

6 COMPETITIVENESS AND CORRUPTION IN ROMANIA – FORECASTING IN THE CONTEXT OF THE ROMANIAN INTEGRATION INTO THE EUROPEAN UNION

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Abstract

Competitiveness and corruption are now – more than ever before – two real challenges for Romania on its way to the European integration. The theoretical approaches to those concepts did not get to a unanimous and happy end and the real figures that evaluate them are not at all pleasing for Romania. Our country registers low positions in the world and European hierarchies both regarding competitiveness and corruption. But, still it looks forward for its integration into the EU. The gaps that separate Romania from the European average scores are significant and by this paper we try to forecast some development directions and to estimate some time horizons in order to reduce the gaps, by significantly increasing competitiveness and diminish corruption.

Key words: Competitiveness, Corruption, Forecasting, Integration, Gap Reduction

JEL Classifications: C53, D63, D73, E26, E27

Introduction

Competitiveness is a very important concept, which has to be well understood because there is some confusion regarding it in different parts of the world and in different times. Competitiveness is strongly related with the productivity of an economy, with the ability of the firms to generate outputs higher than the inputs involved in the processes. Thus, a productive country could become a wealthy country, but an unproductive country will become definitely a poor country¹.

From the perspective of the games theory, M. Porter asked himself whether “*competitiveness is a game with zero sum?*”, because of a country’s winning on the behalf of the others, finally, at global level, nothing is changing. He found an answer to this question,

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¹ See the interview with Michael Porter about the Global Competitiveness Report 2005-2006, World Economic Forum.



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an elegant one, by the way, saying that “all countries could become more competitive because all of them could become more productive and, as much as productive an economy becomes, so much the global economy grows on the behalf of a country’s economy”.

Under these circumstances, we can generalize Adam Smith’s theory according to which the individual welfare leads to general welfare. More than that, it takes into account the synergic effects that the growths of the national economies will generate on the global economy.

Thus, we can logically ask ourselves: „How to become competitive?” “Which are the factors that influence competitiveness?”, and last, but not least, “Does competitiveness excuses the means?”

Two German authors, Klaus Werner and Hans Weiss succeeded in their efforts to answer the last question posed here, in their book called *The black book of the big companies. The intrigues of the international concerns*. Their answer was “yes, competitiveness excuses the means”. The authors draw, obviously in black, some portraits of different international companies, emphasizing the accusations they are faced to, from child exploitation (Coca-Cola, Adidas) to war financing (Bayer), or corruption (Siemens, Philip Morris), and so on. The international companies invest enormous amounts of money in order to build the image of their brand. Regarding the work condition, they make cuts/economies. The consequences are horrible work relationships, poverty and human rights breaking; then, the social responsibility is nothing but publicity.

The international companies externalize their services and production/operations. The opinions about the importance of this evolution for the policies and for the domestic and international economy differ a lot. Some of the observers think that, by becoming free from the oppressive limits of the national economies, they really become “global corporations” and represent positive forces for economic growth and for the prosperity of all the nations. Other authors consider that these giant firms, together with the international finances, symbolize the global capitalism in all that it has bad and that the multi-national firms are above any law, exploiting the whole world in order to grow their corporate profit.

No one denies the fact that the foreign direct investments become an essential feature of the global economy and everybody recognizes that the efforts to close this “genie” back into the bottle will be useless (Robert Gilpin, *The world economy in the 21st century. The challenge of the global capitalism*).

Ulrich Beck argued about the new power of the multinational companies that “the pawn – the economy – becomes a knight in the circumstances given by the information and technology mobility and it can attack and declare chess to the king – the state.”

However, which are the effects upon the national economies? Could they still be competitive, by themselves, confronted with the waves that create the hurricane of the multinational companies by foreign direct investments? How will the governmental efficiency manifest itself in order to grow the national competitiveness? Will the governments of the host countries let themselves to be corrupted by the great concerns? Maybe they have no opportunity to choose.

For these reasons, the economic literature emphasizes more and more the connection that exists between competitiveness and corruption. Daniel Kaufmann argued that for a country that succeeds to reduce the impact of corruption as an obstacle to the business environment one may estimate an improvement by 20 to 30 places in the global competitiveness

hierarchy, by up to 30 places if there is a real growth in the GDP and by 20 if the GDP remains constant.

Starting by this point, we tried to define **marginal competitiveness** to be the raise in the growth competitiveness index obtained by one unit raise in the corruption perception index. Thus,

$$\text{Marginal competitiveness} = \Delta \text{ Competitiveness} / \Delta \text{ Corruption}$$

where Δ represents the change that occurred from one period to the other.

The **Growth Competitiveness Index (GCI)** represents a score that each country obtains; it is influenced by the following factors: macroeconomic performance, governmental efficiency, infrastructure and technology, business efficiency. This index has to be as high as possible (the maximum value is 7).

