# FORECAST OF ECONOMIC INDICATORS OF A COMPANY FROM RETAIL FOOTWEAR

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**Abstract**

*The analysis of economic processes and phenomena aims knowledge of their trend and repeatability that they manifest in different times and over a period. This analysis is fundamental to making forecasts for future changes that will be recorded by the analyzed processes and phenomena. Nowadays, economic activity become more complex, the economic correlations between phenomena multiplies and diversifies so forecasting activities is an imperative and indispensable condition to substantiate decisions. The financial crisis and the entry of a large number of foreign players have changed the balance of power in local retail footwear. In 2015, Deichmann took over the leadership. In contrast, Leonardo SRL company which operated chain stores with the same name became bankrupt after almost two decades of leadership (1994-2013).*

***Key words**: forecast, turnover, profit, footwear industry*

**JEL Classification**: M10, M20

## 1. Introduction

The Romanian market of clothing, footwear and sports equipment, valued at about 16 billion lei, received at the beginning of 2016, ten new names. Thus, existing brands strengthened their existing portfolios with new marks and new brands have chosen to open first unit in Romania. Romanians allocate around 4% of their incomes on clothing and shoes, the highest share in the region. Although in Romania the wages are eight times lower than in Germany, but the prices on clothes and shoes are similar, Romanians allocate the largest share of monthly income for fashion purchases. The situation is similar if Romania is compared with Poland, Hungary or Czech Republic. Thus, Romania is considered a key market for all companies in the fashion industry.

## 2. Presentation of clothing and footwear market in Romania

Romanians' consumption behavior is actually one of the determining factors for retailers who choose to invest in the local market. Moreover, the decision comes as consumption increased last year by almost 9%, the strongest advance after 2008. It has become the main engine of the economy, a sign that Romanians regained their confidence and are more willing to spending. In this context, groups such as H&M and Inditex (local fashion market leaders) have strengthened their portfolios with new names like COS and Uterque. Sensing Romanian consumer appetite for fashion, the Spanish company Inditex recently brought in Romania the eighth brand group, Uterque. Unlike the rest of the companies, who entered in the local industry first offline and then online, this brand entered directly online, afterwards will test the physical operations. Another example is Peeraj, the most powerful group of fashion franchises in Romania, with a total of 14 brands, including 4 brought last year. Peeraj Group owns in Romania an extensive portfolio of fashion brands including footwear retailer CCC, one of the strongest in the market, the French fashion brand Pimkie and the Swarovski jewelry. Last year the company has extended its portfolio with Armani Jeans, Max&Co, Tous, Pimkie and Boggi.

Thus, these giants of the fashion world are added dozens, even hundreds of local and international companies, which want to activate on the 16 billion lei market. Moreover, not only players with a turnover of hundreds of millions or billions of dollars enter in Romania, but also retailers that are at the beginning, as Lanidor of Lynne. Some brands

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enter the market directly, especially those who already have experience in Romania. Others choose to come through local or international franchisees. They are testing the business and then decide the following strategies. A similar model practiced Zara and Mango.

Table no.1. Brands that entered on the Romanian market in 2016

| **Brand** | **Group** | **Country** | **Stores in Romania** | **Presentation form** | **Segment** |
|---|---|---|---|---|---|
| COS | H&M | Sweden | Calea Victoriei, Bucharest | Direct | Premium |
| Uterque | Inditex | Spain | only online | Direct | Premium |
| Forever 21 | Forever 21 Retail | USA | Park Lake mall | Franchise | Mass-market |
| Lanidor | Lanidor | Portugal | Park Lake mall | Franchise | Mass-market |
| Boggi | Boggi | Italy | Baneasa Shopping City | Franchise | Premium |
| Tally Weijl | Tally Weijl Holding AG Group | Switzerland | Afi Palace Cotroceni Bucharest | Franchise | Mass-market |
| Cerruti 1881 | Cerruti | Italy | Baneasa Shopping City | Franchise | Lux |
| Lynne | BSB | Greece | Afi Palace Cotroceni Bucharest | Direct | Mass-market |
| Chopard | Chopard | Switzerland | Baneasa Shopping City | Franchise | Lux |
| Tezenis | Calzedonia | Italy | Afi Palace Cotroceni Bucharest | Franchise | Mass-market |

