Method of the exponential adjustement using directly the terms of the empiric series in the analysis of the dynamics of the textile confections production

Racoceanu, Constantin

University of Craiova

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METHOD OF THE EXPONENTIAL ADJUSTEMENT USING DIRECTLY THE TERMS OF THE EMPIRIC SERIES IN THE ANALYSIS OF THE DYNAMICS OF THE TEXTILE CONFECTIONS PRODUCTION

Constantin Racoceanu, Lector, drd.

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In a simple form, the basic relationship to be used within the exponential smoothing is given by the expression:

$$S_t = wy_t + (1-w)S_{t-1} \ \text{(for } t \geq 2) \ (1)$$

Where:

S_t = the adjusted values of the dynamic series;
y_t = the levels of the empiric series;
S_{t-1} = the adjusted value of the term t-1;
w = a constant of adjustment, having values between $0 \leq w \leq 1$.

Table 1

The dynamic of the production of textile confections realized in 2000 – 2005

Trimester		Production realized (mil lei)	Trimester		Production realized (mil lei)
1	2000	1688.453	1	2004	2022.805
2	2000	1586.081	2	2004	1795.405
3	2000	1761.736	3	2004	2039.351
4	2000	1663.429	4	2004	1775.725
1	2003	2075.672	1	2005	1785.488
2	2003	1881.906	2	2005	1572.969
3	2003	2279.822	3	2005	1723.780
4	2003	2002.283	4	2005	1581.542

Source: industrial statistics analysis certificates 2000, 2005 and 2006

Taking into account the fact that the modern branch of informatics offers a wide range of possibilities for processing and analyzing the statistic data, to calculate the values of S_t, we'll use a special program, integrated in the Excel, known as ***Data analysis***.

To use this program, we'll cover the following steps:

1. We'll introduce in the calculation sheet of the Excel program, in column A, the data in table 1, as follows:

- in cell A1 we'll write „The Value of the Sold Goods";
- in cells A2 – A17 we'll introduce the values for the 16 trimesters.

2. We'll make a click on Tools, then on Data Analysis and then on ***Exponential Smoothing.***

3. We must specify the area of the field in ***Input Range***:   A1 : A17. ***Click*** on *Labels* (if necessary, in our case Yes, because in cell A1 we put a title).

4. Press *Tab* and write the value **0.8** for **1 – w**, in *Damping factor*. This is valid for **w = 0.2**.

5. In the case for the label *Output Range*:   **B2 : B17** (or other column).

6. *Click* in the validation case for the label *Chart Output*, if you want a graphic. Then *Click* on *OK*.

Remark: In B2 the program will display „*N/A*", the adjusted values will be displayed starting with B3 till B16. So the last adjusted value is not displayed. To rectify the displaying, make a *Click* with the left button of the mouse on cell B2, the one that contains „*N/A*", then *Click* on the same cell with the right button. Click on *Delete* from the floating menu. „*N/A*" will disappear, and the values *S(t)* will move a cell higher, occupying the field **B2 : B16**. Make a *Click* on cell B16, put the slider on the black little square in the right down corner. The value *S(t)* from cell **B17** will also be displayed.

Mention: If, after a click on the Tools menu command of the Excel program, **Data_Analysis** does not appear in the sub-menu of this command, then click **Add_Ins**...(from the same sub-menu), click in the validation case of the **Analysis ToolPak** program and then **Ok**. The program **Data Analysis** will be available. Come back to the sub-menu of the **Tools** command and click on **Data Analysis**, then choose the command you are interested in.

Table 2

The empiric series and the adjusted series

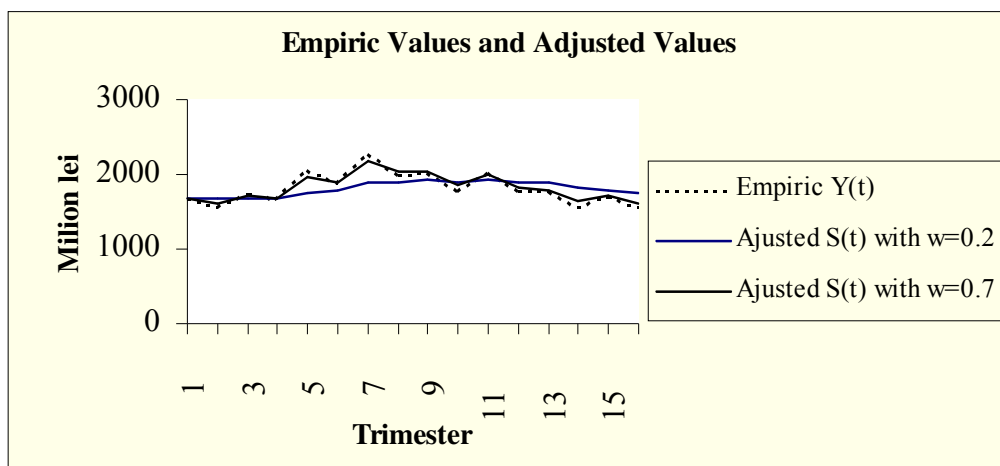| The empiric values Y(t)	The adjusted values S(t) W = 0.2	The adjusted values S(t) W = 0.7
1688.453	1688.453	1688.453
1586.081	1667.9786	1616.7926
1761.736	1686.73008	1718.25298
1663.429	1682.069864	1679.876194
2075.672	1760.790291	1956.933258
1881.906	1785.013433	1904.414177
2279.822	1883.975146	2167.199653
2002.283	1907.636717	2051.757996
2022.805	1930.670374	2031.490899
1795.405	1903.617299	1866.23077
2039.351	1930.764039	1987.414931
1775.725	1899.756231	1839.231979
1785.488	1876.902585	1801.611194
1572.969	1816.115868	1641.561658
1723.780	1797.648694	1699.114497
1581.542	1754.427356	1616.813749