The **Corruption Perception Index (CPI)** reflects the level of corruption as it is perceived by the business people, the analysts of the financial market, and the public institutions. The index varies between 0 (high corruption) and 10 (corruption clean) and it results by aggregating the results of different opinion surveys.

1. Romania and the European Union – With whom do we compare with?

In order to analyze the relationship between competitiveness and corruption we had in mind three periods of time: years 2003, 2004 and 2005. The study is made for the European Union, but including Romania, Bulgaria and Turkey (Table 1).

Table 1

Corruption Perception Index and Growth Competitiveness Index

No.	Country	Year 2003		Year 2004		Year 2005	
		CPI	GCI	CPI	GCI	CPI	GCI
1	Romania	2.8	3.38	2.9	3.86	3.0	3.67
2	Turkey	3.1	3.65	3.2	3.82	3.5	3.68
3	Bulgaria	3.9	3.67	4.1	3.98	4.0	3.83
1	Poland	3.6	4.15	3.5	3.98	3.4	4.0
2	Czech Republic	3.9	4.48	4.2	4.55	4.3	4.42
3	Slovakia	3.7	4.23	4	4.43	4.3	4.31
4	Lithuania	4.7	4.39	4.6	4.57	4.8	4.30
5	Latvia	3.8	4.54	4	4.43	4.2	4.29
6	Estonia	5.5	4.96	6	5.08	6	4.95
7	Hungary	4.8	4.61	4,8	4.56	5	4.38
8	Slovenia	5.9	4.7	6	4.75	6.1	4.59
9	Malta	-	n/a	6,8	4.79	6.6	4.54
10	Cyprus	6.1	n/a	5.4	4.56	5.7	4.54
	10 new EU members average	4.67	4.51	4.93	4.57	5.04	4.43
11	France	6.9	4.91	7.1	4.92	7.5	4.78
12	The Netherlands	8.9	5.24	8.7	5.3	8.6	5.21
13	Germany	7.7	5.24	8.2	5.28	8.2	5.10



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No.	Country	Year 2003		Year 2004		Year 2005	
		CPI	GCI	CPI	GCI	CPI	GCI
14	United Kingdom	8.7	5.23	8.6	5.3	8.6	5.11
15	Italy	5.3	4.38	4.8	4.27	5.0	4.21
16	Greece	4.3	4.58	4.3	4.56	4.3	4.26
17	Sweden	9.3	5.8	9.2	5.72	9.2	5.65
18	Finland	9.7	6.01	9.7	5.95	9.6	5.94
19	Spain	6.9	4.94	7.1	5	7	4.80
20	Portugal	6.6	4.92	6.3	4.96	6.5	4.91
21	Austria	8	5.07	8.4	5.20	8.7	4.95
22	Belgium	7.6	4.88	7.5	4.95	7.4	4.63
23	Luxemburg	8.7	4.99	8.4	4.95	8.5	4.90
24	Denmark	9.5	5.61	9.5	5.66	9.5	5.65
25	Ireland	7.5	4.73	7.5	4.90	7.4	4.86
UE 15 average		7.81	5.10	7.78	5.13	7.73	5.0
UE 25 average		6.57	4.81	6.58	4.85	6.66	4.72

Source: *The Global Competitiveness Report 2005-2006, 2004-2005, 2003-2004, World Economic Forum, Transparency International.*

Table 2

Deviations from UE 10, UE 15 and UE 25 average in 2003, 2004, 2005

Countries	DEVIATIONS 2004-2003		DEVIATIONS 2005-2004	
	Corruption	Competitiveness	Corruption	Competitiveness
UE 10 average	+ 0.,26	+ 0.06	+ 0.11	- 0.14
UE 15 average	- 0.03	+ 0.03	- 0.05	- 0.13
UE 25 average	+ 0.01	+ 0.04	+ 0.08	- 0.13

The deviations perceived are not very high, but they raise some problems. If the governments of the 10 new EU members made all the efforts to diminish corruption, meaning to raise the corruption perception index, with results in each year improvement of this index (+0.26 and +0.06), one cannot say the same about the "older" members of the EU, which faced each year unfavorable deviations (-0.03 and -0.05). Still, the EU average registers favorable deviations (+0.01 and +0.08), sustained by the EU 10 average.

But, we have to take into consideration the fact that the average of the corruption perception index for the three years mentioned above was 7.77 for the EU 15 and only 4.88 for the EU 10. It means that the EU 25 is confronted with a corruption perception index less than 6.60. Hypothetically, if we take into account Romania as well, for the mentioned periods the index for EU 26 would decline to 6.45.