Source: Financial Newspaper, edition of 02.06.2016 www.zf.ro

Regarding the retail market footwear, Deichmann remained in 2015 the leader with a turnover of 328,5 million lei (73 million euro). In 2015 it sold 2,87 million pairs of shoes, an increase of 4% compared to the previous year, at an average price per pair of about 115 lei. By the volume sold in the financial year 2015, Romania was responsible for 1.7% of global sales of 172 million pairs performed on 23 European and US markets.

Deichmann has entered the local market in 2007, one of the last years of economic boom. Having an aggressive expansion, it reached a network of about 70 stores. They counted on a volume business, targeting customers with low and middle income. A similar business model had from the beginning Leonardo footwear retailer, created in 1994 by entrepreneur Florin Panea. Leonardo has been the market leader since its foundation until 2013, when its place was taken by the Germans from Deichmann. During the boom period, Leonardo reached over 200 stores in Romania and neighboring countries and a turnover of over 130 million euro. With the coming crisis and the entry of foreign retailers in the local market headed by Deichmann, Leonardo business began to collapse. Thus, in the second part of 2009, the company Leonardo SRL became insolvent with a total debt of 100 million

euro and entered into a reorganization process for three years. In 2013, the company became bankrupt. In a time when Deichmann has risen sharply, Leonardo went into bankruptcy. The two companies had different investment patterns. While Deichmann was visible in all these years, investing in communication and being present in all environments, Leonardo was not present. Given that many consumers did not know that Leonardo is a Romanian company, the fall of Leonardo wasn't caused by the preference of Romanians for a foreign brand.

Table no.2. Top ten largest Romanian footwear retails in 2013

| Rank | Company | Shareholding | Year of market entry | Turnover in 2013 (mil lei) | Turnover in 2009 (mil lei) | Evolution (2009-2013) (%) |
|---|---|---|---|---|---|---|
| 1 | Deichmann | Foreign | 2007 | 203 | 54 | 278 |
| 2 | Leonardo (bankruptcy) | Local | 1997 | 161 | 410 | -61 |
| 3 | Otter Distribution | Local | 1999 | 95 | 69 | 39 |
| 4 | Benvenuti | Local | 2004 | 67 | 35 | 92 |
| 5 | Leather & Shoe | Foreign | 2008 | 46 | 18 | 152 |
| 6 | Pestos | Local | 1999 | 30 | 13 | 140 |
| 7 | Constar Haulica (insolvency) | Local | - | 30 | - | - |
| 8 | Ecco Shoes Romania | Foreign | 2004 | 23 | - | - |
| 9 | Mexxem (insolvency) | Foreign | 2007 | 22 | 47 | -52 |
| 10 | Louis Vuitton Romania | Foreign | 2008 | 20 | 18 | 8 |
| Total | - | - | - | 698 | 665 | 5 |

Source: National Trade Register Office www.onrc.ro

### 3. Adjustment of time series based on tendency functions

Adjustment and forecasting based on tendency function is a commonly used method in the prevision activity. It relies on adjusting the dynamic series using mathematical (analytical) functions appropriate to the evolution form. Analytical methods of adjustment are more accurate than mechanical ones because take into consideration all terms of the series. The main problem in applying these methods lies in choosing the right type of function that esteems the central tendency of the series. (Anghelache et. al., 2016)

After identifying the type of function that approximates the evolution of actual data, the parameters will be estimated, operation that is realized in most cases by least squares method. Adjustment function thus obtained explains the phenomenon evolution tendency in the previous period, but also values the terms of predicting time series terms. Most commonly used functions for adjustment and forecasting of dynamic series are: linear, parabolic, exponential, logarithmic and logistic. (Lazar et. al., 2009)

Linear trend function is used in case of linear evolutions, like the medium gain method. It has the following form:

$$\hat{y} = a + b \cdot t \quad (1)$$

It is assumed that the process which will be forecasted has the following form:

$$y_t = \hat{y}_t + e_t \quad (2)$$

t- Time variable

$e_t$- prediction error

## 4. The calculation of statistical indicators

Statistical indicators calculated will mainly be indicators of time series, used to analyze the evolution of turnover and profit for Rieker Romania SRL according to the official data available on the official site of Ministry of Public Finance.