**Figure 1: The diagram of the empiric and adjusted values
of the production of textile confections**

The main characteristics of the Romanian textile industry

The main objective of Romania is to create a functional market economy, oriented towards a durable development, comparable with the principles, normes, mechanisms, institutions and policies of the European Union.

The strategy of the textile industry takes into account the raising of the competence of the products, realized with minimal material and social costs but maximum efficiency.

This is based on:

- establishing a business area
- the raising of work productivity
- reducing the energetic consuming
- a new way of technology
- the expansion of using indigene basic materials

The light industry represented:

2000
2,0% from PIB
5,9% from the volume of the industrial production
22,2% from the exports of Romania
18,0% from the numbers of the employees in the industry

2005
About 5,5% from PIB
10% from the volume of the industrial production
26% from the exports of Romania
25% from the total number of the employees in the industry

Table 3

Evolution of the main indicators in the light industry

	UM	1989	1996	2000	2001	2002	2005
1. Evolution of the industrial production (chain indicators)							
- textiles and textile products		100	41,5	93,4	103,1	110,5	105,9
- textile, leather and fur confections	%	100	97,3	153,7	115,1	110	140,2
- leather shoes		100	58,8	105,8	104,1	103,3	84,0
2. Physic production							
Plies	Thousand t	259	84	50,3	43,6	53,9	20,9
Cloth	Mil. Square m	1115	302	194	200	181,4	142,6
Knitwear	Mil. Pieces	260	44	38	35	33,3	19,0
Stockings and full stockings	Mil. Pairs	240	187	150,2	138,3	137,2	122
Wear confections	Mil. USD	1543	1771	2310	2720	3120	4379
Soft leathers	Mil. Square m	17954	6549	1733	1269	1229	1837
Shoes	Mil. Pairs	118	37	37,6	39	37,1	32,5
from which:							
- with natural leather faces	Mil. Pairs	49	27	27,3	27	28	26,5
3. Export	Mil USD	1332	2229	3306	4050,4	4807,4	5669,6
4. Import	Mil. USD	652	1935	2623	3134,7	3716,7	4248,5
5. Number of employees	Thousand pers	802,7	475	441	458,4	450,3	415

In 1989 the force of labor was concentrated in the field of textiles and textile products. After this period – the force of labor reduced as a result of the fact that some great capacities of production stopped, but also because of the natural way (retirement).

In the field of textile confections there was an attraction of the new created or vacated force of labor in concordance with the rising of the production realized in this field.

The adaptation of the Romanian textile industry at the conditions of the European Union market

The tendency noticed for the period 2000 – 2005 suits the social and cultural mutations inside the European textile market, derived from structural modifications at the level of the buyers. We may notice a reduction of the importance of the conventional clothing in favor of the casual articles that are fitter to the requests of the clients, from the point of view of the comfort and the price.

The population will not be in search of the new or the style of fashion, but moreover the best services and the best quality of life. The economic security in future will encourage the consumers, especially the young ones, to be more attentive at the prices.

There will appear two distinct groups of consumers: an innovator group, having more incomes, made of well-informed and severe consumers and a more numerous group of consumers interested in the price, feeling unsure and preferring less expensive articles, of medium quality.

The interest for trade marks will decrease as a result of the strong lack of localization of the production together with a general diminution of the quality.

The trade by retail will be concentrated on specialized chains, with impact on independent traders (they will represent about 38% from the distribution of these articles).

Within the next 10 years the occupation of the force of labor in the field of textile confections will also decrease, because of the policy of transferring the production capacities to the present developing countries that have basic materials and cheap force of labor.