Therefore, Romania has to make more efforts in order to understand and diminish corruption because "one of the reasons why governmental corruption has become omnipresent is, first of all, because there were made too many efforts in order to remediate the problem and too little efforts in order to understand it" (Dele Olowu in *Curbing Corruption: Toward a Model for*

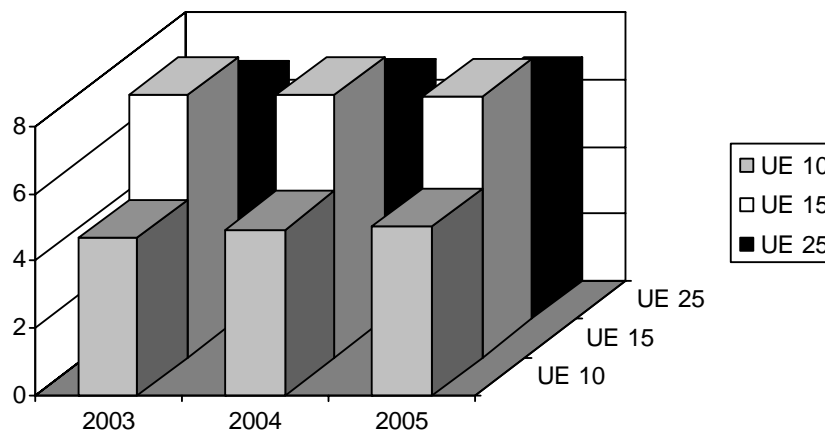
Building National Integrity, The International Bank for Reconstruction and Development, The World Bank, 2003, p. 47).

The issue of corruption reached a new phase, when it is necessary to elaborate and to implement anti-corruption strategies capable to generate long term results. It is also extremely necessary to identify the causes that lead to corruption and not only to eliminate its effects. Daniel Kaufmann argued that the poorest countries are the most corrupt, and the richest countries are “clean”. This is the reason why anti-corruption strategies differ from one country to another or, more than that, why the countries that achieved a certain level of the corruption perception index, Finland for instance, with a 9.7 score will not be preoccupied with anti-corruption strategies, because it practically does not exist.

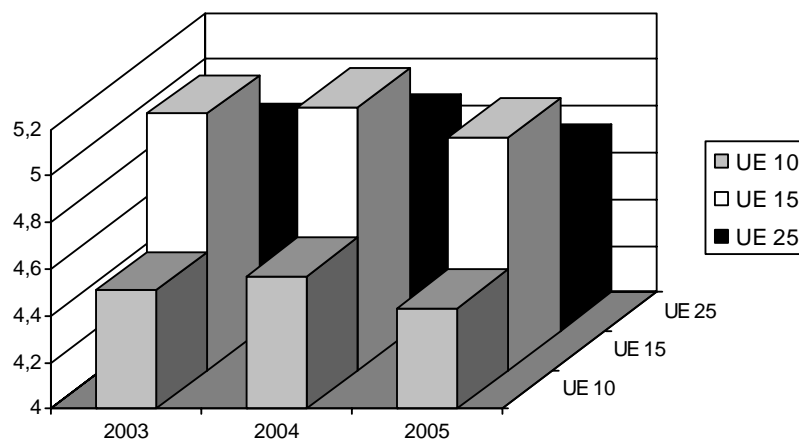
If regarding corruption the new EU members were those that registered a breeder trend of the corruption perception index, one cannot say the same about the growth competitive index of the nations. National competitiveness still remains a desideratum for the new EU members. Year 2005 meant a regress in matters of competitiveness for the EU 10 and for the EU 15 as well, and, as a result, for the EU 25.

Figure 1

Corruption Perception Index – EU 10 (new members) average, EU 15 average and EU 25 average



Growth Competitiveness Index – EU 10 (new members) average, EU 15 average and EU 25 average



One may easily see that the 10 new members diminish the index that the EU 15 obtained, because the average of the EU 25 was much more lower than the EU 15 average and slightly higher than the EU 10 average.

Under these circumstances, the situation of Romania is not pleasing at all. Unfortunately, according to the Annual Report on Competitiveness 2004 (World Competitiveness Center), in Romania the competitiveness relies on the cheap work force and on the money that the Romanians who work outside of the country send back home. Thus, Romania's place is the 63rd of a total of 104 countries and 27th of a total of 28 European countries analyzed.

The year 2005 did not mean a growth towards the top, but a decrease by 4 places in the "hierarchy of the truth": 67th place of a total of 117 countries, and 28th place of 28 countries in Europe.

What is the reason why Romania is scoring so badly as regards competitiveness and corruption as well? It is clear - a high score for corruption, which tends to maximum, means a high score for competitiveness, as well. And vice versa, as long as almost the entire system is corrupt, one cannot talk about competitiveness, maybe only through corruption.

There were just a few countries in the EU where the corruption perception index raised in 2005 as compared to 2004. Thus, we can see a fall by 0.5 in the EU 15 and a rise by 0.8 in the EU 25, due to the rise by 0.11 in the index in the new member states.