Table no.3. Indicators according to the balance for Rieker Romania SRL

| Year | Turnover (lei) | Profit (lei) | Debt (lei) |
|---|---|---|---|
| 2010 | 133.222.971 | 1.546.848 | 650.389 |
| 2011 | 337.861.521 | 3.864.433 | 38.277.660 |
| 2012 | 269.631.141 | 2.748.508 | 25.081.382 |
| 2013 | 220.906.815 | 3.558.360 | 35.622.586 |
| 2014 | 361.224.796 | 3.918.108 | 36.232.985 |
| 2015 | 261.735.593 | 3.171.824 | 18.747.968 |

Source: Ministry of Public Finance http://www.mfinante.gov.ro

Analyzing the data presented in table no.3 it can be noted that turnover almost tripled in 2011 and 2014 compared with the value registered in 2010, increasing with 204.638.550 lei, respectively with 228.001.825 lei. In 2010 was recorded the lowest level of profit compared to previous periods. During 2010-2015 the profit fluctuated continuously, due to the level of debts.

Table no.4. The calculation of statistical indicators for turnover

| Year | Turnover (lei) | Absolute growth (lei) | | Growth rate (%) | |
|---|---|---|---|---|---|
| | | Fixed base | Mobile base | Fixed base | Mobile base |
| 2010 | 133.222.971 | 0 | - | 0,00 | - |
| 2011 | 337.861.521 | +204.638.550 | +204.638.550 | +153,60 | +153,60 |
| 2012 | 269.631.141 | +136.408.170 | -68.230.380 | +102,39 | -20,19 |
| 2013 | 220.906.815 | +87.683.844 | -48.724.326 | +65,82 | -18,07 |
| 2014 | 361.224.796 | +228.001.825 | +140.317.981 | +171,14 | +63,52 |
| 2015 | 261.735.593 | +128.512.622 | -99.849.203 | +96,46 | -27,54 |

Source: own calculation based on official data

Analyzing the statistical fixed base indicators it is noticed that highest growth of the turnover of 171.14 % was recorded in 2014 compared to 2010, in value of 228.001.825 lei and the lowest growth of 65,82% was recorded in 2013 compared to 2010, in value of 87.683.844 lei. Regarding the statistical mobile base indicators it is noticed that highest

growth of the turnover of 153,60% was recorded in 2011 compared to semester 2010, in value of 204.638.550 lei and the highest decrease of -27.54% was recorded in 2015 compared to 2014, in value of -99.849.203 lei.