Many capacities in the field of the textile confections in the European Union countries have been moved to our country, and so the lohn activity developed, because:
- the wages for the force of labor is low by comparison to the one in the UE countries;
- the high technique level of the force of labor in the trade of special products for the textile industry on the UE market.

The following aspects remain decisive:
- the impact of the adhesion of Turkey in the customs union of the European Union;
- the liberation of the trade with the Eastern European countries;
- the complete liberation of the trade.

The commitments assumed by Romania through the Treaty of Association to the European Union is made up in fact of exigencies for the development of the textile industry, targeting:
- the protection of people's health;
- the protection of the environment and consumers;
- the free circulation of goods;
- assuring a concurrent real area;
- harmonizing the laws and creating the correspondent institutions.

The commitments assumed by Romania through the Treaty of Association to the European Union brought also some disadvantages to the textile industry:
- the liberation of trade meant losing an important quantity of basic material;
- the losing of some external markets by the trade societies from the main sector, because they couldn't succeed in changing the technology to assure the EU;
- the gradual alignment to the EU standards regarding the protection of the environment will affect some of the trade societies and they may have to invest great sums of money in this direction to be able to continue their activity.

Romania is part of the international and bilateral treaties that are valid for the field of the textile industry.

The International Treaties are:
- The Treaty of Association of Romania to the European Community and its member states;
- The Treaty of the Free Barter in the Central Europe – CEFTA;
- The Treaty between Romania and the States of the European Association of the Free Barter – AELS;
- The Treaties of OMC regarding the Textiles and Multi fiber Clothes.

The Bilateral Treaties:
- The treaties of free barter concluded with the Republic of Moldavia, Turkey and Israel.

The signed treaties mean the judicial basis of the economic relationships between Romania and the respective countries or groups of countries, the target being to

eliminate the restrictions and to create a proper area for the development of the barter trades. With these treaties the markets have been mutually opened also for the special products of the textile industry, and for the basic materials.

A permanent obligation of Romania as an associated country to the European Union is to adapt the communitarian acquis, meaning also the one regarding the branch of the textile industry, pursuing the following objectives:
- the liberation of the price;
- the free circulation of the goods, services and capitals;
- the concurrence and the elimination of the monopoly situations;
- commercial laws;
- the harmonizing of the customs laws and the antidumping actions.

In order to eliminate the barriers regarding the circulation of the special goods in the field of the textile industry, the following steps have been made:
- the Directions 96/74/EC and 97/37/EC have been taken, regarding the term name of the textiles with the emission of the GO 332/2001 regarding the name, the mark of fiber composition and the label of the textile products, modified with GO nmb.25/2002;
- the Directions 96/73/EC and 73/44/EEC regarding the quantitative analysis of the binary mixtures and respectively tripling of textile fibers with the emission of GO 762/2001 regarding the establishing of the methods of analysis used to determine and value the fiber composition of the textile products.

A series of rules from the communitarian acquis, typical for the field of the textiles, have e degree of compatibility and may be implemented gradually, as increases the capacity of Romania for allocating the necessary funds for:
- the alignment to the conditions of labor protection (equipments, poisoning gas, work schedule, payment conditions during the periods of temporary incapacity ecc.)

   The Directions of the Council nmb.89/686/CEE regarding the personal protection equipments, completed by the Directions nmb.93/95 and 93/68 CEE are partially harmonized in the content of the standards of products and equipments of labor personal security.
- the protection of the environment with the framing in the European normative admitted for the polluting emissions in the air, water and soil.

   In order to be framed in the European normative, the economy agents are obliged to give priority to the elaboration of projects of investments, financed from their own resources and sources attracted from the country and abroad, for the ventilation, developing and modernization of the pre-cleaning stations, of the air ventilation and filter and of the spaces to store and deposit the typical wastage. The respect of the law depends on the realization of the projects of investments mentioned. On a contrary case, the commercial societies implied will shut the activities that generate pollution.
- the protection of the consumer.

   The Laws of Romania need to be harmonized with the communitarian ones, in order to reach a full compatibility between the systems of protection of the Romanian consumers and those from the European Union.The measures are centered upon the improvement of the safety of the products of the field and upon the protection of the economic interests of the consumers of these products.

The GO nmb.329/2001 modified with GO nmb.403/2002 regulates the hygiene and sanitary conditions for the trade of the products. The European acquis will be accompanied by the development of a strong and independent movement of the consumers. That's why the government should adopt new normative laws regarding the protection of the consumers, because at present there are certain restrictions for the lack of the resources.

The GO nmb.168/1997 regulates the regimen of the products and services that may put into danger the life, the health, the security of work and the protection of the environment; see also GO nmb.39/1998 regarding the activity of establishing the standards.

In Romania there are, as well as in the European Union countries, the technical committees that develop their activity according to a classified list including 489 standards, from which 188 are harmonized with the international and European standards ISO and EN.