If one looks closer to the competitiveness and corruption rankings, one may clearly see the *discrepancy between North and South*. The Nordic countries are on the top positions, and the Southern ones on the last positions. It always was a relatively big difference between North and South. Nevertheless, not only the leaders from South are corrupted by the multinational concerns. Also, the democratic regimes do make policies today more in the favor of the large concerns than for those people which elected them. The influences of the

industrial lobbies, the free trade treaties and the legal forms of corruption are responsible for this situation – declared Klauss Werner and Hans Weiss, in *The new black book of the big companies. The intrigues of the international concerns*.

Competitiveness does not mean to be rich. It supposes a systemic process of creating wealth. The study of the way that countries are affected by corruption shows the significant effect that it has on the competitiveness as a whole. In this context, the corruption reduces the capacity of a country to create wealth and, as a consequence, undermines its ability to become more competitive (Mark McCord, *Create wealth, create competitiveness*).

We should remember that corruption involves always two actors: *the corrupted and the briber*. If the briber would not exist, the corrupted would not exist either. The anti-corruption policies will have the effects that we expect from them only when the population will stop to be the main briber.

Remarkable are as well the efforts that the new EU members make in order to diminish corruption and, consequently, to raise competitiveness. Estonia – with a corruption perception index of 6.0 – is the most eloquent example. It managed to leave behind some of the EU 15 countries such as Italy, Greece, Spain, Portugal, Belgium and Luxemburg.

If one takes a look at the answers to the question: “Have you or anyone close to you offer bribe of any kind in the last 12 months?”, they vary considerably from one country to the other. Thus, in the 11%-30% group we find Lithuania, **Romania**, the Czech Republic, Greece; in the 5%-10% group we find Bulgaria, Luxemburg, Poland, Turkey; in the group below 5% we find Austria, Denmark, Spain, Finland, France, Germany, Ireland, Holland, Portugal, Great Britain (Source: *Transparency International, Global Barometer on Corruption, 2005*). The question reveals, once again, the importance of the briber for the mechanism of corruption and for the corruption perception index results.

Let us be happy that Romania is not in the „first group of values”, with 31%-50% perception of corruption. Unfortunately, the rise by 0.1 of the corruption perception index in 2005 as compared to 2004 does not bring with it a competitiveness plus; on the contrary, a diminution in the score was registered (marginal competitiveness – 34.93). In 2004 as compared to 2003, the direct relationship between the two indices verifies – when the index of corruption perception index rises, the national competitiveness rises: Romania gained 12 positions (marginal competitiveness +4.8). Under these circumstances, the marginal competitiveness was calculated as follows:

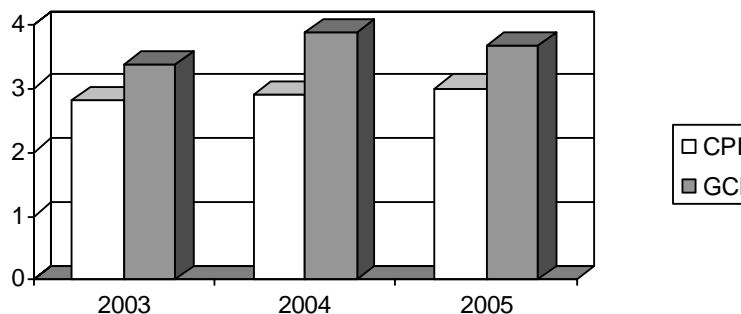
$$\text{Marginal competitiveness 04/03} = (3.86 - 3.38) / (2.9 - 2.8) = + 4.8$$

$$\text{Marginal competitiveness 05/04} = (3.67 - 3.86) / (3.0 - 2.9) = -34.93$$

Figure 3



Correlation between Corruption Perception Index and Growth Competitiveness Index for Romania



Of course, a plus of 0.1 in the corruption perception index does not mean a lot when the three indexes that compose the GCI registered, globally, a 0.5 diminution, reflected in the fall down of the competitiveness score by 0.19.

Do not forget that the growth competitiveness index is obtained as sum of 1/3 Public Institutions Index, 1/3 Technology Index and 1/3 Macroeconomic Environment. The Business Competitiveness Index is also a factor that influences competitiveness, but it is not a constituent of the growth competitiveness index. If the growth competitiveness index places itself between 0 and 3, then the national competitiveness is very low; if it ranges between 3.01 and 3.5 the competitiveness is low; an index between 3.51 and 4.5 reveals a medium competitiveness, while an index between 4.51 and 5.50 ensures a high national competitiveness; the zone between 5.51 and 7.0 is destined to the winners – the countries with the highest competitiveness. By the competitiveness point of view, Romania is placed within the medium group countries according to the index it obtained in 2003, 2004 and 2005.