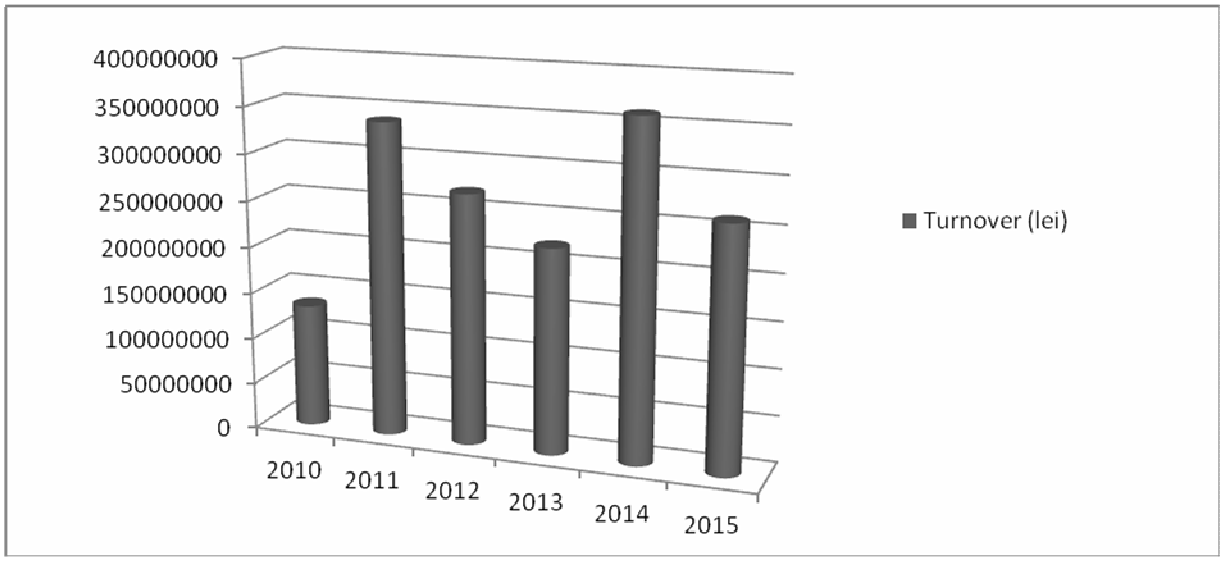

Fig. no.1. The evolution of the turnover in 2010-2015 of Rieker Romania SRL

Table no.5. The calculation of statistical indicators for profit

| Year | Profit (lei) | Absolute growth (lei) | | Growth rate (%) | |
|---|---|---|---|---|---|
| | | Fixed base | Mobile base | Fixed base | Mobile base |
| 2010 | 1.546.848 | 0 | - | 0,00 | - |
| 2011 | 3.864.433 | +2.317.585 | +2.317.585 | +149,83 | +149,83 |
| 2012 | 2.748.508 | +1.201.660 | -1.115.925 | +77,68 | -28,88 |
| 2013 | 3.558.360 | +2.011.512 | +809.852 | +130,04 | +29,47 |
| 2014 | 3.918.108 | +2.371.260 | +359.748 | +153,30 | +10,11 |
| 2015 | 3.171.824 | +1.624.976 | -746.284 | +105,05 | -19,05 |

Source: own calculation based on official data

Analyzing the results from table no.5, it is noticed that the highest increase of profit (+153,30%) was registered in 2014 compared to 2010. Analyzing the values of fixed base growth rate is observed that profit of Rieker Romania SRL registered a continuous increase compared to 2010. Also, values of dynamic mobile base rate reflects the fact that biggest profit growth rate was recorded in 2011 compared to 2010 and the highest decrease was recorded in 2012 compared to 2011 (-28,88%).