These technical committees analyze only the standards that are to be harmonized.

The LOHN - challenges and perspectives

The present situation of the industrial activities that
are being developed in LOHN way

According to the commercial practices in the field, the industrial activity in lohn way is the one being developed from the point of view of the customs in a regimen of temporary import, as follows:

- The existence of a permanent risk of disappearance of some jobs, because of the rising of the price for the work labor in Romania and orienting the industrial activities practiced in a lohn regimen in other countries, with cheaper work labor (Ukraine, the Russian Federation and others).

Present tendencies in practicing the industrial activities in
lohn regimen; internal and external perspectives

From the prognosis studies ordered by the European Commission of the society Mercer Management Consultants and the German Company MESSE – Frankfurt, to the University of München results that the present international tendencies in the field are as follows:

- as there is a general effort of economic redress, as the price of the material resources and especially of the energetic ones is rising, we estimate a reduction of the costs with live work in the total costs.
  As a result, the transfer of some capacities of production, great consumers of live work, will continue from the developed countries to the ones developing at present, with cheap labor work.
- We estimate, for short and middle term, that the production in lohn regimen will develop and the countries with the most competitive labor force will attract more multinational companies.
- The percentage of the clothing confections import within the total necessary of consuming of the EU raised from 55% in 2000 to about 65% in 2005.

- The countries that will assure in the next 10 years the necessary of consuming for the articles of clothing and shoes for the EU countries remain China, Turkey, Romania, Poland, the Czech Republic and Hungary.

Taking into account the economic instability of Turkey, we assume that in the next 10 years Romania will become one of the greatest exporters of clothing and shoes in the EU.

At the internal level there is a "natural" tendency of reducing the volume of the industrial activities in the lohn regimen; in many factory places there are local private businessmen that formed their own competitive independent capacities of production. For the clothing confections industry, in the last 2 years constituted over 20 new independent capacities of production. Their number may increase considerably if there were improving conditions of the system of stocking with basic materials and items resources from the internal market, where the sector of basic manufacture is much too close to involution.

Another tendency at the internal level is the rising of costs with the live work, especially the wages of the workers; this tendency will determine the lack of the comparative advantages of Romania, and that may lead to the moving of the industrial activities in the lohn regimen to other countries with a more competitive labor force.

Conclusions and proposals

Taking into account what we mentioned before, the following conclusions appear:
- The development of some activities of the Romanian industry in the lohn regimen represents for Romania a necessary disadvantage on short and middle term; but on long term, activities of this type must be limited;
- The continuous development of some industrial activities in the lohn regimen helps the commercial agents in Romania to learn more seriously the communitarian acquis and to prepare for winning the concurrence on the free European market.

Taking into account the tendencies appeared on the international market of the field, the economic agents in the industry must select the business partners from abroad on economic criteria, giving priority to the most performing companies in the EU.

Parallel to the continuous practicing of some industrial activities in the lohn regimen on short and middle term, we must initiate some actions for the selective development and modernization of the capacities of production in the basic sectors of the local industry, that may assure materials, middle finished pieces, accessories and components to make finite products, as well as measures for the rising of creativity, initiative and qualification of the labor force at the level of competence and performance imposed by the free market and by the personal trademark.

The assurance of the financial resources necessary for the selective development and modernization of the capacities of production in the sectors of basic manufacturing must be based in future on sources attracted from the potential local and foreign investors and from the non-reimbursable funds from the international organisms.

For the disadvantages presented to disappear, we propose as follows:
- The elaboration and promotion of some strategic project packs to anew the structure, to modernize and to develop the basic textile and leather industry, in

order to assure the material basis of the production for clothing and shoes confections that at present is realized mostly in lohn regimen;

- To select the capacities of production potentially performing from the basic textile and leather industry and their modernization in order to reduce the import of materials in lohn regimen and to create new jobs.
- The development, in the next years, of the agriculture and zootecnical production in Romania, to satisfy the needs of the industry of linen, hemp, wool and animal leather; Romania could specialize in the production of linen and hemp within the European Union.
- Through the programs of rising the competence of the industrial products a main advantage will have the economic agents that produce under personal trademark in order to get, for their own laboratories, apparatus of measurement and control, necessary to implement the new systems that assure the quality, the registration and protection of the original products on the external market, to implement the system of security of management of the security and health labor OH SAS 18001/1999.
- The support given to the economic agents from the basic sectors of the textile and leather industry, in order to have an easier access to the financial non-reimbursable sources offered by the countries members of the EU and the international organisms.
- The encouragement of the private businessmen that leave the units working in the lohn regimen and their support, within the limits permitted by the valid laws, to start a new business.
- The diminution of the percentage of the industrial activities from the light industry that develop in the lohn regimen from 74,9% in 1999 to about 50% in 2010, through a more palpable rising of the activities based on an own concept.

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