Table 3

The composite indexes of competitiveness for Romania and its position in the world classifications

Indicators	Year 2003*		Year 2004**		Year 2005***		Maximum values	Minimum values
	Score	Place	Score	Place	Score	Place	2005	2005
Government efficiency	3.27	86	3.94	74	3.84	78	6.35	2.55
Infrastructure and technology	3.93	55	4.13	47	3.53	49	6.19	1.80
Macroeconomic performance	2.93	81	3.5	71	3.65	73	5.82	2.25
GCI	3.38	75	3.86	63	3.67	67	-	-

Source: *The Global Competitiveness Report, World Economic Forum.*

* 102 countries analyzed; ** 104 countries analyzed; *** 117 country analyzed.

Under these circumstances, we have to make a factorial analysis in order to identify the factors that had favorable and unfavorable influences. We propose the following general model of analysis:

$$GCI = 1/3 PII + 1/3 MEI + 1/3 TI$$

PII – Public Institutions Index

MEI – Macroeconomic Environment Index

TI – Technology Index

Analyzing the data, one may reveal the following influences:

$\Delta GCI_{04/03}$ + 0.48 points	PII + 0.22 points
	MEI + 0.19 points
	TI + 0.07 points

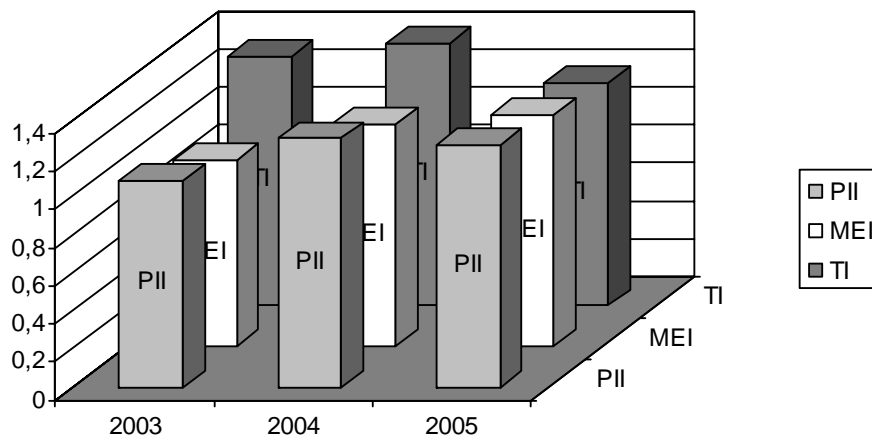
Paradoxically, the Public Institution Index had the most important favorable influence on the rise of the competitiveness index – by +0.22 points; it was followed by the Macroeconomic Environment Index – by +0.19 points and, finally, the Technology Index – by only +0.07 points. We have to say that in 2004 as compared to 2003 all the composite indexes had favorable influences, which raised Romania into the competitiveness classification to the 63rd position.

$\Delta GCI_{05/04}$ - 0.19 points	PII – 0.04 points
	MEI + 0.05 points
	TI – 0.2 points

The year 2005 meant a diminution in the Growth Competitiveness Index – due to the Technology Index that had an unfavorable influence of 0.2 points, increased by the Public Institutions Index with a diminution by 0.04 points. Only the Macroeconomic Environment Index has a favorable influence of 0.05 points, but it was not enough to offset the other deviations. As a result, Romania lost 4 positions and placed itself on the 67th position, with a score of 3.67.

If, regarding competitiveness, we managed to ascend from the 75th position in 2003 to the 63rd position in 2004, and to lose less positions in 2005 than we won in 2004, we could say that regarding corruption the positions 85th from 159 (2005), 87th from 146 (2004), 83rd from 133 (2003) were ours. Anyway, the score rises each year by 0.1 points, namely from 2.8 in 2003 to 2.9 in 2004 and to 3.0 in 2005.

The contribution of the composites indicators to the growth competitiveness index



These low scores clearly reflect themselves into the growth competitiveness index in general, and into the government efficiency index, in particular. Regarding this index, we are placed at the bottom of the competitiveness classification (86th in 2003, 74th in 2004 and 78th in 2005).

If one analyzes the national strategy for 2005-2008, one may see that the rise in the competitiveness will be obtained through the stimulation of the business environment and through anti-corruption measures. Also, the Strategy of the National Development Plan 2007-2013 anticipates the rise in the economic competitiveness and the development of the knowledge-based economy.

Thus, it is necessary to correlate the growth competitiveness index with the corruption perception index, correlation that is illustrated above by the marginal competitiveness reported to corruption. If the corruption perception index would rise in 2006 to 4.0, the optimistic variant, it could mean for Romania a higher rise in competitiveness if the GDP rises in real terms.

In order to achieve an index of 4.0 it is necessary to identify the sectors and the institutions which are most affected by corruption. At the global level, ¾ of the answers pointed to the political parties to be the most affected by corruption domain in each country. In Romania, the most corrupted are seen to be the political parties and the custom-house system, on the same place; they are followed by justice, police, the medical system and the business environment.