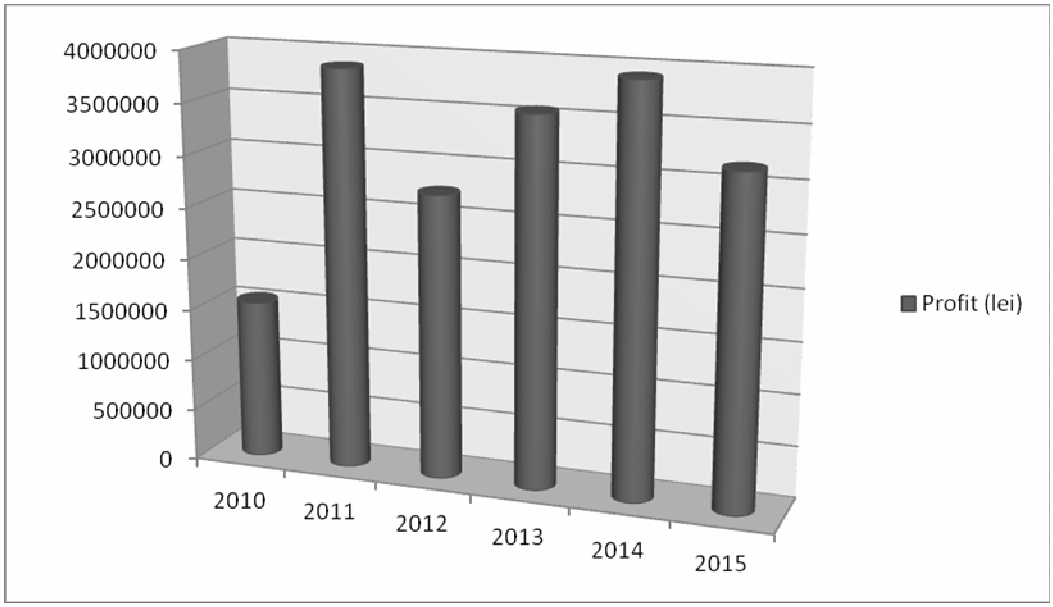

Fig. no.2. The evolution of profit in 2010-2015 of Rieker Romania SRL

Table no. 6. The adjustment of turnover by linear model

| Year | Turnover (lei) | t | $t^2$ | $t \cdot y_t$ | $\hat{y}_t$ |
|---|---|---|---|---|---|
| 2010 | 133.222.971 | -3 | 9 | -399.668.913 | 223.003.558,45 |
| 2011 | 337.861.521 | -2 | 4 | -675.723.042 | 236.701.418,8 |
| 2012 | 269.631.141 | -1 | 1 | -269.631.141 | 250.399.279,15 |
| 2013 | 220.906.815 | 1 | 1 | 220.906.815 | 277.794.999,85 |
| 2014 | 361.224.796 | 2 | 4 | 722.449.592 | 291.492.860,2 |
| 2015 | 261.735.593 | 3 | 9 | 785.206.779 | 305.190.720,55 |
| Total | 1.584.582.837 | 0 | 28 | 383.540.090 | 1.584.582.837 |

Source: own calculation based on official data

$$\begin{cases} n \cdot a + b \cdot \sum t = \sum y_t \\ a \cdot \sum y_t + b \cdot \sum t^2 = \sum t \cdot y_t \end{cases} \Rightarrow \begin{cases} 6 \cdot a = \sum y_t \\ b \cdot \sum t^2 = \sum t \cdot y_t \end{cases} \Rightarrow$$

$$\begin{cases} a = \frac{\sum y_t}{6} = \frac{1.584.582.837}{6} = 264.097.139,5 \\ b = \frac{\sum t \cdot y_t}{\sum t^2} = \frac{383.540.090}{28} = 13.697.860,35 \end{cases}$$

$\hat{y}_{t_0} = a + b \cdot (-3) = 264.097.139,5 + 13.697.860,35 \cdot (-3) = 223.003.558,45$ lei

$\hat{y}_{t_1} = a + b \cdot (-2) = 264.097.139,5 + 13.697.860,35 \cdot (-2) = 236.701.418,8$ lei

$\hat{y}_{t_2} = a + b \cdot (-1) = 264.097.139,5 + 13.697.860,35 \cdot (-1) = 250.399.279,15$ lei

$\hat{y}_{t_3} = a + b \cdot 1 = 264.097.139,5 + 13.697.860,35 \cdot 1 = 277.794.999,85$ lei

$\hat{y}_{t_4} = a + b \cdot 2 = 264.097.139,5 + 13.697.860,35 \cdot 2 = 291.492.860,2$ lei

$\hat{y}_{t_5} = a + b \cdot 3 = 264.097.139,5 + 13.697.860,35 \cdot 3 = 305.190.720,55$ lei

It is noticed that the sum of the initial values of turnover equals the sum of adjusted values. So it may be considered that the turnover has a linear trend. Further is presented the forecast of the turnover based on the linear model.

