sqrt{\frac{CA_{2012}}{CA_{2011}}} - 1 \right) \cdot 100 = \left( \sqrt{\frac{19.510.054.765}{16.565.465.973}} - 1 \right) \cdot 100 = +8,52\% \quad (20)$$

b) average annual rhythm of growth with base in chain:

$$\bar{R}_{2015/2014} = \left( \sqrt{\frac{CA_{2015}}{CA_{2014}}} - 1 \right) \cdot 100 = \left( \sqrt{\frac{13.687.616.179}{16.511.641.600}} - 1 \right) \cdot 100 = -8,95\% \quad (21)$$

$$\bar{R}_{2014/2013} = \left( \sqrt{\frac{CA_{2014}}{CA_{2013}}} - 1 \right) \cdot 100 = \left( \sqrt{\frac{16.511.641.600}{18.071.914.496}} - 1 \right) \cdot 100 = -4,41\% \quad (22)$$

$$\bar{R}_{2013/2012} = \left( \sqrt{\frac{CA_{2013}}{CA_{2012}}} - 1 \right) \cdot 100 = \left( \sqrt{\frac{18.071.914.496}{19.510.054.765}} - 1 \right) \cdot 100 = -0,03\% \quad (23)$$

$$\bar{R}_{2012/2011} = \left( \sqrt{\frac{CA_{2012}}{CA_{2011}}} - 1 \right) \cdot 100 = \left( \sqrt{\frac{19.510.054.765}{16.565.465.973}} - 1 \right) \cdot 100 = +0,08\% \quad (24)$$

In conclusion, summarizing the four pointers I have used in the dynamic analysis of turnover at S.C. OMV PETROM S.A., these should be presented as follows:

Table no. 5 Fixed-base indicators used in the dynamic analysis of turnover

Year	2015/2011	2014/2011	2013/2011	2012/2011	-/2011
Absolute deviation	-2.877.849.794	-53.824.373	+1.506.448.523	+2.944.588.792	-
Indices ( $I_{CA}-100$ )	82,62%	99,67%	109,09%	117,77%	-
Rate of growth	-17,38%	-0,33%	+9,09%	+17,77%	
Average annual rhythm growth	-9,10%	-0,16%	+4,44%	+8,52%	

Source: Personal processing based on data calculated above

Based on these data we can notice that:

- in 2015 as compared to 2011 turnover registered an absolute decrease of 2,877,849,794 lei, corresponding to a reduction in the average annual rate of increase -9,10 %;
- in 2014 as compared to 2011 turnover registered an absolute decrease of 53.824.373 lei, corresponding to a reduction in the average annual rate of increase -0,33 %;
- in 2013 as compared to 2011 turnover registered an absolute increase of 1.506.448.523 lei, corresponding to a growth in the average annual rate of increase +9,09 %;
- in 2012 as compared to 2011 turnover registered an absolute increase of 2.944.588.792 lei, corresponding to a growth in the average annual rate of increase +8,52%.

Table no. 6 Chain-base indicators used in dynamic analysis of turnover

Year	2015/2014	2014/2013	2013/2012	2012/2011	-/2011
Absolute deviation	-2.824.025.421	-1.560.272.896	-1.438.140.269	+2.944.588.792	-

Indices	82,89%	91,36%	92,62%	117,77%	-
Rate of growth	-17,11%	-8,64%	-7,38%	+17,77%	-
Average annual rhythm growth	-8,95	-4,41	-0,03	+0,08%	-

Source: Personal processing based on data calculated above

Based on these data we can notice that:

- in 2015 as compared to 2014 turnover registered an absolute decrease of 2.824.025.421 lei, corresponding to a reduction in the average annual rate of increase -8,95%;
- in 2014 as compared to 2013 turnover registered an absolute decrease of 1.560.272.896 lei, corresponding to a reduction in the average annual rate of increase -4,41%;
- in 2013 as compared to 2012 turnover registered an absolute decrease of 1.438.140.269 lei, corresponding to a reduction in the average annual rate of increase -0,03%;
- in 2012 as compared to 2011 turnover registered an absolute increase of 2.944.588.792 lei, corresponding to a growth in the average annual rate of increase +0,08%.

### 3. Conclusions on the dynamic evolution of turnover at S.C. OMV PETROM S.A.

If we leave apart of the inflation rate we may appreciate it is a company that has registered more of a decrease than an increase, though it has a fairly good position on the market in which it operates. Graph no.1 indicates that the culminating year when S.C. OMV PETROM S.A. registered the most significant turnover is 2012, while the following years 2013, 2014, 2015 it has been registering a continuous decrease.

Most revenue of OMV PETROM has been achieved from the sale of petroleum products. In 2015, the net turnover of the company fell as compared to 2014, the main cause being the reduction in income from the sale of petroleum products as a result of the drastic decrease in the price of oil. Thus, the positive impact, deriving from the sales, determined by an improved market request and great sale in electricity has been annulled. (www.bvb.ro)

In 2014, the net turnover of the company fell as compared to 2013 due mainly to lower sales of crude oil and petroleum products, partially offset by the increased sales of natural gas.

In 2013 the net turnover of the company fell as compared 2012 mainly due to smaller volumes of crude oil and petroleum products sold, partially offset by increased sales of electricity.

In 2012, the company's turnover increased as compared to January 2011 mostly due to the favourable evolution of prices.

Current economic dynamism requires that any strategy aiming at the turnover to take into account the influence of inflation because if the value of turnover is not correct with the inflation rate (turnover in comparable prices), the information loses much of its reliability, and the conclusions of the analysis are deformed (inflation has effects on all levels: operational flow, stream funding, heritage structure, etc.).

### 4. References

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