The foresights are optimistic: 36% of the population does not think that the level of corruption will change in the following three years. Should we be glad if we manage to keep those 3.0 points of the corruption perception index registered in 2005, or we should try to improve this limit?

1. Romania from present to the future



We will try now to make some forecasts in order to identify the time horizon when Romania will be able to exceed the 4.5 points limit that places itself in the category of *high competitiveness countries*.

Thus, for the forecasting we will use the technique of the least squares beginning with the linear equation.

$$Y = a + b X$$

In order to define the parameters **a** and **b** from the linear equation, we will use the following system:

$$\begin{cases} na + b \sum x = \sum y \\ a \sum x + b \sum x^2 = \sum xy \end{cases}$$

where: **n** – number of years (the three years);

x – time argument, the succession of the years;

y – profit dimension (Pr).

This means, after calculus:

$$n = 3, \sum x = 6, \sum x^2 = 14, \sum y = 10.91, \sum xy = 22.11$$

$$\begin{cases} 3a + 6b = 10.91 \\ 6a + 14b = 22.11 \end{cases}$$

After we solve the system, the values of the parameters are: **a** = 3.347 and **b** = 0.145. Then, the linear equation becomes: **Y = 3,347 + 0,145 X**

Table 4

**Recalculating the Growth Competitiveness Index using
the linear equation**

Year	The linear equation	GCI
2003	$Y = 3.347 + 0.145x \ 1 =$	3.492
2004	$Y = 3.347 + 0.145x \ 2 =$	3.637
2005	$Y = 3.347 + 0.145x \ 3 =$	3.782
2006	$Y = 3.347 + 0.145x \ 4 =$	3.927
2007	$Y = 3.347 + 0.145x \ 5 =$	4.072
2008	$Y = 3.347 + 0.145x \ 6 =$	4.217
2009	$Y = 3.347 + 0.145x \ 7 =$	4.362
2010	$Y = 3.347 + 0.145x \ 8 =$	4.507
2011	$Y = 3.347 + 0.145x \ 9 =$	4.652
2012	$Y = 3.347 + 0.145x \ 10 =$	4.797
2013	$Y = 3.347 + 0.145x \ 11 =$	4.942



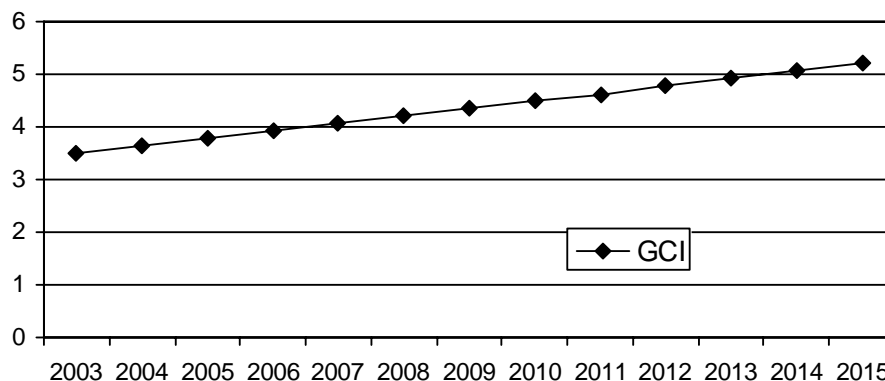
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Year	The linear equation	GCI
2014	$Y = 3.347 + 0.145x_{12} =$	5.087
2015	$Y = 3.347 + 0.145x_{13} =$	5.232

As one may see, **year 2011** represents the year when, according to the forecasting, Romania will be able to become a high competitiveness country. Hypothetically, under these circumstances, the 7 points maximum for the growth competitiveness index will be achieved in 2027.

Figure 5

The evolution of the growth competitiveness index between 2003 and 2015



Similarly, we will identify using the linear equation again the year when Romania will achieve a corruption perception index of 4 points.

After the calculus, results the following equation: $Y = 2.7 + 0,1 X$

Table 5

Recalculating the corruption perception index using the linear equation

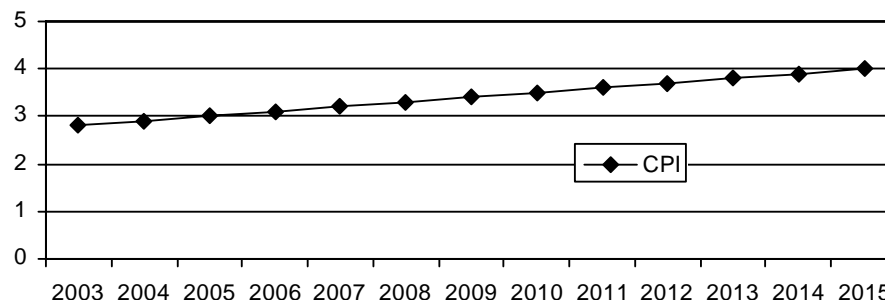
Year	The linear equation	CPI
2003	$Y = 2.7 + 0.1 \times 1 =$	2.8
2004	$Y = 2.7 + 0.1 \times 2 =$	2.9
2005	$Y = 2.7 + 0.1 \times 3 =$	3.0
2006	$Y = 2.7 + 0.1 \times 4 =$	3.1
2007	$Y = 2.7 + 0.1 \times 5 =$	3.2
2008	$Y = 2.7 + 0.1 \times 6 =$	3.3
2009	$Y = 2.7 + 0.1 \times 7 =$	3.4
2010	$Y = 2.7 + 0.1 \times 8 =$	3.5
2011	$Y = 2.7 + 0.1 \times 9 =$	3.6