$\hat{y}_{2016} = 264.097.139,5 + 13.697.860,35 \cdot 4 = 318.888.582$ lei

$\hat{y}_{2017} = 264.097.139,5 + 13.697.860,35 \cdot 5 = 332.586.442$ lei

$\hat{y}_{2018} = 264.097.139,5 + 13.697.860,35 \cdot 6 = 346.284.303$ lei

Table no. 7. The adjustment of profit by linear model

| Year | Profit (lei) | t | $t^2$ | $t \cdot y_t$ | $\hat{y}_t$ |
|---|---|---|---|---|---|
| 2010 | 1.546.848 | -3 | 9 | -4.640.544 | 2.514.094,80 |
| 2011 | 3.864.433 | -2 | 4 | -7.728.866 | 2.720.956,59 |
| 2012 | 2.748.508 | -1 | 1 | -.2748.508 | 2.927.818,38 |
| 2013 | 3.558.360 | 1 | 1 | 3.558.360 | 3.341.541,96 |
| 2014 | 3.918.108 | 2 | 4 | 7.836.216 | 3.548.403,75 |
| 2015 | 3.171.824 | 3 | 9 | 9.515.472 | 3.755.265,54 |
| Total | 18.808.081 | 0 | 28 | 5.792.130 | 18.808.081,02 |

Source: own calculation based on official data

$$\begin{cases} n \cdot a + b \cdot \sum t = \sum y_t \\ a \cdot \sum y_t + b \cdot \sum t^2 = \sum t \cdot y_t \end{cases} \Rightarrow \begin{cases} 6 \cdot a = \sum y_t \\ b \cdot \sum t^2 = \sum t \cdot y_t \end{cases} \Rightarrow$$

$$\begin{cases} a = \frac{\sum y_t}{6} = \frac{18808081}{6} = 3.134.680,17 \\ b = \frac{\sum t \cdot y_t}{\sum t^2} = \frac{5792130}{28} = 206.861,79 \end{cases}$$

$\hat{y}_{t0} = a + b \cdot (-3) = 3.134.680,17 + 206.861,79 \cdot (-3) = 2.514.094,80$ lei

$\hat{y}_{t1} = a + b \cdot (-2) = 3.134.680,17 + 206.861,79 \cdot (-2) = 2.720.956,59$ lei

$\hat{y}_{t2} = a + b \cdot (-1) = 3.134.680,17 + 206.861,79 \cdot (-1) = 2.927.818,38$ lei

$\hat{y}_{t3} = a + b \cdot 1 = 3.134.680,17 + 206.861,79 \cdot 1 = 3.341.541,96$ lei

$\hat{y}_{t4} = a + b \cdot 2 = 3.134.680,17 + 206.861,79 \cdot 2 = 3.548.403,75$ lei

$\hat{y}_{t5} = a + b \cdot 3 = 3.134.680,17 + 206.861,79 \cdot 3 = 3.755.265,54$ lei

It is noticed that the sum of the initial values of profit equals the sum of adjusted values. So it may be considered that the profit has a linear trend. Further is presented the forecast of the profit based on the linear model.

$\hat{y}_{2016} = 3.134.680,17 + 206.861,79 \cdot 4 = 3.962.127,33$ lei

$\hat{y}_{2017} = 3.134.680,17 + 206.861,79 \cdot 5 = 4.168.989,12$ lei

$\hat{y}_{2018} = 3.134.680,17 + 206.861,79 \cdot 6 = 4.375.850,91$ lei

## 5. Conclusions

Valued at over 16 billion lei, the Romanian clothing and footwear market will continue to grow encouraged by the companies that have launched in the past two years, of which only this year were ten brands. Although there is a potential for development of this market, there are companies that even if they want to enter the market, have very specific

requirements related to space, others are obstructed by bureaucracy. Romanian retailers are few and have low economic power, which prevents them promote and develop. In terms of brands that access the market for the first time, Romania was more attractive than countries like Britain, France of Canada, being surpassed only by Asian countries such as Hong-Kong, Singapore or Japan. The advance from 2015 is a record for Romania which in 2013 and 2014 attracted 25, respectively 21 new retailers to the market. Bucharest, the ninth most attractive retail market in 2015 was surpassed by London, Dubai and Beijing and has been over Doha, Vienna and Paris. In the choice of place of opening of the first store, retailers prefer famous areas in 94% of cases within shopping centers. Nowadays it is noticed that while Romania attracts international brands, local retailers also become increasingly interested in export, names like Musette of Nissa having well-defined plans for more markets.

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