Year	The linear equation	CPI
2012	$Y = 2.7 + 0.1 \times 10 =$	3.7
2013	$Y = 2.7 + 0.1 \times 11 =$	3.8
2014	$Y = 2.7 + 0.1 \times 12 =$	3.9
2015	$Y = 2.7 + 0.1 \times 13 =$	4.0

According to the forecasting, the year 2015 represents for Romania the moment when it will achieve a corruption perception index of 4 points. If the tendency of rising by 0.1 each year is maintained, we can conclude that, under the circumstances, in 2075 Romania will be perceived as a “clean” country, with a score of 10 for the CPI.

Figure 6

The evolution of the Corruption Perception Index over the period 2003-2015



The targets that we propose, 4.5 for the Growth Competitiveness Index and 4 for the Corruption Perception Index, are not accidentally chosen, because they bring Romania closer to the average that the 10 new members of the EU registered.

The comparative forecasting studies, made on real and hypothetical data as well, show that the time horizon for competitiveness improvement is much shorter than the one for corruption diminution – at least for Romania, but they confirm the hypothesis that we launched (year 2027 – maximum for the competitiveness and year 2075 minimum for the corruption).

This shifting could be explained, one way or the other, considering that the maximum score for competitiveness is 7, and for corruption is 10.

Nowadays, Romania, which registered a Growth Competitiveness Index of 3.67 in 2005, finds itself in the favorable half, but one cannot say the same about the position which Romania took in the competitiveness classification –67th place out of 117 countries, which means that all the countries make efforts in order to raise competitiveness. We cannot claim for the other countries to stagnate. By these reasons, Daniel Dăianu said that Romania would reach the level of the western European countries only in 2050 and only if the

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economies of those countries stagnate. If we make an average between the two target years resulted from the forecast (2027 and 2075), we will obtain around 2050, as well.

In order to verify if the levels we forecasted are correct, at least from methodological and mathematical point of view, we have to calculate *the coefficient of variation* (v). If this coefficient is less than 35%, the correctness of the forecast will be proved.

To calculate the coefficient of variation we need the arithmetic mean, the spread and the root-mean-square deviation. *The coefficient of variation* is the percentage ratio of the root-mean-square deviation to the arithmetic mean. Consequence of the calculus, the results of the indicators take the following values:

	Arithmetic mean	Spread	Root-mean-square deviation	Coefficient of variation
Competitiveness	3.636	0.024939	0.158	4.3%
Corruption	2.9	0	0	0 %

We can see there is no deviation between the effective values and the adjusted ones for the corruption perception index, which leads to a variation coefficient of 0%. Thus, the forecasting of the growth competitiveness index and of the corruption perception index are both correct, at least from the mathematical point of view.

The reality of the future will surely offer us a lot of surprises. The two time horizons for reaching the average of the EU-10 – 2011 and 2015 – result from a pessimistic scenario that kept all the other variables constant. Some deviations will surely appear, but they can only be favorable, considering that Romania is preparing to enter the EU.

2. Perspectives

But what did Romania do regarding corruption reduction on the one hand and competitiveness increasing on the other hand, and what can Romania hope for in the perspective of the EU integration on January 1st, 2007?

In order to increase Romania's competitiveness, The Ministry of Economy and Trade developed and published (December 2005) an Operational Program called *The increase in the economic competitiveness*. The document proposes to treat competitiveness as a building process of an economic structure based on capital investments and on research–development–innovation processes. The general objective this strategy proposes is to increase the productivity of the Romanian companies in order to reduce the gaps we register as compared to the EU average (considering the fact that in 2005 the productivity in Romania was 33% of the EU average, it is clear that we have a lot to work on). The measures that will be taken in this direction forecast to generate until 2015 a medium productivity increase of about 5.5%, allowing Romania to reach a level of about 55% of the EU average.

Still, we cannot forget that the competitiveness is created at microeconomic level. The companies are those who generate sustainable prosperity. The model that Porter developed in 2003 says that we can identify three stages of economic competitiveness: the factor-driven economy – where basic factor conditions such as low cost labor and easy access to natural resources are the dominant sources of the competitive advantage; the investment-driven economy – where competitiveness is a result of the ability to produce goods and



services of quality, by efficient methods, but with lower salaries; the innovation-driven economy – where the competitive advantage is given by the ability to produce innovative products and services at international level. Looking at “Romania’s case”, one cannot but see that “most of the domestic firms produce good or services designed in other more-advanced countries. Technology is assimilated through imports, foreign direct investments and imitation. Firms have limited roles in the value chain, focusing on assembly, labor-intensive manufacturing, and resource extraction. However, there is also a part of the economy, which may be considered investment-driven. The last couple of years have brought new investment in efficient infrastructure and policy measures aimed at creating a business-friendly administration. The product and services become more sophisticated. Technology is accessed through licensing, joint ventures, foreign direct investments and imitation. At the same time, embryos of an innovation-driven economy have developed, especially in the information and communication technology sector, which has a high competitive potential” (see Dăianu, D., *Romania and the Lisbon Agenda. Sustaining growth and fostering jobs in an emerging economy*, GEA, București, 2005). Thus, there is hope for improving competitiveness...

The *National Report regarding Corruption* (made by Transparency International Romania and published in April 2006) starts by arguing that the effective signals Romania transmits about the fight against corruption are an essential issue for the effective EU integration of Romania in 2007. An important step in this direction may represent all the measures taken at legal and institutional level, such as *The National Strategy against Corruption for 2005-2007* or *The National Agency of Integrity* – but the signals these two “guns” in the war against corruption transmit are still far away from what we expect from them: the first one did not reach its objectives in 2005 (because of some objective and subjective factors as well) and the second still generates debates and fights (between the civil society and the government). Thus, at legal and institutional levels we have still a lot to do in the fight against corruption – even if, at declarative level, Romania has started a “zero tolerance” policy. We can try to copy (or to adapt) all the measures propose by international institutions – see *Curbing Corruption: Toward a Model for Building National Integrity*, IBRD, the World Bank – or by researchers or members of the civil society – see Klitgaard R., MacLean-Abaroa, R., Lindsey Parris, H., *Corrupt Cities. A practical Guide to Cure and Prevention*, ICS Press, 2000 – but the war takes place on “real battle field”, day by day and the real fight has to be fought by all of us.

Each country or region is unique, with its own history and culture, its political system and its own level of social and economic development it has reached. There are huge differences from one country to another, and most of them are a result of the cultural differences. It cannot be created just one successful model which, applied to other countries, succeeds. We can say that a powerful “masculine” country, where the material values come first, as the USA, is a wealthy, competitive and less corrupt country as well; but, just the opposite, a powerful “feminine” country, where the spiritual values come first, like Sweden, could be just like that. Each country values the most one domain or another; instead, other countries pay no money for the same domain.

By these reasons, we think that both the growth competitiveness index and the corruption perception index as well must be balanced by different coefficients of importance, in accordance with the level of each country’s economic development, first of all, and the competitive advance of the nation, secondly.



Competitiveness and Corruption in Romania

In The Global Competitiveness report 2005-2006 we find the foundations for a new formula of calculus for the growth competitiveness index, which will replace by the **Global Competitiveness Index**. When the Growth Competitiveness Index was developed, it tried to catch into its formula some factors that influence growth and that were easy to use in many countries.

But, more and more, it seems it is necessary to take into consideration a higher number of factors capable to measure the most precisely they could the evolution or involution of a country. Such factors are: institutions, infrastructure, macroeconomy, health and primary education, higher education and training, market efficiency, technological readiness, business sophistication and innovation.

Under these circumstances, a country can occupy the first position regarding one specific category, and a much lower position in the other; for example, Denmark took the first place on infrastructure and the 23rd place on health and primary education in 2005.

The forecasting made for Romania had as starting point the fact that all the composite indexes, no matter how many they are, will contribute favorably to the growth of the competitiveness and, sometimes in the future, it will maybe appear one index that will allow Romania to take the first place at global level (see, for example, Chile, which take the first place for macroeconomic performance, and places from 35th to 45th for other indexes; or Japan, which take the first place for health and primary education, and only the 93rd place for macroeconomic performance).

Firm competitiveness, as well as country competitiveness reflects itself into the quality of life, the ability to attract foreign direct investments, the growth of productivity and of value added per input. Those which are competitive have a profit above the average registered in the industry and they are market leaders. At national level, GDP per capita and the level of foreign direct investment per capita are relevant indicators for the competitiveness of a country competing at global level.

Foreign direct investments, but not only them, are crucial for the support of the financial flows, the growth in the exports and the increase in competitiveness. More than that, by macroeconomic performance improvement, efficient government, infrastructure improvement, corruption diminution (because the idea of eliminating corruption is a utopia), Romania will become more competitive, more rich and, consequently, less corrupted.

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